AIR UNIVERSITY review

NOVEMBER-DECEMBER 1983

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13. Indicate the degree to which you would like to see the following subject areas emphasized in the *Review* (one response in each column).

	Most Emphasis	Next Most Emphasis	Least Emphasis
Strategy and planning	☐	☐	☐
Tactics and employment considerations, including intelligence and threat assessment	☐	☐	☐
International relations and economics	☐	☐	☐
Management theory and practice, including human relations, motivation, and psychology	☐	☐	☐
Leadership and related topics	☐	☐	☐
Military history and theory	☐	☐	☐
Science and technology, including analysis of weapon systems	☐	☐	☐

14. Which of the following do you read or look at frequently (more than one response permitted)?

- ☐ *Air Force* or *Army*
- ☐ *Airman*, *Soldiers*, or *All Hands*
- ☐ *Air Force Times*, *Army Times*, or *Navy Times*
- ☐ *Military Review*, *Naval War College Review*, or *Parameters*
- ☐ *Naval Institute Proceedings* or *Marine Corps Gazette*
- ☐ *Time*, *Newsweek*, or *US News and World Report*
- ☐ *Aviation Week & Space Technology*

15. Which do you prefer, an issue of the *Review* that presents a variety of articles or one that features a special theme idea?

- ☐ Variety of articles
- ☐ Special theme idea
- ☐ Both

16. If you had one important improvement to suggest for *Air University Review*, what would it be?

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TEAR OUT ALONG PERFORATION

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COEXISTENCE AND SUCCESSION: THREE LOOKS BACKWARD AND ONE STEP FORWARD

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THE death of Leonid Brezhnev completed an ongoing process of internal maneuvering and patronage that has evidently produced a successor with a strong political base. The elevation of Yuri Andropov to General-Secretary only two days after Brezhnev's death suggests early and skillful maneuvering in what appears to be as close to an "orderly" succession as any in Soviet history. In the West, the new leadership has sent Soviet specialists scurrying to read Andropov's speeches for clues about the future of Soviet-American relations.

Assessing Soviet behavior can be tedious, and, at best, only tentative conclusions can be reached. There are the predictable problems of holding a closed society up to the light of academic scrutiny. Facts are withheld or incomplete, misleading, and even false information is published in Soviet source materials. Compounding these difficulties are the complex biases and preconceived ideas about Soviet intentions held by many Americans toward our long-term rival. Analysis often begins from these two levels of darkness.

Kremlinologist Marshall Shulman recently made an important distinction on this problem. Kremlinology, he argued, is the effort to gain

would be even more tense than they are today. If the past is a faithful indicator, it is not unreasonable to suggest that Brezhnev's successors will move rapidly to improve relations with the West. Western leaders should be cautious, perhaps even skeptical, toward future Soviet initiatives. They should not, however, reject Soviet initiatives out of hand or miss opportunities that might have a positive effect on turning Soviet priorities and resources inward toward their considerable social and economic problems. Looking at the past may offer insights and suggest strategies for future Soviet-American relations.

Lenin: Flexibility and Pessimism toward the West

Lenin and his published legacy play an important role in legitimizing contemporary policymaking. Soviet leaders must find him to be an uncertain compass, since he was both dogmatic and flexible. This apparent contradiction can be partially resolved if one distinguishes between propaganda and doctrine and between the rhetoric of a leader out of power and that of a leader in power. His collective literature, which forms a great deal of Communist doctrine and ideology in foreign affairs, consists of published articles, speeches, and testimony made in defense of or opposition to specific policies of a particular period. It is not surprising that political assumptions changed from one period to another and from one generation of leaders to another after Lenin in response to new challenges. Soviet ideology did not fall from on high into the hands of its architects; rather, as a recent text observes, "it evolved out of the crucible of the political struggles in which its proponents were engaged."[1]

For this reason, Soviet propaganda has historically fluctuated widely over short periods of time. Basic doctrines and concepts such as economic laws of capitalism, capitalist hostility, or peaceful coexistence, however, change less frequently and usually over longer periods. When changes in Soviet doctrine do occur, they are significant. The doctrinal modifications in Soviet concepts of peaceful coexistence have played a central role in their approach to East-West relations. This role from Lenin through Brezhnev may provide insights to the problems and direction of the new leadership.

Lenin was the first but not the last Soviet leader to modify the doctrine of peaceful coexistence. Lenin's doctrine was the inevitable outgrowth of his adaptations of Marxism to Russia and the world as he saw it.

Marxist theories explained the internal affairs of capitalist states. These theories predicted that capitalism would fall through its own internal contradictions and that communism would ultimately pervade the world as its successor. Capitalism's fall was not only desirable but demonstrably inevitable, according to Marx's "scientific laws." Through his angry genius, Lenin and other Marxists saw a powerful economic base capable of high-mass production but with its entire superstructure resting on the backs of an impoverished working class. High-mass production combined with poverty and low consumption contributed to social chaos, depression, and monopoly capitalism. Inevitably capitalism would breed its successor as the masses would rise up and through proletarian revolution combine industrial production with equitable distribution through a socialist society.[2] Lenin's most significant contribution to Marxism was the extension of his theories to explain international relations. In effect, Lenin turned Marxism into a major theory of foreign policy. In his essay, "Imperialism, the Highest Stage of Capitalism," Lenin explained that not only was capitalism exploitive to its own working class, but it also required international expansion. It is important to remember that Lenin expressed these views in 1916, before any Communist states were in existence.

Imperialism, he argued, produced an international system in which capitalist states shared a common socioeconomic structure that fed on competition and conflict for overseas markets, colonies, and raw materials. Wars were inevitable as long as capitalist states existed. Lenin saw

World War I in precisely these terms. Only socialist revolutions throughout the capitalist-state system could rid the world of its major source of conflict. That struggle could begin in the exploited nations on which capitalist societies depended for their stability. Break the system's weakest chain through revolution and wars of liberation and the entire structure of capitalism would fall. One spark would precipitate continuous revolution. For Lenin, the first spark was Russia.

Lenin's success in leading the first socialist revolution produced substantial modifications in his theories. At the time, Lenin and his followers gave revolution in Russia great importance because they saw it as the beginning of revolution everywhere. Victory through the revolutionary efforts of respective Communist parties would occur country by country.

The role of the first socialist state was not made explicit in Lenin's prescription. His doctrine held that revolution as such was not exportable. It must be generated initially from within when "objective conditions" were present. At minimum, these conditions included a system of socioeconomic exploitation and widespread class consciousness and opposition. The first socialist state could aid and abet revolutions elsewhere but nothing in Marxist-Leninist theory required that it initiate war. As both world wars have demonstrated, successful Communist revolution has grown out of "other peoples" wars.

It is true that during the Russian Revolution and civil war Lenin saw armed conflict between communism and capitalism as inevitable. He saw a role for Soviet arms in that struggle, but it is necessary to place those declarations in their historical context. Lenin made his most bellicose statements during the revolution, at a time when forces from Western nations, including U.S. forces, were occupying parts of Russia, and when Lenin naïvely believed that the fall of capitalism generally was right around the corner.

By 1921, Lenin saw that the stability of capitalism was a long-run phenomenon. The precarious situation inside the new Soviet state required and gave rise to the notion of peaceful coexistence with capitalism. Peaceful coexistence was never explicitly developed in detail by either Lenin or Stalin. In fact, both Soviet leaders used the term only rarely. Rather, the policy was implicit in Soviet priorities and in their skillful application of realpolitik. Coexistence was essential not only for building the political and economic power of the state but also to keep the flame of revolution alive lest capitalist hostility be provoked to crush the revolution during its most formative and vulnerable stage. Coexistence with the West was a short-term tactic required by internal weakness. In the long term the Soviet view of the world continued to be based on the concept of capitalist hostility and the inevitability of war so long as capitalism existed. This concept was to remain a pivotal part of Soviet foreign policy.[3]

Lenin had begun the turn toward consolidating internal power. That, in turn, required placing Soviet national interests above proletarian internationalism. The doctrine of peaceful coexistence could never have survived its many internal critics if national priorities did not continue to be preeminent in Soviet thinking. Stalin was even more insistent on these priorities. He looked inward with such vengeance that all efforts to build communism with a "human face" were swept aside. It is the Stalin legacy that dominates American perceptions of communism and remains the predominant backdrop to contemporary Soviet-American relations.

Stalin: Pessimism and Brutality

Lenin's death in January 1924 accelerated a succession struggle that had begun in earnest more than a year earlier following Lenin's first stroke, which had effectively removed him from public life. Lenin's policies after the bloody three-year civil war in the Soviet Union were models of compromise and moderation compared with what was to follow. It was this contrast in policies that prompted Winston Churchill to observe that two great tragedies had befallen

Russia: "The first was Lenin's birth; the second, his death."

Lenin, aged 52 when he suffered his first stroke, was referred to as the "old man" by the 26-member Central Committee whose average age was only 38. The "old Bolsheviks" were youthful revolutionaries in comparison with the mean age of 69 years for members of the "contemporary" Politburo.

Few in the West would have predicted Stalin's rise to power. He maintained a low profile while Lenin was alive. The tyrant that emerged with such force lay dormant in the master bureaucrat and organizer who built a party apparat with loyalties to himself. Opposition was overwhelmed and eventually destroyed.[4]

Issues as well as organizational skill played a critical role in the struggle for party leadership. None was more important than the concept of peaceful coexistence implicit in the debate between Stalin and Leon Trotsky over the proper relationship of the new Soviet state and the non-Communist world. Trotsky argued that Russia could not on its own build a complete socialist state. That would have to await the spread of revolution to industrialized states in Europe. Moreover, the proper role of the Soviet state was to aid and abet such revolutions.

Stalin countered Trotsky's theory of "permanent revolution" with his idea of "socialism is one country." Stalin insisted that not only was it possible to build socialism in the Soviet Union, but it was also a necessity if the proletariat were to survive in a world of hostile and temporarily stabilized capitalist states.[5]

Stalin's argument for domestic priorities was far more attractive than the dimly held light at the end of Trotsky's very long path to socialism. Trotsky argued for more and more revolutions before socialism could be secure. Stalin offered respite to an exhausted people after a long war and revolution. Trotsky's enemies openly worried that Lenin's former Commissar of War with his forceful personality and ties to the generals would become a Bolshevik Napoleon.[6] Stalin's formula implicitly rejected the idea that revolutionary war would be initiated by Russia's proletariat to assist Europeans in overthrowing capitalism. His ruthless policies to develop "socialism in one country" were legitimized by a world view based on a series of mutually reinforcing propositions that all led to the same gloomy conclusion: the Soviet Union was surrounded by capitalist enemies with whom no real cooperation was possible since they were dedicated to the destruction of the world's first socialist state.[7]

Stalin divided the world into two camps, socialist and capitalist. The logic of "socialism in one country" was to buy time and build the strength of the Soviet camp. "Capitalist encirclement" and "capitalist hostility" made war inevitable although not necessarily imminent. In the meantime, peaceful coexistence and cautious diplomacy were required to avoid provoking conflict with capitalist powers.

The final victory of socialism in the Soviet Union was defined by Stalin as the achievement of sufficient security to prevent the restoration of capitalism. To accomplish this, Stalin argued, "it is necessary for the present capitalist encirclement to be replaced by a socialist encirclement."

It is important to recognize the thrust of Stalinist strategic thought. Its preoccupation with conflict, danger, and external aggression aimed at the Soviet state made the development of a general and active strategy of peaceful coexistence impossible. Peaceful coexistence was simply the prerequisite for economic reconstruction and the development of Soviet power. Stalin's world view legitimized repression at home and diplomatic flexibility abroad.

Stalin's pragmatic diplomacy rested on his thesis of capitalist encirclement and hostility toward the Soviet state. But it was also true, according to orthodox Leninism, that conflict still existed among capitalist states. These schisms could be skillfully exploited to prevent a united capitalist front against the Soviet state. Realpolitik more than coexistence with or revolution within individual capitalist states became

the most salient feature of Stalin's diplomacy. Stalin's peaceful coexistence was based on short term, tactical alliances, not on optimistic hope that peace would prevail in the long run.

The pattern was very clear. Stalin continued the diplomatic pattern established in 1922 with the signing of a diplomatic and commercial treaty with the Germans at Rapallo.[8] The two pariahs of Europe emerged from isolation with a diplomatic partner to play off against the French and Great Britain. The Treaty of Rapallo resulted in more than a decade of Soviet-German cooperation that included secret military collaboration. Ironically, the German army, with the aid of the Soviet army, bypassed the provisions of Versailles and experimented with new weapons on Soviet territory. Strengthening the German army was hardly a wise strategy for any Soviet leader who placed a high priority on the future prospects of the German Communists' seizing power.

Stalin's use of foreign Communist parties is worth noting. Many Westerners feared them for their revolutionary potential. Stalin was often believed to be pursuing a dual-track foreign policy: Proper official diplomacy through the foreign office and subversion through his control of Communist "fifth columns." In fact, both structures tended to support the same track. Stalin turned the Comintern (Communist International) into little more than an adjunct of Soviet foreign policy. The role of foreign Communists in a particular country was largely conditioned by the degree of friendliness or hostility of that country toward the Soviet state. This was hardly the role of "general staff for revolution" originally conceived by Lenin and Trotsky.

Stalin's political agility was especially dramatic following Western appeasement of Hitler at Munich. From Moscow, appeasement appeared to come at the expense of Soviet security since it brought the German army closer to the Soviet border. Stalin countered the following year with the infamous Nazi-Soviet Pact which, in effect, turned back the Nazis onto the West at a time when Stalin's diplomatic initiatives toward Great Britain and France were stalled.[9]

Soviet historians argue that the Nazi-Soviet Pact was a skillful move on Stalin's part that bought time to prepare for the anticipated Nazi onslaught. The timing of the Nazi attack in June 1941 was apparently a tactical surprise. The offensive itself was not a strategic surprise. The elaborate military buildup and the defensive barriers constructed in the western military districts prior to the attack lend credence to the Soviet version of events.[10] For those who doubt the strategic potency of diplomacy, it is also worth noting that during the final months of the Nazi-Soviet Pact, Stalin also signed a nonaggression pact with Japan. The significance of a one-front war for the Soviets should not be lost on U.S. policymakers observing the current pattern of initiatives toward normalizing relations with China.

The Grand Alliance with Western democracies forged military victory, but this coalition formed of military necessity failed to become a permanent structure for building or consolidating peaceful coexistence. The Cold War years of Stalin's reign saw him revive the old "two camps" thesis with its message about the danger of a capitalist attack against the Soviet Union.

A year before his death, Stalin presented a somber reiteration of war's inevitability so long as capitalism and imperialism existed. In a more optimistic vein, however, he modified the traditional "two camps" model of international conflict and set the stage for his successors to play a more assertive role in foreign affairs.[11] At the Nineteenth Congress of the Communist Party, Stalin announced an end to the long period of building socialism in one country. The "ebb tide of revolution" had been replaced by a "flow tide." As a result, he urged an abandonment of the essentially defensive policy that had been followed since 1921 and the beginning of a more assertive foreign policy.

The more aggressive posture was made possible, according to Stalin (in his speech at the Nineteenth Party Congress), by the economic

and military recovery of the Soviet Union, the consolidation of communism in Eastern Europe and China, and, perhaps most important of all, by the growth of revolutionary movements in the Third World. The Soviets could exploit this by "picking up the banner of nationalism where it had been dropped by the bourgeoisie." This would promote Soviet security by breaking up or preventing the consolidation of anti-Soviet alliances and hasten the collapse of capitalism in general. But even these improved geopolitical developments did not alter Stalin's perceived threat and permanent enmity of the remaining members of the capitalist world.

Stalin conceived this new offensive in nonmilitary terms. The party line he laid down was carried out almost immediately by his successors. One of them, however, was to carry out major revisions to the theoretical assumptions laid down by both Lenin and Stalin.

Khrushchev: Optimism and Revisionism

Georgi Malenkov seemed the likely successor to Stalin, since he assumed the posts of both Chairman of the Council of Ministers in the government and Secretary of the Party's Central Committee. Within two weeks, however, Malenkov was "released" from his duties on the Central Committee, leaving Nikita Khrushchev as de facto First Secretary of the Party.[12] In retrospect, the removal of Malenkov was the key event in the post-Stalin succession, for Khrushchev was able to strengthen his power base and outmaneuver his rivals. Before the year's end, Lavrenti Beria, Stalin's head of the feared secret police, was arrested and shot. By 1955, Malenkov resigned from his remaining post. Khrushchev had chosen his issues carefully to build a winning coalition within the party. He had asserted strong support for heavy industry and (like Andropov) support for the military. On other issues he played the role of "centrist" or innovator.[13]

As we watch the current succession to Brezhnev unfold, it is important to remember that no one in the West, based on Khrushchev's rise to power, could have predicted the doctrinal revisions he would develop. These were first elaborated in his report to the Twentieth Party Congress in February 1956.

Khrushchev's first revision was based on the growing nuclear arms race and the danger of nuclear war with the United States. He needed to establish an ideological basis for the existence of a long-term relationship between communism and capitalism that would not lead to war. Khrushchev, like the deposed Malenkov, believed that nuclear weapons had fundamentally altered the nature of international conflict. Nuclear war would result in the "mutual destruction" of both Communist and capitalist societies.

Once the new Soviet leader had taken the position that nuclear war would destroy Communist society, it became imperative to revise the Leninist theory of the inevitability of war lest he end up with a theory of inevitable doom. This Khrushchev skillfully did by asserting:

> As long as capitalism survives in the world, the reactionary forces representing the interests of the capitalist monopolies will continue their drive towards military gambles and aggression, and may try to unleash war. *But war is not fatalistically inevitable.*[14]

Khrushchev had reversed both Lenin and Stalin by declaring that capitalism no longer meant the inevitability of war. Peaceful coexistence among states with different social systems could become a permanent feature of international politics rather than a short-term tactic.

The basic aggressive nature of capitalism had not changed. What had changed was the fundamental nature of war that allowed the Soviet Union to deter or perhaps even defeat aggression. In Khrushchev's words, "Today there are mighty social and political forces possessing formidable means to prevent the imperialists from unleashing war." Khrushchev later added that "capitalist encirclement" no longer existed and, furthermore, the "final" victory of socialism had been achieved. "The danger of capitalist restoration in the Soviet Union is ruled out. This means that

the triumph of socialism is not only complete, but final."[15]

Khrushchev's theory of peaceful coexistence was the beginning of an active, optimistic, and purposeful strategy. It was no longer the tactical necessity of Stalin's "socialism in one country." Peaceful coexistence rested on the growing nuclear capabilities of the Soviet state. It did not, however, mean reconciliation of the two hostile systems. The class struggle would continue but at a more regulated and less dangerous level of confrontation.

Support for the class struggle through wars of national liberation but rejection of wars between states was a clear theoretical distinction made in Khrushchev's theory. The former would continue, as would the obligation of the Soviet Union to support them. It was never made clear precisely how the Soviets would support wars of national liberation.

A corollary to the theory of peaceful coexistence was Khrushchev's optimistic assertion that Communist revolution could be brought about by peaceful means. "Our enemies," he argued, "like to depict us Leninists as advocates of violence always and everywhere. . . . It is not true that we regard violence and civil war as the only way to remake society." He went on to describe how the working classes might transform "bourgeois democracy" into the instrument of the "people's will."

> The right-wing bourgeois parties and their governments are suffering bankruptcy with increasing frequency. In these circumstances the working class, by rallying around itself the working peasantry, the intelligentsia, all patriotic forces, and resolutely repulsing the opportunist elements who are incapable of giving up the policy of compromise with the capitalists and landlords, is in a position to defeat the reactionary forces opposed to the interests of the people, to capture a stable majority in parliament, and transform the latter from an organ of bourgeois democracy into a genuine instrument of the people's will.[16]

In another theme directed more perhaps at his home audience, Khrushchev appealed to Soviet workers to increase productivity until the Soviet system demonstrated its superiority by outstripping the West economically. This "competitive coexistence" would, in turn, demonstrate the superiority of the Soviet system to others, especially in the Third World where it might be emulated.[17]

Winning power through parliamentary majorities or model emulation were clear departures from Lenin's view that war or violent revolution were the midwives of social change. What Khrushchev was struggling to define through doctrinal revisions were the means for advancing communism in the nuclear age and in the face of Western military superiority. He provided a formula for peace that did not require a stalemate in the class struggle.

It is ironic that the reception of Khrushchev's revisions in both China and the United States ranged from skepticism to hostility. Chinese leaders feared that Soviet timidity would slow the world revolutionary movement. Publicly, they saw nuclear weapons as a means for advancing world communism. Privately, they may have been more concerned that the Soviet leader had, in effect, removed their protective, nuclear umbrella at a time of intense hostilities in Sino-American relations. There was good cause to question the value of an alliance with the Soviets in the event of war with the United States. Khrushchev's revisionism sounded very much as if the Soviets were prepared to leave their Chinese brethren "twisting in the west wind."

In the United States, Khrushchev's reversal of the inevitability of war went largely unnoticed. Instead, Americans saw his support for wars of national liberation as a threatening new means for escalating the global struggle. For Americans, the linkage of Soviet activities in the Third World was a pivotal part of Soviet-American relations. Protracted conflict, even at a low level of intensity, was not a sphere of activity governed by a different set of laws. For President Kennedy, Khrushchev's challenge was one of the major threats faced by the new administration. Our early involvement in Vietnam can be traced to Kennedy's belief that Southeast Asia represented

a test case for the future success or failure of wars of national liberation.[18]

There were compelling reasons for American skepticism of peaceful coexistence. In practice, the Soviets were discriminating in supporting only those struggles that seemed to enjoy Lenin's criteria for "objective conditions." This meant that "progressive forces" had to be either already in power or very likely to achieve it in the short term. But Soviet support ranged far beyond political endorsements and model emulation. Soviet strategy included massive arms support, advisers, and, more recently, surrogate military forces. It is also true that successive U.S. administrations have credited the Soviets with more power and influence than they have actually enjoyed in directing change in a politically intractable and nationalistic Third World.

Nikita Khrushchev presided over a remarkable period of ideological and conceptual innovation. He might have succeeded in forging a new and less tense era. The fact that he managed some of the most severe crises of the Cold War demonstrates the problem that continues to plague Soviet-American relations. How can the Soviets embrace a "science" of history that prescribes sharp political, economic, and ideological struggles between capitalism and communism while precluding military conflict between states that embrace the contending systems?

Brezhnev: Realpolitik and Military Power

No bill of particulars was ever articulated in the Soviet Union to explain Khrushchev's removal. But his colleagues evidently feared he was moving too far, too fast, on too many fronts. There may well have been widespread agreement after the Cuban missile crisis that the unfavorable strategic military balance threatened the source of Soviet power on which Khrushchev had built his theoretical revisions. Cuba may well have reminded them of Stalin's cynical observation: "You'll see, when I am gone the imperialist powers will wring your necks like chickens."[19]

In October 1964, a vacationing Khrushchev was informed that his colleagues were to install a more "stable" team of leaders. He received the news while conversing with two orbiting cosmonauts.[20] With a final message to outer space, Nikita Khrushchev "retired" to the sudden obscurity that only the Soviet system could provide.

Brezhnev had been a protégé of Khrushchev. Western newsmen had once asked who would replace him as first secretary if he died. "Brezhnev," was his insightful answer.[21] Khrushchev's forced departure was followed by what appeared from the outside to be a collective leadership. Four dominant leaders emerged from the seven members of the Politburo who survived politically into the post-Khrushchev period. Brezhnev at age 58 became Party Secretary, Aleksei Kosygin headed the State bureaucracy as Chairman of the Council of Ministers, Nikolai Podgorny headed the State as Chairman of the Presidium of the Supreme Soviet, and Mikhail Suslov carried on as guardian of party ideology through his functions as Secretary of the Central Committee.

These four presented a common front and a return to normalcy. How contested the internal struggle for dominance was is not known, but it is clear that like all previous leaders, Brezhnev as First Secretary of the party was best positioned to consolidate his personal power. This he did, but only after a period of more than ten years. His dominant position became clear by the Twenty-fifth Party Congress (1976) where he was given top military rank, Marshal of the Soviet Union, and his position as Chairman of the powerful Defense Council was publicly acknowledged for the first time. The following year, Podgorny was removed as President, and Brezhnev became both head-of-state and party leader.

The policy transition that accompanied Brezhnev's rise to power shows considerable modification from the Khrushchev period. Peaceful coexistence remained as Khrushchev had defined it but with substantial de-emphasis in policy priorities. When the goals of Soviet foreign policy were listed in Brezhnev's speeches, peaceful coexistence was often ranked last, behind proletarian

internationalism, building communism in the Soviet Union, and building the strength of world socialism.

Building the strength of socialism seemed especially important to the new Soviet leadership. It is essential to remember that Khrushchev built his theories on the foundation of growing Soviet military power, especially nuclear weapons. He seems also to have made greater claims for that power than were justified at the time. The shortcomings of Soviet power were revealed during the Cuban missile crisis. Determined never to be so vulnerable again, Khrushchev's successors expanded Soviet military programs. These programs produced steady and dramatic increases in Soviet strategic forces during the late 1960s while the United States was preoccupied in Vietnam (testing theories of national liberation).

By 1971 the Soviet Union had equaled and then surpassed the United States in the number of Intercontinental Ballistic Missiles. The United States retained its strategic advantages in other areas, but it was clear to everyone that the Soviets had overcome the military and political disadvantages that they may have associated with our strategic nuclear preeminence. "Strategic equivalence," much like the original Soviet deployment of strategic nuclear weapons under Khrushchev, accompanied a new Soviet interest in peaceful coexistence, this time under the rubric of détente.

The strategic nuclear buildup was accompanied by a severe downgrading of the importance attached to economic competition. Under Khrushchev, economic competition or "competitive coexistence" played a major part in East-West relations. He argued in the strongest possible terms that the Soviet Union would fulfill its obligation to proletarian internationalism by defeating the West in the battle of economic indices. The Brezhnev leadership had no such faith in economic competition.

Ironically, military priorities contributed substantially to the inability to compete or improve the living standards of the Soviet people. Greatly increased military capabilities under Brezhnev became the principle substitute for a growing inability to compete with the West in any other arena. Military might is the one symbol that continues to confer superpower status.

Strategic parity brought with it other challenges to Soviet foreign policy that were best served by détente in the early 1970s. It remained imperative to the Soviets to avoid a nuclear confrontation with the United States. Trade and technology were required by an unsound and declining economy. Détente also served to limit collusion between the United States and China. Even so, détente, like coexistence, did not end the class struggle. According to one widely circulated text in the '70s:

> Peaceful coexistence is a principle of relations between states which does not extend to relations between the exploited and the exploiters, the oppressed peoples and the colonialists. . . . Marxist-Leninists see in peaceful coexistence a special form of the class struggle between socialism and capitalism in the world, a principle whose implementation ensures the most favorable conditions for the world revolutionary process.[22]

The widely circulated endorsements of peaceful coexistence through détente exemplified the Soviet ideal of East-West relations. Détente served the security interests of the Soviet state while increasing the opportunities for peaceful socialist construction elsewhere.

The dual track diplomacy of détente and endorsement of the world revolutionary process may have been the Soviet ideal. In the United States, this era of negotiation that accompanied the winding down of American participation in the Vietnam War was to be played by a different set of rules. The Nixon-Kissinger strategy offered concessions in trade, credits, technology, arms control, and European security provided the Soviets made concessions in areas of vital interest to the United States. These concessions were inevitably linked to Soviet behavior both at home (human rights) and abroad (Third World intervention).[23]

Even though détente resulted in five Soviet-American summits and more than two dozen

formal agreements, no consensus on permanent rules of the game were established. The cracks in détente were exposed where Soviet activities in the Third World collided with American theories of linkage politics. Soviet doctrine made it clear that peaceful coexistence combined cooperation with competition. Its competitive aspects were aimed at limiting Western influence and, if possible, increasing Soviet influence throughout the globe. The waning of détente began over issues of human rights and the failure to ratify SALT II, but the critical blow was wielded by Soviet policies in Africa and the invasion of Afghanistan.

Brezhnev presided over both the high and low periods of détente. His final party Congress in February 1981 reaffirmed the policies of détente and pledged to cooperate with the United States in reestablishing superpower dialogue at the highest level.[24] The direction and substance of that dialogue will be subjected to the intrigues and power struggles of the Brezhnev succession.

Andropov: Reform or Repression?

At this writing Yuri Andropov appears firmly established in all three of Brezhnev's former positions: Party Secretary, Chairman of the Defense Council, and State President, a largely ceremonial post but one with added prestige and authority in foreign affairs.

Much has been made of his former role as Head of Soviet Internal Security in paving his way to power, but it is probably inaccurate to base predictions on his future policies on any negative associations with the KGB. While these contacts make him a well-informed leader, they apparently have not resulted in dogmatism or ideological orthodoxy. In fact, the death of Mikhail Suslov, the last of the rigid Stalin-era ideologues in February 1982, removed what may have been the most formidable opposition to Andropov's successful drive within the Politburo structure.

Andropov's early speeches predictably pledged to base policies on "the invincible might" of the Soviet military. These capabilities are to be retained in support of what Andropov later developed as a major endorsement of peaceful coexistence. On 22 November, in his first speech as top party leader before the party's Central Committee he stated:

> We are deeply convinced that the 70s, characterized by détente, were not—as is asserted today by certain imperialist leaders—a chance episode in the difficult history of mankind. No, the policy of détente is by no means a past stage. *The future belongs to this policy.*[25]

Andropov's strong endorsement of peaceful coexistence and his assertion that there are no acceptable alternatives are a positive sign at this early stage of succession. His pledge to retain Soviet military power is not inconsistent with his early effort to show a conciliatory face to both the West and China. Once political power is consolidated, the Soviet military should not be regarded as an irresistible force given the magnitude of domestic problems the new leadership has inherited. Andropov referred explicitly to many of these problems. The obligatory clichés of communism's triumph over capitalism were dropped in favor of a critical examination of Soviet economic deficiencies. He spoke of "initiatives and enterprise," of greater decentralization, and studying "the experience of fraternal countries." He spoke of the need for incentives for workers and for placing policy personnel correctly so the best workers and scientists were in a position to aid economic growth. This last statement is intriguing for its potential challenge to a Soviet tradition of granting defense industries first call on the Soviet "best and brightest."[26]

With a declining economy, unrestrained military growth cannot be sustained without at least intermediate efforts to reform and stimulate economic growth. For an economy approximately 60 percent as large as that of the United States, to make progress on issues ranging from such basics as food, consumer goods, health, and housing to more complex issues that include restive nationalities in the U.S.S.R., unstable allies in Eastern Europe, and dependent clients in the

Third World will require all of Secretary Andropov's administrative skills. Further repressing of Soviet citizens will not solve these problems. Dissent does not express itself on Moscow streets. Political activism is sublimated often in the form of apathy, indolence, and alcoholism throughout Russian society. These are not the symbols of a strong economy or powerful state. The former head of the KGB confessed that he "did not have ready recipes" for solving Soviet economic problems. From the tone of his early speeches and in spite of police crackdowns against truant workers, Soviet labor may have less to fear than corrupt and inept bureaucrats from Andropov's initial wielding of "carrots and sticks." At age 69 and in poor health, Andropov does not have the ten years it took to consolidate the Brezhnev era. He appears to be prepared to move quickly at home and abroad to liquidate weak positions. Early overtures to China, India, Pakistan, and the West indicate efforts to realign diplomatic and military strength for future cooperation or conflict with the United States. That future rests primarily on progress in strategic and theater arms reductions and in developing general ground rules for mutual conduct in the Third World.

In retrospect, Soviet leaders have embraced the strategy of peaceful coexistence first as a shield that protected the development of "socialism in one country." With the deployment of nuclear weapons during the Khrushchev era and the achievement of strategic parity under Brezhnev, military power reinforced that shield and extended its protection over the global class struggle. This will undoubtedly continue but with priority given to Soviet national interests rather than proletarian internationalism.

The East-West conflict in this arena might be alleviated in one of two ways. First, Soviet domestic demands will require less activism in the Third World and could result in less willingness on the part of Soviet leaders to create dependencies. Second, the United States should undertake a much-needed reevaluation of its own strategy. National liberation movements are formed in most instances by broad but extremely nationalistic political coalitions. The United States would be well served by political strategies that distinguish between Soviet support and Soviet domination.[27] For the former, U.S. economic power in the form of trade, technology, and investment offers more effective instruments of policy than the military containment of revolution that has plagued Soviet-American relations since the end of World War II. Like Stalin after World War II, the United States should "pick up the banner of nationalism" where it has been dropped by aging bureaucrats who seem unable to solve their own internal problems, much less extend socialism beyond their borders.

IN LOOKING at past successions, the one optimistic trend that can be identified is the lack of dogmatism in Soviet ideology. New leaders have not been wedded to a single course of action. Soviet pragmatism and flexibility in the past indicate that U.S. initiatives and policies can play a significant part in determining whether the Andropov era produces a less dangerous period in Soviet-American relations.

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Notes

1. Joseph L. Nogee and Robert H. Donaldson, *Soviet Foreign Policy since World War II* (New York, 1981), p. 14.
2. For a readable account of these views see Robert Heilbroner, *The Worldly Philosophers* (New York, 1967), chapter VI.
3. A detailed analysis appears in Frederic S. Burin's "The Communist Doctrine of the Inevitability of War," *The American Political Science Review*, June 1963, p. 337.
4. Stalin's consolidation of power is described in Jerry Hough and Merle Fainsod, *How the Soviet Union Is Governed* (Cambridge, Massachusetts, 1979), chapters 4 and 5.
5. For a discussion of the debate see Elliot R. Goodman, *The Soviet Design for a World State* (New York, 1960), pp. 129-63.
6. See Hough and Fainsod, p. 112.
7. Stalin's world view is described in Burin, pp. 334-54.
8. Adam Ulam, *Expansion and Coexistence: The History of Soviet*

Foreign Policy, 1917-67 (New York, 1974), p. 150.

9. For somewhat different interpretation of these events see Ulam, pp. 257-60 and D. F. Fleming, *The Cold War and Its Origins* (Garden City, New York, 1961), pp. 84-97.

10. Fleming, pp. 106-34. See also Otto P. Chaney, "Was It Surprise?" *Military Review*, April 1969, pp. 56-67.

11. For Stalin's views, see the account of the Nineteenth Party Congress in Leo Gruliou, editor, *Current Soviet Policies* (New York, 1953).

12. Hough and Fainsod, pp. 204-06.

13. Ibid., p. 209.

14. For Khrushchev's statement on the new theory, see Leo Gruliou, editor, *Current Soviet Policies II* (New York, 1957), pp. 29-63. Emphasis added.

15. Quoted in Paul Marantz, "Changing Soviet Conceptions of East-West Relations," *International Journal* 27, Spring 1982, p. 226.

16. Quoted in Nogee and Donaldson, p. 30.

17. Marantz, pp. 230-35.

18. Virtually all of Kennedy's biographers are in agreement on this point.

19. Strobe Talbott, editor, *Khrushchev Remembers* (Boston, 1970), p. 392.

20. Ulam, p. 573.

21. Hough and Fainsod, p. 242.

22. Quoted in Nogee and Donaldson, p. 245.

23. For Kissinger's views on linkage politics, see *White House Years* (Boston, 1979), pp. 129-30.

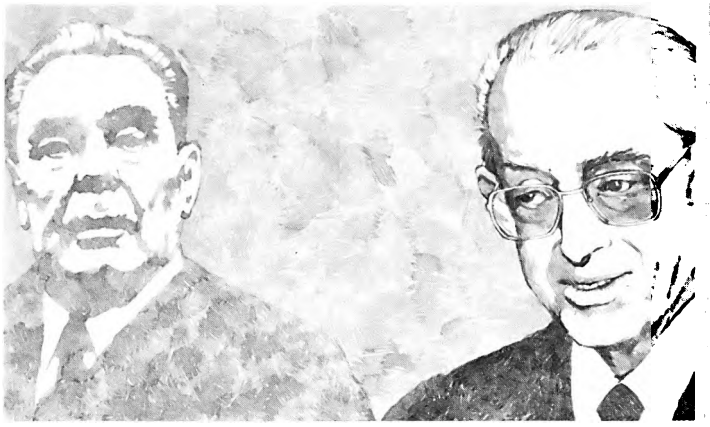
24. The Congressional Research Service Report No. 81-203F, *The 26th Soviet Communist Party Congress* (Washington, Government Printing Office, 1 September 1981), pp. 1-2.

25. *New York Times*, November 23, 1982, p. A13. Emphasis added.

26. Ibid.

27. See Dan Papp, "Wars of National Liberation and Détente," *International Journal* 23, 1 (Winter 1976-77), pp. 82-99.

AMERICAN STRATEGIC NUCLEAR MODERNIZATION AND THE SOVIET SUCCESSION STRUGGLE



DR. JONATHAN R. ADELMAN

PERHAPS the crowning achievement of the now-concluded Brezhnev era was the attainment by the Soviet Union of perceived strategic nuclear parity with the United States. When Leonid Brezhnev wrested power from Nikita Khrushchev in 1964, the United States held a decisive lead over the Soviet Union in this critical area. Brezhnev gave the armed forces a top priority, resulting in a long and sustained military buildup. During the 1970s, the Soviet nuclear arsenal surged forward dramatically in both a quantitative and qualitative dimension. By 1980 the Soviet Union's 2500 submarine-launched ballistic missiles (SLBMs), intercontinental ballistic missiles (ICBMs), and bomber launchers represented more than a 60 percent increase from the 1500 launchers in 1970, not to speak of major improvements in quality. Soviet advances by the late 1970s had significantly degraded the value of America's land-based ICBMs, opening a possible "window of vulnerability" in the 1980s. Significant funds had also been spent on such defensive measures as ballistic missile defense, antisubmarine warfare, and civil defense. By contrast the United States, far from engaging in its own buildup, had been content in the 1970s to exercise what Secretary of Defense Harold Brown aptly characterized as "strategic self-restraint." While the United States did MIRV its Minuteman and Poseidon missiles and double the number of nuclear warheads with increased accuracy in the 1970s, the total number of launchers in its triad was essentially the same in 1980 as in 1970. Between 1970 and 1978, cumulative Soviet spending on nuclear forces was three times that of the United States. Spending on defensive programs remained low, though, for the only American antiballistic missile site was dismantled, and civil defense stayed dormant.[1]

As a result of the Soviet momentum and American stagnation, the Soviet Union attained its long-sought goal of strategic nuclear parity with the United States in the 1970s. From this achievement flowed a number of benefits for the Soviet Union. Ideologically, it seemed to validate the leadership's Marxist views of the inevitable rise of socialism and decline of capitalism, of history being decisively on the side of the Soviet Union. Militarily, the Soviet buildup forced the United States to cede claims of strategic supremacy and, for the first time, formally acknowledge the Soviet Union as an equal. This was reflected in the SALT I and II treaties, which gave the Soviet Union some leverage over American military development. Politically, the Soviet Union felt emboldened to stake out a position in the international political arena commensurate with its

newfound military position. During the 1970s, the Soviet Union launched military transport efforts for its allies in Egypt and Syria, Ethiopia, Angola and Mozambique, and intervened directly in Afghanistan, the first Soviet move outside the Warsaw Pact since World War II. Perhaps Benjamin Lambeth has best captured this new Soviet attitude:

> This mood of sublime self-assurance inspired by the growth of Soviet strategic power has perhaps been most confidently expressed in the widely-cited proclamation of Foreign Minister Gromyko that "the present marked preponderance of the forces of peace and progress gives them the opportunity to lay down the direction of international politics."[2]

The benefits flowing from the successful Soviet buildup did not come cheaply. During the early years of Brezhnev's rule, continued economic growth allowed both guns and butter, easing the cost of the arms race. But in the 1970s the marked slowdown in Soviet economic growth sharply increased the opportunity costs of significant real conventional and nuclear appropriations increases. The fact that Soviet military spending continued to increase at the same rate even in the late 1970s came only at the expense of major decreases in the rate of growth of capital investment and lesser decreases in consumption growth rate. This clearly demonstrated, in Myron Rush's view, that "the prolonged Soviet military buildup is relatively insensitive not only to changes in international climate and in U.S. military policies but also to changes in Soviet economic circumstances."[3]

American Strategic Nuclear Modernization

By the late 1970s the relentless Soviet buildup, which seemed to threaten to go even beyond parity with the United States, began to alarm American defense policymakers. The Soviet invasion of Afghanistan in December 1979 brought these concerns to the forefront of American policy as did concerns about a "window of vulnerability" for American land-based ICBMs in the early 1980s. The Carter administration, especially in its last year, formulated plans for a major expansion in American military spending, including the nuclear arena. The Reagan administration, with its massive $1.6 trillion five-year plan for military spending, made a top priority of reversing the adverse trends of the 1970s. Especially significant in Reagan's view was a major program for strategic nuclear modernization that would give the United States a decided advantage in this key area by the end of the decade.

In October 1981, President Reagan set forth a major program of strategic nuclear modernization of all three legs of the triad. He called for the deployment of 100 powerful counterforce MX missiles by the late 1980s to replace the Minuteman land-based ICBM. At sea Reagan stressed the rapid deployment of the Trident II/D-5 SLBMs, which possessed real counterforce capability to destroy hardened targets. In the air he called for the replacement of aging B-52 bombers with 100 B-1B intercontinental bombers in the late 1980s and the development of the Stealth bomber (ATB) by the end of the decade. Some B-52s would also be modernized and used as launching platforms for 3000 cruise missiles on B-52s and B-1s. All this would be accompanied by increased spending on C³I and strategic defense programs. The net result would be by 1990 to give the United States a strong counterforce first-strike potential against hardened Soviet targets.[4]

The long-term impact of such a program, if carried out in its broad outlines, would be very considerable. Not since the Eisenhower administration has there been such a comprehensive review and program for strategic forces. Given the longevity of such forces (many B-52s are older than their pilots), the potential impact could be felt into the next century.

While the Reagan program clearly lacked an overall coherent policy on the role and future of strategic nuclear forces, and elements of it will probably be changed (as MX), the overall thrust of the program was relatively clear. As Secretary

of Defense Caspar W. Weinberger reported to Congress in February 1982:

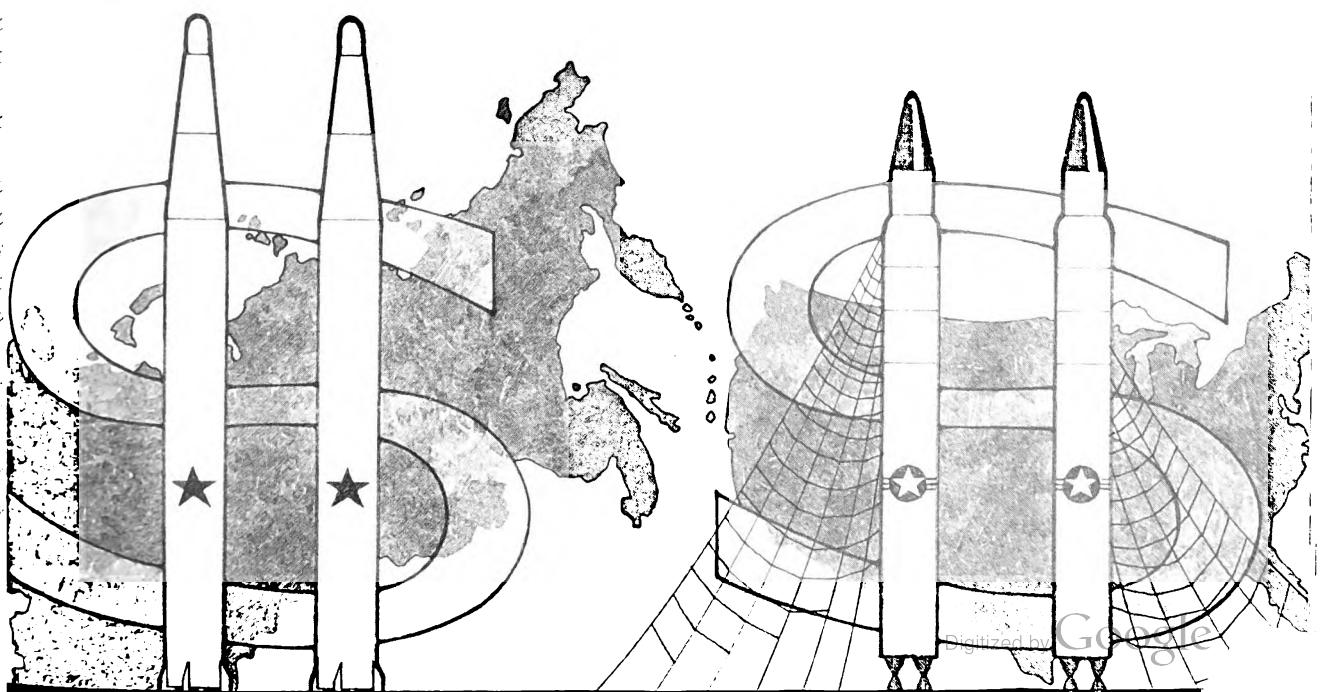
> This Administration . . . does place the highest priority on the long overdue modernization of our strategic forces. While this modernization program is not designed to achieve nuclear "superiority" for the United States, by the same token, we will make every necessary effort to prevent the Soviet Union from acquiring such superiority to insure the margin of safety necessary for our security.[5]

Other Reagan spokesmen have gone even further to imply that the administration is aiming for nuclear superiority over the Soviet Union.[6]

Soviet Perceptions of American Strategic Modernization

The rhetoric and programs of the Reagan administration have genuinely alarmed Moscow. As early as June 1981, V. V. Potashov declared, "With the aid of the MX program, the Pentagon leaders are openly planning to secure strategic superiority to Soviet strategic forces."[7] In October 1981, Georgi Arbatov, director of the Institute of U.S.A. and Canadian Studies in Moscow, averred that "a big step has been taken toward a Cold War" as "weapons systems are being developed which will further destabilize the balance or in any case create the illusions . . . that will increase the shakiness and the instability of the world."[8] In June 1982, *Krasnaya zvezda* and *Pravda* articles stressed that MX and Trident represented a clear attempt by the United States to gain military superiority over the Soviet Union.[9] In December 1982, Defense Minister Dmitri Ustinov bluntly warned, "The point is that Washington has now set itself the goal of upsetting parity and achieving military superiority. A rough deadline for this—1990—is even being mentioned."[10]

In the Soviet view the United States possesses the economic resources, technological capability, and political will to carry out what they feel are dangerous programs. Although Soviet observers tend to emphasize the negative aspects of defense spending, they have little doubt that America's $3 trillion economy could support the level of spending necessary for such forces. In 1982, strategic forces consumed only 13.3 percent of the defense budget ($16.2 billion), a figure scheduled to rise to 16.3 percent of that budget by 1985 ($33.2 billion).[11] Technologically, Vernon Aspaturian has seen Soviet fears of an American reversal of the existing nuclear strategic parity between the two superpowers as grounded in a "deep and even awesome respect for the enormous economic, scientific and technological resources of the United States and realizable mil-



itary potential inherent in them."[12] Politically, they perceive that the hardline tone of the Reagan administration and presumed power of the military-industrial complex make the completion of the strategic program a distinct possibility. Raymond Garthoff has placed the Soviet view in perspective:

> In the Soviet perception, the USA has continued, notwithstanding SALT and détente, to seek military superiority. Although some highly placed U.S. leaders and others are considered to have "soberly" evaluated the strategic situation and given up the pursuit of superiority, powerful forces are believed to continue to seek advantage and superiority in order to compel Soviet acquiescence in U.S. policy preferences. Moreover, actual U.S. military policy and programs are seen as seeking to upset or to circumvent the nuclear mutual deterrence balance.[13]

Clearly the comprehensive modernization program poses a serious military threat in the late 1980s to the Soviet Union, especially as it puts directly at risk the 70 percent of the Soviet nuclear arsenal deployed on increasingly vulnerable land-based ICBMs. Also, the asymmetry of force postures, with the United States deploying only 20 percent of its force posture in such a mode, works to the disadvantage of the Soviet Union. So, too, do the difficulties in altering such an orientation in a country with a strong military tradition of land power, weak access to open waters, and little history of strong offensive bomber power.

At the same time, it is important to stress the limitation of the impact of changes in the nuclear balance on the thinking of top Soviet leaders. Their view of the correlation of forces is far broader and more complex than the simple comparison of strategic nuclear weapons deployed on both sides or various forms of elevated bean counting. Even the military component of the correlation of forces would not focus solely on the strategic nuclear balance. Rather, viewing strategic nuclear forces as only one aspect of military power, it would integrate strategic nuclear forces, theater nuclear forces, and conventional military forces under one rubric. This diminishes the impact of the new strategic systems as changes in the strategic balance can be offset by Soviet conventional superiority (as in the 1950s) or by European theater nuclear advantages (as seen in the large-scale SS-20 deployment).

Furthermore, in the Soviet view military power has never been considered a central or autonomous factor in foreign policy. The Soviets do not emulate the American predilection for analysis of abstract force exchanges irrespective of the larger political goals or strategic context. Rather than simply representing the quantity and quality of men and weapons available to the armed forces, military power has been often seen as a function of other factors, such as political and economic causes. In this context new military challenges need not be met by military power at all. Robert Legvold has well understood this perspective in his observation of the Soviet Union in the 1980s: "Her ability to integrate her economy into a larger order, beginning with the energy sector, for example, will have as much to do with her security, and perhaps even more to do with that of her allies, than any plausible erosion of the strategic nuclear balance."[14]

Indeed, there has been no clear correlation between Soviet foreign policy and the state of the intercontinental nuclear balance. Stalin made great gains in Eastern Europe after World War II in the face of the American nuclear monopoly. Khrushchev steadily advanced the Soviet cause in the Third World, proclaimed the inevitable victory of communism, and repeatedly (if unsuccessfully) challenged the United States over Berlin during an era of American strategic nuclear superiority. And despite the achievement of strategic nuclear parity, Brezhnev actually pursued a more conservative and less bellicose foreign policy than his predecessor, one emphasizing détente, East-West trade and SALT agreements, especially before 1979 and the freezing of Soviet-American relations.

Finally, the Soviet notion of correlation of forces is a very broad concept, in which the military balance is only one aspect of a very complex balance between the two sides. The correlation of

forces includes long-term social, economic, and historical processes embedded in the "objective" course of history which will, they are convinced, witness the ultimate triumph of Marxism-Leninism. Great stress is placed on the growth of international movements, such as the peace movement and national liberation movements, and economic factors, such as the deep recession in Western capitalist countries. Domestic politics, allies, and classes are all given significant roles. So too are qualities of national leaders and national resolve. The anti-Vietnam War movement is cited as an example where internal class contradictions forced a change in American foreign policy. Most important, the Soviets are likely to see strategic modernization not simply in a military context but as symbolic of a broader political context. Vernon Aspaturian, writing at the end of the Carter administration, argued:

> Widely prevalent in Soviet commentary is the view that the United States is not merely interested in reclaiming military superiority but yearns to restore itself to the apex of the international system as principal arbiter of the planet's destiny, to renounce its agreement to accept the Soviet Union as an equal partner and to behave once again as if it were the world's only authentic global power, with a self-asserted right to set the international agenda, resolve disputes and in general regulate and manage the international system.[15]

Everything that has occurred in the first two years of the Reagan administration has only intensified these Soviet views.

Soviet Succession Struggle

The new and threatening American strategic initiatives come at a particularly sensitive period in Soviet politics. The death of Leonid Brezhnev in November 1982 has intensified a sharp succession struggle already well under way before Brezhnev's death at age 76. Historically, Soviet succession struggles have been protracted and even dramatic battles lasting several years. It took five years after Lenin's death for Stalin to smash the left and right oppositions before gaining the undisputed mantle of leadership in 1929. The Stalinist succession struggle lasted four years before Khrushchev's final ascendancy in 1957, highlighted by the liquidation of Beria in 1953, dismissal of Malenkov in 1955, and dramatic defeat of the "Anti-Party Group" Politburo majority in 1957. Even the relatively consensual ouster of Khrushchev in 1964 precipitated a moderate struggle that lasted several years between Brezhnev and Kosygin. Given the multiplicity of factions and groups, institutional rivalries, mobilization of peripheral groups, and complexity of issues, any fast and final resolution of the succession struggle and reintegration of the polity is rather unlikely.

This is especially true given the nature of personnel elite turnover on the agenda. While there have been four changes in the top leadership (1924, 1953, 1964, 1982), the elite leadership has changed only once—and that time (1937) did not coincide with a change in the top leader. While the Soviet elite from 1917 to 1937 was dominated by Old Bolsheviks, the Great Purges in 1937 decimated this group. A new, young postrevolutionary generation, with working class and peasant origins and technical education, rose to power in the wake of the purges. This generation (exemplified by Brezhnev, Kosygin, and Podgorny) is now rapidly passing from the scene. Seweryn Bialer showed in *Stalin's Successors* that in 1978 the average age range of a full member of the Politburo was 66-70, 65 among members of the Councils of Ministers, and 65 among the high command of the Armed Forces.[16] Thus a massive turnover at the elite level coupled with a change in top leaders will ensure true ferment and instability in the Soviet system. This is even truer since the advanced age of Yuri Andropov (69) ensures that, even if he consolidates his power, there will probably be yet another succession struggle at the top by the end of the decade.

Finally, intense internal struggle is virtually guaranteed by the large, complex, and often unpalatable agenda facing any new Soviet leadership in the 1980s. The last years of the Brezhnev

era were marked by petrification and stagnation in Soviet policy abroad and at home. The growth rate of the overly centralized Soviet economy continued to drop inexorably from the 5 percent annual GNP rise of the 1960s to 4 percent in the 1970s to 1-2 percent in the early 1980s. Soviet agriculture suffered several disastrous years, energy production flattened out, and labor productivity growth dropped sharply.[17] In foreign policy the Soviet Union found itself overextended and even floundering. In Eastern Europe massive Soviet military pressure and economic help were needed to defeat the Polish Solidarity trade movement. In the south more than 105,000 Soviet troops were still bogged down in Afghanistan with little prospect of gaining a decisive victory. In the east the Soviet Union has 43 divisions tied down along the Chinese border while its Vietnamese allies are still trying to complete their occupation of Cambodia. Soviet influence beyond its borders has dropped notably. In Latin America, Castro's Cuba has become an expensive obligation while in the Middle East, Soviet impotence was highlighted in the recent defeats of its clients in Lebanon and subsequent exclusion from Lebanese and Arab negotiating efforts. And, finally, relations with the world's other superpower, the United States, have deteriorated markedly in recent years.

These problems, however, will be discussed, debated, and analyzed against the policymaking framework created during the Brezhnev era, and that is where the difficulties will arise. Under Brezhnev the regime managed to provide both guns and butter. Consumers benefited from the doubling of national income during the first twelve years of his rule. A sharp increase in consumption of high-quality foods, a massive housing program, and a new expanded retirement system have all whetted consumer expectations.[18] Similarly, all major central bureaucratic institutions received significant real appropriations increases yearly from the expanding economic pie. Brezhnev cemented the consensual conservative system of decision-making in 1973 when he added the Foreign Minister (Gromyko), Defense Minister (Grechko), and KGB head (Andropov) to the Politburo.

But in the 1980s, the politics of economic stringency will not permit a continuation of politics as usual. The vast and important investment needs of European Russian reindustrialization, Siberian energy development, and Soviet agriculture will compete directly with consumer expectations and the wants and desires of the powerful military-industrial complex. This will lead inevitably to bruising political confrontations on a scale not seen in Soviet politics for two decades. All this will occur, too, against the backdrop of a rearming and more menacing America bent on a strategic nuclear modernization program that threatens to overturn hard earned Soviet claims to nuclear parity. Myron Rush has well captured the tenor of the coming political collisions when he observed:

> By the mid 1980s defense may receive more than half the increment, leaving very little for additional civilian investment and for the consumer. Stepped-up increases in defense expenditures in a continuing arms race against an American economy that is roughly twice the size of the Soviet economy could be achieved only by making repeated cuts in consumption. Reducing Soviet living standards at a time of tight labor supply, however, could further weaken the economy, creating a downward spiral.[19]

The Military in the Succession Struggle

In this context it is especially important to see the role rather likely to be played by the military and its allies in heavy industry in the succession struggle. The response of the Soviet leadership to the American military challenge is also likely to be significantly influenced by the military. As Arthur Alexander has cogently observed about the nature of the Soviet military decision-making process:

> . . . the lengthy complex process of weapons acquisition and great inertia and sheer survivability of organizations and their behavioral patterns ensure that the outcome of that process will be heavily influenced by the organizations involved—by their goals and procedures. This influence derives from

> the organizations' control over information, generation of alternatives and implementation of political choices.[20]

The Soviet military thereby enjoys key advantages in framing the military aspect of a response to American programs. With its almost total control of all aspects of national security affairs, from analysis and intelligence to production and deployment of weapons, the Soviet military enjoys a degree of autonomy not found in the American military. Its predominance in all spheres of military and strategic thought and monopoly of military expertise enable it to frame military problems and define the parameters within which those problems are to be solved.[21]

The military has historically played a significant role in succession struggles since the death of Stalin. It played a key role in the arrest and execution in 1953 of Beria, who led the secret police, a notorious enemy of the military. In 1955 military support of Khrushchev helped him to oust Malenkov, his chief rival. In 1957 Khrushchev prevailed over the "Anti-Party Group" Politburo majority with the aid of Defense Minister Zhukov, who used military transport planes to bring Central Committee members to Moscow to help Khrushchev. In 1964 Brezhnev was able to oust Khrushchev at least in part because of military disenchantment with his policies. And, as we shall see, Andropov's rapid ascension to power after Brezhnev's death in 1982 results in large measure from the backing of the military-industrial complex.

In addition, the military and its heavy industrial allies have made great strides over the last three decades. Under Khrushchev the military became a legitimate and significant political actor, a status denied it under Stalin. The size and power of its Strategic Rocket Forces expanded enormously. Khrushchev in his memoirs recounted how difficult he found it to withstand military pressures:

> Unfortunately there's a tendency for people who run the armed forces to be greedy and self-seeking. . . . "Some people from our military department come and say, 'Comrade Khrushchev, look at this! The Americans are developing such and such a system. We could develop the same system but it would cost such and such.' I tell them there's no money; it's all been allotted already. So they say, 'If we don't get the money we need and if there's a war, then the enemy will have superiority over us.' So we discuss it some more, and I end up by giving them the money they ask for."[22]

Under Brezhnev the armed forces flourished, receiving real appropriations increases of 3 percent to 5 percent a year and sustaining a powerful military buildup in nearly every sector.

But this is not to suggest, as Roman Kolkowicz has done, that the Soviet military will become a dominant political force in an increasingly militarized post-Brezhnev Soviet society.[23] For the Soviet leadership throughout history has successfully prevented any military challenge to its power—and there must be serious doubts as to whether the military even would desire such a position. Stalin excluded the military from decision-making and ruthlessly and massively purged the officer corps in the late 1930s. Khrushchev ousted the popular Marshal Zhukov from the Politburo in 1957 and sharply reduced the size and influence of the ground forces. Even Brezhnev, closely allied with the military, overrode military objections to reach the SALT I and SALT II agreements in the 1970s, in the process reintegrating the military in the negotiating scheme. Brezhnev's generous treatment of the military in terms of appropriations, personnel stability, and professional autonomy was in line with his treatment of other key central institutions, such as the secret police and government bureaucracy.

Furthermore, the military faces certain key problems in maintaining its position. Unlike in earlier battles, the military is now a satisfied, status quo power, seeking to defend its position. Given minimal growth and the rise of reformism in the succession struggle, it may become the object of wrath of other dissatisfied interest groups seeking a share of its large pie. Nor is the military homogeneous. Leaders such as Khrushchev demonstrated considerable success in play-

ing one faction against another (as Zhukov versus Konev). Numerous internal splits, such as conservative ground forces versus radical strategic rocket forces, navy versus air force, and commanders versus commissars may provide ground for the political leadership to consolidate themselves at the expense of the military. Recent military setbacks suffered by the Soviet military in Afghanistan and Soviet clients in the Middle East (Syria at the hands of Israel in Lebanon, Iraq by Iran) may diminish its prestige and legitimacy. Overall, then, the military is likely to play a strong but hardly dominant role in a succession struggle in which it may find itself on the defensive.

The Ascension of Andropov

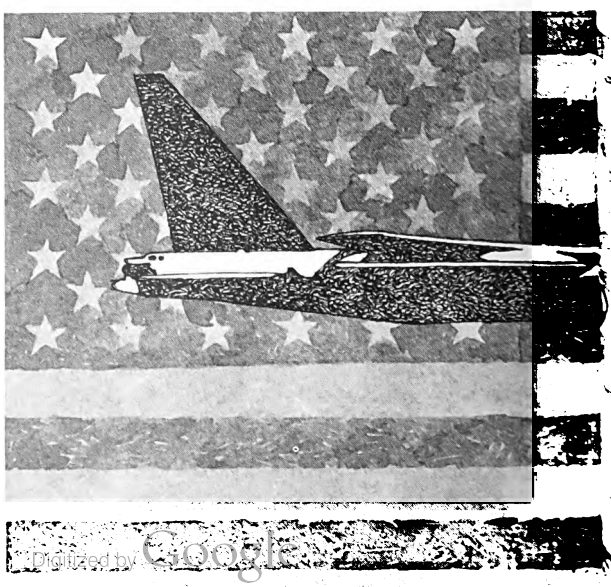
The rapid ascension of Yuri Andropov to the post of Party General Secretary in the wake of Leonid Brezhnev's death in November 1982 signaled the initial victory of the hardliners over the moderates. His background as Soviet Ambassador to Hungary during the 1956 crushing of the revolt and fifteen years as head of the KGB greatly appealed to the hardliners. His strong ties with the defense establishment were reflected in his declaration in November 1982 that "the Politburo has considered and continues to consider it mandatory, especially in the present international situation, to provide the Army and Navy with everything they need."[24] In response in December, Defense Minister Ustinov praised the "complete clarity" of Andropov's policies while Army General V. Varrenikov called Andropov's speech "brilliant and deeply meaningful."[25] Similarly, his strong ties with the KGB, which he had headed for 15 years, were seen in the promotions of his former associates to the Politburo (Geydar Aliyev), post of U.S.S.R. Minister of Internal Affairs (Vitaly Fedorchuk), and post of KGB head (Viktor Chebrikov).

Many factors promoted Andropov's triumph over his moderate challenger, Konstantin Chernenko. The wave of deaths (Brezhnev, Suslov, Podgorny, and Kosygin) and incapacitating illnesses (Kirilenko and Pelshe) of the older generation in the last two years removed many of Brezhnev's associates. In terms of experience, intelligence, and pragmatism, Andropov possessed the best qualifications for the post. His move to the Central Committee Secretariat in May 1982 defused fears of his secret police background. His support for arms negotiations and détente and ties to Georgi Arbatov have shown a moderation that lessens opposition to his rule, as well as the fact that at age 69 he is unlikely to rule for many years.

Finally his initial policies have shown a marked cautiousness in domestic policies and moderation in foreign policy. His stress on fighting economic corruption avoids challenging the interest of powerful economic institutions. His calls for arms negotiations with the West on strategic arms and theater nuclear weapons, coupled with appeals for negotiations over Afghanistan and China, show an attempt to defuse international crises and insulate domestic politics from their volatility.

The Context of American Strategic Nuclear Modernization

The Soviet Union has with Brezhnev's death entered into a period of intense political struggle over the future shape of Soviet politics. This process will undoubtedly be lengthened by the

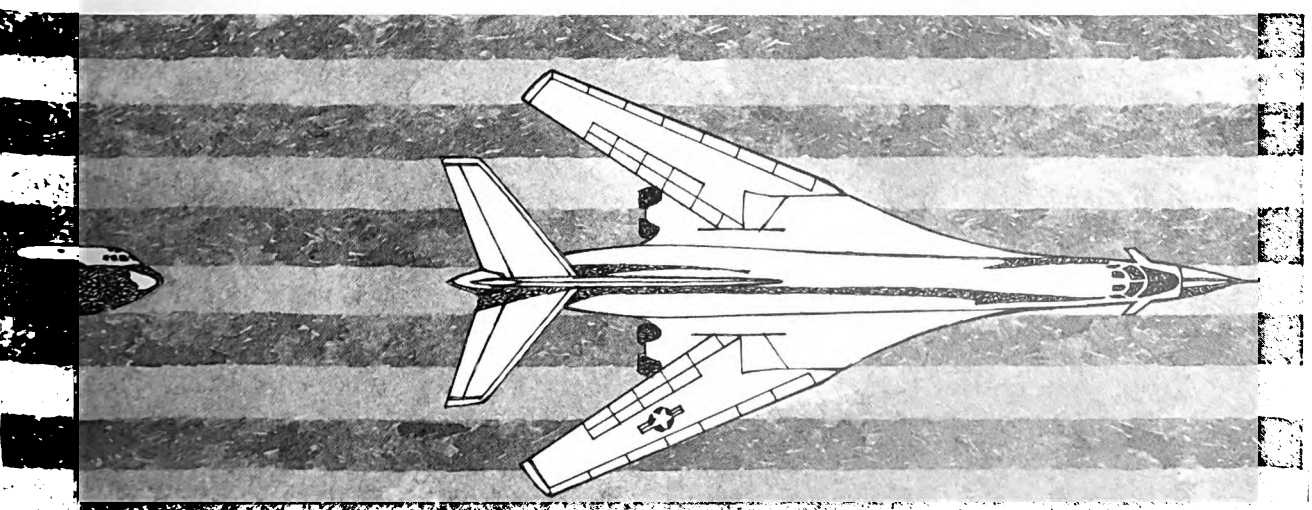


fact that Yuri Andropov is 69 years old. Even if he succeeds in consolidating his power, a new succession struggle to determine who succeeds him is likely by the end of the decade. Given the centrality of the Soviet-American relationship in Soviet eyes, moves made by the United States will affect the succession. Moderate American moves can, under certain circumstances, help beget moderate Soviet responses. Similarly, hardline American moves can provoke hardline Soviet responses. For, as Uri Ra'anan has astutely argued,

> The fractional nature of Soviet leadership, if borne in mind, presents options to other powers—as a potential "brake" upon adventurous tendencies that appear to be surfacing in Soviet actions . . . Certain elements in the Soviet elite may be beginning to feel that there are actions in the international arena of a bold and militant nature, which, basically, no longer "pose risks" that would prove really costly to the USSR. Consequently, it could prove advantageous for other powers to be able to "manipulate" factional strife at the apex of Soviet leadership, if only by supplying political "ammo" to those who, in their own interests, would wish to demonstrate that their domestic rivals really are "adventurists." Groups in the Kremlin raising "the banner of caution" could show that actions proposed by these rivals might involve very high international costs and that these were Western signals, not necessarily of a declaratory nature, intimating the gravity with which such ventures would be viewed.[26]

Given the threat that American strategic nuclear modernization poses to the major and expensive Soviet attainment of achieving perceived nuclear parity with the United States, it will surely become a major issue in Soviet politics. Soviet hardliners and moderates would agree that the American program, if carried through, would pose a serious danger to the Soviet position in international politics. But Soviet hawks will see it as a harbinger of an overall attempt to dethrone the Soviet Union as a superpower. In this view only a "hard" Soviet response, in the form of competition with the West and use of force, would deter the West. Conversely the doves, seeing the American strategic program as more purely military in scope and denigrating the military factor in the correlation of forces, will argue for détente and arms control agreements to restrain an economically and technologically superior enemy. Interestingly the more moderate position was previously adopted by both Khrushchev and Brezhnev after they had gained power with the support of the hardline camp. For as George Breslauer has perceived:

> Both Khrushchev and Brezhnev presented their collaborative designs at a time when they perceived themselves to be in a position of "effective strategic parity" with the United States but when they greatly feared that unless the parity relationship were codified and regularized, the United States could make a technological burst forward and leave the Soviet Union behind once again.[27]



The Soviet perception of the overall context of the American program thereby becomes quite important. If it is perceived as the dominant feature of an overtly hostile American policy seeking to revive the Cold War, it will strengthen Kremlin hardliners. This policy would confirm traditional Marxist-Leninist views on the irradicable warlike, aggressive, and hostile tendencies of capitalist states. If they felt that America had adopted this policy, it would revive deep-seated historical fears of capitalist encirclement and foreign invasion. There will be a strong "rallying around the flag," patriotic reaction in which consumer concerns will be shelved for an ongoing Soviet buildup. This would weaken the moderates who have argued for greater contact and trade with a West which seemingly had accepted Soviet strategic parity. There would seem to be little to lose from an outright renewal of the Cold War. The worst fears of Soviet military and civilian leaders will have been confirmed. Soviet hardliners will be able to use the American program to further their own ends.

If American policy helps to promote a new, hardline post-Brezhnev leadership, the consequences will be considerable. During the last two decades the decline of the Cold War has led to the emergence of a new and tenuous Soviet-American relationship, symbolized by the signing of two SALT agreements and the Helsinki Accord. As a result, China has replaced America as the most immediate threat to Soviet security. Now, if partly through American actions, the United States were to be restored to its old status of the Soviet Union's major enemy, the impact will be immediate and possibly military in nature. The Soviet Union lacks the ability to compete on a global basis with the United States in either the economic or cultural realms. Economically, far from being an economic superpower, the Soviet Union imports high technology goods and industrial products while exporting natural resources (gold, gas, and oil), the classic pattern of an underdeveloped country. Culturally, Soviet-style communism has long since lost its appeal in Europe and the Third World. Therefore, any hardline Soviet response to the American buildup must be military in nature since this is the only arena in which the Soviet Union is truly globally competitive and even enjoys some marginal advantages.

The first Soviet response might be to launch an increased arms buildup of its own to match the American program and maintain parity. Although this would harm key domestic interests, it would be readily sustainable over a short run of several years. The trillion dollar Soviet economy, already far more militarized than the American economy, would find it easier than the American economy to step up military production.[28] The visible American threat would allow the Kremlin leadership to contain domestic dissatisfaction arising from the downgrading of consumer spending. The Soviet leadership could also doubt the long-term commitment of the United States to such a course, given the volatility of American politics, frequent electoral changes in leaders, economic difficulties, and strong nuclear freeze movement.

A further Soviet response could be for them to use their military forces in a much more aggressive fashion than heretofore. Since World War II the Russians have deployed their forces outside the Warsaw Pact area only once (Afghanistan)—and that time in a neighboring country with no possibility of direct Western intervention. A more aggressive Soviet policy could take advantage of several favorable conditions. The attainment of strategic nuclear parity with the United States has freed the Soviet Union from the fear of having to back down (as in Cuba in 1962) in the face of American threats and countermeasures. By a number of measures, Soviet ground forces possess means substantially in excess of those necessary for the defense of the homeland. Geographically, as a massive Eurasian power, the Soviet Union has a unique ability to intervene quite easily in Europe, Asia, and the Middle East. And even if the Reagan administration succeeds in a major strengthening of American conventional forces, this is a protracted process requiring a number of years to complete. In the interim

Soviet conventional superiority could be exploited in a number of areas of opportunity. In short, the real "window of vulnerability" in the 1980s might well lie not in nuclear weaponry (whose use is highly unlikely) but in conventional weaponry.[29]

The Russians could find a number of areas around the world where it might be profitable to use, or threaten to use, forces by themselves or through surrogates. In Asia they could stage maneuvers or border incidents along the Chinese border. The Chinese, intent on pursuing their ambitious Four Modernizations program, would then have to choose between some form of accommodation with the Russians or building up their forces at the cost of development. In the Middle East, the Soviet Union could contemplate resolving its own future energy problems through pressure or actual force on the weakly armed emirates. Or it could massively supply Syria with enough advanced weapons to ignite another Arab-Israeli conflict in which the Soviet Union could hope to demonstrate that it is the only reliable Arab ally against Israel. Throughout the Third World, from Central America to southern Africa, there are numerous areas where the Soviet Union might profitably contemplate direct or indirect military intervention.

This is *not* to say that there are no positive benefits to be derived from American strategic nuclear modernization. Indeed, there are important benefits to be gained. For if the United States were to continue to allow the Soviet Union to alter the military balance in its favor, this would undoubtedly aid the hardliners in the succession struggle.[30] The potential benefits from the threat or actual use of force would soon outweigh possible costs. Given the enormous economic, political, and social problems facing Russia in the 1980s, the temptation would arise to resolve them partially through the now attractive conventional military option. With the vast Soviet nuclear capabilities inhibiting any likely use of American nuclear assets, the Soviets could more freely utilize their conventional forces. It was in America's interest to redress the balance so as to help push the Soviet Union away from such a military solution to its problems.

But if the American strategic modernization program were coupled with positive American proposals (as serious trade and arms negotiations), they will strengthen the moderate position in the succession struggle. For as Alexander Dallin perceptively observed about the interdependence of the two superpowers:

> The mutual perceptions of the superpowers are shaped, in large measure, by each other's behavior along with domestic pressures and constraints. The United States is thus an unwitting participant in internal Soviet arguments and reassessments, and this is likely to be the case particularly at times of genuine debate and uncertainty in Moscow—times which are once again upon us.[31]

In this context moderate American actions can show the potential benefits from dealing with the United States while the strategic modernization program demonstrates the futility of the Soviet hardline position of pursuing a military option vis-à-vis the West. Such an American position would show that the United States is not intent on depriving the Soviet Union of its hard-won status as a superpower.

The key to the moderate position will be the credibility of the proposals offered to the Soviet Union. The Soviet leadership believes that the United States in the 1970s undermined détente by not keeping its promises. Militarily, the United States initialed the SALT II Treaty—and the Senate never ratified it. Economically, the United States never granted the Soviet Union "most favored nation" trade status—while China and Romania were granted the status. Trade between the two superpowers never rose above the paltry level of several billion dollars a year. Politically, America accepted the centrality of the Soviet-American relationship—and then actively played the China card. Constant American policy flip-flops and temporary restrictions on the Soviet-American relationship during the Carter and Reagan administrations undermined American credibility.

Three areas are most important for such a

moderate policy. The critical problems facing the Soviet economy in the 1980s and the dominant role of domestic policy in resolving the succession struggle ensure the primacy of economic issues. Although the eagerness of America's Western European and Japanese allies to trade with the Soviet Union has somewhat diminished the value of American trade, it still remains important. The United States, even today, remains the economic engine of the non-Communist world and provides its direction. Especially in the 1980s, the Soviet Union needs American wheat, nonmilitary high technology, and capital investment to overcome domestic economic difficulties. Both direct and indirect American involvement could be vital to such massive projects as the development of Siberian energy resources and European Russian reindustrialization. Such projects would also aid the ailing American economy and suffering major trade deficits. Overall, then, heightened Soviet-American economic relations would be mutually beneficial, especially to a Soviet economy suffering from low productivity and technological backwardness.

Similarly, the United States, as the world's other superpower, is seen by the Soviet Union as holding important cards in the military sphere. Arms control agreements provide public confirmation of the great power status of the Soviet Union. They can provide a cap (albeit a high one) on the arms race, which would allow limitations on the growth of military expenditures. By easing tensions between the superpowers and decreasing the possibility of accidental nuclear war, they serve the interests of both sides. As Leonid Brezhnev reflected this view in June 1982, five months before his death, "The destinies of war and peace largely depend on whether there will be reached a Soviet-American accord on the limitation and reduction of strategic armaments, an honest, fair accord which infringes the interests of nobody."[32] Perhaps most concretely, by providing contact and dialogue between the two sides, arms talks provide a positive climate for economic and political relations.

Finally, the United States holds important political cards as well. The Soviet Union, with a vulnerable 4700-mile border with China, is eager to avoid American modernization of the obsolete but large Chinese army. In the Soviet view, any final resolution of the crises in Poland and Afghanistan requires American noninterference in areas vital to Soviet interest. As reflected in Soviet inactivity in Lebanon in 1982, the Soviet Union continues to seek to avoid direct confrontation with the United States in areas of competition in the Third World. Overall, then, the centrality of the Soviet-American relationship offers considerable opportunities for significant political negotiations between the two sides.

Finally, it is important to stress the limitations on the development of such relations. For as Seweryn Bialer has perceptively argued:

> The difficulties in U.S.-Soviet relations do not have as their source mutual misperceptions of the two powers by each other. At the heart of the conflict is the real diversity of their interests, a real difference in their evaluation and perception of the international situation, a real diversity of their priorities in approaching the world system, and a real asymmetry in the development of their international appetites and their consciousness of what is possible and obtainable for their respective countries in the international arena.[33]

Soviet Perceptions of American Politics

If Western observers have often perceived Soviet politics as a riddle wrapped up in an enigma, then Soviet observers of American politics have often been equally puzzled. This unease has only been partially reduced by the academic work of Georgi Arbatov's Institute for the Study of U.S.A. and Canadian Politics. The very chaotic, volatile, decentralized, and media-oriented nature of American politics seems alien to the highly centralized, disciplined, and controlled practitioners of Soviet politics. What is a Soviet observer to make of the role of "gypsy moths" and "boll weevils," Jerry Falwell and the Moral Majority and nuclear freeze activists, Tip

O'Neill and Jesse Helms (the "Six Million Dollar Man")? How could any system generate no fewer than six presidents in the last twenty years, including a Texas rancher, California red baiter, Michigan All-American football player, Georgia peanut farmer, and a fading Hollywood movie actor? Finding a thread that can explain (or worse, predict) American politics must seem a Herculean task to the Soviet leaders.

Mirroring the American image of a dualism in Soviet politics, the Soviet leaders possess a similarly dualist view of American politics. They see a contest between hardliners and moderate "sober realists" within the capitalist camp. Their initial concerns about Reagan's hardline rhetoric were tempered by relief at the demise of Jimmy Carter and positive recollection of the last Republican President who had espoused hardline rhetoric (Richard Nixon). But Reagan's massive defense buildup, continued strong anti-Communist rhetoric, and slashing of domestic social programs are now seen by many in the Soviet leadership as the work of an unregenerate hardliner. His arms control proposals are perceived as one-sided and propagandistic, reflecting the interests of the powerful military-industrial complex. Moscow hardliners thereby see Reagan as demonstrating the innate correctness of their position.

Others perceive the Reagan administration as being forced into a more realistic, moderate position by a series of domestic and international pressures. Perhaps the most important impetus are the dangers arising from a superpower arms race, dangers directly threatening the American position. For an unstable arms balance increases the dangers of war rather than enhancing American security. For as Georgi Arbatov wrote in April 1982:

> Actually, armaments programs, rather than correcting the strategic disproportion, destabilize the military balance. Attempts to gain unilateral advantages, to threaten some particular elements of the other side's defense capability, inevitably lead to countermeasures and rebound on the initiators. The stockpiling of armaments for more effective use of arms, instead of making deterrence stronger, adds to the probability of a global confrontation.[34]

Furthermore, an arms race with strengthened first-strike capability on both sides increases mutual suspicions and enhances the possibility of an accidental war. In July 1982, Defense Minister Dmitri Ustinov obliquely warned that the Soviet Union might be forced to resort to a launch-on-warning system to counter an enhanced American threat.[35]

A series of domestic factors will also, in this Soviet view, push the United States away from a hardline position. The severe American difficulties, which *Pravda* has highlighted by reprinting American unemployment figures monthly by key states, will be intensified by unproductive military expenditures. The massive nuclear freeze movement, reflecting the broad progressive aspirations of the masses, will restrain American militarism. So, too, will the sharp internal contradictions within American society, such as intense racial problems.

Foreign pressures will also play a role. Strong Soviet pressure for arms control agreements will combine with the Soviet capacity to match any American buildup. As P. G. Bogdanov wrote in May 1982:

> . . . if the government of the U.S.A. and its allies in NATO would create a real additional threat to the security of the Soviet nation and the allies of the USSR, this would force the Soviet Union to take such responsive measures which would place in analogous position the other side, including directly the U.S. and its territory.[36]

Large-scale European nuclear freeze demonstrations will push European governments, already favorable to détente, into pressuring the United States against a new arms race. According to V. Kovalev in June 1982:

> There has also been pressure on Washington from its Western European allies in NATO who in turn are forced to come to terms with the mood of the societies of their own countries, disconcerted by the absence in the White House of preparedness to carry on real negotiations with the USSR.[37]

Finally, the changing nature of world politics, which is shifting in favor of socialism, will influence American policies. As A. K. Slobo-

denko has recently written, "The strongest influence on the development of U.S.A. military strategy at the contemporary stage is the relation of forces in the world arena."[38] Overall, then, many forces will reinforce a new realism in Washington.

IN HIS first year in control, Yuri Andropov has moved cautiously to consolidate his power. While promoting his former KGB associates (Geydar, Fedorchuk, and Chebrikov), he has avoided domestic initiatives except for a relatively safe campaign against economic corruption. Abroad he has sought to ease tensions in Afghanistan and China along the long Soviet border. Andropov has made major arms control proposals at the strategic and theater nuclear level in an attempt to insulate domestic politics from volatile international politics. As a hardliner, he has little to lose from such moves.[39]

Although domestic policy issues and actors will decide the future shape of Soviet politics, the American strategic nuclear program will certainly have an impact. By threatening to upset the existing strategic nuclear balance in favor of the United States and render vulnerable the massive land-based Soviet nuclear rocket forces by the end of the decade, the American program endangers hard-earned Soviet nuclear parity with the United States. This American buildup, coming during the sensitive period of the Brezhnev succession struggle, threatens the Soviet Union in the only arena in which they are truly a global superpower—the military arena. If American policy is perceived as part of a new hardline, it will strengthen the position of Soviet hardliners. If seen as integrated with new moderate initiatives, it may deter the hardliners and reinforce the moderates on the Soviet side. To this extent American policies may make a difference in the Soviet succession struggle.

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Notes

1. For details of the experience of the 1970s, see Richard Burt, "Reassessing the Strategic Balance," *International Security*, Summer 1980, pp. 38-40; and Kurt Lewis, "The US-Soviet Strategic Balance in the 1980s: Missing the Trees for the Leaves," *Survival*, May-June 1982, pp. 110-15. Joseph Nye has attributed the relative decline in American power in the 1970s to the short-run effects of the Vietnam syndrome, Soviet military growth, American energy vulnerability, and declining economic productivity growth. He also cited the long-run problems of an increasingly dispersed world economy and complex international political environment in which the role of the United States has declined. For his interesting article, see Joseph S. Nye, Jr., "U.S. Power and Reagan Policy," *Orbis*, Summer 1982, pp. 391-411.
2. Benjamin S. Lambeth, "The Political Potential of Soviet Equivalence," *International Security*, Fall 1979, p. 33.
3. Myron Rush, "Guns over Growth in Soviet Policy," *International Security*, Winter 1982/1983, p. 174. It is important to note that strategic nuclear weapons account for only a relatively small proportion of total military spending. Conventional weapons and manpower costs tend to be a more significant part of military spending.
4. For a good summary of the Reagan plan, see the International Institute for Strategic Studies, *The Military Balance 1982-1983* (London, IISS, 1982), p. 3.
5. Weinberger's testimony is reproduced in *Survival*, May-June 1982, p. 132.
6. As, for example, the remarks of Presidential counselor Edwin Meese in Los Angeles in August 1981.
7. V. V. Potashov, "Arms Race in the United States—Threat to Peace," *SShaA:Ekonomika, Politika, Ideologiya*, June 1981, p. 37.
8. Quoted in Leon Gouré and Michael Deane, "The Soviet Strategic View," *Strategic Review*, Spring 1981, pp. 43-44.
9. See *Krasnaya zvezda*, June 4, 1982, and *Pravda*, June 4, 1982.
10. *Pravda*, December 7, 1982.
11. See Herschel Kanter, "The Reagan Defense Program: Can It Hold Up?" *Strategic Review*, Spring 1982, p. 24.
12. Vernon Aspaturian, "Soviet Global Power and the Correlation of Forces," *Problems of Communism*, May-June 1981, p. 8.
13. Raymond Garthoff, "Mutual Deterrence, Parity and Strategic Arms Limitations in Soviet Policy," in Derek Leebaert, editor, *Soviet Military Thinking* (London, 1981), p. 111.
14. Robert Legvold, "The Concept of Power and Security in Soviet History," *Adelphi Papers* No. 151, p. 10.
15. Aspaturian, p. 8. For a particularly telling analysis in this area, see Lambeth, pp. 25-38.
16. See Seweryn Bialer, *Stalin's Successors* (London, 1980), chapter 5.
17. For a useful overview of the subject, see Morris Bornstein, editor, *The Soviet Economy: Continuity and Change* (Boulder, Colorado, 1981).
18. See Bialer, pp. 149-51.
19. Rush, p. 175.
20. Arthur Alexander, "Decision-Making in Soviet Weapons Procurements," *Adelphi Papers* Nos. 147, 148, p. 2.
21. For further analysis, see Stanley Sienkiewicz, "SALT and Soviet Nuclear Doctrine," *International Security*, Spring 1978, p. 90.
22. *Khrushchev Remembers*, translated and edited by Strobe Talbott (Boston, 1970), pp. 519-20.
23. Roman Kolkowicz, "Military Intervention in the Soviet Union: Scenario for Post-Hegemonial Synthesis," in Roman Kolkowicz and Andrzej Korbonski, editors, *Soldiers, Peasants, and Bureaucrats* (Winchester, Massachusetts, 1982), pp. 109-38.
24. *Pravda*, November 22, 1982.
25. *Krasnaya zvezda*, December 8, 1982 and *Izvestiya*, December 16, 1982.
26. Uri Ra'anan, "Soviet Decision-Making and International Rela-

tions," *Problems of Communism*, November-December 1980, p. 47.

27. George Breslauer, "Political Succession and the Soviet Policy Agenda," *Problems of Communism*, May-June 1980, p. 48.

28. See Jacques Gansler, "Can the Defense Industry Respond to the Reagan Initiatives?" *International Security*, Spring 1982, pp. 102-21.

29. Unlike in the nuclear arena, the Soviet Union has traditionally enjoyed a strong quantitative superiority over the United States in conventional weaponry. Given the deterioration of the defense industry, high cost of a conventional buildup, and serious problems with manpower, changes in the conventional balance are likely to proceed far slower than in the strategic nuclear balance. This creates possibilities for the Soviet Union in the conventional arena where the initial stakes are far lower than in the nuclear arena.

30. It is important to keep in mind that the new American strategic modernization program was a bipartisan effort which started well before the Reagan administration in the last two years of the Carter administration.

31. Alexander Dallin, "The United States in the Soviet Perspective," *Adelphi Papers* No. 151, p. 20.

32. *Pravda*, June 4, 1982.

33. Bialer, p. 435.

34. G. Arbatov, "The Strategy of Nuclear Madness," *Kommunist*, No. 6, April 1981.

35. *Pravda*, July 12, 1982.

36. P. G. Bogdanov, "Klyuchevoi vopros'—predotvrashenie yadernoi voiny," *SShaA*, May 1982, p. 51.

37. *Krasnaya zvezda*, June 4, 1982.

38. A. K. Slobodenko, "Formirovanie voenno-politicheskoi strategii administratsii Reigana," *SShaA*, June 1982, p. 125.

39. Hardliners often have unusual room for political maneuver. Charles de Gaulle was able to extract France from Algeria. Richard Nixon was able to create a new relationship with the People's Republic of China. Menachem Begin was in a position to sign a peace treaty with Egypt while withdrawing from Sinai.

The Dnieper made Russia Byzantine, the Volga made her Asiatic; it was for the Neva to make her European.

Sidney Harcave
Russia: A History

Many a man like Napoleon crossed the Niemen proudly only to return miserably across the Berezina.

Russian Proverb

Russia has two generals in whom she can confide—Generals January and February.

Nicholas I, Emperor of Russia
Punch, 1853

THE FACTORS IN THE SOVIET STRATEGY

COMODORO (R) JOSÉ C. D'ODORICO
ARGENTINE AIR FORCE

AS with any school of strategic thought, the Soviet school recognizes the need for a combined and balanced use of the classic elements of strategy. Tactical exercises show how those elements interplay. Up to this point, there would seem to be no significant differences between the strategic concepts of socialists and nonsocialists. That is precisely why students of this discipline make the mistake of comparing these two groups, using the same criteria to analyze the strategic styles of Marxist and of non-Marxist states.

The drive to simplify the intellectual content of strategic thought takes us unwittingly in the direction of error. At times, the same criteria are used to assess ideas that only appear to be similar. Naturally, the findings are unrealistic and bear little relation to the truth. To attempt to immerse oneself in a study of Soviet strategy without first understanding the principal foundations of Marxist-Leninist theory is the kind of rash impulsiveness that ends in confusion. Indeed, there is a very close and unyielding bond between Soviet strategy and Marxist-Leninist theory. Generally speaking, research into the official philosophical theory of the Soviet Union is not carried out properly with qualified experts and in appropri-

ate institutions. As a result, some professionals use commonplace parameters to examine Soviet strategic thought.

The root of the differences between Soviet strategy and nonsocialist strategy is the way man's nature and his value as an intelligent social being are perceived. This is reflected vividly in Soviet strategic thinking. It may be that the very close relationship between Soviet philosophy and Soviet strategy has scarcely any counterparts or precedents in other parts of the world, which in itself would be a very important reason to examine the substance of those relationships more closely.

Reduced to its most basic elements, modern general strategy is developed on the basis of space, time, and maneuver, with much creativity and an increasingly greater technological foundation. Strategy development relies increasingly on data sciences, electronics, communications, and other services that, little by little, are bringing strategy into a closer relation with the sciences. Despite these new circumstances, the traditional elements of strategy are just as important as ever. The Soviets are fully convinced of this, although it does not prevent them from adjusting the variants to their own patterns of behavior. For the socialists, strategy is meaningful only as part of a philosophy which gives that strategy its vitality and the means to express itself. This indissoluble bond makes Communist strategy unique; it is essential that we understand its distinctive nature merely to survive as free societies.

The accuracy of our knowledge will determine the probability of success against the basic enemy and give new meaning to the principle of strict economy in the use of available means. Our success in continuing the battle against Marxism-Leninism will in large part depend on how carefully we observe that principle. The philosophy developed by the Chinese strategist Sun Tzu in 500 B.C. is just as applicable today, despite its having been put to the test for more than 2000 years: "Know your enemy and know yourself, and you will win 100 battles without ever running any risk of defeat." This simple, wise maxim applies today to students of Soviet strategy.

Neither the social system nor the set of human values that Marxist socialism adopted is the same as ours in the nonsocialist world. Hence, they cannot be judged or evaluated by the same criteria. Some specific examples will help clarify this point: the concepts of democracy, freedom, and peaceful coexistence as defined by a Marxist would be completely at odds with the same concepts as defined by a nonsocialist. These differences repeat themselves in countless ways and ultimately establish the cosmography of two diametrically opposed worlds.

Why, then, would the strategic elements of *time*, *space*, and *maneuver* have the same meaning as in the nonsocialist world? Why wouldn't they be used to denote something totally contrary to what we in our world usually understand them to mean?

Some countries comprehend the true nature of international Communist strategy, which spawns bloody confrontations that seriously jeopardize our lives as free nations. If these countries were able to withstand the initial onslaughts, it is because they have responded to that strategy adequately and effectively and have remained alert because they know the danger persists. Such is the case with my country, Argentina.

THE *time dimension* of the prolonged offensive that the Soviet Union has undertaken tells us in advance how communism interprets the time element in strategy. Red strategy has been figuratively labeled a "strategy without time," but not because the time factor was not provided for in the technique. Marxist strategy measures time by other criteria that follow from the principle of dialectical materialism, which Marx adopted from the philosopher Hegel and adapted to his own particular perception of the cosmos.

Without entering into a critique, the cycle in Marxist theory established by the laws of "opposites" (theses), "negations" (antitheses), and "transformation" (synthesis) is repeated over the course

of time as a function of the quantitative and qualitative changes that matter undergoes. Apparently, the repetition of this theoretical cycle is endless, although when applied to the case of "social matter," Marx believed that perfect communism would be achieved at some point, thus ending the cycle. That very special state, which is the utopian goal of political communism, governs the temporal dimension of the U.S.S.R.'s global strategy.

If this were true, what could possibly delay the achievement of that illusory objective when, according to Marx, the capacity of each individual will be evaluated so as to deliver to him goods that are commensurate with his needs? Our experience, logic, and the history of mankind show that that goal is beyond reach because it will never be possible to produce sufficient goods to satisfy the individual's *free* needs. But what interests us in this case is the amount of weight given to time in achieving that very impracticable goal. Since the true Communist believes that perfect communism will indeed come about, he makes the time factor subordinate to the achievements of the objective and thus makes himself part of an almost infinite process, i.e., a process that is moving toward a moment that cannot be foretold. If the period of time necessary to reach the ideal state "from each according to his capacity, to each according to his needs" can only be measured in theoretical terms, one can predict that the struggle being waged to achieve that ideal state will go on endlessly. The vagueness of the time element is very much in keeping with the "strategy without time" that the Soviet Union, as the leader of the socialist world, has kept intact and employed since 1917. A review of the 65-year history of the Red superpower is an invitation to reflect on the way the *time factor* has been dealt with when developing strategy and the importance that would have to be attributed to this modus operandi to preserve the security of the nonsocialist world.

How do the Soviets interpret the presence of the time factor that is such a substantial part of our strategy? Briefly, technically speaking, the search for utopian communism will go on without any preset time limit, so that it will last an indefinite number of years or generations. This fact, which is clearly evident in Communist strategy, is a source of concern to us since it leaves no room for a truce; the battle (praxis) has no foreseeable end. Where is genuine peace in this world that the Soviets force us to share and that they explain on the basis of their dialectical materialism? Is peace nothing more than an abatement of the intensity of a battle that has no end? The *pax sovietica* is the subjugation of all peoples to Marxism. Therefore, one cannot expect any political agreement between the U.S.S.R. and other states to lead to any real alleviation of world tensions, since the strategy being implemented does not allow for that option.

The endless battle to which the official policy line of the U.S.S.R. condemns the West makes no provision for any cease-fire until the basic goal has been achieved, which is very unlikely. This is a grim conclusion inasmuch as it indicates that the Yalta, Geneva, and SALT I and SALT II agreements, to mention some of the most salient, have only momentary importance in the Soviet Union's strategic approach. Further, in an unmeasured time frame, defeats have no more importance than passing events. They represent a partial setback while the monstrous war continues to be waged, a war wherein time loses its practical dimension and has nothing whatsoever to do with time as routinely understood. It becomes an accidental circumstance that will unfavorably affect only immediate generations. What is important is to bring about that golden dream of all Marxists, one that systematically becomes more and more remote, slipping through their hands like some unattainable fantasy.

In the past, wars alternated with periods of

peace that could be clearly identified by the absence of violent confrontations between nations. Today, the concept of war that communism has introduced—it is the center of Communist policy, according to Lenin; it is a policy with bloodshed, according to Mao Tse-tung—has put an end to any hope for a true and lasting peace. The strategy that is employed to transform such novel notions of war into fact is consistent. We can understand from that approach why all triumphs do not end in achieving the purpose of the war and why defeats are not considered final. The search for the Marxist paradise in which the Soviet Union is engaged feeds the maelstrom that its "strategy without time" produces, where time as a factor, so vital to a beleaguered world such as our own, takes on another dimension that serves dangerously to confound any attempt to develop suitable responses.

THUS far in history, no state or group of states has undertaken to conquer the world with such resolve and dedication as the U.S.S.R. Nevertheless, if so many difficulties arise in putting together reasonably happy national societies, it can be assumed that a political undertaking that involves the entire planet will automatically become something colossal.

But Marxist theory has shaped the intellect of Soviet leaders and has given them a heavy strategic responsibility: the ideological and physical conquest of a very divided and diversified world that has never achieved lasting agreements, shared common objectives, or established stable agreements to make for better understanding among nations. Nothwithstanding this apparent political madness, one must consider carefully the events that have happened since the Bolshevik machinery first went into operation in 1917, make allowances for the nonbelievers and remind them that the successes achieved through that course of action are proof of the efficiency of the Leninist revolutionary method which, moral judgments aside, has yielded positive results for Kremlin administrators.

Regardless of which country they live in, Marxists are convinced of the viability of expanding the Red internationalist project to the most remote corners of the planet and work relentlessly to achieve that ideal goal. While the classic schools of strategic thought give more moderate weight to the *space factor*, Marxist-Leninist strategy puts the space factor on a global scale. In other words, the space factor is on the same colossal dimension as the time factor, whose philosophical horizon is the practical fulfillment of perfect communism. Although the breadth of the space factor is beyond the comprehension of nonsocialist orthodox strategists, it has been patiently analyzed by the first Communist power to find a strategic modus operandi that will enable it to keep that factor under control. In this respect, the Soviets have already achieved decisive territorial and political successes that are visible to any observer. More than one-fourth of the world's population is governed by socialist rules which, though not completely uniform among all countries, are in keeping with the general principles of the Communist philosophy. This fact shows us clearly that the techniques that Soviet communism has used are sufficiently effective to make us question whether it is indeed impracticable to operate strategically within a worldwide spatial framework. The ups and downs experienced over the course of the prolonged world ideological offensive that the Soviets have led may misguide those who do not have an in-depth understanding of Marxist-Leninist doctrine. A rapid reading of the official theory prevailing in the Soviet Union shows how its disciples are obligated to make every effort to obtain the seemingly unobtainable.

Logically, expansion of the strategic space to include the entire planet is unrealistic. However, when that factor is coupled with discretionary use of time, the image of the fabulous undertaking that both strategic elements entail again becomes a matter of serious concern. In Western terms, the likelihood of conquering and subjugating the entire world, without correcting for the diversity of races, religions, and cultures that

now coexist, is a plan that is in the realm of the psychedelic, one that is impossible to accomplish within reasonable time periods. However, the Marxist-Leninist concept of "strategy without time" could, if it encounters no adequate opposition, work the alchemy that we now regard as pure fantasy.

In any event, control over the space factor under the Soviet Communist conception would have been much more difficult had the enormous theater of war created thanks to the existence of the Marxist philosophy not been ingeniously compartmentalized. The systematic division of the world into large-scale operational sectors keeps the uniqueness of the various regions and countries that make up each region intact. This is a priority, the means to deal separately with the questions that arise in each geopolitical unit.

The Soviet Union has already selected its global strategy model for spreading communism beyond its borders, in accordance with the dictates of "proletarian internationalism." It has opted for the indirect strategy, where face-to-face confrontation between the major protagonists in this human drama is a very remote possibility. On the other hand, the entire organization and all forces have been harnessed to develop revolutionary war worldwide—expansion of the fraternal internationalism by way of actual deeds—as a well-integrated modus operandi directed at defeating the external monster that capitalism supposedly represents within the traditional class struggle that Marxists hold sacred.

Using this practical definition of their indirect strategy, the Soviets decided without exception that their theater of revolutionary war would cover the entire world. However, for that political undertaking to be controlled by the Soviets using their available means or resources, they set up as many theaters of operation as there were Communist parties in the various countries. If it is acknowledged that at present there are 91 parties that under various names adhere to Marxist-Leninist philosophy, we must suppose that there are 91 theaters of operation that are kept fully operational, even though one might not detect warlike acts or even the presence of organized violence.

In those 91 theaters that have been set up in the countries around the world that harbor within their territory, knowingly or unknowingly, legal or clandestine Communist parties, the strategic method employed is that of subversive warfare. This is a perverse offshoot of revolutionary war, often silent but in some instances fraught with violence, when the opposition of those who refuse to allow themselves to be subjugated is forceful and effective. In each of those theaters of operation, under the zonal responsibility of the Communist party established in the area, the subversive warfare is fitted to the specific national circumstances like a glove to the hand. Each of those political centers of subversive operations is supervised from the headquarters of international operations headed by prominent leaders who are little known publicly; Yuri V. Andropov, for example, was little known in his role as Director of the KGB, as is Boris N. Ponomarev, Chief of the International Department of the Secretariat of the Communist Party of the Soviet Union.

Some recent examples of that subversion are reflected in the current situations in Afghanistan, Somalia, Namibia, Guatemala, Nicaragua, and El Salvador, to cite only a few countries where the presence and activity of the so-called local Communist parties have achieved various stages of Marxist-Leninist domination.

Thus, the Soviets are moving ahead in the world. They are achieving consistent gains and are confusing the nonsocialist politicians and military men who are neither accustomed to nor professionally educated in the strategy of macrodimensional factors. The solution that has been found to put the space factor into practice has brought splendid results to the Soviet Politburo, without its having had to exert efforts that could not be sustained with the resources available. This type of warfare (i.e., subversive warfare) is one of the most economical and least prone to verifiable indictment by other states because by preference the leaders resort to local human

and material means to carry out their superior tactics. When outside assistance is needed from socialist countries, the support required is relatively small and at little cost. What at the outset would seem to be a utopian objective becomes much more realistic with this administrative and operational division of labor, and the probabilities of success increase significantly.

Thus far in history there has never been a strategy where the space factor was on such a massive scale. Not even the insane machinations of Adolf Hitler were organized and carried out in such a way as to pose any real threat except to the European countries that had already been invaded. The British, Spanish, Romans, and Mongols saw huge empires collapse before their very eyes, but none of them ever attempted the physical and ideological expansion to which the Soviet leaders now aspire with manifest determination and aggressiveness. What differences do we detect between the earlier empire builders and those who now aspire to world conquest?

The interests that motivated some of the leaders of the past—Genghis Khan, Julius Caesar, Alexander the Great, Philip II, Victoria, and even Hitler—were basically the classic ambitions of political and economic power. The interests that move the Soviet Marxist-Leninists to revolutionary action have much more deep-seated and durable roots than any of these others because the conquests to be made were no longer confined to the realm of material power. Rather, the priority target is the total takeover of the human mind so that men will learn to obey the doctrine that forcefully imposes egalitarianism and ideological slavery on the masses ("from each according to his capacity, to each according to his need").

In the face of these disturbing facts, the nonsocialist world has the obligation and responsibility to ponder carefully and calmly the threat that the Soviet Communist strategy poses through the manipulation of its time and space factors. The apparent absurdity implicit in the content of the strategy is no cause to abandon its analysis because if that attitude were to be adopted, our freedom and independence would be handed over to Soviet forces because of our own naiveté and ingenuousness. The evidence compiled in the last forty years is sufficient to arouse our intellectual and moral defense.

IN Soviet strategy, the notion of *the ploy* is in no way inconsistent with what we have

said with respect to the utilitarian exploitation of the time and space factors. On the contrary, civilian and military leaders, in a close political communion born of identical indoctrination, have understood the need to standardize the practical interpretation of these instruments so that together they may faithfully serve the final and lasting ends obscurely described in Communist philosophy.

For these reasons, it should come as no surprise to us that Soviet strategic ploys involve political, economic, social, and military forces indiscriminately when this is in the interest of the ends established. We should not forget that the Soviets are conducting a revolutionary war; by any yardstick it is an unconventional conflict because of the heterodox means and type of tactics used. The important point to remember is that the complex Soviet strategic activity is aimed solely at achieving a political objective, represented in the theory by the triumph of Marxist dogmas. Hence, the strategic ploy does not identify with any one camp in particular but rather feeds on any of them indiscriminately and tends to be stronger where opposition is weaker. The reason for this phenomenon is that Marxism-Leninism is a totalitarian doctrine intrinsically weakened by its internal contradictions and lacking in natural powers, thereby forcing solid defenses used to oppose it by those who know its congenital weaknesses. That is why this doctrine thrives only in regions where defensive barriers are ideologically tenuous.

In the meantime, the Soviets continue to deploy a strategy that has no temporal limit and is mapped out on a worldwide spatial dimension; they keep the maneuvering factor flexible so as to adapt it to suit the conditions that evolve as the battle progresses. For example, let us cite one of the most conflict-ridden strategic ploys that the leaders in the Kremlin planned and conducted behind the scenes during the last decade, with the complicity of the French, Italian, and Spanish Communist front. Although that ploy did not achieve the desired success, it at least served to promote more than one polemic among the democratic European sectors.

The so-called Eurocommunism, or communism assimilated by Europeans who are under democratic regimes, sought to hide the wolf in sheep's clothing. Had Eurocommunism rejected the dictatorship of the proletariat, had it played its part fairly in pluralistic elections and on an equal footing, had it accepted democratic coexistence without harboring messianic political ambitions, it simply would have ceased to be communism and would have become a pseudo-socialist hybrid that had reneged on the Marxism of Marx. But the Eurocommunists betrayed themselves for what they were when they refused to condemn the international policy of the Politburo which, under the pretext of proletarian brotherhood, intervenes in the internal affairs of other sovereign nations.

Another example of a Soviet irregular strategic ploy typical of the Soviet revolutionary doctrine is the relaunching of the concept of so-called peaceful coexistence, a scheme for political advancement totally lacking in peaceful intent. The peaceful coexistence that the Soviets foster is fully in keeping with Leninist dogma which states that coexistence between two different societies is impossible. Peaceful coexistence rules out open confrontation between the United States and the U.S.S.R. merely in order to avoid the holocaust that the indiscriminate use of the world's biggest nuclear arsenals would mean and which would not in any way be to the advantage of Soviet communism. In this kind of "catch-as-catch-can" that admits coexistence, the only thing prohibited is the generalized use of atomic weaponry; all other methods and means of political, economic, social, and military combat are legitimate and hence usable, according to Soviet strategic thought.

Ploys of this type suggest that the means of confrontation are frequently mingled among various fields of human activity, where subversive warfare is an undeniable fact and operations take on strange forms that defy the conventional understanding of nonsocialist leaders. The use of one type of variant or another (be it political, economic, social, or military) is a response to the specific circumstances prevailing in each theater of operations—each state where a Communist party exists—and therefore the examples must be evaluated with particular care since they are not always useful as experience in other theaters. The solutions applied in the United States-Vietnamese conflict are of little use in the Salvadorian-Guatemalan-Honduran case, since it must be recalled that each theater of operation where a subversive war is being conducted with the intervention of local Marxist-Leninist organizations backed by the Kremlin is unique. Hasty comparisons in this area lead to dangerous and irreparable mistakes.

It is no wonder that nonsocialist strategists feel somewhat disconcerted because of the odd mixture of ingredients that the Soviet operators bring to their strategic ploys, parading a considerable political-military agility. The best means to detect in advance strategic situations that are likely to crop up in the context of a total world confrontation is to make an in-depth study of the theory of subversive warfare as the most advantageous political-military scheme selected by the U.S.S.R. to carry Marxist-Leninist doctrine beyond its borders. When war compulsively becomes the center of policy, separate and isolated study of each one of the instruments that is being manipulated in the gigantic confrontation is totally meaningless because one runs the risk of losing sight of the real center of gravity that the Soviets have established to unleash their strategic offensive; even more so when countries under attack are targets of an insidious and well-orchestrated psychological campaign conducted with the support of the social communications media and organizations associated with Communist parties. What happened on the United States domestic front between 1965 and 1975 is a crude example of what can happen when. On one side there are strategists who are experts in subversive warfare, and on the other side an attempt is made to respond to the attack by using classic and conventional means. The result of that campaign, which was so well planned, was a corrupting sense of national frustration, whose side effects have only recently begun to dissipate.

Just as the space and time factors of Soviet strategy are consistent conceptually and in terms of dimension, a pattern repeats itself in the ploys. It continues when it yields positive effects over the course of time and is interrupted only when it has achieved its objective or when there is evidence of failure. It is not subject to either time or space; there are no outside pressures or limits, only decisive success or decisive failure. These operational criteria apply in manipulating the strategic factors; they give the leaders of the Soviet Politburo significant freedom of action, which they know how to use to support novel initiatives and ethical-moral standards that are contrary to man's nature.

WHAT is the material purpose of the huge global Soviet strategy? In summary, it is to organize a double claw or set of pincers with colossal arms that will enable the Soviets to surround, via exterior lines (outflanking maneuver), the heart of its most difficult enemies: Washington and Peking. In the meantime, interior lines (local subversive wars) rush upon each one of the geopolitical units in succession. These are the countries that, when combined, form the arms of the pincers that will make that deadly embrace possible. How long will the maneuver in that global strategy last? Its importance is relative; what is vital is to make the idea set forth in Marxist-Leninist theory a reality. Is what we have said a gross exaggeration? To those who think so, we invite you to look at any political map of the world and affix red flags to those countries that at the present time are threatened by or governed by Marxist socialist regimes and

pseudo-Marxist regimes, and either supported by or looked kindly upon by the U.S.S.R.; then draw a line to connect those red flags. You will see with surprise that the lines take on the shape of rudimentary pincers that hovers over the two capitals mentioned earlier.

No one can honestly deny that there are gaps in those lines that indicate fissures caused by a variety of reasons such as the so-called European arm that so gallantly took on the Berlin blockade (1949), the Portuguese fiasco in 1974, the freezing of the Eurocommunist campaign, which has caused a persistent atrophy. However, one must not fail to recall that the political-geographic gaps have not appeared because of the absence of subversive action but rather because of the momentary triumph of peoples and governments that refuse to become new "popular democracies." In this particular regard, it is wise to recall that the defeats of the Marxist-Leninist praxis are temporary. The fact that the Soviets still cling to this concept should alert the nonsocialist world to the fact that it must cease to be so easily trapped by the temptations of a false security.

This interpretation of the strategy of the most aggressive Communist-spreading center of our time indicates that mankind has a critical period ahead, during which we will have to fight off the domination of the Red wave. The seriousness of the situation described here should not transform us into incurable pessimists who assume that all is lost. Nevertheless, a solid and united response to the offensive strategy that the Soviet Union is conducting is essential to neutralize the freedom of action with which it currently operates. To accomplish this, it is essential that we begin by knowing every detail of the enemy that threatens our lifestyle and our basic freedoms. What hangs in the balance is nothing more and nothing less than the security of our world.

Buenos Aires, Argentina

1984 Air University Airpower Symposium

The eighth annual Air University Airpower Symposium, featuring the topic "United States Air Force Role in Security Assistance," will be held 5-7 March 1984 at Air War College, Maxwell Air Force Base, Alabama.

Papers will be presented to illustrate problems, policies, developments, and recommendations. Panel topics for subdivisions of the theme are the following:

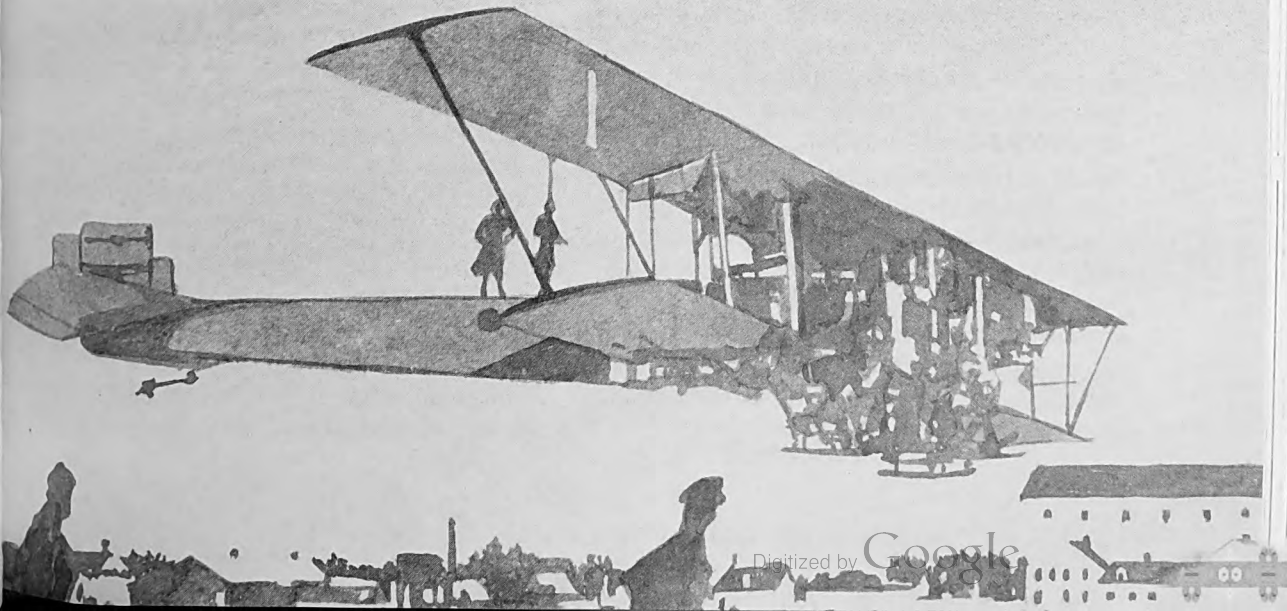
Security Assistance Policy, Responsibilities, and Organization;
Implementation of Current USAF Security Assistance Program/ Training;
Impacts of Security Assistance on the USAF; and
Issues, Initiatives, and Trends.

More information on the symposium may be obtained from Lt Col Richard J. Eyermann, Airpower Symposium, Air War College (AWC/ EDRP), *Maxwell AFB, AL 36112 or AUTOVON 875-2831/Commercial (205) 293-2831.*

MUROMETS TO BLACKJACK: THE *VVS* AT 66

DR. ALBERT L. WEEKS

THE new *Soviet Military Encyclopedia* (1976-80) boasts of one of the Soviet Air Force's firsts: the Ilya Muromets, a four-engine bomber designed by Igor Sikorsky and first flown in 1913, during the reign of Nicholas II.[1] Under General Mikhail Vladimirovich Shidlovsky, these aircraft proved themselves the world's first heavy bombers, participating in 422 World War I raids, some of which involved four and one-half-hour sorties. Seventy years later, as the Soviets prepare to celebrate the 66th anniversary of the establishment of the Red Air Force, they can boast of a forthcoming major addition to their long-range bomber force—the NATO-designated Blackjack, a manned bomber capable of speeds in excess of mach 2.[2] This plane, which is 20 percent larger than our B-1B, can fire air-launched cruise missiles (ALCMs) or penetrate air defenses to drop gravity weapons. The Tupolev plant could be producing as many as 100 of these planes a year by 1986. Photo reconnaissance satellites detected the new aircraft in 1981; currently



it is undergoing tests at Ramenskoye. The Blackjack could be operationally deployed with the Soviet Air Force—the *Voyenno-vozdushnye sily* or *VVS* by 1987.

The old Muromets and the new Blackjack should remind us of a recurrent theme in Soviet strategic planning: the capability to deliver ordnance as far as possible from the landlocked frontiers of Mother Russia, thus expanding her frontiers at minimal risk to the "spark" of the world revolution. V. I. Lenin appreciated the importance of a strong air force to the future of world revolution. All succeeding leaders—including today's General Secretary Yuri Andropov—have renewed their commitment to Lenin's position.

Neglect of Bombers

Although long-range aviation as epitomized by the four-engine bomber has been a part of the *VVS* since the surviving Muromets were drafted into the Red Air Force, and despite the strategic importance of keeping war as far as possible from Russia, the Soviets have seldom attempted to develop more than a modest air-breathing capability in this area. Why? Although Soviet revolutionary expansionism is linked to the military power necessary to achieve Lenin's goals, Soviet expansionist ambitions—until the 1950s—outpaced their mastery of aerial technology. Not even the great Russian aircraft designer Andrei N. Tupolev (1888-1972), whose first long-range bombers were manufactured in limited quantities in the early 1930s, could convince Stalin of the wisdom of heavy bombers. Furthermore, engines for such aircraft were too small or too unreliable to meet Tupolev's advanced airframe designs.[3] Thus, the country that led the world in heavy bombers in 1917 spent the next 18 years struggling with technology in an attempt to regain her leadership and was without a new, indigenously produced four-engine bomber for virtually the entire period. The Soviets again achieved their pre-eminence in the field in 1935, but it was short-lived because of the role that Stalin played.

Josef Stalin has often been accused of paranoia, and that paranoia was perhaps best evidenced in his suspicion of the professional military and the intelligentsia. The purges of the general staff and the senior officer corps in the later 1930s attest to the more dreadful side of his nature. Tupolev fell from favor not for any failings of his scientific work but because Stalin suspected him—as he did Marshals M. N. Tukhachevsky and V. K. Blyukher, army commanders I. P. Uborevich and I. E. Yakir, and many scores of thousands of others—of being Nazi sympathizers. One theory holds that the Gestapo passed incriminating "evidence" to tsarist émigrés in Paris who gave the information to NKVD agents who then passed it on to Stalin. Whatever the reason, the purges removed the brain trust of Soviet aviation. Most were never to reappear, but, fortunately for the U.S.S.R., some were merely put into cold storage. When Germany invaded the Soviet Union in June 1941, Tupolev, like many other Soviet scientists, was released from prison and brought back into the defense fold.

Despite this turn of events, the use of long-range bombers was never fully accepted by Stalin as a viable method of waging war. Nor have many Soviet professional soldiers or uniformed strategists accepted it until recently. For example, the contemporary Soviet officer's library textbook, *Military Strategy*, edited by a team of military thinkers headed by Marshal V. D. Sokolovsky, vehemently rejects the recommendations of Italian theorist Giulio Douhet.[4] The latest edition of the *Soviet Military Encyclopedia* echoes Sokolovsky:

> . . . Douhet's theories suffer from the bourgeois disease of fear of the revolutionization of mass armies [by] commending the use of bomber aviation . . . to decide the outcome of war. The experience of World War II proved the complete unsupportability of Douhet's views on air war; the experience learned from later local wars [since World War II] also exposes the groundlessness of the Douhet point of view.[5]

Although some large Tupolev-designed airplanes like the Maxim Gorky were produced in

the early years of the Soviet state, they were not part of a concerted effort to produce a strategic force of heavy bombers. Aviation theory in the Stalinist era stipulated the use of air power primarily in close coordination with ground forces and for transport of troops and supplies. In large measure, technological shortcomings—particularly in engine design—inhibited the development of heavy bombers, so that the Russians did not keep pace with the British and Americans. The small number of large aircraft produced in the Soviet Union in the 1930s were primarily used for display over Red Square (for foreigners) and on tour (for the native population), to garner propaganda benefits and achieve specific aviation records.

At first glance, one is tempted to point to the Stalinist theory of "socialism in one country," the ideological manifestation of Stalinist communism, as inhibiting long-range bomber development. Some have interpreted the expression of this doctrine as evidence that Stalin had renounced Trotsky's and Zinoviev's—indeed the Communist International—goal of revolutionizing the globe and reforming it in the Soviet image. Stalin, however, rejected this interpretation:

> The very development of world revolution . . . will be that more rapid and thorough the more Socialism strengthens itself in the first victorious country [the USSR], the faster this country is transformed into a base for the further unfolding of world revolution, into the lever for the further disintegration of imperialism. . . . The development of world revolution will be that more rapid and thorough, too, the more effectively aid is rendered the workers of other countries by the first Socialist country.[6]

Thus, Stalin did not reject but, rather, wholeheartedly endorsed Lenin's admonition to revolutionize the world. The echo of Stalin's statement has been heard and heeded by each succeeding generation of Soviet leaders, and Yuri Andropov has said that he adheres to the same commitment.

Neglect of the long-range heavy bomber arm of the Soviet Air Force until the 1950s did not stem from "socialism in one country" or any "abandonment" of Leninist goals for world revolution. Rather it resulted from a combination of factors including Stalin's predilection for ground forces and a traditionally Russian commitment to defense in depth. There were also technological limitations which, despite the brilliance of many of the early Soviet aircraft designers, were not overcome until after the Second World War. Finally, there was the effect of the purges on the professional and technical classes.

A Look at the *VVS*

The Soviet *VVS* was not born like an Athena full-blown from the brow of Zeus—or even Lenin. Lenin's military advisers, including Leon Trotsky, wanted to exploit and adopt whatever they found to be useful in the tsarist military. Besides co-opting the Ilya Muromets, Lenin's ad hoc "Bureau of Aviation Commissars" began rounding up as many *spetsy* (tsarist aviation specialists, including pilots and mechanics) as they could find in December 1917. Within two years the Red air arm included 500 aircraft, 270 qualified pilots, enough ground crews to suffice, and sufficient knowledgeable technicians to establish a number of aviation schools.[7] Former tsarist officers made up 80 percent of the pilots, 60 percent of the detachment commanders, and 62 percent of the frontal and army air commanders. Some 40 percent of the enlisted ground crew had served in the old Imperial Army.

Aviation proved crucial in defeating the White and Green forces* as well as the interventionist forces during the Russian Civil War. Later, the Red Air Force assisted in the tremendous task of sovietizing the whole of the vast tsarist empire, including the non-Russian borderlands such as the Ukraine, Georgia, Armenia, central Asia, and the Tatar regions, areas that comprised nearly half of the former imperial population.

From its earliest period until the mid-1930s, aviation contributed to the emerging Soviet state

*The Greens were originally those who evaded the White "draft." Later the term referred to White deserters who banded together and defied Red attempts to control disputed territory in 1919-20.

in a number of ways. Among significant firsts were the original over-the-pole flight to the United States in 1937. Politically, the quest for air power helped lay the foundation for an elaborate Soviet-German collaboration, which continued until the Nazi legions poured across the Soviet border on 22 June 1941.

In the interwar period, while the Soviets generally lagged in bomber development, they kept pace with or led most Western countries in the development of fighters and light bombers (though a good deal of their equipment was of foreign design).[8] More important, Soviet strategists developed a viable doctrine for coordinating air and ground forces. To some degree, they have the Germans to thank for progress in this area. After Junkers built its factory in Fili outside Moscow in 1922 to avoid the restrictions imposed on Germany by the Versailles Treaty, the Soviets began enjoying the best of all possible arrangements: Not only did they get the direct benefits of aid from German technicians but they were also able to send officers to Germany for extended sojourns. The training of Russian aviation technicians and military personnel proved a significant by-product of this symbiotic relationship that lasted, in one form or another, for nearly twenty years.

The expansiveness of the vast Russian Steppes facilitated the testing of airplanes and, incidentally, rockets. On the Steppes the Russians constructed their *aerodromy* and testing facilities. In charge of this effort was Andrei Vasiliyevich Sergeyev (1893-1933), a former tsarist flyer who headed the Main Directorate of the Air Fleet in 1921 and 1922.

Under Sergeyev, who was to become a central figure in the development of Soviet aviation, and subsequent administrations, the Red Air Force began to field planes that were a credit to their Russian designers. Between the early 1920s and the mid-1930s these designers produced an ever-improving series of fighters including the *I*-2, *I*-3, *I*-4, and *I*-5.* These designers also produced a reconnaissance aircraft of considerable capability, the *R*-3, and two heavy bomber versions, the *TB*-1 and *TB*-3.*[9]

Early Developments

In the early 1930s, with the aircraft industry firmly established, Soviet military strategists began to focus on an air strategy. Two traditions emerged. First, there was to be close coordination between tactical support aircraft and the developing armored component of the Red Army. Unlike other air forces of that time, the Red Air Force did not move toward independence as a separate service. Second, long-range aviation continued to stagnate.

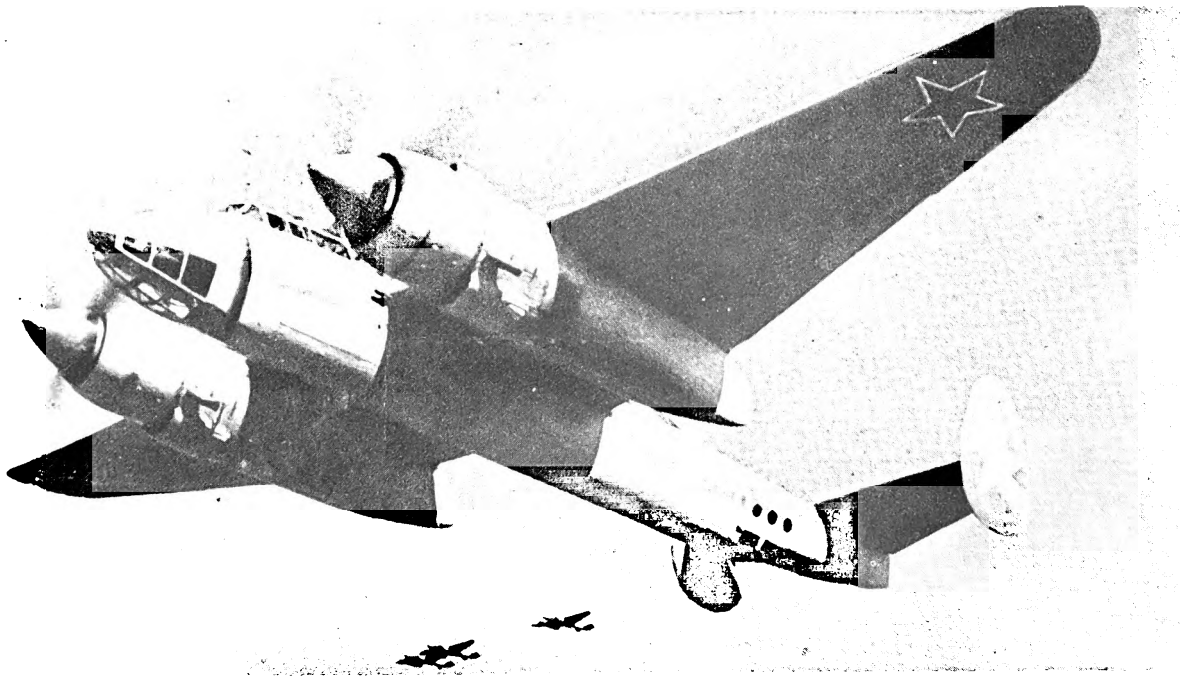
The period was rich in innovation. There were significant improvements in the parachute, which had first appeared in tsarist Russia in 1913.[10] In 1926, the *BICh*-3,** the world's first "flying wing," was flown.[11] Soviet pilots set a number of international long-duration flight records.[12] Finally, the Soviets formed the world's first paratroop and airborne divisions, with the enthusiastic support of Red Army Marshals K. Y. Voroshilov and M. N. Tukhachevsky.[13]

Still, it was the development of close cooperation between the tactical air components and the ground units that dominated this period. These developments enjoyed not only the blessings of army commanders like Tukhachevsky (whose exhaustive writings reveal some amazing anticipations of current Soviet doctrine and strategy) but also had the benefit of the innovative thinking of Soviet designers and inventors who contributed their own creative notions. Not only was there A. N. Tupolev but also K. E. Tsiolkovsky, pioneer rocketeer, as well as N. N. Polikarpov and D. P. Grigorovich, fighter designers, and literally dozens of other engineers who were perhaps not so well known but just as important to the future of Soviet aviation. Together, each in his own way, these designers worked to keep the

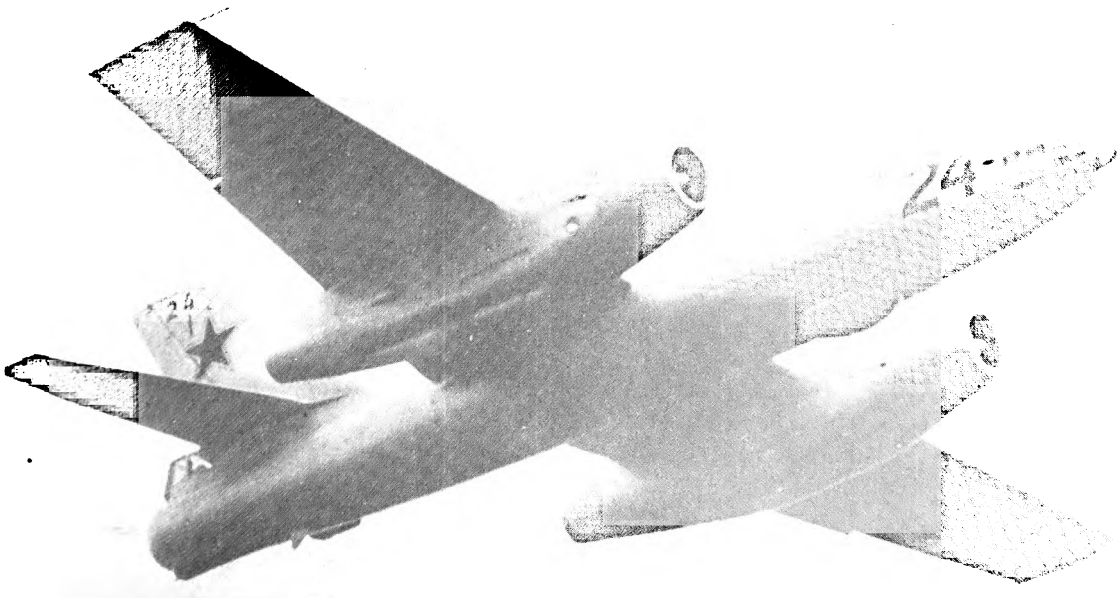
*I is the abbreviation for *istrebitel'* or fighter pursuit aircraft.

*R is the abbreviation for *razvedchik* (reconnaissance) while *TB* stands for *tyazhyolyy bombardirovshchik* (heavy bomber).

**BICh is an acronym for Boris Ivanovich Cheranovskyy.



While imprisoned in 1936 and 1937, A. N. Tupolev designed the Tu-2 (above) as a counterpart to Germany's Ju-88. The Tu-2s performed both close air support and interdiction-type missions during the Red Army's thrust into Europe in 1944-45. . . . Soviet pilots favored the Il-28 (below) over a competing Tupolev design. Built by the thousands, many Il-28s still serve in the Soviet Air Force as target tugs, meteorological aircraft, and trainers.



Soviet Air Force thinking about airlifting heavy loads, flying long distances with significant payloads, and, above all, in combining and coordinating the air arm with the ground forces.

Prewar Developments

As noted earlier, the purges took a tremendous toll among the Soviet General Staff and from the commanders of the various services. During the first purges in 1934, the Red Army was left relatively unscathed, but in 1937 the Soviet dictator turned his full fury against the professional officer corps. Of the 75,000 senior and field grade officers in the Red Army, 30,000 were either executed by the NKVD or imprisoned. The purge claimed 90 percent of the general officers and 80 percent of the colonels.[14] Three of the five Soviet marshals were executed, among them Marshals Tukhachevsky and Blyukher. A similar portion of the Red air command was also swept away.

Combined with the setbacks it suffered in the latter days of the Spanish Civil War and the embarrassment of its performance in the Winter War with Finland in 1939 and 1940, the Red Air Force faced significant problems on the eve of the war with Germany. On paper, however, the Soviet military seemed impressive. The defense-centered five-year plans had produced an awesome military-industrial complex by the late thirties. The Red Air Force was larger than any of the capitalist air forces;[15] the Russians accomplished this by doubling the number of aircraft to be produced under each successive five-year plan starting in 1928. Just before the German invasion in 1941, the Soviets were mass-producing Yak-1, LaGG-3, and MiG-3 fighters, Pe-2 and Pe-8 light bombers, and Il-2 Shturmovik single-engine attack planes, but this was too little, too late.

World War II Experience

When the German war machine rolled across the Soviet frontier, the Red Air Force consisted of an imposing 8000 to 10,000 aircraft in 12 air divisions. Unfortunately, despite advances in fighter design, much of the fighter strength of the Red Air Force consisted of obsolete I-15 and I-16 aircraft of Spanish Civil War vintage. Furthermore, the German attack caught most of the Red Air Force on the ground. Soviet pilots who engaged the Luftwaffe found that Me-109s and Me-110s generally outclassed their fighters. Ignoring the effect of the purges, the greater skill of the German aircrews, and the technological superiority of the German machines, Chief Marshal of Aviation Pavel S. Kutakhov, the present Commander in Chief of the *VVS*, insists that the losses suffered in the summer and fall of 1941 were due primarily to German planning and surprise. It was these factors that, according to Kutakhov, enabled the Germans to achieve air superiority over the crucial sectors. Despite this handicap, Kutakhov notes, Soviet airmen flew some 6000 sorties "which inflicted serious damage to the enemy's tank forces as well as to the Luftwaffe, which lost 200 aircraft" early in the war.[16]

Kutakhov also points out that the early losses prompted sweeping measures "aimed at reconstructing the Soviet aircraft industry, strengthening the *VVS*, upgrading the preparedness and training of aircrews." Soon to follow were new aircraft including the Yak-3 and Yak-9, the La-5 and La-7, the two-seat Shturmovik Il-2, and new Ilyushin, Petlyakov, and Tupolev bombers. Kutakhov notes that significant improvements were made in airborne armament and ordnance; aerial photography; air navigation equipment; radio communications and ground-based radar; and in optics and other technologies. However, Kutakhov fails to mention that the few heavy bombers in the *VVS* fell behind their Western counterparts by lacking such advanced equipment as radar aids to navigation.

Above all, Marshal Kutakhov's article stresses the usefulness of deployments of "air armies" (*vozdushniye armii*) during the latter phase of the war. According to the Marshal, after deploying their air assets to the greatest advantage for supporting the advancing Red Army, Soviet

airmen struck enemy airfields and destroyed many German planes on the ground. Nevertheless, throughout the advance the Air Force "gave constant attention to supporting the infantry, to massing air forces in conjunction with combat actions of the ground forces."[17]

The Modern *VVS*

Modern Soviet aviation theory has gone through a number of phases roughly conforming to the phases through which Soviet military strategy has passed.

During Stalin's reign, the Red Air Force served as an arm of the ground forces. Reflecting the tactical and strategic thinking of Frunze, Tukhachevsky, and others, the Red Air Force formed part of the "combined operations" aspect of Soviet war-fighting. Accordingly, the Soviets continued to fill their inventory with fighters, medium bombers, and transports.* The few heavy bombers they had played only a small role in prosecuting the war against the Nazis.

In the late forties, Soviet science took a quantum leap with the development and detonation of nuclear weapons and the building of the Tu-4 heavy bomber. Tupolev copied the Tu-4 from three U.S. Army Air Forces' B-29 bombers that made emergency landings in Siberia after raids on Japan in 1944. Since the U.S.S.R. was not at war with Japan, the bombers were interned and then exploited by Tupolev and his engineers. By the end of Stalin's reign, the Soviet Air Force had over 1200 Tu-4s. At the same time, mass production of the Tu-4 may have seemed like a mistake just when Soviet inventories of the aircraft were skyrocketing. Imagine the consternation in the *VVS* when the Korean War proved the B-29 defenseless against Soviet MiGs! While the MiG-15, as an interceptor, was superior to anything the United States had operational, the B-29 was also superior to the Tu-4. Hence, just when the U.S.S.R. had developed a significant bomber capability, their advantage evaporated overnight.

Production of the Tu-4 ceased after Stalin's death. In the early fifties a new generation of bombers, including the Tu-16 Badger medium-range jet, the Mya-4 Bison long-range jet, and the Tu-95 Bear long-range turboprop bombers entered the Soviet inventory. It seems that intercontinental bombers like the Bison and Bear were seen as a temporary expedient until rockets of sufficient power and reliability could be developed.[18] During this period, American intelligence overreacted and overestimated the prospective size of the Soviet bomber fleet to prompt an illusory "bomber gap."[19]

With the death of Stalin, Soviet military thinkers enjoyed new freedom to be innovative. This led to an all-out effort to build missiles capable of carrying nuclear and thermonuclear warheads. Soviet strategy, previously subject to the whims of Stalinist dogmatism, began to develop along more logical lines.

Strategy and Technology

Colonel Oleg Penkovsky, a GRU intelligence officer executed in 1962 for spying, discussed the increased vitality in Soviet strategic and military thinking in the post-Stalinist period in the famous *Penkovsky Papers*. In the midfifties, Penkovsky notes, a decision was made to move away from heavy bombers and to concentrate on building the Strategic Rocket Forces as an independent branch of service.[20] While it is difficult to determine the order in the relationship between technological innovation and political-military planning and doctrine (and, specifically, which drive which), it is clear that in the post-Stalinist period—and especially since Khrushchev's fall in 1964—doctrine and strategy have worked synergistically with technology.

As the capabilities of the Soviet Air Force and the Strategic Rocket Forces grew in the late fifties and into the sixties, the Soviets continued to

*The Soviets produced more than 125,000 aircraft during World War II; this number was supplemented by several thousand aircraft from Great Britain and the United States. The U.S. total of approximately 14,000 Lend-Lease aircraft to the U.S.S.R. included 9000 P-39/40/63 types, about 4000 A-20 and B-25, and 700 C-47. No heavy bombers were included.

In 1951 Stalin ordered V. M. Myasishchyev to build an intercontinental jet bomber. The technological state of the art demanded that it be large, but the Mya-4 was also underpowered and only 200 were built. Approximately 45 remain in the SAF as long-range bombers, and 30 serve as in-flight refuelers.

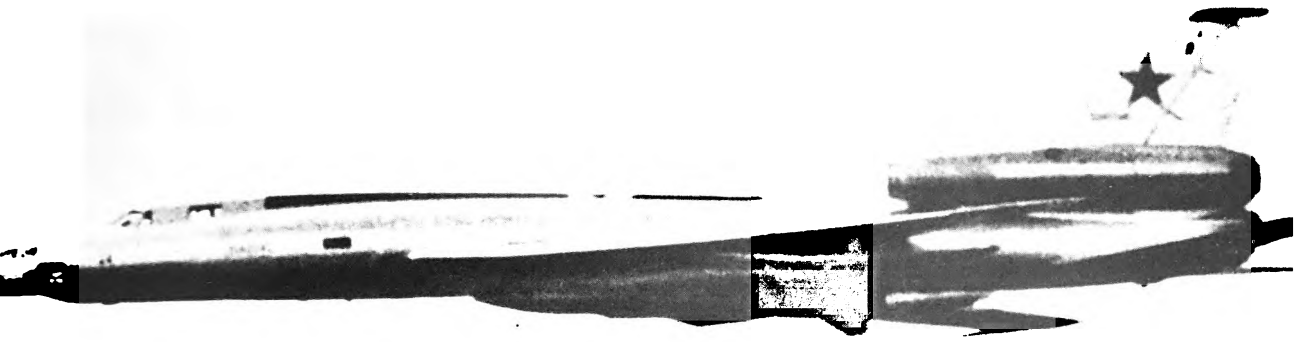
support Marxist-Leninist revolutions throughout the world. Even though Khrushchev announced in January 1961 that the Soviets would confront the West through wars of national liberation, the importance of a strategic striking force not only remained but perhaps grew in importance. While missile development was emphasized in this period, long-range bombers continued to play a role in the *VVS*.[21]

Enter the Blackjack

Soviet air doctrine calls for the *VVS* to support the army, defend the homeland from bomber and missile attack, and maintain transports to deploy troops to overseas hotspots. Traditionally, although they have great theoretical value, long-range bombers have played only a minor practical role in Soviet strategy. Why then has the U.S.S.R. opted to build a new supersonic intercontinental bomber?

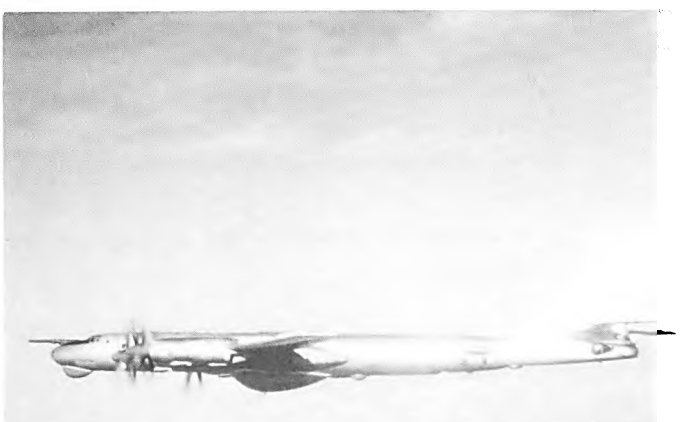
The answer to this question is to be found in how the Soviets might use the Blackjack. The bomber may be the result of a major change that took place in Soviet military thinking at the end of the sixties and in the early seventies when Soviet planners began thinking in terms of waging large-scale conventional as well as nuclear war.[22] The Soviet concept of protracted war is that warfare might go through several prolonged stages.* It might start as a conventional war and move into nuclear conflict and revert to a form of warfare that would include the use of both conventional and nuclear weapons. The development of the Blackjack suggests that the Kremlin's

*On the declaratory policy or propaganda level, Soviet civilian writers, when discussing controlled escalation and the U.S. strategy of "flexible response," criticize the notion of phased escalation, attributing it to a "capitalist plot" to legitimize nuclear war.



The An-22 (left), which first flew in 1965, represents the U.S.S.R.'s initial effort at building a heavy transport capable of supporting Soviet power projection over long distances. . . . The Tu-22 (above), a contemporary of the B-58, is a supersonic bomber which, with in-flight refueling, threatens all of Europe, Japan, and shipping in the North Atlantic and western Pacific.

The Tu-95 Bear intercontinental bomber (below) has been part of the SAF since the midfifties. It still is the backbone of the strategic bombing fleet and also performs long-range reconnaissance and antishipping roles.



strategists have accepted the view that their bomber—like the American B-1B—could perform as an ALCM-carrier or be used to deliver either conventional or nuclear weapons in the period after the initial nuclear exchange. Certainly the Blackjack—unlike a missile—has the advantage of being recallable, and the ability to recall a strategic striking force means that the force can be used with greater flexibility to intimidate or demonstrate resolve during crises.

Yet another possibility is that Blackjack, with its long-range capability, may be part of a new Soviet effort to enhance their force projection potential. If, for example, the U.S.S.R. were to acquire additional basing rights in the Western Hemisphere—perhaps in the Caribbean island of Grenada, where a new long runway is under construction "for civil purposes," or elsewhere in Central America—Blackjack would be able to deploy with ease and perform missions from these bases which would have the bomber ranging all over the hemisphere. Furthermore, the Blackjack could be used in the European theater to strike crippling blows in the opening phases of a conflict and do so with blinding speed. The Soviets seem to have adopted what they call the "Douhet philosophy" previously rejected with vehemence. Certainly there is evidence to suggest that Soviet military thinkers are once again examining their World War II experience from the standpoint of aerial bombardment and its uses in nonnuclear conflict.

For the present, the main tenets of Soviet aviation doctrine are likely to remain unchanged:

- Support ground forces in mass attacks of conventional, partly nuclear, or totally nuclear constitution;
- Carry out a variety of theater or intercontinental missions involving transport and bombing raids;
- Intimidate potential foes throughout the world; and
- Gain aerial supremacy in any military confrontation.

To these ends, the Soviets seem to be restructuring their strategy to develop their own version of flexible response.

The latest innovation in air force organization in the U.S.S.R. reveals a reassessment of the assignment of air forces and their organization by *fronts,* military districts, and so on. New aircraft such as the Su-25 Frogfoot close-air-support fighter and the Su-24 Fencer interdiction fighter-bomber promise new flexibility across the battle front and extending to the enemy's rear.[23] Helicopters will play a large part in any Soviet blitzkrieg attack into Asia or Europe. Choppers like the Mi-24 Hind, under the direct control of ground commanders, will provide assets for a form of close air support that has the advantage of being able to move with the offensive and, if required, provide continuous air coverage for a unit.[24] Furthermore, we might expect the Soviets to overhaul their air forces to combine the command of long-range aviation with that of the Strategic Rocket Forces to create an entity that would more closely resemble the U.S. triad.[25]

THE SOVIET VIEW remains as it has since the 1960s and 1970s and echoes Stalin's behest that the first socialist state must hold the initiative at every stage and be prepared to go to war with the capitalist powers. Moreover, Soviet military literature abounds with terms like *frustrate, preclude, crush, forestall,* etc., a nuclear attack. Indeed, both the "short war" thesis and the "long war" thesis are but alternate parts of the arsenal of Soviet strategic thought. In either or both scenarios, tactical and strategic air power occupy very important niches. The *VVS* has a varied and rich history, and it most certainly seems to have a promising future.

New York University

We wish to thank Major Gregory Varhall of the Air War College for his editorial assistance.

Notes

1. Marshal of the Soviet Union Nikolai V. Ogarkov, editor, *Sovetskaya voyennaya entsiklopediya (Soviet Military Encyclopedia)* (Moscow: Military Publishing House, 1977), vol. 3, p. 512. Henceforth referred to as *SVE*.

2. *Jane's All the World's Aircraft 1982-83*, pp. 232-33. A picture of Blackjack, formerly known as Ram-P, appeared in *Aviation Week & Space Technology*, Fall 1982.

3. Air Vice-Marshal S. W. B. Menaul, *Russian Military Power* (New York: St. Martin's Press, 1980), p. 61.

4. Harriet Fast Scott, editor, *Soviet Military Strategy* by V. D. Sokolovsky (New York: Crane, Russak and Company, 1968). See pp. 266, 270, 390, and 543-44 for discussion.

5. *SVE*, vol. 3, p. 276.

6. J. V. Stalin, *Works* (Moscow: Foreign Languages Publishing House, 1953), vol. 6, pp. 415 and 418. These and similar statements are compiled in Albert L. Weeks and William C. Bodie, *War and Peace: Soviet Russia Speaks* (National Strategy Information Center, 1983).

7. Colonel General I. M. Moroz, editor, *V. I. Lenin i sovetskaya aviatsiya (V. I. Lenin and Soviet Aviation)*, (Moscow: Military Publishing House, 1979), p. 179. Figures on the percentages of tsarist officers and men in the Red Air Force are found in this work on p. 180.

8. Harriet Fast Scott, "Soviet Air Commanders," *Air Force*, March 1982, p. 53.

9. Edgar O'Ballance, *The Red Army* (London: Faber and Faber, 1964), p. 115.

10. *Soviet Military Review*, No. 2, 1982, p. 24. The inventor's name was G. Ye. Kotel'nikov (1872-1944).

11. *SVE*, vol. 4, under *"letayushcheye krylo"* (flying wing), p. 626.

12. O'Ballance, p. 114.

13. The Germans were keenly aware of the Soviet mastery of this technique, yet they were baffled as to why the Soviets had not used paratroops throughout the war on the (Russian) western front. (Note: The Russians did make use of airborne landing in their one-week war with the Japanese later in 1945.) Cf. B. H. Liddell Hart, *The German Generals Talk* (New York: Quill, 1979), p. 222.

14. Boris I. Nikolaevsky, editor, "The Crimes of the Stalin Era Special Report to the XX Congress of the Communist Party of the Soviet Union," *New Leader*, 1962, pp. 39-40.

15. Chief Marshal of Aviation P. S. Kutakhov, *"Voyenno-vozdushnye sily,"* [Soviet Air Force], in *SVE*, vol. 2, p. 203. Succeeding statistics are also drawn from this article.

16. Ibid.

17. Ibid., p. 204.

18. Menaul, p. 64.

19. Mark E. Miller, *Soviet Strategic Power and Doctrine: The Quest for Superiority* (Miami: Advanced International Studies Institute, 1982), pp. 43, 44.

20. Oleg Penkovsky, *The Penkovsky Papers* (New York: Doubleday and Company, 1965). For discussion, see Harriet Fast Scott and William F. Scott, *The Armed Forces of the USSR*, second edition (Boulder, Colorado: Westview Press, 1981), pp. 75-76.

21. See successive editions of *Soviet Armed Forces Review* (Gulf Breeze, Florida: Academic International Press, 1981 and 1982) for discussion by Alfred L. Monks. For example, between 1980 and 1981, aircraft within Long Range Aviation—The Soviet Air Force bomber arm—decreased by 76 airframes. The Backfire-B strategic bomber seems to have a dual role: as a tactical weapon (in an open "conventional war" phase of a European Theater conflict) and as an intercontinental bomber (requiring, however, in-flight refueling). The former appears the more important role.

22. Harriet Fast Scott and William F. Scott, pp. 53-56.

23. Colonel Lynn M. Hansen, USAF, "Soviet Airpower: Behind the Buildup," *Air Force*, March 1981, pp. 68-72; Colonel William F. Scott, USAF (Ret), "Continuity and Change in Soviet Military Organization and Concepts," *Air Force*, March 1982, pp. 43-48.

24. Hansen, p. 72.

25. Scott, "Continuity and Change in Soviet Military Organization and Concepts," p. 47.

> Marxism is not only not accurate, it is not only not a science, has not only failed to predict a single event in terms of figures, quantities, time-scales or locations . . . it absolutely astounds one by the economic and mechanistic crudity of its attempts to explain that most subtle of creatures, the human being, and that even more complex synthesis of millions of people, society.
>
> Aleksandr I. Solzhenitsyn
> *Letter to the Soviet Leaders*

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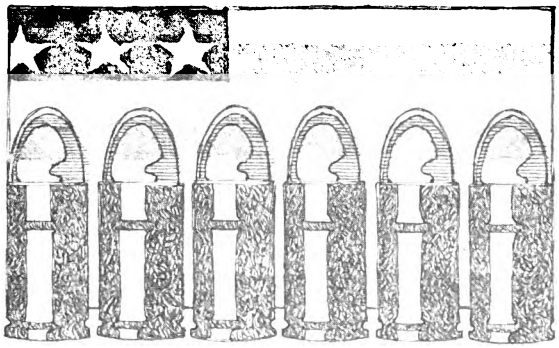
We gratefully acknowledge the generosity of the Arthur G. B. Metcalf Foundation for funding this essay competition by a permanent grant through the United States Strategic Institute of Washington, D.C., and look forward to next year's contest with great enthusiasm.

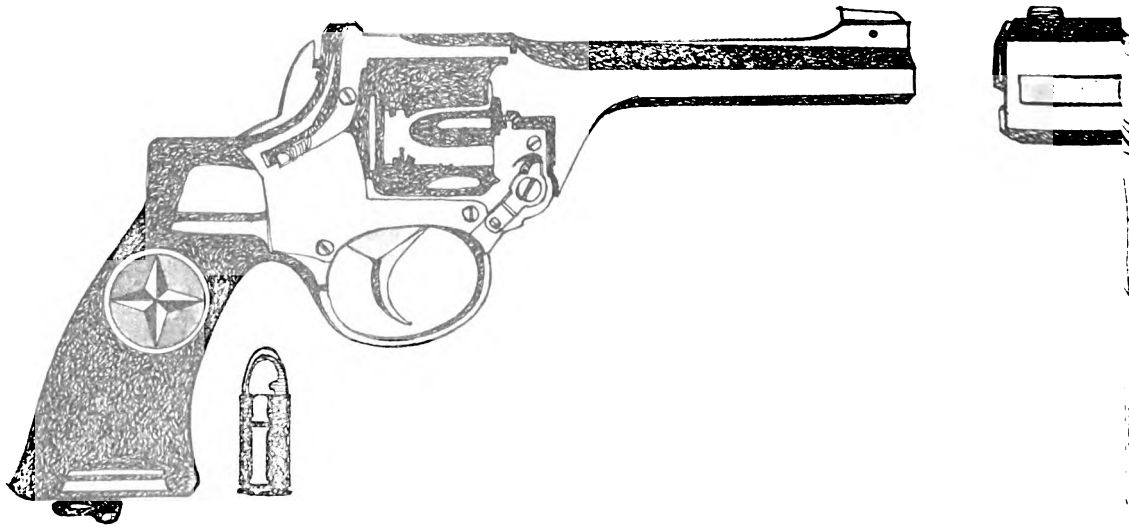


A POSSIBLE FALLBACK COUNTEROFFENSIVE OPTION IN A EUROPEAN WAR

DR. RICHARD B. REMNEK

IN recent years serious doubts have arisen about the ability of the North Atlantic Treaty Organization to withstand a Warsaw Pact attack in Europe. Several factors underlie this concern: the numerical superiority and improving quality of the Soviet armed forces; the narrowing technological gap in U.S.-U.S.S.R. combat systems; new Soviet operational concepts designed to counter NATO's defense strategy; the Soviets' ability to achieve tactical surprise through deception and by selecting the time and place of attack; and strains within the NATO alliance that hinder our efforts to strengthen Western Europe's defenses.

A major part of these efforts centers on improving our ability to reinforce the key central region. For this purpose the United States has decided to preposition equipment for six divisions planned



to be airlifted to Europe within ten days. (This is the POMCUS or Prepositioned Overseas Materiel Configured in Unit Sets program.) The Navy has acquired eight SL-7 fast container ships, each capable of transporting 56,000 measurement tons of equipment to Europe within five or six days. The crucial importance of these and other plans to enhance our strategic mobility has been stressed in a recent NATO study of military balance:

> The Warsaw Pact can . . . mobilize its manpower more readily than NATO. It can also reinforce more quickly. . . . NATO cannot sustain an effective defence against these reinforced Warsaw Pact forces solely with in-place forces. Therefore, a successful defence is largely dependent upon the timely arrival of substantial reinforcements . . . However, the problems would be considerable even if there were to be reasonable warning time. Rapid reinforcement is a very complex operation that demands the timely availability of numerous resources, particularly transport aircraft and shipping.[1]

However, it is unclear whether the early reaction to advance warning and close coordination among NATO allies needed for NATO's mobilization plans to work would take place during a crisis leading to war. To be sure, Soviet preparatory activities would probably be detected fairly early, but determining what they meant would be difficult, mainly because the Soviets would undoubtedly attempt to disguise their intentions. There is no reason to believe there would be any greater consensus among and within NATO countries about Soviet intentions than now exists. The Soviets would try to work through the European peace movement to exert pressure against mobilization. On both sides of the North Atlantic, there would be reluctance to mobilize, since diverting civilian aircraft, merchant ships, airfields, ports, railroads, and other facilities to military uses would disrupt local economies.

Moreover, should our allies be slow to declare mobilization, it would delay our own buildup as well. In part, that is because much of the support infrastructure necessary for the deployment and reinforcement of U.S. forces belongs to our West European allies.

And even after mobilization had been declared, the required intricate timing and close coordination might be lacking. NATO's consultative mechanisms are cumbersome; its communication system could be overloaded, especially if key communications relay points were sabotaged during the crisis phase. In general, there is serious concern whether NATO is well suited to wartime crisis management.

Should mobilization be delayed and impeded, it would follow that much of the manpower and materiel scheduled for early air and sealift to Europe might not be in place by D-day. Indeed, they may not even have reached their forward-basing and staging areas before the latter were overrun or so damaged as to be essentially unusable.

Following the initiation of hostilities, the Soviets would try to interdict supplies and troop reinforcements to Europe. As the Soviets have begun recently to think that a war with NATO could be fought and won by conventional means alone, they have upgraded the antisea line of communication mission accordingly.[2] Should they interdict effectively the flow of supplies to Europe, their chances of achieving a break-

through on the Central Front would also improve significantly. In such circumstances the National Command Authorities (NCA) could be pressed by field commanders to employ theater nuclear weapons. The NCA, however, might be reluctant to do so for fear of uncontrollable escalation to an intercontinental nuclear exchange. And even if the NCA were willing, it might be unable to employ theater nuclear weapons effectively. The Soviets have developed "operational maneuver groups" to counter NATO's strategy by exploiting penetrations of NATO's forward defense lines to disrupt its rear and destroy primary targets like nuclear storage facilities.[3] Should they succeed, they would destroy much of NATO's forward-based nuclear assets and at the same time mix so closely with NATO's forces in the rear as to make employment of remaining theater nuclear weapons difficult.

In a scenario where, partly as a result of delayed and disorganized mobilization, the military situation along the Central Front deteriorates beyond the point of stabilization, I believe there may yet be a conventional alternative to vertical escalation. This alternative would be to launch a counteroffensive from NATO's southern region.

The idea of a counteroffensive is not new. Secretary of Defense Caspar Weinberger, in his annual report to the Congress for FY 1983, pointed to the peacetime deterrence value of a counteroffensive that would seek to exploit Soviet vulnerabilities in Eastern Europe.

> A wartime strategy that confronts the enemy, were he to attack, with the risk of our counteroffensive against his vulnerable points strengthens deterrence and serves the defensive peacetime strategy. This does not mean that any allied offensive, using any means whatsoever and at any place other than the point attacked, would serve our purpose. Our counteroffensives should be directed at places where we can affect the outcome of the war. If it is to offset the enemy's attack, it should be launched against territory or assets that are of an importance to him comparable to the ones he is attacking.
>
> Some important Soviet vulnerabilities have to do with the fact that the Soviet empire, unlike our alliance, is not a voluntary association of democratic nations. . . . Our plans for counteroffensive in war can take account of such vulnerabilities on the Soviet side.
>
> Strategic planning for counteroffensive is not provocative. It is likely to increase the caution of the Soviet leaders in deciding on aggression, because they will understand that if they unleash a conventional war, they are placing a wide range of their assets—both military and political—at risk.[4]

To the limited extent the idea of a counteroffensive along these lines has been considered, it has usually been within the geographic context of NATO's central region.[5] The counteroffensive option I am proposing here, however, takes the collapse of the Central Front as its point of departure. This does not mean I believe the Central Front would collapse. Rather I am simply exploring courses of action that might be available in the event the Soviets prove stronger than anticipated.

MY aim here is to stimulate discussion about alternative strategies in a European war by considering one of them, *a fallback counteroffensive option* that has two variations. This first variation could be to stage the counteroffensive from southern France. The counteroffensive could proceed directly north through the Rhone Valley or flank main Soviet forces by swinging west and then north, around the Massif Central and through Toulouse and Limoges, or in both directions simultaneously in a envelopment maneuver. The counteroffensive would then move east to the West/East German border, thereby restoring most of the status quo ante. (Should the Soviets overrun West Berlin, it would be extraordinarily difficult to retake it short of liberating East Germany.)

The second variation of the counteroffensive option could be staged from northern Italy and move east through the Ljubljana gap and then north toward the Baltic. It would advance by the shortest route and path of least resistance through the "weakest links" in the Warsaw Pact—Hungary, Czechoslovakia, and Poland. By interdicting Soviet lines of communication, it would

flank a Soviet thrust into Western Europe. Its objective would be not simply to reverse a deteriorating military situation but also to liberate Eastern and thereby Western Europe as well.

My assumption is that the Soviets may be able to check either West or East European counteroffensive operations, but they could not deal with both simultaneously, especially after the (probably major) losses they would have suffered during the first week of the war. And should the Soviets commit themselves to countering one variant, it would make available the other one. In short, we would take whichever avenue of advance the Soviets would leave us.

Furthermore, their unfavorable geographic position would induce them to make the first move. It is roughly 150 miles between Marseilles and Genoa, the two principal ports for offloading equipment and supplies for West and East European counteroffensive operations, respectively. In contrast, it is a little less than 500 miles between Lyon, a likely jumping off point for a Soviet assault on remaining NATO forces in southern France, and Bratislava on the Danube, which could serve well as a line of defense against a U.S. thrust into Eastern Europe.

Besides the greater distances involved, Soviet movements of men and materiel across northern continental Europe would likely be hindered by NATO air interdiction and hit-and-run attacks by NATO military and paramilitary forces still holding out behind enemy lines. A U.S. commander on the other hand would be able, with relative ease, to swing forces over a far shorter distance from one staging zone to the other, especially since NATO would probably control the air above the staging areas. Also, the transfer of men and materiel between staging areas would be assisted by hundreds, if not thousands, of vessels of all types and sizes that would have put into the numerous French and Italian Mediterranean ports during the prehostilities crisis period. Because it would be far easier for the United States than the Soviet commander to switch forces from one European "theater" to another, we could keep the Soviets guessing about the direction of our counteroffensive. Because of their unfavorable situation, the Soviets would probably not be able to wait and react to our move; they would probably have to commit themselves first.

It is difficult to predict in advance which variant the Soviets would first try to counter. To a major extent their response would be based on their strategic war objectives and priorities, but these would undoubtedly be unclear, to us at least, particularly if the Soviets were able to disguise their intentions to achieve tactical surprise at the outset of war.

In the absence of certainty about Soviet strategic priorities, one can nevertheless hypothesize that the Soviets would probably choose to commit forces to the defense of Eastern Europe. This is not because they think it would be easier for us militarily to carry out an East European rather than a West European counteroffensive. It isn't. An East European operation would have to cross some very difficult mountainous terrain in Yugoslavia and have much longer logistical supply lines, which could be attacked along both flanks.

Rather, they would tend to recognize they have more to lose in Eastern Europe than gain in Western Europe, for the stakes, and hence the dangers, are far greater in their own backyard. A U.S. victory in Eastern Europe means the liberation of both East and Western Europe. That is because an exchange of occupied territory would be politically unacceptable for the United States, for unlike the first Sinai disengagement agreement after the October 1973 War, the bargaining would not be over miles of sand but the fate of millions of human lives with strong kindred ties to the West. The Soviets would also anticipate that anti-Soviet elements in East Europe would be mobilized to assist the allied counteroffensive operation in numerous and potentially important ways. Orchestrating that support would require clandestine preparatory organizational activities well before the counteroffensive started. Moreover, it would take time to overcome the demoralization of pro-Western elements in East Europe that would have set in after Soviet victo-

ries along the Central Front. Major East European support would probably follow, not precede, initial successes of a counteroffensive, and only then if the objective of that operation were clearly seen to be the liberation of Eastern Europe. Should the East Europeans distrust U.S. intentions and believe we were willing to trade East for West European territory, they would probably not even cooperate with U.S. military authorities in "liberated" areas, much less support our forward advance.

An East European counteroffensive would be a response proportional, in an international legal sense, to a Soviet invasion of Western Europe. However, since an East European operation would not restore the status quo ante, it would be far more destabilizing and hence less desirable an option than a West European campaign to retake lost territory. Faced with the loss of their East European buffer, the Soviets would be more likely to employ theater nuclear weapons and thus escalate the war perhaps out of control. Given these inherent dangers, an East European counteroffensive should be selected only when the alternatives—capitulation or escalation—seem worse.

However, the feasibility of the preferred West European counteroffensive may well rest on the military credibility of the East European variant. Without the Untied States' demonstrating the capability and willingness to exercise that option, the Soviets would have little incentive to withhold forces to protect their deep rear. And this in turn might doom any attempt to regroup and counterattack against the main Soviet combat forces in Western Europe. Our willingness to undertake an East European operation could be demonstrated convincingly only in practice. Inserting at the outset of hostilities the large numbers of U.S. Special Forces and covert operatives needed to orchestrate support for the counteroffensive among East Europeans might serve as an early indicator of our intent to initiate the operation if necessary. The military capability to perform this operation can be demonstrated in peacetime.

The feasibility of this fallback counteroffensive option with the forces currently available can be determined reliably only through extensive war gaming and campaign analysis at a level of detail and classification beyond the scope of this article. My objective here is simply to identify and briefly consider some obvious problems connected with the operation. The key issues are the availability of men and equipment; the security of the sea lines of communication, receiving ports, and staging areas; the physical and political problems connected with crossing Yugoslavia; and, as the forces advance, the long logistic lines and their vulnerability to flanking attack.

The Availability of Men and Materiel

No reliable prediction is possible about what the military balance of remaining NATO and Warsaw Pact forces would be after a successful Soviet offensive in the central region. But planning estimates can be made in peacetime to determine what ratios of U.S. to Soviet forces and supplies would be needed to provide some confidence that a counteroffensive plan would work. And these ratios could then be compared with real-time intelligence information to determine whether the counteroffensive had a reasonable chance of success.

There is no way a priori to know whether *enough* men and materiel would be available when needed. However, in a scenario where mobilization had been delayed and, partly as a result, the Soviets broke through early (say on or about D+7), large numbers of U.S. combat forces and materiel should still be in the pipeline. Some, if not most, of the six divisions scheduled for early reinforcement of the central region might be available, as might mobilized reservists, any withheld forward-based strategic reserves, and evacuated frontline troops. U.S. troops could be augmented by Italian, French, Spanish, and if NATO's southeastern flank were reasonably quiet, Greek and Turkish forces as well. Even with prepositioning of equipment in Europe

and the enhanced sealift capability of eight SL-7 fast container ships, the bulk of the heavy equipment would still be shipped to Europe by slower vessels, which might not have reached their destinations by D+15. Thus, large numbers of tanks, armored personnel carriers, and other heavy equipment, which could be used in a sustained operation requiring high mobility, could be available for the counteroffensive. This might not be sufficient to accomplish the mission unless a considerable amount of equipment prepositioned in the central region could also be saved and deployed.

The Security of Sea Lines of Communication

Of all the issues related to the feasibility of the counteroffensive operation, this one appears to be the least problematic. The sea lines of communication to the Mediterranean ports should be safer than those extending directly to the Channel ports. Routing transatlantic convoys farther south to the Mediterranean would reduce the effectiveness of a Soviet air interdiction campaign directed from the north.

The potential Soviet submarine threat to our shipping lanes in the Atlantic does not appear to be serious. The Soviets recognize that the more cost-effective way of performing the anti-SLOC mission would be by destroying ports or mining straits, not by sinking cargo vessels on the open ocean. The Strait of Gibraltar would be difficult to mine because of its width, depth, and fast currents. Moreover, any Soviet attempt to mine it would be ineffective because of Western military control of the area. A Soviet surface ship or submarine could be detected and destroyed before it could lay many mines. And the few mines that might be laid could be cleared before safe passage through the Strait would be required.

The Soviet threat in the constricted waters of the western Mediterranean would be far more serious. There the Soviets' primary target would be NATO naval forces, especially the U.S. Sixth Fleet carriers; ports and other shore facilities would be a secondary target and cargo shipping a tertiary one.

The Soviet Mediterranean Squadron consists on average of 45 ships, roughly 12 of which are submarines.[6] During a local crisis such as the October 1973 War, the Soviets doubled their routine peacetime presence. In a war crisis that focused on central Europe, however, the Soviets would probably commit their Northern Fleet attack submarines, which normally service the Mediterranean Squadron, to perform a higher-priority mission—protecting their own SSBNs withheld as a strategic reserve in the Norwegian and Barents seas. While the Soviets would be unlikely to augment their submarine force in the Mediterranean, neither would they be likely to draw it down if NATO carrier groups were deployed there. The Soviet Mediterranean Squadron normally has enough combatants to form three anticarrier warfare (ACW) groups,* enough to target two U.S. and one French carrier battle groups.[7]

In the western Mediterranean, Soviet submarines probably pose the main threat to Western naval forces. The noise generated by the great volume of peacetime seaborne traffic there undoubtedly hinders our ability to detect Soviet submarines. Our ability to listen to (noisy) Soviet submarines would improve significantly if the thousands of fishing vessels and smaller craft were called to port in a crisis leading to war.

The Soviet air threat is probably less problematic since the western Mediterranean is beyond the range of unrefueled Backfires operating from Crimean airfields. To be sure, the U.S.S.R. might deploy its Backfires to Libyan airfields before hostilities if it believed it had a reasonable chance of disabling our carriers thereby. But such forward deployment of Backfires during the prehostilities period would be a risky exercise in crisis management.

Soviet surface combatants pose even less of a threat provided they are not allowed during the

*A Soviet ACW group usually includes one SSM-equipped major surface combatant, a SAM-equipped surface combatant, an SSM-equipped submarine, and one or more attack submarines.

crisis period to interposition themselves with U.S. warships, as they did during the October 1973 Middle East War. Should Soviet combatants be located beyond the SSM range of U.S. ships at the outset of war, they would be highly vulnerable to U.S. land- and sea-based attack aircraft.

In general the Soviets would seem to pose a serious but manageable threat to our naval forces in the Mediterranean. With our naval and land-based air forces, we should be able to neutralize the Soviet Mediterranean Squadron in time to protect the SLOC through the western Mediterranean.

The Security of Ports and Staging Areas

There is a reasonable prospect that the ports and staging areas would be secure long enough to initiate a counteroffensive. The underlying assumption here is that the Soviets do not possess the resources or capabilities to break through on central and southern regions simultaneously. With their forces concentrated along the Central Front during the initial phase of the war, a simultaneous sweep in the southern region to the Mediterranean ports would be beyond their capability. In peacetime, there are four Soviet and six Hungarian divisions, equipped with over 2300 tanks and 1400 artillery pieces, stationed in Hungary.[8] In a crisis, these divisions could be reinforced from the Kiev Military District. This augmented force would then be available for a push against northern Italy. Given their questionable reliability, however, it seems unlikely that the Hungarian divisions would be used in front-line combat operations. The reinforced Soviet combat forces even with the Hungarian divisions are a little more than 200,000-men strong. They would probably be supported by most of the 2300 Warsaw Pact aircraft estimated to be available in the region. These Warsaw Pact forces would face at minimum 8 Italian divisions, or some 128,000 men, equipped with 1250 tanks and 1550 artillery and mortar pieces, and with 3127 tube-launched, optically-tracked, wire-guided and Milan antitank-guided weapon systems on order. These ground forces would be supported by most of the 990 NATO aircraft committed to the Southern region's defense. Although the Warsaw Pact would have 50 percent more troops, more than three times as many tanks, and more than twice as many aircraft available, it might not be sufficient to offset the Italians' defensive advantage.

Furthermore, the Soviets would have to push through difficult mountain passes in Yugoslavia, which could be blocked by the Yugoslav Army. Even in the worst and highly unlikely case that the Yugoslavs permitted the Soviets to pass through to the Italian border prior to hostilities, a Soviet advance into northern Italy would be impeded by numerous river obstacles. And if the Soviets succeeded in moving up the Po Valley, they would be entering a cul-de-sac, which could be surrounded by Italian forces defending mountainous terrains along the Apennine ridge and Dolomites. Even in the worst case the Italians should be able to hold the high ground above their Mediterranean ports and thereby defend the staging area needed for a counteroffensive.

One wonders, moreover, whether the Soviets would be willing to bear undoubtedly heavy combat losses for initial objectives limited to taking out specific targets such as NATO airfields and any theater nuclear assets. These could be targeted perhaps just as effectively by saboteurs or long-range SS-12 Scaleboard or follow-on SS-22 surface-to-surface missiles, whose employment would have the diplomatic bonus of not violating Swiss, Austrian, or Yugoslav airspace.

While the Soviets probably could not overrun the Mediterranean ports and staging areas in time, they might be able to saturate them with enough missiles equipped with chemical weapons to force cancellation of the operation. It is worth noting that the Italian ports are no further from East Germany than are the French channel ports and are well within the range of SS-12 and SS-22 missiles. However, the Soviets are esti-

mated to have 170 of these missiles.[9] And should they have other targeting priorities when the battle in the central region was in doubt, there may be too few of these missiles left afterward to get the job done.

Finally, there seems to be a reasonable chance that NATO forces would be able to control the air above the staging areas with land-based aircraft supported by sea-based fighter aircraft from U.S. and French carriers. Should the Soviet Mediterranean Squadron be eliminated early on, the Sixth Fleet carriers might then move into the western Mediterranean. When the Central Front collapsed, the carriers could be stationed where their aircraft could cover the ports and staging areas as well as possible withdrawal south of surviving NATO forces. Our ability to maintain air superiority would also be enhanced through aircraft attrition. After the first week of the war, the number of Soviet long-range Su-24 Fencer A and MiG-27 Flogger D/J ground-attack aircraft would probably have been significantly reduced. Destruction of forward airfields, including any of those the Soviets may have captured, would make it difficult for them to employ their older and shorter range tactical aircraft in either a ground-attack role or as fighter escort for bombers. Also, if our air defense system, including C^3 and AWACS, remained intact in the region, we should have the advantage when performing the easier air intercept mission with the support of surface-to-air missiles over our own territory. Therefore, we should be able to hold and defend the ports and staging areas long enough to launch the counteroffensive. But once it started, the severe military challenge would come.

Crossing Yugoslavia

The winding, narrow roads of the Ljubljana gap make passage difficult for any army. Should the Soviets already possess that territory, say as a result of having penetrated northern Italy, it would be doubly difficult to retake it. At a minimum this would require tactical surprise, which might be achieved by timing airborne operations to coincide with the start of the counteroffensive. There are two obvious problems connected with an airborne attack: First, would there be enough airborne forces available after the first week of war to seize the Yugoslav passes? Second, if their drops were successful, could the airborne forces hold long enough for link up with main force elements? I believe the first problem would be the more serious of the two.

It is unlikely there would be any U.S. airborne forces that had not been committed to battle within the first week of war. And should any paratroops survive a Soviet breakthrough, it would be difficult in the extreme to reconstitute them for another airborne operation. Of the forces currently available, the reserve airborne forces would probably come from Italy's airborne brigade and perhaps France's airborne division. If they succeeded in taking the passes, they should be able to hold them until ground forces arrived. The lead units could be Italian forces that had earlier taken up defensive positions in the Trentino-Alto Adige region, only 120 miles from Yugoslavia's Julian Alps. (Should the Po Valley be overrun, the Italians could fall back to defensive positions north and south of the Soviets and then proceed to counterattack from both directions at the start of the counteroffensive.)

But what might happen if the Soviets had not breached the Ljubljana gap and Yugoslavia decided to defend it with front-line troops? If the Yugoslavs, perhaps "fraternally" assisted by the Soviets, had dug in, it would seem to be extraordinarily difficult to dislodge them. One can only hope, perhaps wishfully, that with the fate of both East and West Europe in the balance, Yugoslavia would be willing to cooperate with a U.S.-led counteroffensive.

It is in Yugoslavia, furthermore, that the war could well turn nuclear. Soviet employment of tactical nuclear weapons to attempt to check our advance would be far more effective in the Yugoslav mountain passes, where our forces would be concentrated, than in the Hungarian plain, where our troops could spread out. The Soviets would also try everything they could, perhaps

including the use of nuclear weapons, to keep us from entering Hungary and unleashing thereby the force of anti-Soviet nationalism in Eastern Europe.

However, while the dangers of escalation to nuclear war may be great as U.S. forces push through Yugoslavia, so too would the opportunity be for a peaceful resolution of the war. This is not simply because of the heightened tensions that would surround our movement into Yugoslavia. It is also because both sides would be reluctant to proceed further—the Soviets toward initiating nuclear war and the U.S. toward entering and hence liberating Eastern Europe, a militarily demanding and politically provocative mission whose incalculable consequences could well push the war out of control. Yugoslavia might be the interlude that would give both sides reason to pause and perhaps end the war on mutually agreeable terms.

Long Logistic Lines and Their Vulnerability to Soviet Counterattack

Should the counteroffensive continue into Eastern Europe, the long logistic supply lines would become a problem, though how serious it would be is unclear. The narrow roads through Yugoslavia could become a major bottleneck that would slow the advance. Ammunition and spare parts in particular might then be in short supply.

The longer the logistic lines became, the more vulnerable they would be to a Soviet counterattack along their flanks. However, the Soviets would have problems in mounting a counteroffensive. It would certainly be difficult for them to do so from the west, since that would draw down on their main forces in Western Europe, perhaps enough to allow us to open a second front in France. Also, Soviet troop movements along north European roads would be harassed by a NATO air interdiction campaign. The Soviets' air interdiction capability from the north might be far more constrained, however. Were Switzerland and Austria to declare neutrality at the outset of war, the U.S.S.R. would probably prefer that they continue to remain neutral with a U.S. counteroffensive under way. Were Moscow to believe that violating their airspace would give them a pretext to support NATO, it might opt to respect that airspace. With the shorter-range strike aircraft they would probably have left, they would almost be unable to fly around the 420-mile-wide zone of Swiss and Austrian territory that would shield the movement of U.S. troops and equipment across Italy through Yugoslavia and into Hungary.

A flank attack with less capable reserve forces from the east poses other difficulties for the Soviets. Given the terrain features, the Soviets would probably counterattack across the Hungarian plain. Their advance could be resisted by the local population supported by U.S. Special Forces. After U.S. forces had entered Hungarian territory, local support for the counteroffensive would probably be at its peak.

Should the Soviets use airfields and staging areas in the Western Ukraine for this counterattack, we could wage unconventional warfare there to hamper their operations.*

To be sure, expanding the war to Soviet territory and energizing centrifugal ethnic strains in the process would raise the stakes considerably and push the Soviets toward vertical escalation of the war. Nevertheless, were the United States to demonstrate beforehand its capability to infiltrate and organize one of the most nationalistic regions of the U.S.S.R. (e.g., by organizing a Ukrainian detachment within the Special Forces), it might deter the Soviets from mounting a counterattack from their soil. Therefore, it is not as easy as it first might seem for the Soviets to attack the flanks of an East European counteroffensive.

*It is worth noting that the Western Ukraine was officially incorporated into the U.S.S.R. only in 1945. In the interwar period the Western Ukraine was divided between Poland and Czechoslovakia. It has always had strong ties with the West through the Uniate Church. Since 1945, the region has been a major seedbed of dissent nationalism. As that part of the Soviet Union most likely to welcome U.S. liberation of Eastern Europe, it would be a fertile ground for covert operations deep in the enemy's rear.

The discussion thus far has focused on problems connected with an East European counteroffensive. This is not to suggest that the preferred West European counteroffensive thrust is problem-free. Although the problems are fewer and similar (e.g., securing the SLOCs and staging areas), there is one problem that is unique and deserves attention. And that concerns the French role. French military doctrine calls for a nuclear countervalue riposte to a Soviet invasion of French soil. The French Army is not configured for a prolonged conventional war but for brief offensive operations employing tactical nuclear weapons.[10] For the counteroffensive to work, the French would have to forgo their doctrine, employ their forces in a defensive role for which they are ill-prepared, and permit their territory to be used as the principal battleground of choice. This presupposes a degree of cooperation well beyond that which now exists as a result of recent French moves toward closer coordination with other NATO countries. One can only hope that at the crucial moment the French would desist from unilateral nuclear escalation and subordinate their plans to ours.

Alternatively, the Soviets might promise not to attack France in exchange for French neutrality. That transaction would leave us with only the Eastern Europe option and would also facilitate the release of Soviet forces to counter it. However, such a bargain would be far more likely to be struck in a limited war that involved only issues in which France had no interest than in an all-out war that threatened the viability of the West European economic system.

One final issue that pertains to both counteroffensive options concerns the allocation of scarce resources. To remedy any deficiencies in our ability to carry out a fallback counteroffensive it might be necessary to divert resources for this purpose from strengthening our defenses in the central region. This would be worse than "robbing Peter to pay Paul," since it would make greater the need for a fallback plan.

However, in a scenario where mobilization was delayed, large numbers of men and amounts of materiel should be available, though whether they would be sufficient would depend on the correlation of remaining military forces at the time. Our needs are likely to be specific (e.g., expanding U.S. Special Forces for multiple missions). Some improvements in our ability to undertake a fallback counteroffensive might also strengthen our overall defenses (e.g., developing an air assault and airborne reserve force). In the final analysis, developing the capability for a fallback option is somewhat like purchasing life insurance. For both there are opportunity costs to be paid in anticipation of future need.

It is worth adding that acquiring the capability to undertake a counteroffensive option is not simply a military matter. Political factors are equally important. Yugoslavia and France, for example, would play pivotal roles in determining the success or failure of the counteroffensive. Hence, effective diplomacy in support of specific military objectives would be essential.

THIS DISCUSSION suggests that a fallback counteroffensive could become a realistic option should the need arise in a European war. More detailed analysis and planning, changes in our force structure, and successful joint exercises would be needed to gain confidence that such an option could be successful. However, what is perhaps more important for the purpose of peacetime deterrence is that even with our current capabilities, there is no certainty that the counteroffensive would fail. And that should create uncertainty in the Soviets' mind about our response to the collapse of NATO's Central Front. It would certainly heighten their caution about the dangers of starting a war if they believed that even were they able to place at risk our valued assets in Western Europe, we might still be able to threaten their control of their vital East European buffer. Given their acute sensitivity to their strategic vulnerabilities in Eastern Europe, it would not take very much convincing for the Soviets to take an East European counteroffensive option seriously. If they were to do so, it would also induce them to reallocate forces from

offensive to defensive purposes and to improve the flexibility and adaptability of their forces to deal with unexpected military responses—areas in which the Soviets are currently deficient. By exploiting Soviet political and military vulnerabilities, an East European counteroffensive option can thus enhance our overall deterrence posture.

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Notes

1. *War or Peace: The Official NATO Study of the East-West Military Balance*, in *Current News* (Special Edition), 13 July 1982, pp. 10-11.

2. For evidence that the Soviets have introduced within the past two years an independent option for a protracted conventional coalition war, see James McConnell, "The Soviet Anti-SLOC Mission in the Context of Soviet Doctrine," *Center for Naval Analyses* Memorandum 82-0700 (12 May 1982). Previously, the Soviets contemplated only a conventional phase, approximately one month in duration, of a war that would inevitably escalate to the nuclear level.

3. For a full discussion of the operational concepts underlying these units, see C. J. Donnelly, "The Soviet Operational Manoeuvre Group—A New Challenge for NATO," *International Defense Review* (No. 9, 1982), pp. 1177-86.

4. U.S. Department of Defense, *Annual Report to the Congress by Secretary of Defense Caspar W. Weinberger*, 8 February 1982 (Washington: Government Printing Office, 1982), p. I-16.

5. See, for example, Sir John Winthrop Hackett, *The Third World War: The Untold Story* (New York: Macmillan, 1982), and Samuel P. Huntington, "The Renewal of Strategy" in *The Strategic Imperative*, edited by Samuel P. Huntington (Cambridge, Massachusetts: Ballinger, 1982), pp. 21-32.

6. United States Navy Department, Office of the Chief of Naval Operations, *Understanding Soviet Naval Developments*, third edition (Washington: Government Printing Office, 1978), p. 13.

7. See Charles C. Petersen, "Trends in Soviet Naval Operations," in *Soviet Naval Diplomacy*, edited by Bradford Dismukes and James M. McConnell (New York: Pergamon, 1979), pp. 49-50.

8. See *War or Peace: The Official NATO Study of the East-West Military Balance*, p. 18; I.I.S.S., *The Military Balance 1982-83*, p. 22.

9. See *Air Power*, December 1982, p. 145.

10. See Diego Ruiz Palmer, "French Military Doctrine for Theater Warfare," *Ground Defence International* (December 1980), pp. 10-12.

The policy of Russia is changeless. . . . Its methods, its tactics, its maneuvers may change, but the polar star of its policy—world domination—is a fixed star.

Karl Marx, 1867

I cannot forecast to you the action of Russia. It is a riddle wrapped in a mystery inside an enigma; but perhaps there is a key. That key is Russian national interest.

Winston Churchill, London,
October 1, 1939

LEVELS OF STRATEGY AND AMERICAN STRATEGIC NUCLEAR POLICY

DR. DONALD M. SNOW

THE DEBATE over American nuclear strategy for deterrence is clearly in disarray. Deep divisions separate scholars, defense analysts, and policymakers about the nature of the nuclear threats that confront us, appropriate strategies to counteract those threats, and proper force configurations to support the deterrent purpose. Disagreement covers the intellectual spectrum of possible advocacy. At one extreme, harsh assessments of the Soviet threat have led analysts like Colin S. Gray to advocate a much more robust force structure and a plausible "theory of victory" in a nuclear conflict as the necessary ingredients for continued deterrence of Soviet nuclear aggression.[1] Such suggestions appall other analysts and bring about ringing appeals for a return to more conventional deterrence conceptions grounded in assured destruction.[2] As one British observer dourly concludes, "From the surreal world of the analysts have emanated hypotheses about how to fight and survive a nuclear war that corrupts the Western concept of deterrence." As a result, "the outlook at the start of the 1980s is quite surprisingly grim.

The risk of a holocaust is growing with every year that passes, and whether we shall avoid it is at least questionable."[3]

The strategic debate swirls between these extremes, manifesting itself most distinctly around two basic interrelated issues sufficiently well treated in the literature to need no more than passing mention here. The first issue is the evolving nature of the strategic threat posed by the Soviet Union. Focused on the continuing aggressive Soviet force modernization and expansion program that dates back to the latter 1960s and the discovery that the Soviets view deterrence differently than do Americans (for example, "war-winning" strategy, Soviet civil defense), disagreement is widespread about what all this means. Have the Soviets acheived some sort of nuclear superiority? and if they have, of what utility (if any) is it to them? Even more fundamentally, what are the *true* intentions of the Soviets for their thermonuclear arsenal? and how can we meaningfully relate Soviets' capabilities to their intentions? Within these prickly and intractable questions, the stuff for worst-case analysis abounds.

The second issue is more evolutionary and technological: weapons arsenal capabilities have changed and expanded, at least theoretically, a great deal during the past decade, and uses of nuclear weapons formerly unthinkable (because unattainable) have become less so in some minds.[4] The issue, resulting from the independently developed but mutually reinforcing emergence of multiple warhead delivery vehicles and increased warhead accuracy, has been the theoretical achievement of hard-target counterforce capability against a broadening but not comprehensive set of retaliatory targets[5] and the consequent "window of vulnerability" and what (if anything) to do about it. These matters constitute the heart of the controversy over the MX missile system and ways to base it.[6] In a more futuristic vein, the potential development of effective ballistic missile defenses (BMD) through projected advances in antiballistic missile (ABM) and "exotic" laser and particle beam (collectively directed energy transfer or DET) technologies[7] offers the prospect for a parallel expansion in capabilities.

These technological innovations, particularly as they begin to enter the operational inventory, have raised considerable clamor in the strategic and especially the academic communities. The basis of misgivings is that these new systems possess characteristics suitable for missions either extraneous to or at odds with deterrence conceptualizations derived from assured destruction. Dissension reached a pinnacle in the late summer of 1980 when the Secretary of Defense Harold Brown announced so-called Presidential Directive (P.D.)59 and has continued amid speculation the Reagan administration will supersede that guidance with planning for a protracted, winnable nuclear war.

Reaction has been strident and has helped to crystallize a debate about strategic policy as fundamental and profound as the debate about massive retaliation in the late 1950s that eventuated in assured destruction. Critics passionately condemned P.D. 59 as a sharp break from the traditional assured destruction deterrence base with dangerous implications that could make nuclear war more thinkable and hence more likely. Supporters, including many within the professional military itself, viewed the directive as at most an incremental change in operational policy, a position taken by Secretary Brown when he announced the document at the Naval War College commencement: "P.D. 59 is *not* a new strategic doctrine; it is *not* a radical departure from U.S. strategic policy over the past decade or so. It *is*, in fact, a refinement, a codification, of previous statements of our strategic policy."[8]

The irony, which gets at the heart of the entire debate over strategic policy, is that both sides are correct, from their perspectives. The difficulty arises because those perspectives are different, focusing on different aspects of nuclear strategy, so that a tendency and continuing danger exist that the parties will simply talk past one another rather than engage in a mutual dialogue from common reference points. If a constructive

debate is to emerge, this problem needs to be addressed for what it is, a levels-of-strategy problem.

It is the central contention here that the nuclear strategy process, rather than operating in a seamless, deductively valid manner, operates at a minimum of three separate levels, each of which has strong implications for the others but which, in fact, operates in large measure independently of one another.

Levels of Strategy

"In simplest terms, strategy is a plan of action that organizes efforts to achieve objectives."[9] This simple definition suggests that strategy has two basic components. The first is the plan of action: a response to some form of challenge posed by an adversary to our politically determined goals or objectives that changes as our perceptions of the challenge alters. In strategic nuclear terms, the political objective is to deter a thermonuclear aggression by the Soviet Union (or any future member of the "nuclear club"), and nuclear strategy at any time is the action plan that gives effect to that objective. Second, however, strategy is also "the process which connects the objective *ends* with the *means* to achieve that objective."[10] When the dynamic nature of nuclear strategy is considered, one is confronted by the various levels at which strategy operates and the discontinuities that can exist between those levels.

Broadly speaking, nuclear strategy is made and carried out at three levels: *declaratory strategy, development and deployment strategy,* and *employment strategy.* (Desmond Ball refers to the two latter levels as "action" policy or strategy.)[11] Each level represents a complex of activities and missions that flow from the deterrent purpose, and each level tends to have its own reasonably distinct set of actors, dynamics, and operational constraints.

Declaratory strategy refers to the broad "set of public pronouncements made by the President, the Secretary of Defense or sometimes other senior administration officials regarding the requirements of deterrence, targeting policy, and strategic doctrine."[12] Based on subject perceptions and political judgments about the nature and intentions of our adversaries, what will dissuade them, and how our actions will be perceived by our adversaries, declaratory strategy is the most general and public statement about what deters. The nature of deterrence involves complex psychological and theoretical elements in addition to murky assessments about adversary intentions and philosophical statements about the propriety of different strategic options, so that strategy at this level tends to be abstract and theoretical. Often seemingly unrelated to day-to-day events in the political world, declaratory strategy attracts the attention of the theoretical intellectual community. It is on this level that almost all of the academic debate is confined.

Declaratory strategy is also the least continuous strategy level. Although declaratory strategy is influenced by the body of theoretical work arising from the academic community and defense "think tanks"—most of the conventional "wisdom" in the current debate is latter 1950s and early 1960s in vintage—it bears the imprimatur of the President or Secretary of Defense who adopts it as official policy, and public officials come and go more rapidly than, say, weapons scientists and engineers. The expert community can and does produce varying shades of opinion so that a new President can assemble an expert team to produce a new, or at least new-sounding, strategy generally conforming to whatever general predilections on defense he may hold. Moreover, defense and strategic affairs have an importance and glamour that appear to make administrations want to place their own distinctive marks on them. Hence, Eisenhower's massive retaliation strategy gave way to Robert S. McNamara's controlled response and assured destruction, which successively was replaced by Nixon's strategic sufficiency, James R. Schlesinger's limited nuclear options, and Harold Brown's countervailing strategy. These name changes are often more cosmetic than substan-

tive, but each generally changes declaratory strategy to some degree, reflecting changed perceptions of the threat and the balance of capabilities, among other things.

The other two levels of strategy are more implementary in nature, falling within the realm of military strategy or Desmond Ball's action policy. Development and deployment strategy actually refers to two distinct operations that are related, since one cannot deploy a weapon system that one has failed to develop in the first place. (The obverse, however, is not true: one can decide not to deploy a successfully developed system.) Generically, development and deployment strategy refers to the process that begins with investigation of the weapons potential of some physical principle to the point that a finished weapon system or component enters the operational inventory. Collectively, the two processes have the purpose of force acquisition, but different actors and dynamics are prominent in each phase.

The development phase of development and deployment strategy refers to the process of scientific endeavor that begins with ideation of weapon systems possibility through the point that a successful weapon system prototype is produced. As such, it is roughly equivalent to the familiar research, development, testing, and evaluation (RDT&E) cycle. In turn, RDT&E can be divided into two subphases suggested by the different operations conducted: research and development, followed by testing and evaluation.[13]

Different actors predominate and make decisions that cumulatively constitute strategy within each subcycle. Research and development is the primary province of basic scientists (e.g., physicists and chemists) and engineers. Decisions about what to investigate and how to solve engineering problems are largely based on scientific criteria about physical properties of the universe. As W. K. H. Panofsky explains, scientific endeavor is relatively insensitive to strategic or policy direction because "'pure scientists' take pride in their ability and success in pursuing science for its own sake, unaffected by the potential application of end products of their achievements."[14] Therefore, it is difficult to influence or control what will be discovered; if one already knew what scientists would find in their research, there would be no need for the inquiry. Moreover, the time line on scientific discovery is difficult to predict, much less control: scientific discoveries are made when they are made and cannot be ordered to meet a politically dictated strategic timetable. Efforts to influence the pace and direction of scientific endeavor are indirect, stimulating, or depressing specific research efforts through differential funding levels. As well, many weapon possibilities arise from scientific and engineering in nonmilitary research that may be related to military programs or be wholly unrelated. Often, these contributions are entirely serendipitous.

When basic research yields promising weapon possibilities the fruitfulness of which is a matter of developing practical applications, some decisional discretion occurs. Development is largely an engineering concern, seeking applications of basic ideas and designing prototype weapon systems incorporating the research findings and making engineering improvements on current designs. At this point, however, outcomes are not assured, making assessment difficult, so that decisions tend to be made primarily on the basis of likely technical feasibility rather than on some broader criteria of strategic desirability, and there is a natural tendency to pursue as many promising areas as budgetary constraints will allow. Those individuals responsible for making such decisions, mostly scientists and career officers, bring their own viewpoints and perspectives on the nature of the threat, desirability of certain weapons, and the like, which may or may not reflect the perceptions of political authorities up to and including the President. A classic case in point was President Carter's purported "discovery" of U.S. neutron (enhanced-radiation) bomb research in a newspaper account of a congressional subcommittee hearing where an Energy Research and Development Administration (ERDA) official unintentionally made reference

to the project during testimony.

During the testing and evaluation subcycle, when prototypes undergo operational tests, the results are noted and evaluated and necessary modifications are made; the critical point is in deciding whether deployment recommendations will be forthcoming. To some extent, the criteria for these recommendations are likely to be purely technical: Does the weapon system work at all or up to some usable standard, and is there a mission for it? Two decades of failure in the cruise missile program (largely because of guidance system deficiencies) comes immediately to mind as a major system whose deployment recommendation was delayed because of technically based deficiencies.

A bureaucratic dynamic in this process provides a bridge from development to deployment strategy. In the RDT&E process, weapon systems tend to develop constituencies within the industrial/defense bureaucracy that create internal pressures for positive deployment decisions. The most obvious advocates are those individuals with a direct interest in the system: the scientists and engineers who designed and developed the system; the agency or agencies that sponsored stages of development; and the service or services that would add the system to the operational inventory. Since no one wants the reputation for developing or sponsoring bad ideas, this basis for advocacy is natural and understandable, as is service interest in adding new (and presumably superior) components to the arsenal. Also, those defense industries that would be primary contractors or subcontractors for a system have a direct vested interest in positive procurement decisions.

Although those associated with developmental strategy remain active advocates in pushing for particular deployment decisions, they are not the central actors. Decisions about what weapon systems in what quantities enter the inventory and which cumulatively define deployment strategy are economic and hence political in character. The economics and accompanying politics are evident at a minimum of two levels: in the interservice allocation process of proposing and later dividing up the defense budget; and in the political decision process where defense allocations must compete with other budget priorities. Different actors with differing interests and motivations are involved in each phase of the economic process that supports deployment recommendations, with technologists interested in specific systems and theoreticians concerned with effects on the structure of deterrence in a support role offering expert advice in support of the various contenders. If it is true that policy is what receives funding, deployment strategy is at the heart of nuclear strategy *writ large*. The large points to be made are that the criteria used in making budgetary decisions are political and economic, they are made by politicians, and those decisions may or may not be swayed significantly by abstract notions about deterrence.

Determining what kind of defense budget will be proposed is largely an executive branch in-house affair. At one level, it is a competition between the services, where each presents its needs and where outcomes expressed as proportions of defense requests and allocations for each service (as well as trends in those percentages) take on both great substantive and symbolic value. At another level, the competition is between the Department of Defense and other agencies, where the chief arbiter and devil's advocate (especially in the current administration) is often the Office of Management and Budget (OMB). The role of OMB Director David Stockman was particularly prominent within the early months of the Reagan administration.

Ultimately, of course, deployment is based on what Congress appropriates. Internal executive branch political processes result in budgetary tradeoffs and compromises where procurement patterns are altered on the bases both of strategic and nonstrategic requirements. More of the same is likely to occur in Congress when budget recommendations must compete with other national priorities for funding. Although both houses have members expert in defense issues on their Armed Services committees, the ultimate

disposition of the defense budget, including those systems that can be procured and deployed, is done by the entire membership, many of whom may vote up or down a particular allocation on grounds entirely divorced from any notion of deployment strategy. The budgetary process is politics in its purest form, and since deployment strategy is the result of decisions about what to buy in what quantities, that level and hence overall nuclear strategy are guaranteed a political content.

Employment strategy, the third level, represents planning for the actual use of nuclear weapons in combat should deterrence fail. The most concrete manifestation is the single integrated operational plan (SIOP). The term SIOP is itself a bit misleading, because the SIOP is and always has been a complex series of different attack scenarios emphasizing varying levels of destruction and different kinds of target sets. Guidance regarding targeting priorities for the SIOP is provided by Presidential memoranda, such as President Nixon's National Security Decision Memorandum (NSDM)-242 that sought to bring about limited nuclear options and President Carter's aforementioned Presidential Directive 59. This guidance in turn is "spelled out in the *Nuclear Weapons Employment Policy* (NUWEP) issued by the Secretary of Defense."[15]

Within the parameters established by the NUWEP and the various Presidential memoranda, the detailed SIOP is crafted by the Joint Strategic Target Planning Staff (JSTPS), a body composed primarily of professional military officers. As a nuclear "battle plan," the SIOP serves two broad purposes. First, although its details are secret, its broad objectives are openly available through statements by public officials like former Secretary Brown's announcement of P.D. 59 (he cited the priorities as "the things the Soviet leaders appear to value most—political and military control, military force both nuclear and conventional, and the industrial capacity to support a war,"[16] a list essentially identical to the priorities listed by Ball in the current plan, SIOP-5D)[17] and unclassified congressional testimony. Making general contours public serves the deterrent purpose of informing our adversaries of the potential kinds of destruction they might have to endure in response to their nuclear aggression. Second, the plan provides the President with a carefully elaborated set of options for fighting a nuclear war at whatever level of intensity seems appropriate.

That the planning process for employment strategy should be "designed by military men, as a military operational plan"[18] comes as no surprise, since it is the military's role to plan for, and if necessary to fight, wars. Dominance of the operational element of employment strategy by the professional military does, however, enter yet another distinct set of actors with distinct orientations to the strategy process at this level. Professional officers rarely become involved, at least publicly, in discussions over declaratory policy, and, until recently, most theoreticians have demonstrated only passing interest in employment matters beyond a general preference for countervalue or counterforce targeting. The result is to facilitate a general lack of awareness by one group about what the other is doing and, when interaction does occur, to increase the prospect that dialogue will occur within separate frames of reference.

The fact that different actors operate at the various levels of strategy facilitates independent development at each level, but there is another vexing dynamic that virtually ensures some discontinuity. That problem is the time frame within which each level operates: all three levels have distinctive and independent time lines for their activities that make it virtually impossible to synchronize them at any given time.

Declaratory statements of strategy have the least sensitive constraints imposed by time: a President or Secretary of Defense can issue statements of declaratory strategy whenever he deems it appropriate. Certainly, there are constraints arising from the other levels and externally. A President cannot change strategies too often without appearing indecisive or foolish, and strategy must reflect judgments about what the

public will support. Declaratory formulations also reflect the state of activity in the other levels of strategy in two distinct ways. First, declaratory strategy must reflect the current state of the art at other levels, or the declaration will lack credibility (for example, even if one has the perceived will to carry out a strategy, one must also have the hardware).

Second, declaratory strategy is used to provide guidance to and influence other levels of strategy. The motivation underlying assured destruction, as a means to influence the deployment portion of development and deployment strategy, illustrates the point. As Laurence Martin argues, "finite assured destruction was originally more a way of constraining procurement than an operational strategy clearly thought through and actually intended for execution."[19] In support of this contention, it must be remembered that there was active support within the military and elsewhere to deploy an intercontinental ballistic missile (ICBM) force of 2000-3000 missiles during the 1960s. Moreover, the emphasis on targeting noncombatants was never fully accepted by those responsible for the SIOP, for whom counterforce targeting was always more military and hence natural. As a result, in operational planning "'assured destruction' measures were no more than an insensitive—and quantitatively conservative—shorthand for the hideous reality of nearly any full-scale retaliation."[20]

Whether the function of declaratory strategy is or should be to reflect reality at the other strategic levels or whether the function should be to provide policy guidance from which the other levels deductively flow is, of course, the central question, but the answer is prejudiced by the time line function. Of the three levels, declaratory strategy is least influenced by temporal constraints. Ball's action levels, however, are much more sensitive to time constraints that are internal to their own processes rather than being the product of external assessments.

Development and deployment strategy is the most obvious case in point. Science proceeds at its own pace, and scientific and engineering discoveries cannot be finely calibrated to a precise timetable. The period from the time of conceiving the idea for a weapon to the time a usable system reaches inventory is generally measured in years. During that process, breakthroughs in development occur but cannot be predicted. The development stage of this strategy level is long and uncontrollable. Furthermore, deployment decisions are made over long periods of time. The arsenal components deployed today are products of research and development efforts initiated in the 1940s and 1950s (the designs for systems in the air-breathing leg of the triad are 1940s vintage), and the predicted life span of strategic systems is measured in decades. Given these facts, current development and deployment decisions affect and must be measured against strategic needs in the 1990s and beyond, just as decisions made two or more decades ago influence capability and hence strategy today.

Finally, the ultimate transition from strategy to war plan (employment strategy) has its own distinctive temporal dictates. The basic dynamic is that targeting as reflected in the SIOP will inevitably lag behind declaratory strategy and reflect capability resulting from developmental and deployment decisions. The reason follows from the way operational employment strategy is fashioned; the SIOP is constructed using the various methods described earlier as guidance, and it is a time-consuming technical task. According to Desmond Ball, the current plan, SIOP-5D, "includes some 40,000 potential target installations, as compared to some 25,000 in 1974 when NUWEP was promulgated and the development of SIOP-5 initiated."[21] Since the warhead arsenal is less than one-quarter that size, a significant amount of time goes into setting target priorities. There is also the extremely technical, complex task of matching appropriate warheads from different sources to targets. In this matching process, one must allow for problems like MIRV footprinting limitations and consider cross-targeting requirements. All of this means that it can take years for a fully operational new SIOP to be developed. Thus, there will be a time

lag while the new plan is being developed. To the extent the new guidance creates demands for change, a declaratory-employment strategy mismatch is inevitable. Because declaratory strategy and guidances change fairly often, this problem is dynamic and constant.

Too much of the literature and defense debate proceeds as if the problems associated with the interactions between levels of strategy do not exist. The academic debate, centering around assured destruction and its alternatives, rarely gets past the theoretical underpinnings of declaratory strategy, and when it does, its contribution is often a Greek chorus of appall and despair. At the same time, a great deal of the debate occurs as if it were divorced from any political context. At least implicitly, the debate over declaratory strategy assumes a fundamental rationality to the enterprise; once one has accepted certain principles about what deters, the rest is a mechanistic application of those principles. Viewed from the levels of strategy, however, the political elements are revealed as fundamental and critical. Declaratory strategy is made by the nation's chief politician and his assistants and reflects a variety of political purposes (most prominent of which, of course, is preserving the national existence), and bottom-line deployment strategy is the culmination of the political process, appropriations.

The failure of so much analysis to view strategy in its political context is the most damning indictment of avoiding the levels of strategy problem. Decisions that cumulatively define nuclear strategy are made by politicians, and it is not surprising that those politicians regard strangely recommendations from theorists ignoring that basic reality. The scholarly debate emerges as a theological contest that can safely be relegated to the cloisters. The lack of communications between theorists and politicians frequently results in politically unacceptable strategy and strategically deficient policy.

Implications

In an analytically tidier world, the relationship between the various levels of strategy would be a simple deductive exercise where declaratory strategy was translated precisely into development and deployment and employment strategies. As has been argued, such a view oversimplifies and distorts reality. In fact, there are discontinuities and even contradictions among the various levels arising at least partially from the two broad dynamics cited earlier: there are different individuals and institutions with different perspectives involved in strategic formulations at each level, and the internal dynamics of each level dictate a temporal sequence to strategic activity that virtually guarantees some discontinuity at any time. It is worthwhile briefly to view the current state of the nuclear debate in the levels of strategy framework.

The heart of the debate that has been going on since the early 1970s has largely been over declaratory strategy (limited nuclear options versus assured destruction),[22] with residual concern over development/deployment strategy (MX is or is not necessary given a mutual assured destruction [MAD] or limited nuclear options [LNOs] declaratory posture) and employment strategy (counterforce or countervalue targeting is or is not compatible with MAD or LNOs). Particularly when the debate is extended beyond declaratory strategy, there is at least the *implicit* assumption that development/deployment and employment strategies do or should flow deductively from current declaratory positions. Whether such a relationship ought to exist is a philosophical question that can be debated; such a formulation contradicts the way the process operates.

In one sense, the whole debate is, in Shakespeare's phrase, "much ado about nothing." Certainly the debate about MAD and LNOs is overblown, in the sense that, at the operational level, MAD has always contained more finite targeting objectives (employment strategies) and the LNO position admits all-out countervalue exchange as the ultimate possibility, whether it is featured or not. A debate focusing on "pure" MAD or LNO positions hence distorts the policy debate, which occurs over shades of emphasis rather than at the extremes.

Understanding that declaratory strategy is neither MAD nor LNOs but rather the part of the mix emphasized serves two essential purposes. First, it moves the debate away from the extreme ends of the poles back toward the middle ground where real policy debates among those political and military actors who devise strategy occur. In the process, we create the possibility that academics and strategy makers can engage in dialogue instead of talking past one another. Second, understanding that changes in declaratory strategy are matters often of subtle reemphasis and repackaging creates a greater sense of continuity to the strategy process than does viewing the formulation of declaratory strategy questions in either-or terms. In the process, this recognition promotes an appreciation of the continuities rather than the discontinuities between the levels of strategy.

Linkage becomes apparent with both employment and development/deployment strategies. At the employment strategy level, recognizing that declaratory strategy in fact has always dictated a range of strategic options makes more natural a dual emphasis on countervalue and counterforce targeting, since limited options imply selectivity in targets attacked and these quite naturally contain counterforce objectives. Given the natural military professional inclination toward attacking combatants (counterforce objects) rather than noncombatants (countervalue objects), a counterforce-oriented SIOP (and guidance therefore as in P.D. 59) represents not so much a change in philosophical positions over what kinds of threats deter best as it does an improved linkage between declaratory employment, and development/deployment strategy. Developments in weapon systems capabilities are expanding the list of counterforce objectives that can be targeted. Furthermore, these advances in weaponry permit greater flexibility in one's response to changes in adversary offensive and defensive capabilities. Such developments are a natural outgrowth of technological processes both in the U.S. and U.S.S.R. and reflect no more than the dynamic nature of weapon science.

Strategy that emphasizes a variety of options also suggests a development and deployment orientation investigating a wide variety of possible capabilities. This observation is clearly true within the development cycle of this level of strategy, but true discrimination occurs when deployment decisions are made. Within this cycle, political actors are most prominent, and deployment strategy is often effectively formulated on bases that are largely nonstrategic (for example, budgetary tradeoffs) rather than on the basis of clearly articulated deterrence grounds. Tradeoffs and compromise are the basic stuff of politics, and as long as the process does not produce strategically unacceptable outcomes (which it has not to date), it is natural and not pathological.

These dynamics, suggesting both sources of continuity and discontinuity, are complex and have some clear implications for theoreticians and practitioners alike. Two implications stand out for theoreticians (undoubtedly there are others). On the one hand, deterrence strategy as a complex interaction of the various levels of strategy clearly suggests that concentration on any one level is inadequate. The disservice such an emphasis provides is vividly demonstrated in shock and dismay over P.D. 59. If one had been looking at questions of MAD versus LNOs exclusively, the pronouncement appeared a dramatic and definitive statement of philosophy; viewed from the level of employment strategy as influenced by development and deployment strategic decision-making, P.D. 59 was little more than an incremental link in an ongoing process.

On the one hand, and relatedly, this mode of analysis suggests that theoreticians need to broaden their horizons to encompass all levels of strategy if they are interested in influencing policy decisions that affect the deterrent condition. Probably most critically, this implies the need to become involved in the critical deployment level where decisions are made that define arsenal characteristics, targeting possibilities, and limitations, and, hence, the capabilities that make different declaratory strategies credible or incredible.

That involvement is likely to be the most effective in pointing out the relationship between the theoretical and the concrete. If nothing else, the contribution may be best in pointing out the long-range, nonobvious impact of discrete decisions on the structure of deterrence. If policy is indeed that which receives funding, the critical intervention point, where the greatest impact can be registered, is the political processes leading to funding decision for various patterns of force deployment.

For practitioners, the problem is not understanding the process, it is coordinating the levels better. At the operational levels of development/deployment and employment strategy-making, there is too often only a shallow awareness of the theoretical implications of various decisions and a resultant surprise when objections are raised. At the same time, coordinating activity at the various levels more tightly can avoid logistical difficulties in selling strategies, as the P.D. 59-MX controversy illustrates. In logical fashion, the sequence of policy decision would have flowed from countervailance as declaratory strategy (emphasizing limited options) to P.D. 59 as employment strategy (to determine target coverage patterns necessary to carry out identified options) to developmental/deployment strategy to provide the necessary hardware for the employment strategy (the most obvious need arising from such assessment being additional warheads, which MX would provide). Steps two and three were reversed, and the result was contention. MX was criticized as providing excess, redundant counterforce capability, and P.D. 59 was condemned as revolutionary heresy. Closer coordination among the levels of strategy would not have removed controversy because the whole concept is controversial. Viewing the process as a sequential levels-of-strategy problem would, however, have reduced the confusion.

THE BOTTOM LINE is a plea to look more closely at all the levels that produce nuclear strategy, with the hopeful result that those making decisions at the various levels will be capable of meaningful dialogue that will produce better strategy at each level. Targeters need to realize that strategy is more than the SIOP, politicians need to understand that budget-driven decisions may have strategic implications far beyond the impact on the federal debt, and theoreticians need to realize that the constraints of the real world make deterrence strategy-making something other than an exercise in deductive logic. It all seems so obvious that it hardly bears emphasis, yet the evidence suggests that the obvious has not been so self-evident after all. Recognizing that there is a levels-of-strategy problem does not solve the disorder of nuclear strategy, but it at the least makes more sense out of why the disorder exists.

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Notes

1. See particularly, "Nuclear Strategy: The Case for a Theory of Victory," *International Security*, Summer 1979, pp. 54-87; "Targeting Problems for Central War," *Naval War College Review*, January-February 1980, pp. 3-21; and (with Keith Payne), "Victory Is Possible," *Foreign Policy*, Summer 1980, pp. 14-27.

2. For a particularly eloquent statement, see Robert Jervis, "Deterrence Theory Revisited," *World Politics*, January 1979, pp. 289-324.

3. Nigel Calder, *Nuclear Nightmares: An Investigation into Possible Wars* (New York: Viking, 1980), pp. 13, 10.

4. My own assessment of these sources of contention, including documentation, can be found in "Strategic Uncertainty and Nuclear Deterrence," *Naval War College Review*, November-December 1981, pp. 27-41.

5. Some of my thoughts can be found in *Nuclear Strategy in a Dynamic World: American Strategy in the 1980s* (Tuscaloosa, Alabama: University of Alabama Press, 1981), pp. 96-99 and 205-16.

6. For an overview, see Donald M. Snow, "The MX-Basing Mode Muddle: Issues and Alternatives," *Air University Review*, July-August 1980, pp. 11-25.

7. For a somewhat speculative overview of the prospects, see Donald M. Snow, "Lasers, Charged Particle Beams, and the Strategic Future," *Political Science Quarterly*, Summer 1980, pp. 277-94; or Barry J. Smernoff, "Strategic and Arms Controls Implications of Laser Weapons: A Preliminary Assessment," *Air University Review*, January-February 1978, pp. 38-50.

8. "Remarks Prepared for Delivery at the Convocation Ceremonies

for the 97th Naval War College Class," Washington, D.C.: Office of the Assistant Secretary of Defense (Public Affairs), 20 August 1980, p. 6. Emphasis in original.

9. Dennis M. Drew, "Strategy Process and Principles: Back to the Basics," *Air University Review*, May-June 1980, p. 39.

10. Ibid. Emphasis in original.

11. Desmond Ball, "Dynamics of the US Strategic Nuclear Policy Framework," *Defense and Foreign Affairs*, April 1981, p. 5.

12. Ibid., p. 4.

13. One of the best discussions of this process remains Richard G. Head, "Technology and the Military Balance," *Foreign Affairs*, April 1978, pp. 544-63.

14. W. K. H. Panofsky, *Arms Control and SALT II* (Seattle: University of Washington Press, 1979), p. 3.

15. Ball, p. 4.

16. Brown, p. 7.

17. Ball, p. 6.

18. McGeorge Bundy, "Strategic Deterrence Thirty Years Later: What Has Changed?" in Christoph Bertram, editor, "The Future of Strategic Deterrence, Part I," *Adelphi Papers* No. 160 (London: International Institute for Strategic Studies, Autumn 1980), p. 8.

19. Laurence Martin, "The Determinants of Change: Deterrence and Technology," in Christoph Bertram, editor, "The Future of Strategic Deterrence, Part II," *Adelphi Papers* No. 161 (London: International Institute for Strategic Studies, Autumn 1980), p. 13.

20. Bundy, p. 8.

21. Ball, p. 6.

22. Donald M. Snow, "Current Nuclear Deterrence Thinking: An Overview and Review," *International Studies Quarterly*, September 1979, pp. 445-86.

military affairs abroad

OBATO: SUPPORT OF THE SOVIET AIR REGIMENT

JAMES L. WADDELL

Soviet technicians service the engines and tail section of a Tu-22 Blinder aircraft.

Without the combat readiness of the Soviet Armed Forces Rear Services, there is no troop combat readiness. War may begin, but without a well-prepared rear, without precise and comprehensive rear support, it would end sadly a few days later. That is why we must make every effort to see that the Soviet Armed Forces Rear Services are always as combat ready as the forces they are supporting.[1]

THIS statement, taken from a speech made by the Soviet minister of defense at the conclusion of the Neman major exercise in 1968, is a useful reminder that an understanding of Soviet Air Force (SAF) operations is incomplete without an understanding of the Soviet Air Force Rear Services, their logistics system. The basic combat element of the SAF is the air regiment. Although there are several elements in the support structure of an air regiment, the principal element is the independent airfield technical support battalion (*otdel'nyy batal'on aerodromno-teknicheskogo obsluzhivaniya*—OBATO).

The predecessor of the OBATO was first formed in early 1941 in the course of a major reorganization of the Soviet Air Force Rear Services.[2] It was designated an airfield service battalion (*batal'on aerodromno/obsluzhivaniya*-BAO) and was, in the words of a World War II BAO commander, intended to be the

> basic unit of aviation rear services, an independent unit intended to support two flying regiments, equipped with any type of aircraft, with everything necessary for the life and combat work of the personnel. Quarters, rations, clothing, financial support, transport, munitions, armaments, fuel, and lubricant materials, weather data for flights—all this and much more were the responsibility of the BAO.[3]

This mission statement, with a few modifications, could apply to the current OBATO.

The Airfield Technical Support Battalion Today

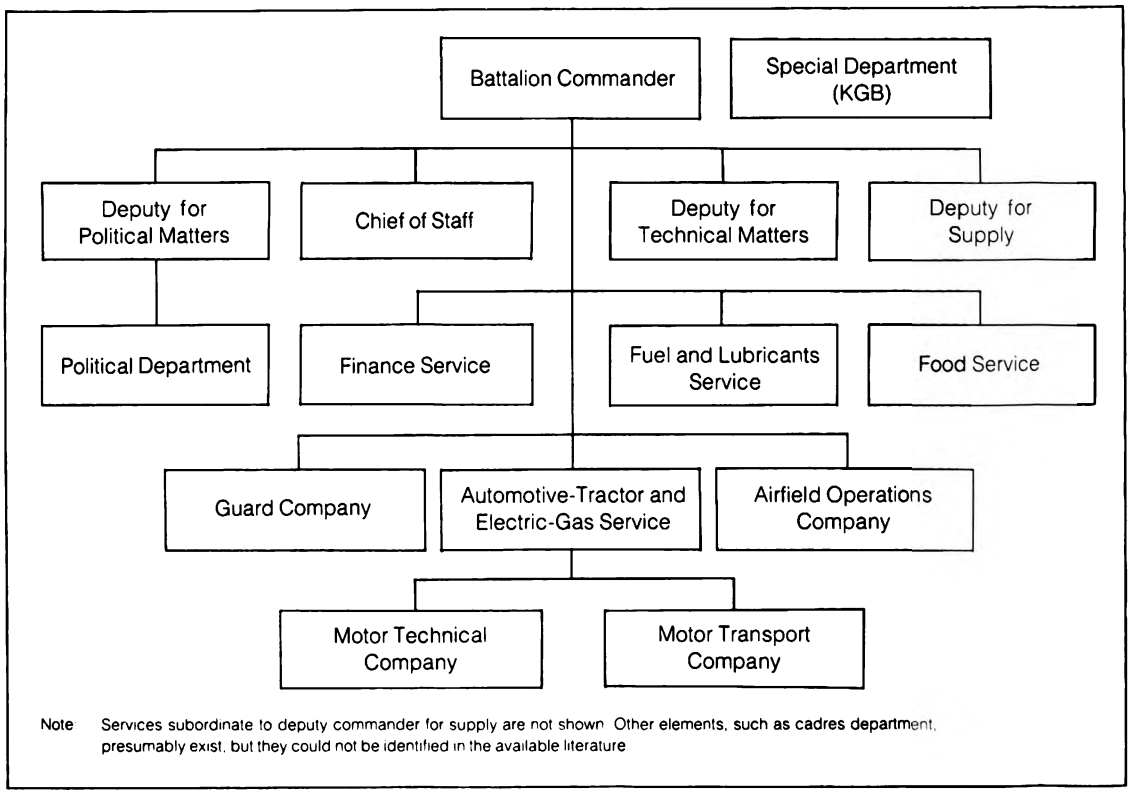
In the transition to jet aircraft after World War II, the Soviet Air Force made organizational changes in both its flying and rear services units.

In late 1945, the highest elements, the air basing regions, were reorganized as aviation technical divisions and given the mission of supporting an entire air corps. The next lower level in this new organizational scheme was the aviation technical regiment, designed to support an entire air division. The technical regiment, in turn, consisted of aviation technical battalions, each supporting one air regiment at a separate airfield.[4] The continued existence of the technical divisions and regiments cannot be confirmed from the available literature, but the battalions were redesignated independent airfield technical support battalions by at least the 1960s, and they continue to operate under this designation today.

As a component of the Soviet Air Force Rear Services, the battalion is assigned to an entirely different chain of command from the flying unit it supports.[5] The battalion commander is operationally subordinate to the air regiment commander, but he remains administratively subordinate to the next higher echelon of his battalion. Seemingly, this arrangement could lead to conflicts, but reports of any problems in this respect are virtually nonexistent. The reason, perhaps, is that the air regiment commander normally has a higher rank and, within the military district or group of forces, ultimately reports to a commander whose rear services chief is only one of several deputies.

The accompanying chart shows the general organizational structure of a typical battalion, which is normally commanded by a major but may also be commanded by a lieutenant colonel.

Structure of the Independent Airfield Technical Support Battalion



Note: Services subordinate to deputy commander for supply are not shown. Other elements, such as cadres department, presumably exist, but they could not be identified in the available literature.

The commander has deputies for technical matters, supply, and political affairs, the last of which, normally a major, is at least first among equals.

The battalion deputy for political matters controls the unit's political department and is presumably a second reporting official for the deputy commanders for political matters in the companies. The functions of a political officer at any level include not only organizing and directing political work but also overseeing ideological development among the troops; to some degree, he also functions as information and educational officer and counsels people with regard to family and personal affairs.[6] The political department itself and the immediate staff of the deputy for political matters are usually small elements of not more than three or four officers. The department is probably also responsible for the unit's enlisted and officers' clubs.

Internal security and counterintelligence are the responsibility of the special department (*obsobyy otdel*) headed by a KGB officer. Neither the title nor the functions of the special department are mentioned in contemporary Soviet literature. Primary sources of information about this department are defectors,[7] but it appears rather likely that these officers operate entirely outside the military chain of command.

Routine battalion planning and administrative matters are handled by the chief of staff, usually a major, and his small section. The actual mission of the battalion—providing services and material to the regiment—is performed by a number of services and other elements.

fuel and lubricants service

The mission of the fuel and lubricants service (*sluzhba* GSM) is to receive, store, maintain quality control, and issue aviation fuels, gasolines, various alcohols, fire-extinguishing materials, and special liquids such as hydraulic fluids and antifreezes.[8] The service, normally directed by a captain, is responsible for one or more fuel and lubricant dumps, a fuel analysis laboratory, vehicle refueling points, and portable pumping stations. The portable pumping stations are used frequently in units that receive fuel shipments by rail.[9] The service is also responsible for the operation and maintenance of centralized refueling systems at airfields with such facilities.

A handbook for the Soviet Armed Forces Rear Services mentions both underground and aboveground storage of fuels but provides specifications only on horizontal steel tanks with capacities of 4.1 to 26.9 cubic meters. Rubberized cloth bladder tanks, probably used during deployments, are available in capacities of 2.5 to 25 cubic meters. When empty, the tanks weigh from 47 to 250 kilograms and probably can be easily transported by truck.[10]

automotive-tractor and electric-gas service

This service normally directed by a major, formerly consisted of two separate services, but it has functioned as a single service since at least 1981.[11] The motor transport and motor technical companies in the service are commanded by either a senior lieutenant or a captain who has deputies for political and technical matters. The motor transport company is organized into at least three platoons and a motor pool (*avtopark*) and is used to transport personnel and equipment. Trucks are the most frequently mentioned vehicles, but the company's inventory probably includes cars, crew busses, and aviation refueling trucks.[12]

The motor technical company, the "electric-gas" component of the service, is often called the "special equipment" (*spetstekhnika*) unit because of the nature of its vehicles. These vehicles include the MZ series of oil replenishment vehicles, AKZS oxygen trucks, AUZS carbon dioxide vehicles, VZ and MS series of compressed air vehicles, APA series of aircraft starter trucks, AZS battery-charging stations, AKV air-conditioning units, MP series of engine heaters, aircraft and general-purpose tugs, and fire trucks. One reference indicates that a platoon of aircraft starter trucks has at least nine APA vehicles, but the

actual strength is probably much greater.[13]

Many of the services provided by both companies obviously must be available at precisely specified times to satisfy requirements of flight operations, and the chief of the service faces a complex managerial problem in meeting these requirements. He resolves the problems on a day-to-day basis by appointing an airfield technical support duty officer (*derzhurny po ATO*) who coordinates all relevant support activities on a given day and normally works from a central control point with radio communications.[14] Although this system apparently functions quite well, it depends entirely on the skill and experience of individual officers. For long-term solutions, the use of network planning, similar to the "decision tree" method used in the West, in airfield technical support operations has been discussed and apparently even used in some battalions since the early 1970s.[15]

the airfield operations company

All functions relative to operation and maintenance of permanent and natural surface runways, taxiways, and hardstands are performed by the airfield operations company (*aerodromno-ekspluatatsionnaya rota*). This unit is commanded by a senior lieutenant or captain and organized in specialized platoons headed by warrant officers. The priority mission is keeping permanent surface runways operational. Although the problem of removing sand from runways appears occasionally in Soviet literature,[16] heavy snowfalls—apparently the only kind in the Soviet Union—are mentioned far more frequently. The company uses several models of heavy rotary snowplows or scraper blades mounted on trucks to remove snow. Ice is removed with so-called heat machines. These vehicles, apparently unique to the Soviet Air Force, consist of old jet engines mounted in movable frames on special chassis. Spreader devices are mounted on the exhaust nozzles to ensure even distribution of hot air. Fragments of ice left by the heat machines or less extensive ice formations are removed by KPM combined self-propelled sprinkling and sweeping systems. These machines and the AP-60 and V-63 vacuum sweepers are used during warmer weather to keep runways and other areas free of debris and thus prevent possible foreign object damage to aircraft.[17]

The Soviets apparently make widespread use of precast ferroconcrete slabs for runways and taxiways. These slabs, designated PAG-XIV, are 14 centimeters thick, 2 meters wide, and 6 meters long and weigh 4.2 metric tons.[18] The company devotes much time throughout the year to inspecting and caulking seams between slabs. The combination of severe cold and extremely rapid thawing in most of the Soviet Union also means that runways and taxiways must have very efficient drainage systems.[19]

The airfield operations company also maintains natural-surface runways used as emergency landing strips at most permanent fields. These runways can be built with either packed earth or sod, depending on local conditions, and they must be periodically packed or sown with grass, fertilized, and mowed. In winter, these strips must be cleared of snow, or, if the accumulation is too great, it can be rolled and packed until the surface becomes suitable for landing. To perform these tasks, the company uses equipment ranging from mowers and seeders to rollers, bulldozers, and graders.

Although aircraft crash barriers are not frequently mentioned, the airfield operations company is also responsible for installing, maintaining, and operating these systems. The system mentioned most often is the ATU-2, which is suitable for aircraft of the MiG-17/19/21 weight class, but indications are that more advanced models are available.[20]

guard company

The security and defense of the entire airfield, including aircraft and separate facilities, is the responsibility of the battalion's guard company (*rota okhrany*). This unit consists of at least two

platoons commanded by warrant officers, but the company is normally commanded by a captain. The company normally mans a series of fixed guard posts connected by landline to the guard control point, and it may use patrol vehicles.[21] Its weapons are assault rifles and machine guns, and it has some organic communications equipment. With the exception of training in heavy weapons, the company apparently receives training similar to that received by a Soviet motorized rifle company. The emphasis in specialized training includes exercises in defending against enemy airborne assault and dealing with hostile penetrations by diversionary groups.[22]

supply services

Soviet Air Force Rear Services units are expected to supply flying units with virtually all essential items except complete aircraft. One official handbook lists spare parts for aircraft, engines, air equipment (presumably instruments and the like), armament, ground support equipment, airfield equipment, and other classes of items, such as metals, paints, chemicals, pressure vessels, and the like. The same source also provides a general list of special clothing items, such as flight coveralls, G-suits, full pressure suits, winter clothing, life vests, and life rafts. The battalion's deputy commander for supply is apparently responsible for general supply, and a number of other services handle specific classes of supply items. For example, one report of the activities of a battalion's aviation technical supply service indicates that it accepts written-off jet engines and scrap for salvage and is responsible for forwarding "time-expired" engines to the manufacturing plant for overhauls. Another source refers to unpacking and issuing ammunition by an aviation armaments service (*sluzhba aviatsionnogo vooruzheniya*) to squadrons of a flying unit. Presumably, such a service would also be responsible for operating the missile storage facilities mentioned in the late 1960s by a former SAF deputy commander-in-chief for rear services.[23]

food service

The food service (*prodovol'stvennaya sluzhba*) of the battalion operates separate dining facilities for aircrew and maintenance personnel of the air regiment and, presumably, other facilities for support personnel. Soviet flying personnel receive a special high calorie diet known as the "flight ration" (*letnyy payek*) in four meals per day.[24] At permanent bases, the food service employs many civilians in capacities from chief of dining facilities to waitresses.* The service is probably also responsible for operating the auxiliary farms assigned to many Soviet military units. In one instance, a battalion reportedly raises 350 pigs and maintains a 400-square-meter hothouse producing eight tons of vegetables per year.[25]

other services

The battalion has its own finance service, which, in addition to paying the troops, develops and controls the unit's budget. Whether the same services are provided to the air regiment is not clear. Other operating elements provide critical medical and meteorological support, but I was unable to determine whether these elements are part of the battalion or whether they function directly under the air regiment. High-level Soviet interest in housing and working conditions at SAF bases suggests that the battalion has considerable responsibility for quarters, buildings, general maintenance, and provision of such services as heat, electricity, water, gas, sewers, and the like, but the general officer addressing this topic does not identify a specific element as being responsible for such functions.[26]

deployment operations

The capability to move rapidly to remote and often unprepared locations and begin immediate

*Despite propaganda claims to the contrary, waiting tables is considered "woman's work" in the U.S.S.R. Consequently, women are employed virtually exclusively in this function at Soviet bases.

air operations is an important element of combat readiness for all units, particularly for SAF Frontal Aviation. A deployment of this nature, however, requires much support from the battalion. Once such a move is ordered, the battalion forms a deployment support group (*komendatura*) consisting of sufficient personnel, equipment, and supplies to begin operations at the new location. Heavy equipment will be necessary if a totally unprepared site requires construction of a runway. One SAF general officer noted that rear services units have accomplished training deployments with their own vehicles, railroads, helicopters, and transport aircraft.[27] Two more recent accounts, both describing support of deployments of helicopter units, mentioned only the use of organic motor transport. However, the author of one of these articles aptly described the purpose of such activities as "practical training under complex conditions as close to combat as possible."[28]

personnel strength and sources

The personnel strength of a technical support battalion cannot be precisely determined, but it probably includes several hundred officers, enlisted personnel, and civilian employees. Officer personnel are apt to be graduates of a Soviet Ministry of Defense school that trains rear services specialists for all the services. They may also be graduates of reserve officer training programs at one of five Soviet automotive and highway institutes.[29] Warrant officers are recruited from enlisted personnel of the battalion and presumably remain with their units almost indefinitely. Enlisted personnel are conscripts who arrive in biannual contingents and apparently do not receive specialist training. Civilians are recruited locally for a variety of support functions. For military personnel in general, assignments appear very stable, but promotion opportunities are very limited, particularly in comparison with flying personnel.

THE CONCEPT of air unit support embodied in the independent airfield technical support battalion has substantial historical roots. It originated in the search for more effective uses of air power, played a major role in World War II, and has undergone surprisingly few changes over a span of more than 40 years. It reflects both Soviet military conservatism and reluctance to tinker with a system that has proved itself. Major changes are not likely to occur in the near future, but support for deployment will become increasingly important as a growing number of attack helicopters and new tactical aircraft are introduced into the Soviet inventory. One can reasonably expect that operations from unprepared locations, such as meadows, will become more common.

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Notes

1. S. K. Kurkotkin, editor *Tyl Sovetskikh Vooruzhennykh Sil V Velikoy Otechestvennoy Voyne 1941-1945 gg.* (Moscow: Voyenizdat, 1977), p. 546.
2. *Sovetskaya Voyennaya Entsiklopediya (SVE)*, s.v. "Aviatsionnyy Tyl" by V. D. Galov. See also John T. Greenwood, "The Great Patriotic War, 1941-1945," in *Soviet Aviation and Air Power*, Robin Higham and Jacob W. Kipp, editors (Boulder, Colorado: Westview Press, 1977), pp. 79-80.
3. Ye.V. Ovcharenko, *Na Frontovykh Aerodromakh* (Moscow: Voyenizdat, 1975), p. 6.
4. See Galov.
5. Ibid.
6. Herbert Goldhamer, *The Soviet Soldier—Soviet Military Management at the Troop Level* (New York: Crane, Russak, 1975), p. 277.
7. There is one reference to a special department officer on page 36 of Ovcharenko's book (note 3). A more recent work that also includes a list of the general duties of special department officers is Aleksei Myagkov, *Inside the KGB* (New Rochelle, New York: Arlington House, 1976).
8. See A. G. Blok et al., *Spravochnik Spetsialista Tyla Aviatsii* (Moscow: Voyenizdat, 1972), pp. 214-24, for a list of such items.
9. Arrivals are sometimes unexpected as indicated in Captain V. Sokolov, "Eshelon Pribyl Noch'yu," *Aviatsiya i Kosmonavtika*, March 1981, p. 38.
10. Blok, pp. 227-28. A partial photograph of horizontal steel tanks may be found in *Aviatsiya i Kosmonavtika*, June 1982, inside front cover.
11. One of the earliest instances of this change appears to have been

in Major O. Mychko, "Aerodrom—Nash Post Boyevoy," *Aviatsiya i Kosmonavtika*, January 1981, p. 38.

12. Aviation fuel truck specifications, including capacities of 4 to 22 cubic meters, are given in Blok, pp. 159-62.

13. See Blok, pp. 166-86, for designations and specifications of individual equipment. The reference to APA platoon strength is taken from Lieutenant Colonel Yu. Stadnik, "Usloviya Odni. A Rezul'taty," *Krasnaya Zvezda*, 24 June 1980, p. 2.

14. Duties and functions of this officer are discussed in Lieutenant Colonel I. Sysolyatin, "Oni Trudyatsya Dlya Poletov," *Aviatsiya i Kosmonavtika*, October 1969, p. 20; Captain B. Obukhov, "S Garantiyey," *Aviatsiya i Kosmonavtika*, March 1972, pp. 28-29, and occasionally in other articles.

15. See, for example, Lieutenant Colonel V. Abramov, "Setevyye Grafiki v Aerodromno-Tekhnicheskom Obespechenii Poletov," *Tyl i Snabzheniye*, November 1971, pp. 84-86, and Lieutenant Colonel-Engineer V. Slivkin and Major-Engineer Yu. Titov, "Ispol'zuyu Setevyye Grafiki," *Aviatsiya i Kosmonavtika*, July 1973, p. 21.

16. Such as Major M. Kamyshnikov, "Posle Peschanoy Buri," *Aviatsiya i Kosmonavtika*, September 1980, p. 35.

17. Specifications for these machines may be found in Blok, pp. 134-40.

18. Ibid., p. 99.

19. Major General-Engineer A. Panenkin, "V Period Talykh Vod," *Aviatsiya i Kosmonavtika*, April 1978, pp. 42-43.

20. *SVE*, s.v. "Aerodromnyye Avariynyye Tormoznyye Ustanovki" by L. P. Kartashev.

21. Lieutenant Colonel V. Kaz'min, "Poka Grom ne Gryanet . . . ," *Krasnaya Zvezda*, 17 April 1980, p. 2.

22. Captain N. Antonov, "Bespokoynaya Dolzhnost'," *Aviatsiya i Kosmonavtika*, February 1982, pp. 16-17.

23. Blok, p. 194, pp. 234-42; Colonel A. Sorokin, "Kogda Umolkli Turbiny," *Krasnaya Zvezda*, 24 May 1981, p. 2; Colonel General of Aviation F. Polynin, "Opyt Aerodronmo-Tylovykh Ucheniy—V Praktiku Obucheniya," *Aviatsiya i Kosmonavtika*, March 1969, p. 10; Major Yu. Zhabkov, "Aerodrom K Rabote Gotov," *Aviatsiya i Kosmonavtika*, February 1981, p. 12.

24. Blok, pp. 250-55.

25. Major A. Tkachenko, "Rezervy Pod Luchom," *Aviatsiya i Kosmonavtika*, August 1980, p. 35.

26. Major General of Aviation A. Kondioglo, "Gorodkam Aviatoram—Obraztsovoye Soderzhaniye," *Aviatsiya i Kosmonavtika*, September 1977, p. 37.

27. Colonel General of Aviation F. Polynin, "Opyt Aerodromno-Tylovykh Ucheniy—V Praktiku Obucheniya," *Aviatsiya i Kosmonavtika*, March 1969, pp. 10-11.

28. Colonel G. Kiyayev, "Chto Pokazalo Ucheniye," *Aviatsiya i Kosmonavtika*, March 1975, p. 5.

29. Harriet Fast Scott and William F. Scott, *The Armed Forces of the USSR* (Boulder, Colorado: Westview Press, 1979), p. 347; *Spravochnik Dlya Postupayushchikh V Vysshiye Uchebnyye Zavedeniya SSSR* (Moscow: Vysshaya Shkola, 1980), pp. 223-24.

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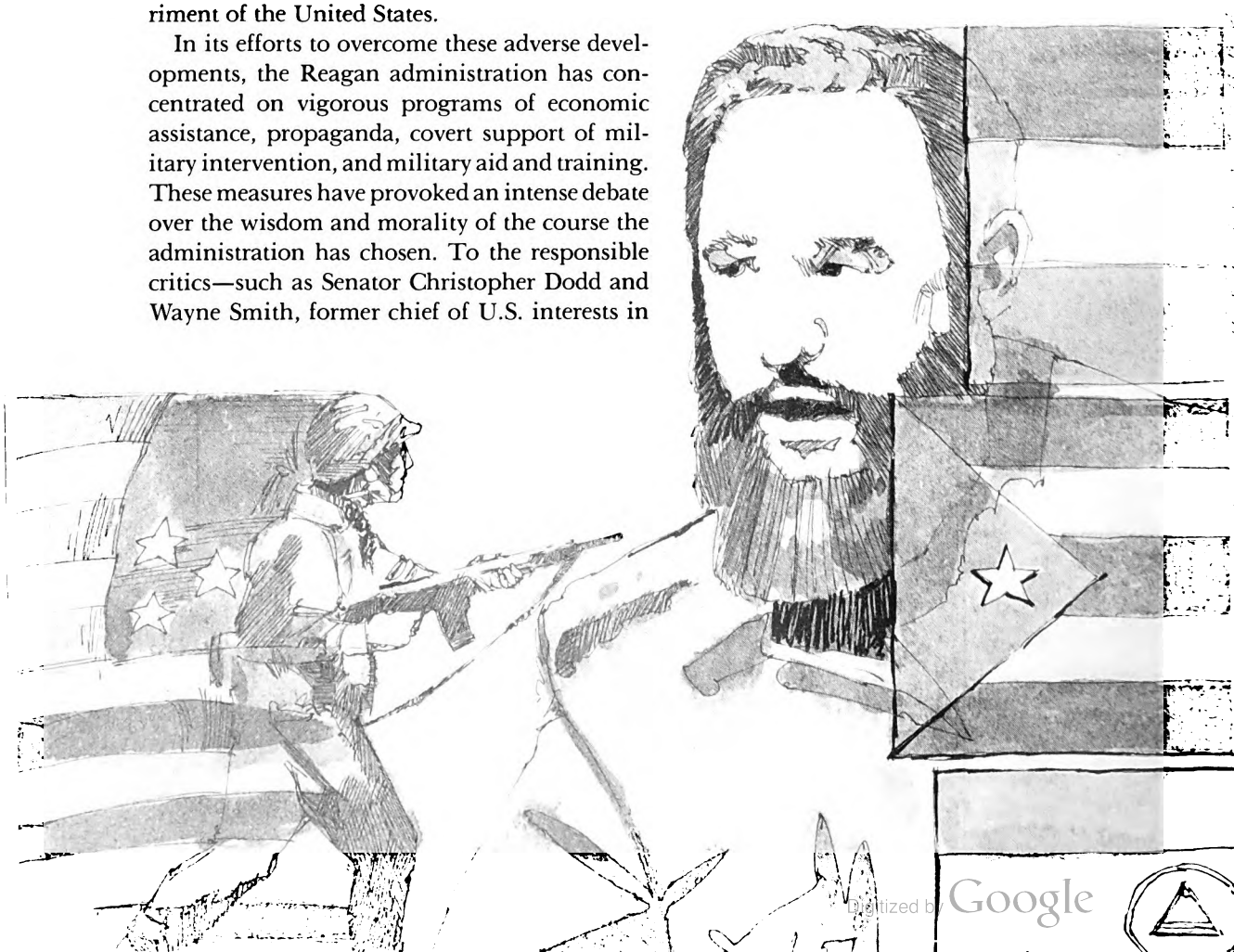
CUBA AND UNITED STATES STRATEGY

DR. P. EDWARD HALEY

A NATION's vital interest, as Charles Burton Marshall once observed, is what it will fight to protect or achieve. The United States has a vital interest in the maintenance of a favorable political and military environment in Central America and the Caribbean, but it has lost military and political initiative in the region. A hostile revolutionary government in Nicaragua and civil war in El Salvador, together with the growing military power of Cuba, threaten to transform the political and military circumstances in the region to the detriment of the United States.

In its efforts to overcome these adverse developments, the Reagan administration has concentrated on vigorous programs of economic assistance, propaganda, covert support of military intervention, and military aid and training. These measures have provoked an intense debate over the wisdom and morality of the course the administration has chosen. To the responsible critics—such as Senator Christopher Dodd and Wayne Smith, former chief of U.S. interests in Havana—this course reveals fundamental errors of understanding and judgment. They insist that the disturbances in Central America are local in origin and do not threaten U.S. security. Also, if a genuine threat to U.S. security developed—such as direct Soviet intervention—Dodd and Smith allege that the United States has the military power to deal with it.[1]

Supporters of the administration's policy reply that U.S. security is endangered not because of local grievances but as a result of Cuban and



Soviet intervention. The National Security Planning Group observed:

> Strategically, [the United States . . . has] a vital interest in not allowing the proliferation of Cuba-model states which would provide platforms for subversion, compromise vital sea lanes and pose a direct military threat at or near our borders. This would undercut us globally and create economic dislocation and a resultant influx to the U.S. of illegal immigrants.[2]

However, for different reasons, neither the critics nor the supporters of U.S. policy have examined the military dimension of the issue about which they so fervently disagree. Critics avoid it because they oppose anything having to do with the use of force in Central America, even the careful discussion of it. Ironically, their arguments depend on an invalid military premise: that the United States possesses overwhelming military superiority in Central America and the Caribbean and could crush Cuba and any combination of anti-U.S. revolutionary governments there if it chose to. Supporters of the administration are silent about the military questions, either because they, too, are unaware of the actual military weakness of the United States in the region or because they wish to avoid embarrassing admissions.

As a result, the public debate about U.S. policy in Central America is incomplete and misleading. It is based on the false premise that the United States has a military trump card to play. Such a trump may exist if Castro is foolish enough to take an extremely provocative action—such as basing Cuban warplanes in Nicaragua—or if relations deteriorate severely between the United States and the U.S.S.R. Neither appears likely. More important, such extreme contingencies provide an unsuitable basis on which to plan U.S. foreign policy. Because neither the critics nor the supporters of this policy are prepared to acknowledge the military realities in the Caribbean, they are unable to recognize the advantages and disadvantages of the United States as it attempts to transform the situation there.

The unavoidable military reality is that the United States is without adequate military support for its foreign policy objectives in Central America. In practical terms, this means the United States is unable to take more drastic measures in opposition to pro-Castro forces in Central America other than those developed by the Reagan administration. In this sense, the nonnuclear strategic military weakness of the United States has predetermined U.S. policy.

A Comparison of Caribbean Powers

Cuba is free to support revolution and subversion in Central America because Cuban leaders know that the United States is unable to force them to stop. The inability of the United States to coerce Cuba may be demonstrated in two ways: by comparing the military forces available to each country in the event of a showdown and by comparing U.S. forces presently available to those that participated in two other amphibious campaigns; these campaigns were the seizure of Okinawa during World War II, a military campaign that would be roughly comparable to an invasion of Cuba, and the British recovery of the Falkland Islands in April-May 1982.

The U.S. military is constituted for the nuclear defense of the United States and for the conventional and nuclear defense of Western Europe. There are other vital U.S. security interests. In the western Pacific, the United States has deployed the Seventh Fleet and two divisions to defend Japan and Korea. A carrier task force operates in the Indian Ocean, and there are token forces in the Panama Canal Zone and the Caribbean area. However, unlike the strategic nuclear forces and the units in Western Europe, these other deployments are valuable primarily as symbols of U.S. commitment and as a frame to be filled out by mobilization rather than for their immediate combat power, which is not on a scale comparable to that of the enemy forces nearby.

In a confrontation with Cuba, the United States would possess total nuclear superiority. However, one assumes that nuclear weapons would not be used against Cuba unless a threat of

nuclear attack arose from the island, as it did in 1962. Therefore, the force available for use against Cuba would have to be drawn from the nonnuclear units not earmarked for deployment elsewhere. As the following tables indicate, very few U.S. military units are available for use against Cuba without significantly reducing forces already committed to other theaters.

The shortfall in U.S. land and naval power revealed in Tables I and II is even greater than it appears. Two army divisions, for example, are not completely manned by active duty personnel. Moreover, it would never be possible to deploy 100 percent of the active ships and submarines in any of their assigned areas. At best only some fraction of the ships would be on station. (See Table II.) The others would either be in transit or in port because of equipment and weapon shortages, training, crew leave, and maintenance. During one of its perennial struggles with the Congress for operating funds, the Pentagon revealed how severe these reductions can be. In June 1983, a Defense Department spokesman stated that the United States was able to arm fully only 5 of its 13 operational carriers at one time.[3] This observation underlines the inability of the United States to use its existing naval power against Cuba. Any diversion of carriers and surface combatants from their regular assignments to blockade or combat duty in the Caribbean would reduce the other fleets to token forces unable to carry out their missions.

As Table III reveals, the United States has no tactical fighter squadrons available for use against Cuba without reducing its capabilities to intervene in the other vital theaters—Europe, Asia, and the Middle East—to which the nation is committed. This is critical to the formulation and execution of U.S. policy in Central America and the Caribbean because of the vital importance of control of the air to effective naval and amphibious action in the region.

As was true with naval strength, the table exaggerates U.S. tactical air power, since only a portion of the airplanes listed would be ready for combat flight. If one generously assumes that 50 percent of all tactical aircraft are ready for combat, Cuba has an operational force of 109 aircraft available for combat in a confrontation with the United States. The United States has none.

Table I. Planned and present deployment of U.S. Army divisions

Deployment	Mechanized	Armored	Infantry	Airborne	Brigades
Europe	2	2			4
Europe (planned)	3	2	2		1
U.S. Central Command (planned)	1			2	1
Japan					support troops
Korea			1		
Alaska					1
Panama					1
Hawaii			1*		
Totals	6	4	4	2	8
Total in U.S. Army	16				
Total Planned Deployment	16				
Army divisions Available for use against Cuba	0				

Sources: *Report of the Secretary of Defense to the Congress* (Washington: U.S. Government Printing Office, 1983); *United States Military Posture*, prepared by the Organization of the Joint Chiefs of Staff (Washington: U.S. Government Printing Office, 1983); *The Military Balance 1982-83* (London: International Institute for Strategic Studies, 1982).

*Unit's establishment is detached.

Fleet	Carriers	Surface Combatants	Attack Submarines
Second (Atlantic)	4-5	76	41
Third (Eastern Pacific)	3	44	30
Sixth (Mediterranean)	2	14	5
Seventh (Western Pacific)	3	21	8
Indian Ocean	1	6	0
Mideast	0	4	0
U.S. Central Command (planned)	3	60(?)	8(?)
Totals	17	225	92
Active Strength	14	204	90
Available for use against Cuba	0	0	0

Source: *The Military Balance 1982-83* (London: International Institute for Strategic Studies, 1982).

Table II. Deployment of U.S. Navy major combatants

Clearly, the table reveals the same unfortunate picture as the others. Without a serious reduction in the ability of the United States to honor its commitments in Europe, the western Pacific, and the Middle East, the United States lacks the air power to engage Cuba militarily.

The U.S. Marine Corps has a strength of 192,000. It is constituted in three divisions, each

Table III. Strength and deployment of U.S. tactical air force divisions

Location	Squadrons (aircraft)				
Base	F-4	F-15	F-16	F-111	A-10
Alaska	1(24)				
Germany	6(144)	3(72)	2(48)		
Iceland	1(24)				
Japan		3(72)			
Korea	2(36)		2(48)		1(18)
Netherlands		1(24)			
Philippines	2(48)				
Spain	1(24)				
United Kingdom				7(156)	7(126)
Totals	13(300)	7(168)	4(96)	7(156)	8(144)
Active Strength	31(708)	16(376)	13(312)	11(252)	12(288)
Remaining	18(408)	9(208)	9(216)	4(96)	4(144)
Fighter Squadrons (F-4, F-15, F-16, A-10) Remaining	40(976)				
U.S. Central Command (planned)	20(?) fighter squadrons				
Europe (planned)	20				
Available for use against Cuba	0				

Source: *The Military Balance 1982-83* (London: International Institute for Strategic Studies, 1982).

with its own air wing, a total of 441 combat aircraft in 26 fighter and ground attack squadrons. Plans for the Rapid Deployment Joint Task Force call for an independent Marine amphibious brigade, but this unit apparently has not yet been established. (See Table IV.)

Table IV. Strength and deployment of U.S. Marines

Deployment	Division
Japan/Okinawa	1*
CONUS	2
Hawaii	brigade from Japan-based division
California	1
North Carolina	1
U.S. Central Command (planned)	1
Total Marine divisions	3
Deployed or committed	2
Available for use against Cuba	1

Source: *The Military Balance 1982-1983* (London: International Institute for Strategic Studies, 1982); U.S. Naval Institute *Proceedings/ Naval Review 1983*, May 1983, p. 272.

*Part of unit's establishment is detached.

The unavoidable conclusion is that out of this impressive force of army, navy, and air forces, the United States has at best one Marine division with its air wing available for service in the Caribbean without disrupting the assignment of other units to other theaters. In a word, Cuba has the military initiative in the region. Cuban not U.S. foreign policy is adequately supported by military power.

The following survey of Cuban military power shows that Castro has acquired potent self-defense and interventionary capabilities. The effectiveness of this Cuban military power is enhanced by the inadequacies of conventional U.S. military forces opposed to it. The Cuban army, reserves, and paramilitary forces have expanded dramatically in the past six years and now greatly outnumber the active force the United States has to send against them. (See Table V.) During the same period, the U.S.S.R. has significantly increased both the size and quality of the Cuban air force, which now disposes of some 190 advanced fighter aircraft, MiG-21 and MiG-23. (See Tables VI and VII.)

The Cuban navy is a coastal defense force. However, the range of its missile boats and the narrow waters around Cuba make it formidable to an opponent who has not established air superiority. The missile boats are the Osa-I and II and Komar class, with a range of 800 nautical miles at 25 knots and 400 nautical miles at 30

Table V. Recent developments in Cuban military manpower (in nearest thousands)

Service	'77	'78	'79	'80	'81	'82
Armed Forces	189	159	189	206	227	225
Army	160	130	160	180	200	200
Navy	9	9	9	10	11	10
Air Force	20	20	20	16	16	15
Reserves	90	90	90	90	130	190
Paramilitary	113	113	118	118	118.5	618*
State Security	10	10	15	15	15	15
Frontier Guard	3	3	3	3	3.5	3
Youth Labor	100	100	100	100	100	100
Territorial Militia	-	-	-	-	-	500*

Sources: *The Military Balance* (London: International Institute for Strategic Studies, annual); U.S. Department of State, "Cuban Armed Forces and the Soviet Military Presence," Special Report No. 103, Bureau of Public Affairs, Washington, D.C., August 1982.

*Castro began to form this military unit early in the Reagan administration. *The Military Balance* gives a total of 50,000 for the unit in 1982. The much larger U.S. State Department figure is used here. Presumably the unit is still being formed.

Aircraft	1977	1978	1979	1980	1981	1982
Squadrons (number of aircraft)						
Ground attack	4(75)	2(30)	3(40)	3(40)	3(42)	3(50)
Interceptor	7(120)	7(118)	8(128)	8(128)	8(113)	14(169)
Transport	3(50)	3(50)	4(30)	4(46)	4(57)	4(54)
Helicopter	2(54)	2(54)	3(40)	4(49)	4(59)	7(112)

Source: *The Military Balance* (London: International Institute for Strategic Studies, annual).

***Table** VI. Strength of the Cuban Air Force (by aircraft type and squadron)*

knots respectively. They are armed with the Styx missile, which has a range of 18 miles and carries a 1100-pound conventional warhead. (See Table VIII.)

Cuba, Okinawa, and the Falklands

A comparison of present U.S. forces to those employed in the invasion of Okinawa underlines the inability of the United States to coerce Cuba. The island of Okinawa, one of the Ryukyu chain, runs north to south and is some 60 miles long and from 2 to 18 miles wide; total area, 485 square miles; its population in 1940 was 435,000. Cuba has an area of 44,218 square miles and a population of 9,827,000.

For the invasion of Okinawa, the United States amassed an impressive force. Altogether, 184,000 troops were assigned to the operation, code-named Iceberg. Supported by Vice Admiral Marc A. Mitscher's Fast Carrier Task Force (FCTF), five divisions or 116,000 men were committed to the initial landings, which began on 1 April 1945. The Fast Carrier Task Force included 9 carriers, 5 fast battleships, 8 escort carriers, 4 heavy cruisers, 7 light cruisers, 3 antiaircraft

***Table** VII. Strength of the Cuban Air Force (by aircraft type)*

Aircraft	'77	'78	'79	'80	'81	'82
Combat aircraft	195	148	168	168	175	259
MiG-17	75	30	30	30	30	30
MiG-19	40	40	40	40	40	40
MiG-21	80	78	78	78	78	154
MiG-23	—	—	20	20	27	35
Transport	50	50	30	46	57	54
Il-14	Some	Some	10	10	10	20
An-2	Some	Some	Some	12	12	12
An-24	Some	Some	Some	4	15	2
An-26	—	—	20	20	20	20
Helicopters	54	54	40	49	59	112
Mi-1	30	30	10	5	15	Some
Mi-4	24	24	20	24	24	60
Mi-8	—	—	10	20	20	40
Mi-24	—	—	—	Some	Some	12
Surface-to-air missiles	144	144	144	144	144	200
SA-2/3	144	144	144	144	144	144
SA-6	—	—	—	Some	Some	56?

Source: *The Military Balance* (London: International Institute for Strategic Studies, annual).

Ships	'78	'79	'80	'81	'82
Submarine	—	—	2	3	3
Frigate	—	1	1	1	1
Patrol (large)	18	18	14	12*	10
Fast attack (missile)	26	27	26*	23*	26
Fast attack (torpedo)	24	24	23*	22	24
Coastal patrol	12	12	12	12	12
Minesweepers (all able to lay mines)	—	2	8	9	9
Landing craft (medium)	7	7	7	7	7
Survey vessels	6	12	13	13	13
Frontier guard	15	14	14	14	14
Totals	108	117	120	116	119

Sources: *The Military Balance* (London: International Institute for Strategic Studies, annual); *Jane's Fighting Ships* (London: Jane's, 1981).

* *Jane's* and *The Military Balance* sometimes give different figures. The figures shown represent the author's best estimate where marked by an asterisk.

Table VIII. Strength of the Cuban Navy

cruisers, and 58 destroyers. In addition to the FCTF, another 1300 American ships followed the invading American troops, including 10 battleships, 9 cruisers, 23 destroyers, and 177 gunboats. In all they fired 44,825 shells of 5 inches or more, 33,000 rockets, and 22,500 mortar shells. All the landing area for 1000 yards inland was blanketed with enough 5-inch shells, 4.5-inch rockets, and 4.2-inch mortars to average 25 rounds in each 100-yard square. Simultaneously, aircraft from American carriers attacked Japanese positions. They were aided by a British carrier force, whose planes flew 345 sorties to destroy enemy aircraft on nearby islands. To supply the invasion force required a sealift of approximately 745,000 measurement tons. Japanese forces defending Okinawa numbered approximately 77,200. Less than 10 percent survived the battles. American casualties were also heavy: 12,300 dead. Aircraft and shipping losses were severe on both sides.[4]

In contrast to the American armada deployed against Okinawa, the active U.S. forces available for conventional military operations against Cuba are minuscule. Without disrupting American commitments to other theaters, they include 1 Marine division and its fighter wing, several carriers, and a handful of surface combatants. It is beyond the capability of this brave but slender force to establish control of the air around Cuba. Without adequate air cover, U.S. naval commanders would be reluctant to bring their carriers and large surface combatants into the waters around Cuba. For the same reason the Gulf of Mexico would be closed to U.S. capital ships if hostilities between Cuba and the United States were imminent. It follows, then, that a naval blockade of Cuba could not now be established. A blockade that depended on mines for complete coverage would also fail because of Cuban air, missile boat, and minesweeping capabilities. (See Tables VII and VIII.) The United States committed 180 ships to blockade a far weaker Cuba in 1962. This was less than one-fourth (21.5 percent) of the active U.S. fleet of 835 ships. Twenty years later, the commitment of 180 ships would represent nearly 45 percent of the entire fleet.[5]

In contrast to the American operation against Okinawa in 1945, the forces assembled by the British government to recover the Falkland Islands were much smaller. Even so, they provide a standard of successful amphibious warfare and would probably surpass the American forces that could be committed against Cuba without borrowing heavily from other commands. For the Falklands campaign, the British assembled a task force of 28,000 men and 100 ships. They were opposed by some 12,000 Argentine troops in the garrison on East Falklands and by the Argentine air force and navy operating from the mainland.

Among the 44 warships in the British task force were 2 carriers, 6 submarines, 2 missile destroyers, 6 destroyers, 15 frigates, and 5 minesweepers. Altogether, 42 Sea Harrier vertical/short takeoff aircraft were committed to combat. British losses were 255 dead and 777 wounded. The task force lost 12 ships and 28 aircraft (7 planes and 21 helicopters).

Two of the most important advantages gained by Britain during the fighting were control of the air—by British count 117 Argentine warplanes were destroyed—and control of the sea. After their initial heavy losses, and fearing attack by the nuclear submarines of the British task force, the Argentine navy would not venture beyond the 12-mile coastal safe limit allowed by British commanders and, therefore, was unable to hinder the operation against the Falklands in any significant way. Perhaps the most striking comparison relevant to U.S. strategy in the Caribbean is that in an operation against forces that are much smaller, less potent, and less well trained than those of Cuba, the British deployed a task force whose warships numbered one-fifth the entire surface combat fleet of the U.S. Navy. Plainly, the lesson of the Falklands is that the United States can find the power to coerce Cuba only by wrecking the structure of its military commitments to other vital theaters.[6]

Alternative Policies toward Cuba

United States foreign policy toward Cuba and the nations of Central America must now be made on a basis of U.S. military weakness. But most critics of the Reagan administration will not address this military reality. Rather, they appear to share the view that nothing short of the establishment of a Soviet military base in the region is harmful to U.S. vital interests or would justify U.S. countermeasures. Senator Christopher J. Dodd took this position in his reply to President Reagan's address to a joint session of Congress on 27 April 1983. Charles William Maynes, editor of *Foreign Policy*, expressed this view succinctly in a widely publicized article: "In the final analysis," Maynes argued, "there is only one step these countries could take that would affect the national security of the United States: They could offer military facilities to the Soviet Union."[7]

This might be termed the minimalist definition of U.S. vital interests. It is attractive to critics of administration policy because it seems to postpone indefinitely the day of a showdown. After all, what Latin American revolutionaries would be foolish enough to offer military facilities to the U.S.S.R.? Can we so easily have forgotten Castro's offer and its acceptance by the Soviet Union?

Contrary to the view of the minimalists, the United States must continue to be intimately involved in the defense of endangered countries in Central America precisely because revolutionary disturbances may bring to power radicals who would offer military facilities to the Soviet Union. It is a matter of political common sense. No prudent government throws away military and political allies. To do so would be strategic folly. In addition, it would demoralize all potential U.S. allies, making military showdown with the Soviet Union even more likely than it is at present.

There are other serious problems with the minimalist argument. Apparently, there is nothing to admire about U.S. policy in Central America. To Maynes, there is no difference between U.S. policy in Central America and Soviet policy in Central Europe. "The United States should recognize," Maynes wrote, "that it cannot oppose the Brezhnev Doctrine in Eastern Europe while proclaiming a Reagan Doctrine in Central America." The argument is false. The constant effort of the Carter and Reagan administrations has been to bring about democratic reform in Central America. Admittedly, both administrations were unwilling to overthrow the existing friendly governments in order to achieve rapid peaceful change. But this is prudence rather than a compromise of principle. In any case, the U.S. search for democratic reform, a lessening of repression and violence, and free elections have nothing in common with Soviet policy in Poland, which has been to do exactly the opposite.

The remedy offered by these critics is as flawed as their analysis. They say, if the Soviet Union should attempt to establish a base in Central America, the United States should then ruthlessly wipe it out. Moscow and the nations of Central America and the Caribbean should be

told, as Maynes put it, that any establishment of Soviet military bases in Central America "will trigger an immediate U.S. invasion to wipe out the facility." The statement has a certain appearance of toughness to it. But it must not be taken at face value for at least two reasons. First, as this analysis has shown, the United States has no immediate conventional military options in the Caribbean and Central America. It would acquire them over a period of years, but few of the critics speak in favor of the large-scale conventional buildup that would be needed to get them. In these circumstances, to speak of unilateral American intervention to destroy Soviet bases is to indulge in fantasy.

Second, a Soviet base already exists in the Caribbean, but neither Maynes nor Dodd nor any of the other critics of this school advocate its elimination by military attack. Why should one believe that if another Soviet base were to be established in Central America they would favor its destruction by prompt American military action? Rather than advocating such firm steps, they would be the foremost spokesmen for the peaceful acceptance of the new status quo. Arguments would be found to prove that the base was small or concerned only with strengthening the internal position of the newly installed revolutionary regime. The Soviet action would be shown to be the result of a new power struggle within the Kremlin, a conflict that would be wrongly influenced if the United States took decisive military action in Central America. Interdependence would be cited as proof of the irrelevance of such military outposts. Then, the War Powers Resolution would be recalled, and the strategic defense of U.S. vital interests would be transformed into a constitutional question.

If one rejects such criticisms—and rejection is appropriate—one does not readily find more satisfactory proposals among those basically friendly to the policy of the Reagan administration. Perhaps the most elaborate constructive criticism of administration policy was presented in a monograph prepared in September 1982 for the U.S. Department of State and Air Force.[8] It is a serious, conscientious work whose shortcomings stem less from errors of its author, Edward Gonzalez, than from the limitations imposed on him by his government sponsors. Clearly, he was instructed to confine his advice to measures that could be implemented within the present political and material limits on U.S. policy. Gonzalez was not allowed to suggest, for example, a significant increase in U.S. conventional military capabilities, although he warned that significant military action against Cuba would surpass the present military capabilities of the United States. Given these limitations, it is not surprising that Gonzalez recommended little more than incremental increases in present policy: better surveillance of arms shipments, better propaganda, and intensified economic and diplomatic pressure on Castro.[9] Until such steps are backed by adequate U.S. conventional power deployed in the Caribbean, Cuba will ignore them. The visit of Cuban General Arnaldo Ochoa Sanchez, organizer of Castro's African interventions, to Nicaragua in June 1983 suggested that the Cuban government was planning to increase its aid to the Sandinista regime in disregard of the Reagan administration's opposition.

In addition, Gonzalez has made a critically important error. The goal of U.S. policy, he argued, should be to "Finlandize" Cuba. By his definition, this would mean: "The integrity of the smaller country's political institutions and economic system, and its international autonomy, are observed by the neighboring superpower on the condition that the smaller state respect the superpower's security interests.[10] This is a misleading analogy for at least three reasons. Most important, the U.S.S.R. has gone to war against Finland twice and has annexed part of its territory in order to oblige the smaller country to "respect the superpower's security interests." Although the United States has used force against Cuba, notably during the Bay of Pigs invasion in 1961, it now lacks the military capability to attack Cuba without mobilization. This is not true of the Soviet Union and Finland. Moreover, the Soviet Union has repeatedly used massive

force against the nations of Eastern Europe since 1956 and, in Poland, has continued to threaten invasion.

The Soviet capability to invade Finland is all too credible. To the east of the Finnish-Soviet frontier lie Murmansk and the Kola Peninsula, where the U.S.S.R. maintains one of the largest concentrations of conventional air and sea power in the world. John Erickson has described the Soviet Northern Theater of Operations as:

> . . . one of the strongest—possibly the strongest—complex of bases in the world . . . housing strategic forces capable of and committed to operating far beyond the Soviet periphery plus tactical forces deployed to protect these bases and embodying the capability of seizing and holding any appreciable territorial buffer zone . . . It is this search for security, avowedly defensive in origin, which has led and will continue to lead to overweening presence, impressive tactical readiness and pressure inevitably inducing instability.[11]

Second, Finland has a large Communist party and for the sake of its own internal unity must accommodate all but the most extreme demands from the Soviet Union. As part of the armistice agreement with the U.S.S.R. in 1944, Finland was obliged to legalize the Finnish Communist Party (SKP). Previously the party had operated directly from Moscow. Since the end of World War II, the SKP has been one of the country's four major parties and has repeatedly joined in coalition governments of Finland. Although Finland is a relatively small country, the SKP ranks with the major Communist parties of Europe, usually polling from 16 to 23 percent of the vote. In 1979 its electoral front, the Finnish Peoples Democratic League (SKDL) won 17.9 percent of the vote and membership in the government. The party's share of the vote fell in local elections in 1980. Even so, the SKDL/SKP put three ministers in the new government formed after Mauno Koivisto succeeded Urho Kekkonen as President in January 1982. The foreign policy objective of the SKP in the presidential elections was "to ensure the maintenance and strengthening of ties with the USSR" and to place "top priority on reassuring Moscow that Finnish authorities would adopt no policies constituting a threat to Soviet security."[12]

Not only is there no pro-American equivalent of the Finnish Communist Party in Cuba but the United States has allowed Castro to deport to its shores by the hundreds of thousands the very people who might have forced him to accommodate his policies to the interests of the United States. Finally, by its continuing communization of Eastern Europe, the U.S.S.R. has demonstrated to Finland that the alternative to acquiescence to the demands of Soviet security is most unattractive. This condition has no counterpart in the Cuba-U.S. relationship.

Although they are not spoken as criticism, the arguments of Ambassador Jeane Kirkpatrick in favor of supporting rightist authoritarian regimes also require attention in a survey of viewpoints supportive of the Reagan administration's policies in Central America. In simplest terms Ambassador Kirkpatrick's analysis holds that no sensible nation undermines friendly governments in a vital security zone. She embellishes the argument by observing that rightest authoritarian regimes are not in principle morally inferior to leftist totalitarian ones. But this does not detract from her appeal to political prudence.[13]

Granted, it is imprudent to ignore the dangers of one's friends. Let us even assume, for the sake of argument, that the policy informed by the Kirkpatrick view of revolution in Central America is capable of producing a successful defense of vital U.S. interests. One still encounteres two serious problems. First, the policy inspired by this analysis may be an international success and a domestic failure. The injustice of the existing regimes may be so great and reform of them may be so protracted and uncertain that domestic support for the administration's policy disappears in partisan wrangling and indecision. While the ugliness of the authoritarian right in Central America is all too tangible, the sins of the totalitarian left remain hypothetical as long as such movements fail to win power. Unable to discern the similarity, the American democracy

may choose the lesser apparent evil.

It is, of course, far from clear that the Kirkpatrick view of the revolutionary process will always lead to successful international results. And if it does not, what recourse will the administration have? The metaphor employed throughout the debate on Central America has been that of climbing a staircase—a slow, steady rise in American involvement similar to that followed in Vietnam. A more apt metaphor would be falling off a cliff. If the present policy of military aid, economic development, and diplomacy and propaganda fails, the administration will suffer a nasty spill.

A DIFFERENT policy is needed. It must be one that is based on adequate military support. It must also be a policy that can win the support of the three-quarters of the electorate within the United States who have a grasp of the role of force in international politics. The international test of such a policy would be the return of a political and military environment in Central America favorable to the United States. The domestic political test of such a policy would be its ability to win the backing of those who oppose meddling in the internal affairs of the Latin and Central American republics and who are also alarmed about the dangers of Soviet and Cuban adventurism. Without a strong bipartisan basis, any policy of opposition to Havana and Moscow will fail. Under present political constraints, the United States will be denied more or less indefinitely the ability to intervene directly in revolutionary conflicts in Central America.

This restraint notwithstanding, the problem remains: How to base American foreign policy in Central America and the Caribbean on adequate military power? The solution would be to separate the internal politics from the foreign policies of the governments of Central America. In other words, American policymakers would base their decisions on the external actions rather than the internal ideology of these regimes. This approach has been recommended by observers with views as diverse as Maynes and Gonzalez. However, they have not advocated the additional measures without which such a distinction remains rhetorical. That step is for the United States to acquire the conventional military capabilities—primarily increased air and naval power—necessary to prevent governments in the region from refusing to respect U.S. security interests. At the same time, the United States must maintain its programs of reform and economic and military assistance in order not to squander military and political assets. In some cases these efforts will aid in the appearance of viable, morally attractive regimes. In others they will fail, and hostile, anti-American regimes will come to power.

The problem for the United States is to develop an internationally effective recourse when the failures come, as some surely will. This is not to suggest that U.S. foreign policy problems in Central America and elsewhere in the Third World can be solved by military means alone. Any satisfactory resolution of the problems facing the United States in these areas will require all the resources of diplomacy and economic development that the U.S. commands. But neither will these problems be solved by a foreign policy that is inadequately supported by military power. In this sense, it is possible to identify a rough test of the adequacy of U.S. conventional strength in Central America and the Caribbean. U.S. policy will be adequately supported when the United States is able to impose an air and sea blockade on Cuba without disrupting its commitments to Europe, Asia, and the Middle East.

With such military strength behind its foreign policy, the protection of vital U.S. interests becomes feasible and not, as it is in the critics' world, hypothetical. Without this margin of conventional military power, the United States will remain unable to defend its vital interests in Central America and the Caribbean.

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Notes

1. Major criticisms of the administration's Central American policies may be found in Senator Christopher Dodd's televised speech, text in *New York Times*, April 28, 1983; Wayne S. Smith, "Dateline Havana: Myopic Diplomacy," *Foreign Policy*, Fall 1982; William LeoGrande, "Cuba Policy Recycled," *Foreign Policy*, Spring 1982; Tom Wicker, *New York Times*, April 29, 1983; William Pfaff, *Los Angeles Times*, May 23, 1983.

2. The administration's policy was set forth in National Security Document 17 of 1981 and in "United States Policy in Central America and Cuba through FY 1984," prepared by the National Security Planning Group, an entity established by the President in 1981. Its members are the Vice President, the Secretary of State, the Secretary of Defense, the Director of Central Intelligence, the Director of the National Security Council, and the three top presidential aides—Edwin W. Meese 3d, Michael K. Deaver, and James A. Baker 3d. The text of the National Security Planning Group's document is in *New York Times*, April 7, 1983. The text of President Reagan's address on Central America to a joint session of Congress is in *New York Times*, April 28, 1983. See also the responses to LeoGrande's *Foreign Policy* article by Myles R. R. Frechette, Office of Cuban Affairs, Department of State; and Edward Gonzalez, University of California, Los Angeles, in *Foreign Policy*, Fall 1982.

3. *Los Angeles Times*, June 22, 1983.

4. See Roy E. Appleman, James M. Burns, Russell A. Gugeler, John Stevens, *United States Army in World War II. The War in the Pacific*, volume 2, part II. *Okinawa: The Last Battle* (Washington: Historical Division, Department of the Army, 1948), chs. 1-3, 17-18, appendixes, and tables.

5. The figure for U.S. ships in the blockade of Cuba is from Elie Abel, *The Missile Crisis* (New York: Bantam, 1966), p. 98. For fleet strengths in 1962 and 1982, see *Military Balance, 1962-1963; 1982-1983* (London: International Institute for Strategic Studies).

6. For information on the Falklands campaign, see the article by the former British Defence Minister John Nott in U.S. Naval Institute *Proceedings/Naval Review 1983*, May 1983, pp. 118-39.

7. *Los Angeles Times*, June 12, 1983.

8. Edward Gonzalez, "A Strategy for Dealing with Cuba in the 1980s," R2954-DOS/AF (Santa Monica, California: The Rand Corporation, September, 1982).

9. Ibid., pp. 97-130.

10. Ibid., p. 101.

11. John Erickson, "The Northern Theater: Soviet Capabilities and Concepts," *Strategic Review*, Summer 1976, p. 68.

12. Finis Herbert Capps, "Finland," in Richard F. Staar, editor, *Yearbook on International Communist Affairs, 1982: Parties and Revolutionary Movements* (Stanford, California: Hoover Institution Press, 1982), p. 273; see also Keesing's *Contemporary Archives*, April 2, 1982, p. 31410.

13. Jeane Kirkpatrick, "Dictatorships and Double Standards," *Commentary*, November 1979.

An intelligent Russian once remarked to us, "Every country has its own constitution; ours is absolutism moderated by assassination."

Georg Herbert, Count Münster
Political Sketches of the State of Europe, 1814-1867

to train more than 14,000 Allied pilots.[1] Most of them were from England and France although the graduates also included Chinese, Brazilian, and Dutch pilots. The United States undertook this training program because we were not under daily threat of enemy attack and did not have the poor weather that prevailed over Europe; therefore, training could progress without interruption.

Allied training was provided under the leadership of Major General Henry H. Arnold, then Chief of the U.S. Army Air Corps. General Arnold committed one-third of his training capacity to train foreign pilots.[2] Pilot training was conducted at many locations throughout the United States including Lackland, Lowry, Luke, Maxwell, Moody, Nellis, and Tyndall Air Force bases. Foreign students from diverse backgrounds converged on these bases to be transformed into the backbones of their respective countries' air forces. The training program was very successful, but the unique cultural backgrounds from which the students came posed complex questions for the instructors. How does an American instructor pilot train a Chinese student who comes from a strictly agricultural society? How does one teach air discipline to a student whose only concept of flying stems from his observations of the flight of birds? In addition to these culturally related problems, American instructors had to face a more serious problem, the language barrier. Many students who came to the United States spoke little or no English. Removing this roadblock proved to be a major task and interpreters were acquired to help conduct training. Even then, a great deal of information was lost through translation. In spite of all obstacles, the World War II training program proved vitally important to the war effort of each country that sent pilot candidates to the United States.

The postwar period brought many changes to the Allied pilot training program. Lend-Lease training was terminated in March 1946, which meant the countries receiving training assumed total financial responsibility for that training.[3] As a result, foreign training in the United States has decreased significantly since the end of World War II negated the need for large air forces and countries channeled their financial revenue toward reconstruction. Nevertheless, America's Allies still required a force of well-trained pilots and continued to rely on the United States for assistance. The United States has been training foreign pilots ever since.

Sheppard AFB, Texas, has been used for foreign flight training throughout the last 16 years. A flight school for the Federal Republic of Germany was opened in 1966 upon the arrival of Lieutenant Colonel Hans Opel, Commander of the German Air Force (GAF) Training Group in the United States.[4] German students arrived in 1967, and the GAF program started training more than 200 students a year. The GAF sent experienced German pilots to Sheppard to serve as instructors; however, most of the instructor pilots were from the United States Air Force. Training was accomplished by using approximately 80 T-37s and T-38s that were purchased and maintained by funds from the Federal Republic of Germany.[5] The program proved very successful, and other European countries expressed their interest in it. In 1979, the Netherlands decided to enroll students in the GAF program and also sent a Dutch pilot to be an instructor. Throughout the last ten years, Sheppard AFB has also been used as a training base for student pilots from Central and South America, Africa, and Asia.

The goals of all our foreign training programs have been to strengthen our allies in order to deter another global war and be prepared to win if war should occur. The North Atlantic Treaty Organization (NATO) exists to achieve these same goals. The worth of any military organization is based on its ability to train and maintain professional soldiers in any arena of combat.

In 1970, the EuroGroup established the [Euro-training Subgroup] as a forum for the exchange of views of training matters in general.[6] This subgroup was expanded in 1971 into the Euro-NATO Training Group. In 1973, the idea of a

NATO-wide flying program was adopted by the Euro-NATO training—Air Force Sub-Group (ENT-AFSG). A subsidiary of Euro-NATO Training, the ENT-AFSG formed a multinational working group from potential participating nations (Belgium, Canada, Denmark, Germany, Greece, Italy, the Netherlands, Norway, Portugal, Turkey, the United Kingdom, and the United States) to study the feasibility of establishing a multinational pilot training program. The ultimate objective would be a NATO-wide air force accustomed to flying and working together using the same concepts, tactics, and rules of flight.

The United States was finally selected as the best location for at least the next ten years. As mentioned earlier, our weather is consistently better than Europe's. Additionally, we have been in the business of large-scale national and international flight training longer than any other country. Furthermore, the United States has greater resources available in terms of facilities, airspace, and instructor pilots.

In 1980, Sheppard AFB was selected as the logical USAF base for ENJJPT. The 80th Flying Training Wing at Sheppard AFB had the capacity to expand its flying operations to meet the needs of the ENJJPT program and a sizable cadre of American, German, and Dutch instructors to begin the program. The German Air Force T-37s and T-38s could be turned over to ENJJPT, and the GAF syllabus needed only minor modifications to make it suitable for the program. The 80th Flying Training Wing also had an operational PIT (pilot instructor training) program that could expand to meet ENJJPT's instructor requirements. A final point worth mentioning is that the German Air Force program at Sheppard enjoyed an excellent rapport with people in the surrounding communities. Experience gained through past foreign training programs at Sheppard helped the 80th Flying Training Wing anticipate and solve the problems it faced as it expanded to become the only multinational organization of its kind.

In February 1980, representatives of the twelve NATO countries met at Sheppard to set operational policy for ENJJPT. A variety of issues concerning finances, student quotas, support facilities, legal arrangements, housing, etc. had to be resolved among all twelve nations. In December 1980, ministers of defense from each country met in Brussels, Belgium, to sign the memorandum of understanding. After the Brussels meeting, plans were completed to ensure ENJJPT's success, and each country began selecting personnel who would ultimately be the ones to make ENJJPT work. ENJJPT was under way. It is a truly joint cooperative, cost-sharing project with a NATO-developed syllabus, a joint NATO staff and faculty, and facilities dedicated to NATO.

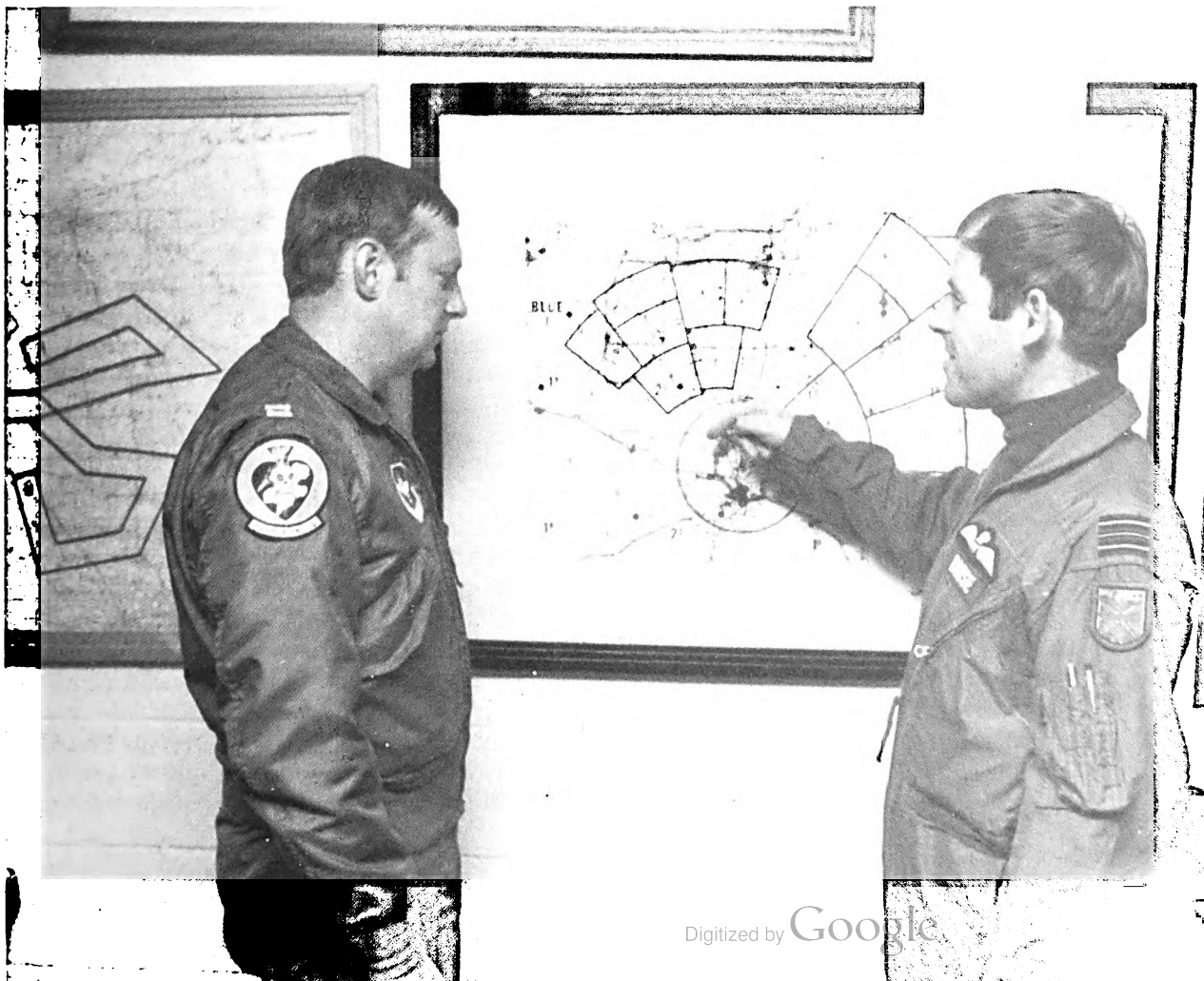
The key ingredient for a successful pilot training program is found in quality instruction. Instructors for ENJJPT are carefully screened and selected according to their military records. Many European instructors chosen for ENJJPT have between 10 and 15 years of experience in fighter aircraft. American instructors include top undergraduate pilot training (UPT) graduates plus a cross-section of experienced pilots from all major weapon systems. The 80th Flying Training Wing enters all instructor trainees into its own PIT course in lieu of the standard American PIT course at Randolph AFB. Although the local PIT course at Sheppard is the same length as PIT at Randolph, the course is specifically tailored to prepare a pilot to be an ENJJPT instructor.

The ENJJPT UPT course is significantly different from standard American UPT. Among other things, the students are among the best qualified from each NATO country. For example, only 5 percent of German applicants and 8 percent of qualified American UPT applicants are chosen. Other nations select students in an equally stringent manner. Then, during the 55 weeks at Sheppard AFB, students complete approximately 450 hours of classroom academics, 260 hours of actual flight instruction, and 115 hours of procedural and ground training. The ENJJPT syllabus has a strong emphasis on low-level navigation and formation. During the T-37 phase, each student solos in low-level navigation

and formation. During T-38 training, two of the low-level navigation sorties are flown as a flight of two aircraft at an altitude of 500 feet. During the formation phase, each T-38 student receives a flight evaluation in formation flights of two and four aircraft. Emphasis in formations of four aircraft is placed on the basic tactical maneuvers that students will use throughout their careers in fighter aircraft.

The first UPT class consisting of 4 Norwegian, 15 American, and 17 German students actually began training on 1 October 1981. The same day pilots from Canada, the Netherlands, Norway, Denmark, Belgium, and the United States entered instructor training. Every six weeks a new class of 36 NATO students enters training. ENJJPT's second student class was composed of Norwegians, Dutch, Danes, and Americans. The second PIT class included pilots from Norway, Turkey, Portugal, Great Britain, and the United States. Throughout fiscal year 1982 students arrived from all countries except Canada, Greece, Portugal, and Italy. Until now Italy has not participated; however, Italy is entering the program in FY84 with UPT students and instructors. Some of the nations (Norway, Netherlands, Denmark, Germany) will depend on the ENJJPT program to train all of their fighter-oriented students. Other nations expect to retain their own

The quality of instruction is a key factor in making any training program a success. The USAF uses some of its best pilots in the Euro-NATO Joint Jet Pilot Training effort. Here an instructor answers a Royal Air Force pilot's questions about local flight procedures.



The Northrop T-38 Talon, standard advanced trainer in the USAF, serves in many of the inventories of our NATO allies. Pilots from several NATO countries will have had extensive experience in the fighter versions of this aircraft, the F-5 Freedom Fighter and the Tiger II.

flight schools and will depend on ENJJPT to train only a portion of their UPT students (subject to further consideration). The full impact that ENJJPT will have on the NATO alliance awaits the test of time, but some observations have already become apparent within the 80th Flying Training Wing.

From the viewpoint of an instructor, the most significant observation concerns language. Students arrive with a good working knowledge of the English language in both reading and comprehension. Although their vocabulary may sometimes be limited and flying opens a whole new chapter of words and phrases, students aggressively tackle the challenge to master the language. This is no small task since one publication alone, the Department of Defense General Planning document, for example, contains hundreds of aeronautical terms that students must learn. Learning new terminology in an international environment such as ENJJPT does have its humorous moments. For example, a recent radio conversation between Fort Worth Center and a student pilot went as follows:

FORT WORTH CENTER: "Snort 34, when will you depart your area, sir?"

STUDENT (replying in a heavy accent): "In roundabout two minutes."

FORT WORTH CENTER: "Was that two or ten, sir?"

STUDENT: "Two minutes!"

FORT WORTH CENTER: "I can't understand you, sir, two or ten?"

STUDENT: "Two; one plus one!"

In spite of occasional misunderstandings, students are becoming remarkably adept in handling radio calls and many other flying terms associated with the program.

Another significant observation deals with the sense of comradeship created among the students by the intense pressure of training. Students have been transplanted from unique backgrounds into a common environment that is equally demanding for all. The "melting pot" effect, that has characterized America's history continues today in ENJJPT. Each ENJJPT class is sharing

a year's worth of hard work, long days, and the ultimate joy of success. Their common goal to become fighter pilots is enabling these students to overcome the cultural and social barriers of their varied backgrounds.

The ENJJPT Pilot Instructor Training program brings together the same cultural backgrounds but under different circumstances. The trainees entering PIT are experienced pilots; many have performed prior duties as instructors in a variety of NATO fighter aircraft. Their rank ranges from second lieutenant to colonel. The challenge in PIT is for each pilot to tailor his instruction and standardize his grading practices to the level of a UPT student. The diverse backgrounds of flying experience among PIT trainees provide an inherent advantage in the ENJJPT program. The European instructor trainees bring with them valuable experience from flying in European weather conditions under European flight rules in NATO fighter aircraft. The variety of techniques and practical knowledge each instructor has learned from his previous flying makes a significant contribution to the ENJJPT program.

As in the ENJJPT Undergraduate Pilot Training program, language and communication differences have required attention, but they are generally viewed as an opportunity to interact. American instructors face the challenge of communicating without overusing colloquialisms. A U.S. instructor would accomplish little if he debriefed an allied student's landing by saying, "You started out in the ball park, but when you landed we almost bought the farm." Even the three English-speaking NATO countries (United States, Canada, and the United Kingdom) find themselves separated at times by a common language. For example, if a British pilot requested an "overshoot, visual circuit with undercarriage for a roller," and after landing asked for a "bowser," he has requested a low approach, followed by a closed pattern, gear down for a touch and go. After landing he wants to refuel—everyone's vocabulary grows in ENJJPT.

When we compare ENJJPT with its predecessor flight program during World War II, the most significant achievement has been to reduce the problems caused by the language barrier. "ENJJPT English" is a way of life. Furthermore, the cohesion already apparent within ENJJPT with its people working together is particularly significant when one considers the political differences and problems between some of the participating nations in the past. The Warsaw Pact will probably never enjoy the spirit of unity demonstrated within ENJJPT. But what of ENJJPT's future?

Foreseeable problems are now being faced so that ENJJPT will not only survive but will fulfill the aims and goals envisioned by each parent country. Within the working level of ENJJPT, the 80th FTW is becoming a uniquely organized unit. An American second lieutenant instructor may have a Norwegian flight commander, a Dutch section commander, a Danish squadron commander, a German deputy commander for operations, and an American wing commander. That may sound nice to the ambassador of each country, but the young instructor may have a hard time getting help from his supervisors for a serious personal problem. In matters pertaining to pay, base housing, promotion, career planning, etc., he may not receive much help from his immediate supervisors because they probably know less about the USAF system than he does. Likewise, most American supervisors know little about the career-planning decisions that other nations' officers must make. To help deal with such problems, each country has a senior national representative (SNR) who assists in meeting needs of personnel from that country. There is help available to the junior officer, which may come from his immediate supervisor or from his SNR. Personal and professional matters all are dealt with tactfully and diplomatically. In a sense, everyone in the program is an ambassador.

Probably the most significant concern each country has in the ENJJPT program is in the product. Each graduating class is being carefully evaluated by everyone involved. The abilities of

the ENJJPT graduates are directly dependent on the specific maneuvers they were taught coupled with the judgment that was imparted to them while performing such maneuvers and the minimum standards they had to achieve in order to graduate. Twelve different countries like those in ENJJPT would have 12 different courses of training if each country conducted its own training. For example, in the United Kingdom the Royal Air Force flight school introduces its pilots to low-level navigation at an altitude of 250 feet above ground level when a student is in his initial phase of flight training. Additionally, they do not assign aircraft individually to a block of airspace for training as the American UPT bases do. Instead, their training takes place with all aircraft assigned to operate within the same area. (It certainly teaches a student to watch where he is going.) It is common to hear an instructor say, "Well, in my country we do it this way." The point is that ENJJPT must be a compromise. The program must take advantage of every country's experience and not lose the value of separate programs through compromise.

The current ENJJPT syllabus was derived from the previous German Air Force program at Sheppard. In 1980 each country's representative on the ENJJPT steering committee approved adoption of the GAF syllabus to initiate the ENJJPT program. Since that time instructors and SNRs have recommended changes to the syllabus, which are presented to the ENJJPT steering committee during its semiannual meetings. These circumstances are the opportunities that make ENJJPT both worthwhile and unique. How they are handled by the steering committee and within the 80th FTW impacts the whole ENJJPT concept. Program success is being realized at the worker level, within the wing, and the dedication and commitment of all ENJJPT personnel are very evident. The overall future of ENJJPT depends on its ability to produce a pilot that meets the needs of each country's defense, but there is one final consideration: ENJJPT's future is also dependent on the future of NATO.

In his inaugural speech at the ENJJPT commencement ceremony, United States Senator John G. Tower of Texas said, "I wish politicians could emulate the splendid international cooperation that is displayed by the military leadership [which has enabled NATO to] survive the political problems that have afflicted NATO from time to time." As long as NATO members share the common commitment to deter tyranny and aggression in Western Europe, ENJJPT stands to contribute to that goal.

If deterrence fails, ENJJPT-trained pilots will be the first line of defense. As General Lew Allen, Jr., recent USAF Chief of Staff, said,

> In the critical early days of any conflict that might come, the skill of NATO fighter pilots may well determine the tide of battle. The NATO allies must fight as one if war should come. Fighter pilots must react in a similar way; they must understand the principles of flying, of tactical fighter flying, in a similar fashion. And there's no better way to start that cohesion, that common basis for integral combat, than this initial joint training.[7]

That statement summarizes the purpose of the world's most unusual flying training program: Euro-NATO Joint Jet Pilot Training, ENJJPT!

Sheppard AFB, Texas

Notes

1. Air Training Command Historical Monograph, *History of Foreign Training in ATC 1941-1946*, pp. 14-33.
2. Ibid., p. 9.
3. Ibid., p. 37.
4. *History of the 3630th Flying Training Wing*, 1 January-30 June 1966, p. ix.
5. *Sheppard Air Force Base History, 1 January-30 June 1967*, p. 37.
6. *The Eurogroup*, published by the Eurogroup, issued by the NATO Information Service, B-1110 Brussels.
7. General Lew Allen, Jr., Speech at ENJJPT Commencement, 23 October 1981.

IRA C. EAKER ESSAY COMPETITION

Air University is pleased to announce the fourth annual Ira C. Eaker Essay Competition. Its purpose is twofold:

—First, to honor the achievement of Lieutenant General Ira C. Eaker and his colleagues, aviation pioneers whose courage and innovative spirit laid the foundation for American greatness in aerospace.

—Second, to memorialize the indomitable martial spirit of these men, a spirit that nourishes the perception of military service as a calling.

Topic areas for the essay competition are professionalism, leadership, integrity, ethics, strategy, tactics, doctrine, esprit de corps, or any combination thereof.

ENTRY RULES

—Essays must be *original* and *specifically* written for the contest. Only one entry per person may be submitted.

—Entries must be a minimum of 2000 words and a maximum of 4000 words.

—Essays must be typewritten, double-spaced, and on standard-size paper.

—The competition is open to all active (duty) members of the regular Air Force, Air Force Reserve, Air National Guard, Air Force Academy and AFROTC cadets, and Civil Air Patrol.

—A separate cover-sheet should include the essay title, author's name, rank, duty/home address and duty/home phone numbers. The author's name must not appear on the essay itself. The title should be at the head of the first page.

—Send entries to the Editor, *Air University Review*, Building 1211, Maxwell AFB, Alabama 36112. All essays must be received or postmarked by 1 June 1984. For further details, call AUTOVON 875-2773, Commercial (205) 293-2773.

—First-publication rights on all essays belong to *Air University Review*.

First, second, and third-prize medallions will be awarded as well as $2000, $1000, and $500 United States Savings Bonds. Distinguished Honorable Mention and Honorable Mention certificates will also be awarded. Winning essays will be published in the *Review*.

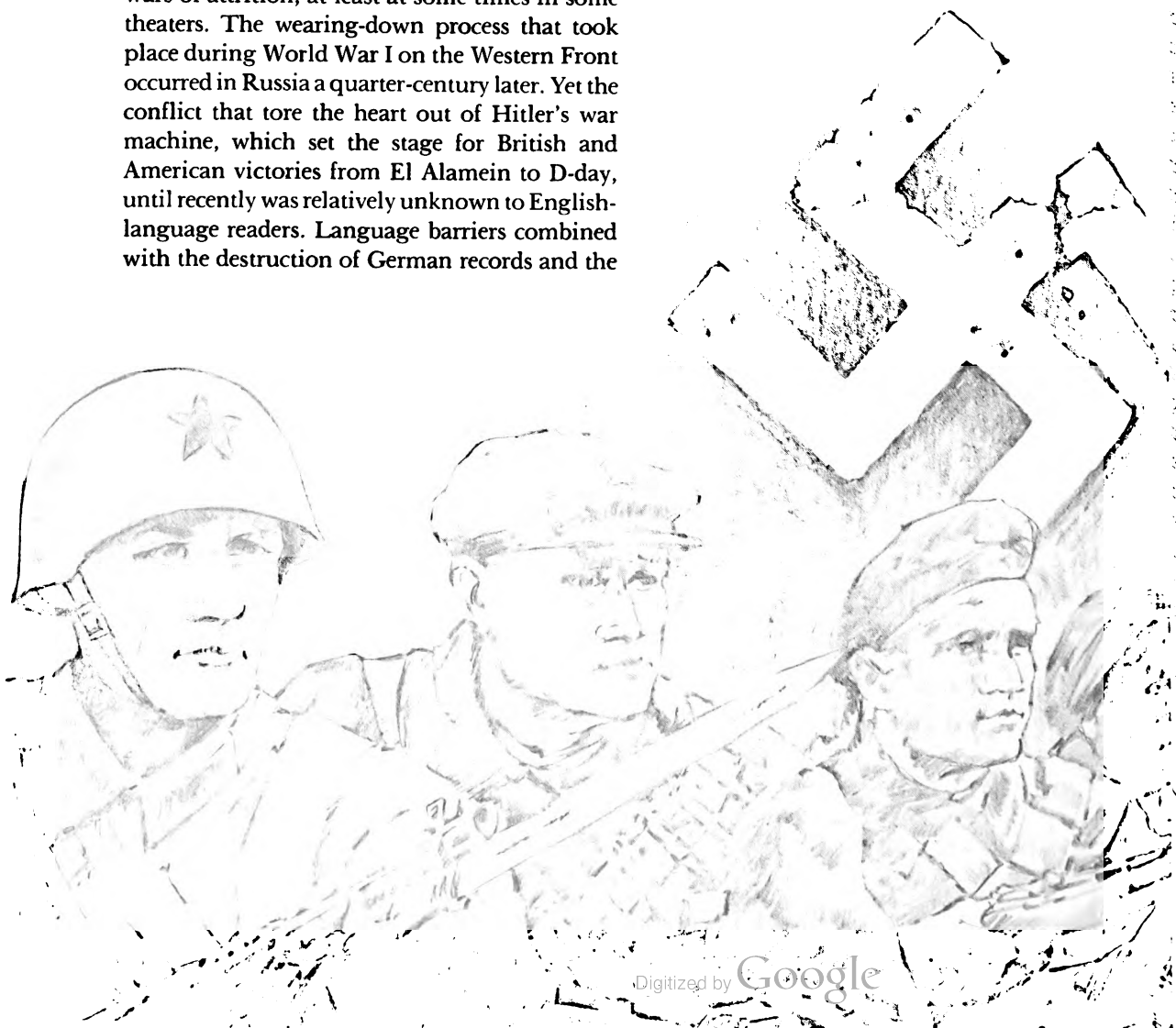
The Ira C. Eaker Essay Competition is funded by a permanent grant from the Arthur G. B. Metcalf Foundation through the United States Strategic Institute, Washington, D.C.

R books, images, and ideas

FIGHTING THE RUSSIANS: AN ULTIMATE TEST?

DR. DENNIS E. SHOWALTER

TOTAL wars, as waged by industrial nations in the preatomic era, have tended to become wars of attrition, at least at some times in some theaters. The wearing-down process that took place during World War I on the Western Front occurred in Russia a quarter-century later. Yet the conflict that tore the heart out of Hitler's war machine, which set the stage for British and American victories from El Alamein to D-day, until recently was relatively unknown to English-language readers. Language barriers combined with the destruction of German records and the



reticence of the Russians to create an impression of prehistoric beasts grappling in a nightmare landscape composed of equal parts of snow, dust, and mud. The very scale of the fighting seemed to beggar description on any but the most general terms.

IN this context, the memories of German generals with a literary bent acquired disproportionate importance. Autobiography has been aptly described as the life story of a hero by one who knows. The Wehrmacht's commanders had to perform the dual task of explaining a lost war while justifying their service in the ranks of a hideous dictatorship. By and large the result was a tendency to devote several hundred pages to the glory days of Operation Barbarossa, then plug in a chapter deploring Hitler's interference with one's military genius, and finally skip lightly over the three years that brought the Russians from the Volga to the Elbe.[1] Yet despite their shortcomings, these works remain a major source of operational information on the Russo-German War.

First published in English in 1958, Erich von Manstein's *Lost Victories* has contributed much to its author's controversial image.† Some accounts make a virtual cult figure of him: the archetypal decent German who obeyed Hitler grudgingly the better to serve the men under him; the brilliant staff officer who designed Germany's plan of campaign against France in 1940; the master of offensive operations whose genius almost rescued the 6th Army from Stalingrad; the man who held Germany's front together in southern Russia for more than a year against hopeless odds. On the other side of the coin are descriptions of a Manstein whose military gifts were not matched by a corresponding force of character. This Manstein sanctioned and endorsed atrocities against Russia's Jews that earned him a sentence as a war criminal. This Manstein, early aware of the military conspiracies against Hitler, temporized for the sake of his own career and even after Stalingrad continued to walk the trimmer's path. This Manstein developed such inflated ideas of his own capacities that as late as 1944 he believed Germany could win the war if he were only made commander in chief.[2]

A rereading of this unaltered reprint of the memoir's original English version suggests that Manstein's professional achievements matched his character almost exactly. It is impossible to question his operative gifts. No high commander in World War II fulfilled a broader spectrum of responsibilities so brilliantly. The staff planner of Poland and France became the dynamic leader of a Panzer corps in the first stages of Operation Barbarossa. Transferred from Leningrad to the Crimea, Manstein assumed command of an army undertaking one of the war's most complex sieges. His conquest of the peninsula after ten months of brutal head-on fighting demonstrated that he could be patient as well as dashing, that he could use artillery as well as tanks. As commanding general of Army Group Don, later Army Group South, he played the Russians as a matador plays the bull, multiplying inadequate forces by his virtuosity in handling reserves, allowing local Russian breakthroughs to overextend themselves, then checking them by well-timed counterattacks.

Manstein was an optimist. Even after Stalingrad he argued that a draw was still possible on the Eastern Front. In particular, the demonstrated weakness of the Russian high command justified a policy of taking big risks for big gains. Indeed, much of Manstein's growing hostility to Hitler reflected his disgust with the Nazi leader's lack of strategic sense. Manstein asserted that

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†Erich von Manstein, *Lost Victories*, reprint edition, edited and translated by A. G. Powell, foreword by B. H. Liddell Hart, introduction by Martin Blumenson (Novato, California: Presidio Press, 1982, $18.95), 574 pages.

even Kursk was too limited in its conceptualization and its objectives to be worth the risk. His repeated insistence that only an elastic defense could maintain German's position in Russia eventually cost him his command.

One of Manstein's sharper critics says that he achieved "little" except for planning the French campaign, overrunning the Crimea, and containing the Russian offensive in the spring of 1943.[3] It seems reasonable to respond that any one of these feats would be quite enough for most soldierly careers. Combined, they ensure Manstein's place among World War II's great captains. Yet at the same time Hitler's repeated criticisms of Manstein's tunnel vision cannot be dismissed out of hand. Manstein was an able technician but not a commander whose genius transcended the military limits imposed by geography and diplomacy. Ultimately he accepted these; he did not challenge them.

In this context Manstein's repeated descriptions of himself as a man willing to push Hitler to the limit and to disobey him when necessary are not mere window-dressing. But his arguments that he was to busy fighting a war to perceive Hitler's true nature, and that in any case a general no more has the luxury of resigning than does a private, are less convincing. The essential difference in this respect between the general and the common soldier is that the former is tested morally rather than physically. When a senior officer's personal integrity or professional judgment are unacceptably challenged, it is at least arguably his duty to refuse compliance whatever the consequences. Whatever his motivations, Manstein remained a step below the highest levels of his craft morally as well as technically. Is it too extreme to suggest that his limitations in one area reinforced as well as reflected his shortcomings in the other? And in that context, is it inappropriate to note that resignation was not an acceptable option for the U.S. Army's generals in Vietnam despite their relatively high level of substantive dissent from administration policies?[4]

THE most favorable description of *Great Battles on the Eastern Front* is that it is an extended working paper.† Trevor Dupuy's Historical Evaluation and Research Organization has developed a complex and controversial method of applying statistical analysis to military history. Using mathematical formulae, Dupuy claims the ability to determine the outcome of battles future as well as battles past. Thus far the approach has been primarily illustrated with examples from Northwest Europe and the Italian front.[5] Its application to the Russo-German War seems only a matter of time. As an apparent first step, Dupuy and his current associate Paul Martell offer a book consisting largely of statistical tables and orders of battle based on Soviet sources.

Much of the material is intrinsically worthwhile. Buffs as well as scholars have had cause to bemoan the scarcity of such information on the Red Army. The exact operational deployment of individual fronts (the Soviet equivalent of a Western army group) at Kursk, or during the Battle for Berlin, can be useful knowledge. Comprehensive data on the tactical density of Soviet artillery and armor in key engagements are also welcome, though I would wish to learn whether the infantry's 82-mm mortars are systematically included in the figures listed under "guns and mortars." Interesting, too, is the material on the organization of the 2nd Air Army in July 1944—among the few detailed breakdowns of the Russian tactical air arm at its cutting edge.

Unfortunately, however, the data are presented in what amounts to a raw state. The lists

†**T. N. Dupuy and Paul Martell, *Great Battles on the Eastern Front: The Soviet-German War, 1941-1945* (Indianapolis and New York: Bobbs-Merrill, 1982, $14.95), 249 pages.**

and tables are too often meaningless in the absence even of general information on comparative organizations and doctrines—the sort of thing that war-gamer James Dunnigan did effectively in *War in the East.*[6] What is the use of knowing how many rifle divisions were in the first echelon of the 2nd Byelorussian Front at the start of the battle for Berlin if one remains ignorant of what a rifle division was or should have been? The number of tanks supporting the Steppe Front on 10 August 1943, as compared to 10 July 1943, means relatively little without an accompanying sense of how they were organized and what their formations were supposed to do. Dupuy and Martell appear to have adopted a variant of the common Soviet belief that statistics convey meaning in themselves.

The problem is made worse by the nature of the text. It amounts to little more than a series of battle histories, based heavily on Russian sources and incorporating neither analysis nor commentary. The authors make no significant effort to show how the statistical evidence they have so painfully compiled influenced the course of operations. Even more surprisingly, Dupuy and Martell begin their work by an eloquent description of the German performance against such odds as one of history's greatest feats of arms. Then they refuse to tell their readers anything significant about how the Germans did it. What factors—perhaps nonquantifiable factors—enabled the Mansteins, the Models, and the men they led to hold off the Russian masses?

IN *Fighting the Russians in Winter: Three Case Studies,* Allen Chew is less pretentious and more useful than *Great Battles on the Eastern Front.*† Number 5 in the excellent series of *Leavenworth Papers,* this work juxtaposes a series of company-scale actions fought outside Arkhangelsk in 1919 by British and American troops, the 1940 destruction of a Russian rifle division by a Finnish task force, and the winter campaign of 1941-42. Whether he is discussing platoons or armies, Chew's conclusions are the same. Equipment, acclimatization, and training are the keys to winter warfare. Technical or numerical superiority can be irrelevant, or indeed a positive handicap, as the Russians 44th Division learned in 1940. Northern winters confer a disproportionate superiority on the defense and significantly extend the time required to perform even simple tasks, whether on personal or formation levels.

Chew accurately criticizes the failure of Germans and Russians alike to draw conclusions from the experiences of 1918-19. Planners in both armies simply ignored the implications of winter conditions or expected that morale and general professional competence would enable their soldiers to cope. The school of experience charges notoriously high tuition. But as Chew demonstrates, the Russian army by 1941 had at least begun making institutional adjustments to its own climate. Had he chosen to enlarge his work, he could have shown that the Germans quickly learned their own lessons, developing increasing sophistication in winter combat as the war progressed.

Chew's work invites more detailed consideration of the role of training, as opposed to heritage, in preparing men and units for winter warfare. The Finnish troops that destroyed the 44th Division, for example, included a large number of men with directly relevant skills: skiers, hunters, and lumberjacks. Fighting on their home ground, they reduced a motorized division of Ukrainians to a static target in a matter of days. It is not, however, usual to find a defending force so well adapted to its operational environment by virtue of the civilian occupations of its per-

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†Allen F. Chew, ***Fighting the Russians in Winter: Three Case Studies, Leavenworth Papers,* No. 5 (Fort Leavenworth, Kansas: Combat Studies Institute, 1981), 51 pages.**

sonnel. Are elite, specialist units necessary under arctic conditions, or can the requisite operational skills be acquired by any good battalion? In this context it is unfortunate that Chew's third case study was a general discussion rather than a regimental-scale operational analysis like his first two. A treatment of the functions and limitations of air power under extreme winter conditions would also have been welcome.

Nevertheless, *Fighting the Russians in Winter* resembles the other books discussed in this review. All three incorporate warnings for an America whose geographical and political circumstances demand the ability to cope with a broad spectrum of enemies, climates, and terrain. Wars have a habit of being fought in unlikely and unpleasant places. They have a way of defying even the most sophisticated efforts of reducing them to quantifiable data. And above all they place demands on character as well as professionalism. No military system favoring the one-dimensional specialist, the man who executes but does not reflect, can ultimately expect to produce either great captains or competent commanders.

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Notes

1. Gotthard Breit, *Das Staats-und Gesellschaftsbilder deutschen Generale beider Weltkriege in Spiegel ihre Memoiren* (Boppard, 1973) is a useful comparative survey of German military memoirs.

2. As introductions to the Manstein question, the essay in *Nie Ausser Dienst. Zum achtzigsten Geburtstag von Generalfeldmarschall Erich von Manstein* (Köln, 1967) are less sycophantic than might be expected. Andreas Hillgruber's discussion of Manstein and his myth is particularly useful. Albert Seaton, "Von Manstein," in *The War Lords* edited by Michael Carver (London, 1976), pp. 231-43, is more critical.

3. Albert Seaton, *The German Army, 1933-1945* (New York, 1982), p. 216.

4. This point is statistically established in Douglas Kinnard, *The War Managers* (Hanover, New Hampshire, 1977).

5. Trevor N. Dupuy, *Numbers, Prediction, and War* (New York, 1979).

6. James Dunnigan et al., *War in the East: The Russo-German Conflict, 1941-45* (New York, 1977).

THE BROKEN EAGLE: THE LUFTWAFFE AND HISTORY

DR. EDWARD L. HOMZE

THE gifted young English historian Matthew Cooper, who earlier wrote a lively account of the German Army, has now turned to the Luftwaffe. His considerable skills as writer and researcher are matched by the difficulties involved in trying to untangle the history of the Luftwaffe. The youngest and most favored branch of the Wehrmacht, the Luftwaffe was largely responsible for many of the successes of the Wehrmacht as well as its failures. In many ways analyses of the rises and falls of the Luftwaffe are better barometers of the Nazi regime than are studies of any other of its military institutions. The characteristics of the regime can be seen clearly in the youthful air force, since the Nazis literally moulded it from its inception to its fiery death.

The focus of *The German Air Force 1933-1945*

is slightly different from most of the recent publications on the Luftwaffe.† Cooper concentrates on the strategic development of the Luftwaffe, an area that, according to the author, has been missed by others. The weapons, tactics, and combat experiences of the Luftwaffe have not been ignored but are seen in relationship to the strategic development of the Luftwaffe. That is one of the many strengths of this book. Cooper sees the Luftwaffe in its totality. The interdependence of technology, the economy, political judgments, and military doctrine constitute the story he is trying to tell. This is what he means by strategic development.

In the first three chapters, Cooper quickly surveys the prewar period and concludes that the Luftwaffe of 1939 was a tactical air force largely because of the technological and economic realities of the period. The leadership of the Luftwaffe was planning a balanced air force consisting of strategic as well as tactical forces, but time ran out on them. Cooper notes with approval the Luftwaffe's decisions to skip development of the first generation of heavy bombers in favor of an advanced bomber and the interim solution of dive-bombing. He is also sympathetic to the 1938 decision to concentrate production on four principal aircraft: the Bf 109, Me 210, Ju 88, and the He 177. Unlike most of the postwar critics of the Luftwaffe, Cooper argues that these were sound decisions arrived at through consensus by the leadership. He even has some kind words for Ernst Udet's handling of the Technical Office and its selection of aircraft models, although he agrees that Udet and his staff were not capable of handling their many tasks.

In the prewar chapters, he explains the flaws in the command structure and the growing tensions among Hermann Göring, Erhard Milch, Udet, and the professional military that were to plague the Luftwaffe during the war. Not much is done with how the political climate of nazism influenced the Luftwaffe, nor does Cooper address the arguments of many Luftwaffe generals, after the war, that they were kept in the dark about Hitler's grand strategy. Since they were not privy to the Führer's ultimate goals, they did not know what kind of air force to build. Should it be built to war against France, or should it be built to attack England or Russia? Obviously that would make a difference. Without tight control and guidance of the political leadership, the Luftwaffe just grew—battling with the army and navy for a bigger share of the limited resources but without a clear idea of its intended use. That the Luftwaffe performed so well in the blitzkrieg mode was largely accidental, Cooper would agree with a recent work of Wilhelm Deist[1] that by the time the Luftwaffe concentrated on a blitzkrieg type of operation the blitzkrieg was a thing of the past. In reality the Luftwaffe was like most of the other prewar air forces, a hybrid—part strategic and part tactical. Reflecting the Douhet tradition, the Germans wanted a strategic Luftwaffe—or at least make it appear to be a strategic air force—but the best they could afford was a tactical air force. As the war was to show, the Luftwaffe was a failure at strategic bombing but successful with interdiction and close support. Probably just as important as its structure and doctrines, the Luftwaffe was saturated with an "offensive-minded" philosophy that was hard to reverse during the war. The feeble efforts at night fighting early in the war and the slowness in switching over to fighters later in the war are two examples of this persistence of offensive-mindedness that would cost the Luftwaffe dearly.

Once the war started, the shortcomings of the Luftwaffe became evident. Although it performed well in the early campaigns in Poland and France, the Battle of Britain was another story. Cooper thinks the Luftwaffe could have won it had the Germans persisted in their origi-

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†**Matthew Cooper, *The German Air Force 1933-1945: An Anatomy of Failure* (London: Jane's, 1981, $27.95), 406 pages.**

nal strategy of pressuring the Royal Air Force. Fighter Command was on its last leg, but according to Cooper, "It was weaknesses in the Luftwaffe's own conduct of the Battle that ultimately prevented it from gaining the victory within its grasp."(p.160) The Luftwaffe had air superiority over at least southeast England in support of a seaborne invasion.

Despite the loss over Britain, the real turning point in the fortunes of the Luftwaffe was the invasion of Russia. Germany now was fighting a three front aerial war that simply outstripped its limited resources. The faults in the German production, training, and organizational programs became evident, but the leadership failed to react quickly enough. Just as the French seemed to be a step behind the Germans in 1940, the Germans seemed a step behind the Allies during the second half of the war. The Germans were too slow in building their night fighter force, even slower in gearing-up their production. Hard-pressed on all fronts, German leadership turned conservative, preferring "a bird in the hand to two in the bush" approach. As a result, older proven aircraft were kept in production longer than they should have as the leadership was afraid to gamble on newer, more-advanced models. Of course, given their experience with the Me 210 and the He 177, this cautious approach is understandable, but every country during the war had flops. The difference was that Germany could not afford them as much as the Allies.

In other areas the German leadership revealed its slowness and caution. After the failure of a quick victory in Russia, the Luftwaffe had to abandon its concept of a "balanced air force." Concentrating on combat aircraft, they relegated the production of trainers and transports to a secondary role with dire results. More and more the Luftwaffe in Russia became tied to ground-support roles, and what little reserves it had were often switched frantically from one sector to another or one major front to another like a fire brigade. "Too little and too late" was a refrain as common to the Germans after 1942 as it was to the Allies before 1942.

In most other areas still hotly debated, Cooper's judgment is usually very sound. For example, on the issue about the slow introduction of the jet fighter, he does not blame Hitler so much as the Luftwaffe's leadership. They were too slow in pushing the program. As Cooper constantly pointed out, the bringing into operational service of a new aircraft is a finely tuned process between military requirements, industrial capacity, and technology. A mistake or even a change in goals in any of these areas has an immediate repercussion on the others. The German leadership never mastered this art; parenthetically maybe nobody ever masters this art, but at least some do better than others. In this case Cooper would agree that the Germans did not do as well as the Allies, as the Me 210, He 177, Bomber B, and the jet fighter prove.

In two areas Cooper's views are open to criticism. First, he does not see how the organizational structure and training of the Luftwaffe's leadership created a mentality that lent itself to disaster. As Horst Boog recently pointed out in his seminal study on the Luftwaffe's leadership,[2] the doctrine, training, and, of course, the promotions to higher ranks encouraged the development of a Luftwaffe mentality that emphasized combat over all else. Technological and industrial requirements were downgraded just as the officers who served in these areas were handicapped by the system. The results were obvious—a further unbalancing of the Luftwaffe. In what is probably the best history of the air war, R. J. Overy argues the same thing;[3] that the western Allies developed their balanced use of all forms of air power largely because of the circumstances they found themselves in, while the Germans and Russians did not. Second, Cooper does not address the problem of how nazism affected the Luftwaffe. The Nazi system, freewheeling, disjointed, personality dominated, without clearly defined goals (except for racism and expansion) had a devastating effect on the economy as well as the military of Germany. Under the Nazis, there just was no overall guiding concept for the air industry or the Luftwaffe. The Nazis' scorn of

methodical approaches, their impatience with experienced experts, and their incessant search for easy, "quick-fix" solutions had a corroding effect on the Luftwaffe during the war. The Nazis' flair for activism and improvisation may have been a success in the political realm, but it was a failure in the more prosaic realm of building an industry and an air force to fight a world war.

Despite these criticisms, Cooper has written the best popular history of the Luftwaffe during World War II. It is a balanced, thoughtful, and interestingly written book that is every bit as good as his earlier work on the German Army.

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Notes

1. Wilhelm Deist, *The Wehrmacht and German Rearmament* (Toronto: University of Toronto Press, 1981). Deist is a member of the Institute for Military Historical Research at Freiburg im Breisgau which is currently doing a projected ten-volume history of World War II called, *Das Duetsche Reich und der Zweite Weltkrieg;* two volumes in the series have been published. Deist has written the Wehrmacht sections, and he has argued in all of his works that the so-called blitzkrieg strategy is largely a figment of imagination in the minds of writers. Hitler had no coordinated, rational plan for rearmament.
2. Horst Boog, *Die deutsche Luftwaffenführung, 1935-1945* (Stuttgart: Deutsche Verlags-Anstalt, 1982).
3. R. J. Overy, *The Air War 1939-1945* (New York: Stein and Day, 1980).

MINERAL IMPORT DEPENDENCY: DOES IT MATTER?

DR. LEONARD G. GASTON

IN congressional testimony in 1980 General Alton D. Slay, then Commander of the Air Force Systems Command, pointed out that it was not just petroleum that presented serious problems of import dependency for the United States. Noting that some forty minerals were essential to an adequate defense and a strong economy, he reminded the Industrial Readiness Panel of the House Armed Services Committee that the United States imported more than one-half its supplies of more than twenty essential minerals.

Since that time, more discussion has appeared in the press; and recently a study has been released by the Library of Congress that will be of interest to Air Force professionals who would like to know more about the nature and extent of U.S. dependency on imported minerals.†

This study by the Library's Congressional Research Service contains an almost overwhelming array of tables and statistics. It lists twenty-nine minerals included in the National Defense Stockpile, defined as "strategic and critical" by

†***A Congressional Handbook on U.S. Minerals Dependency/Vulnerability*** **(Washington: U.S. Government Printing Office, 1981), 404 pages, a report to the Subcommittee on Economic Stabilization of the House Committee on Banking, Finance, and Urban Affairs, prepared by the Congressional Research Service, Library of Congress.**

public law and provides an informative discussion of each: its uses, possible substitutes, where imports came from, and the status of actual supplies versus stockpile goals. Information as to what percentage of U.S. use of each, from 1976 to 1979 was imported, is given in a summary table.[1] The reader who is not familiar with General Slay's testimony may find sobering the information that two regions, Southern Africa and the U.S.S.R., loom large as sources for certain scarce minerals essential to the industrialized world.[2]

The report examines the assertion that the U.S.S.R. is engaged in a "resource war" against the United States; and it concludes that there are three points of view or levels of concern regarding such a conflict. None of the three are particularly reassuring. The first view indicates that *war* is an inappropriate term. Supporters of this view suggest that the Soviet Union is in the process of changing from an exporting nation for many materials to an importer nation. Although only economic issues would be involved, such a shift could "dramatically change the world supply/demand status for the materials thus involved and necessarily, will strongly affect U.S. attempts to maintain the necessary level of mineral imports." (p.167) The highest level of concern maintains that a serious resource war is indeed being waged by the U.S.S.R. The middle view concludes that the Soviet Union lacks the foreign exchange necessary to get the minerals it needs on the international market and the capital to develop internal supplies. Consequently, it will attempt to combine intimidation and subversion with economic means to obtain and assure overseas mineral supplies. Some authorities would insist that recent Soviet behavior is not new. The ruling government of Russia has pursued a calculated policy of expansionism for some three hundred years from the time of Peter the Great, and it would be expected that the U.S.S.R.'s increasing economic and military power would make it more able and willing to carry out such subversion. (p. 169)

The report discusses the relative stability and accessibility of various sources of minerals imported by the United States, including three critical countries of Southern Africa—Zaire (formerly the Belgian Congo), Zimbabwe (formerly Rhodesia), and the Republic of South Africa (all-important suppliers of essential minerals but vulnerable to unrest or terrorist activities). Other suppliers include Australia (stable but far away) as well as Canada and Mexico (already reliable, large-scale suppliers of some minerals). Among many interesting tabulations, the report lists the six countries that are major U.S. suppliers of more than one strategic or critical material: the Republic of South Africa (4 materials), Australia (3), Brazil (3), Canada (3), Thailand (2), and the U.S.S.R. (2).

The report singles out eight materials "for which the industrial health and defense of the United States is most vulnerable to potential supply disruptions"—chromium, cobalt, manganese, the platinum group of metals, titanium, bauxite/aluminum, columbium, and tantalum—and points out that the first five have been called "the metallurgical Achilles' heel of our civilization." (p. 130)

An interesting sidelight is provided by a discussion of the commercial potential of deep seabed manganese nodules, which contain commercial quantities not only of manganese but of copper, cobalt, and possibly, molybdenum. Concentrations of these nodules lie far beyond normal national jurisdictions, and, until the late 1960s, this would not have been a barrier to mining. Unfortunately (in my opinion), the United Nations General Assembly in 1967 passed a resolution to consider national limits and jurisdiction over minerals beyond these limits. During the intervening 14 years, some 150 nations, most economically and technologically underdeveloped, have taken part in drawn-out negotiations over these questions. As a result, although American firms have led the way in sampling and analyzing deposits of nodular concentrations for commercial viability, "because of uncertainty over the outcome of the U.N. conference, plans for proceeding with commercial

development of ocean mining are being delayed." (p. 295)

Another possible source of more minerals for the United States might be neighboring countries in the Western Hemisphere; but U.S. interests there appear to be losing out to aggressive policies of the Metal Mining Agency of Japan and Japanese government loan guarantees and negotiations. (pp. 322, 330-32)

The strengths of the report are in its assemblage of data and insights regarding them. Its weaknesses are minor: It quotes extensively in places from other reports, and possibly because of this the reader can lose his way in terminology. "Southern Africa" seems clear in meaning as does "Republic of South Africa," but "South Africa" as used on page 159, in a sentence which follows one that refers to "Southern Africa," is not. In addition, some readers might quarrel with the conclusion that new initiatives by the Reagan administration to improve the nation's defense posture will increase the possibility of a return to the cold war. (p. 165) (Since the Soviet military buildup has proceeded apace and Soviet influence has continued to expand around the world, one could argue that the cold war never departed.) Another minor complaint concerning what was, overall, an excellent collection of data: Greater discussion of the potential offered by the Serra dos Carajás region of Brazil would have been desirable.

But the report's most serious drawback is not attributable to its authors but to the unknown person, who, for reasons of economy or to meet the definition of a "handbook," made the decision that the publication would be printed on 5- by 9-inch pages. The original, well-typed, double-spaced research report on 8½ x 11-inch paper was no doubt highly readable; but, photographically reduced to 5 x 9 inches, it is not. Readers over thirty will want as a minimum to assure the availability of extremely good lighting.

Enon, Ohio

Notes

1. I believe the terms adopted by the *Wall Street Journal* to be more descriptive: *Critical* meaning essential for the continued operation of U.S. industry (some 40 minerals), *strategic* meaning critical minerals that are available in large supplies only from foreign sources (roughly half of those designated as critical). Roger Lowenstein and Maria Shag, "Vital Ingredients," *Wall Street Journal*, April 15, 1981, pp. 1, 20.

2. Edgar Ulsamer, "In Focus," *Air Force*, January 1981, pp. 17-21.

POTPOURRI

The Threat: Inside the Soviet Military Machine by Andrew Cockburn. New York: Random House, 1983, 338 pages, $16.95.

Andrew Cockburn's book is the latest contribution to the rapidly expanding collection of books and articles depicting the Soviet armed forces as a clay-footed colossus or, more in tune with its national origins, a Potemkin village. In his words, the Kremlin has on its hands "a drunken, half-trained conscript army, a high command riven with political intrigue, progressively less useful weapons systems, and a society more vulnerable than most even to a limited nuclear onslaught." (p. 236) Given an enemy so weak, why is the United States spending so many billions on defense? The answer, according to the author, is simple: the military-industrial bureaucracy needs a viable Soviet threat to keep the dollars flowing for the purchase of increasingly more complex and costly weapon systems. And those on the other side of the curtain, the poor slobs, try to keep up with the latest American fad in armaments, whether useful or not.

Cockburn assumes throughout that the denizens of the Pentagon are dishonest, data-juggling people interested only in a bigger slice of the budgetary pie. Nowhere does he depict the top brass as deciding anything for patriotic reasons. Their sole motivation, from the secretaries of defense down, is to keep the public, especially its representatives in Congress, sufficiently alarmed about the Soviet threat to cough up the wherewithal for their costly gadgets. This theme is repeated ad nauseam.

Just how much of a threat do the Russians present? According to Cockburn, of the million and one-half men drafted each year, about half of them end up in the construction or railroad troops, usually for ethnic reasons. Only the Slavs and the Balts man the ground force combat units or go into the Air Force and the Navy. But even the Slavic recruits spend an inordinate amount of time getting drunk, stealing anything movable to get money for alcohol, or beating up on the non-Slavic conscripts. The officers do little about these transgressions for, if reported, they will reflect not only on the officer's career but even on his superior's. This is the so-called "vertical stroke" that permeates the armed forces.

In dealing with the other services, Cockburn finds them all grossly overrated. The Soviet air force's planes are far inferior to the Pentagon's evaluations; the PVO, with its one-half million men, 5000 radar installations, 10,000 antiaircraft missile launchers, and 2500 interceptors, is militarily inept but a real boon to the U.S. bomber lobby's demand for ever more expensive equipment; the capabilities of Gorshkov's navy are invariably exaggerated by the American admirals; and, finally, the much-vaunted Civil Defense is really a boogieman conjured up by General George Keegan, Leon Gouré, and T. K. Jones. By the time Andrew Cockburn is through retailing the Soviet inadequacies, his American reader should feel rather complacent about the Russian threat. But not for long, for he is then informed of how fouled up his own forces are. Cockburn, it would seem, just doesn't think much of military institutions in general, and the American and Russian brands in particular.

On a more positive note, his prose flows readily; he can be witty in his castigations of the bloated military bureaucrats, and he does display a good knowledge of weapon systems, both American and Russian. Some of his criticisms of the practitioners of military politics are both astute and justified. If it were possible to avoid the continuous diatribe aimed at the iniquitous behavior of the Pentagon bureaucrats, ***The Threat*** could make enjoyable reading, but that would mean ignoring the raison d'être of the opus. The last chapter, entitled "The Consequences of Threat Inflation," offers some dour, even apocalyptic, warnings about how the inflation of the threat can eventually lead to Armageddon. I suppose the "hawkish" rebuttal is that "deflation" of the threat to such a point of absurdity is even more dangerous.

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The New Red Legions: A Survey Data Source Book, Vol. I; The New Red Legions: An Attitudinal Portrait of the Soviet Soldier, Vol. II, by Richard A. Gabriel. Westport, Connecticut: Greenwood Press, 1980, Vol. I, 252 pages $40.00; Vol. II, 246 pages, $22.50.

The Soviet Soldier: Soviet Military Management at the Troop Level by Herbert Goldhamer. New York: Crane, Russak and Company, 1975, 352 pages, $8.75 paper.

Little has been written about Soviet conscripts, although they comprise nearly eighty percent of the Soviet armed forces. The reason, quite simply put, is that access to information in a totalitarian state such as the Soviet Union is severely restricted. The collection of most information is prohibited, and officially released information is frequently and intentionally distorted. The result is a profound lack of information regarding the Soviet soldier. As a consequence, the Soviet military is often evaluated by solely quantitative means (counting the number of tanks, aircraft, or personnel) and making comparisons with the size and numbers of Western military organizations. Thus, the United States falls short in most of these assessments. However, such simple quantitative comparisons are faulty since they neglect an accurate assessment of "the people behind the machines."

Richard Gabriel's two-volume work helps fill this information gap and demystifies the Soviet soldier. It is based on empirical data drawn mostly from surveys conducted with recent Soviet émigrés. The first volume contains the statistical data, a treasure for academic purests, but the second volume makes for more interesting reading. It is a well-written analytical summary of the collected data.

Among other serious studies of the Soviet soldier, the late Dr. Herbert Goldhamer's ***The Soviet Soldier*** may well be considered a classic. This study relies principally on unclassi-

fied Soviet journals, gleaning as much as one can from them for information regarding the Soviet soldier's life.

Goldhamer's and Gabriel's books complement one another and together comprise an indispensable reference for students of Soviet military affairs. They provide a thorough understanding of the largest portion of our adversary's forces. One of the most important experiences for the Soviet soldier is the extensive premilitary training, which begins at an early age. Preschool and youth programs administered by the state are aimed at instilling a sense of subordination to authority. In accordance with the 1967 Law of Universal Military Service, overall responsibility for the premilitary training of youth was given to a Communist party organization known as DOSAAF (Voluntary Society for Assistance to the Army, Air Force, and Navy). DOSAAF membership numbers about 80 million citizens between the ages of 14 and 27. Through the establishment of military clubs, training reaches almost all Soviet youth. Although touted as voluntary, public and social pressures expose youth of all ages to some aspects of the club activities. Beginning in the tenth grade, all boys and girls receive 140 hours of compulsory basic military instruction.

Nonetheless, despite this extensive program of premilitary training, Goldhamer cites several shortcomings serious enough to call into question its overall effectiveness. Compulsory premilitary training was introduced as a replacement for basic training conducted after induction, but complaints abound about the quality of the premilitary training. Soviet youth, like all youth, have their own preferences concerning what they learn. Often these preferences do not correspond to the priorities or needs of the military. Additionally, equipment for premilitary training programs is often neglected, resulting in a scarcity of materials required for effective training. Reports indicate a serious lack of skill among conscripts reporting for duty, and basic training after induction is becoming necessary more frequently.

All young Soviet males must register for military service at 17 and report for duty at 18. Service is for two or three years, depending on which branch they are assigned to (two years for army and air force; three for navy). Call up takes place twice a year—in the spring, after the planting season; and in the fall, after the harvest. Females are permitted to enlist, but those few who do serve in noncombatant roles, traditionally in the clerical and medical fields.

Professor Gabriel's survey reveals that family support of conscription is low. Rather, resignation to military service as "an evil that cannot be avoided" (although deferments for extenuating family circumstances, physical problems, and continuing education account for about ten percent of those eligible for induction) seems to be the general sentiment among conscripts. Also, the fear of severe punishment assures mass conformity among Soviet servicemen.

One questions whether Soviet leadership could maintain morale and reliability among conscripts if engaged in a protracted conflict, especially one not directly threatening the Soviet homeland. Perhaps Afghanistan provides a good example: Morale and discipline problems seem to abound within the ranks of the Soviet forces currently battling native resistance in that bordering Moslem country. Pacifism, fighting, and alcohol abuse are also limiting the effectiveness of Soviet soldiers.

Yet it is safe to assume that the Soviet soldier would be a vigorous opponent in a conflict involving the West. In fact, historically, the Russian soldier has fought best when the motherland was felt to be in danger. However, both Gabriel and Goldhamer caution against viewing the Soviet soldier as "ten-feet tall" or a "man of steel." A comprehensive assessment of the Soviet armed forces would probably place them on a par with their Western counterparts.

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Mighty Eighth War Diary by Roger A. Freeman with Alan Crouchman and Vic Maslen. New York: Jane's, 1981, 508 pages, $29.50.

This volume is a labor of love, the second in a planned trilogy chronicling the day-by-day exploits of the Eighth Air Force during World War II. Roger Freeman first became enamored with the activities of American aviators, when as a teenage schoolboy he watched the formations departing in the gray dawn and returning in the afternoon, most often in lesser numbers, to airfields adjacent to his father's farm in East Anglia. The romance has blossomed through four decades and seven books, and Freeman probably possesses more knowledge than anyone else of the *Mighty Eighth*, as he entitled the first volume in this series.

Most of this volume is a compilation of statistics dealing with each mission launched by the Eighth. Among these is the first heavy bomber attack against the marshaling yards in Rouen, France, on 17 August 1942, flown by aviators such as Brigadier General Ira C. Eaker, Commanding General, Eighth Bomber Command; Colonel Frank Armstrong, on whose exploits *Twelve O'Clock High* was based; and Major Paul Tibbets, later of *Enola Gay* fame. For each mission, the author has laboriously researched and provided identification of the groups participating: the targets attacked; the number of aircraft dispatched; the number of effective aircraft (defined as those which actually dropped bombs); the number, type, and tonnage of bombs dropped; claims of enemy aircraft destroyed; and American losses of aircraft and personnel (killed, wounded, and missing in action). This awesome array of data is supplemented by well-written vignettes of the personnel, airfields, aircraft, and missions involved. Most of the excellent photographs, interspersed liberally throughout the book, have been obtained from participants, giving them a spontaneity and depth often lacking in official photographs.

Freeman wisely declines to take sides in the argument that still rages among armchair veterans of that combat as to whether the B-17 or B-24 was the better aircraft. Freeman sometimes accepts too uncritically the reminiscences of aviators who have retold their same daring exploits for forty years, unconsciously embellishing them in the retelling. There are some unexplained disparities between the official records cited and the credits claimed in the volume. On the whole, however, the number of errors, given the mass of statistics provided, is minimal and evinces the care with which the volume has been prepared. Those who have long

believed that the United Kingdom and the United States are separated by a common language will find some convincing evidence in this book as one reads that "short-snorters" were "autographed bank notes" and some aircraft "went missing" while on others "the undercarriage lowered to restrict speed."

These minor caveats aside, this excellent collection, which is aimed essentially at the aficionado, clearly evokes memories of forty years ago when young American airmen, many of them teenagers, were received so hospitably in Britain. The Yanks grew to like fish and chips, drank warm beer, played darts in friendly pubs, and ogled, romanced, and sometimes even married lovely English lasses. The visiting Americans were also impressed with the lush, green countryside which, when viewed from the air, showed little evidence of a determined British people engaged along with the Royal Air Force and the Eighth Air Force in their deadly struggle to defend human freedom and dignity. *Mighty Eighth War Diary* is a fitting statistical and photographic account of the exploits of the most publicized of the World War II air forces and one of the proud ancestors of the present USAF.

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Afghanistan and the Soviet Union by Henry S. Bradsher. Durham, North Carolina: Duke University Press, 1983, 326 pages, $32.50 cloth, $12.75 paper.

The agony of Afghanistan continues to bedevil most of the world, which has ineffectually opposed the Soviet military takeover and the sweep of Afghanistan into the Soviet colonial sphere. Henry S. Bradsher has made a superb contribution in analyzing those developments. He brings to this study years of experience as a news correspondent on Soviet and Asian affairs, including stints in Moscow and Kabul. *Afghanistan and the Soviet Union* was written while he was a scholar at the Smithsonian Institution's Kennan Institute for Advanced Russian Studies. Bradsher has made excellent use of government documents, periodicals, and newspapers from around the world and of interviews with knowledgeable officials and other participants of recent events in Afghanistan. Unfortunately, but understandably, many of those interviewed are not identified.

After a brief introduction to modern Afghan history, Bradsher moves quickly to the cold war and then concentrates on developments since the 1960s, especially the overthrow of Mohammed Daoud in April 1978 and the ensuing chaos and Soviet intervention. The analysis is superior to anything yet published and, in light of Soviet and Afghan secrecy, undoubtedly will not be superseded for years. Those interested in American policy also will find this a rewarding work. Bradsher follows the interplay of American politics and is critical of American timidity since the withdrawal from Vietnam.

Besides the fullness of his account, the author has made two major contributions to understanding the conversion of Afghanistan into a Soviet colony. The first is his analysis of the importance to Soviet leaders of their perceptions of the international "correlation of forces" in decisions concerning Afghanistan. He believes the Soviets carefully evaluated those forces and, perceiving the balance between "socialism" and "capitalism" as favoring them, acted decisively. In arguing his case, Bradsher goes far beyond events in Afghanistan in a fine chapter dealing with changes in Soviet military theory and force structure and with intervention elsewhere, principally in Africa and the Middle East. Since the 1970s, conditions have appeared most favorable for a relatively free hand for the Soviets in Third World adventurism, unrestrained by fears of Western countermeasures. He admits that analysis of Soviet decision-making is difficult and that the story of decisions regarding Afghanistan is still clouded and may never be fully known; nevertheless, his appraisal of the military, economic, ideological, and other factors is convincing.

The other major contribution is his unique comparison of the Soviet intervention in Afghanistan with that of the Soviet Union and the People's Republic of China in other parts of Asia. Other scholars have dealt as ably with the crushing of the *basmachi* in Central Asia, but Bradsher includes comparisons with intervention in Mongolia, Sinkiang, and Tibet as well. Those comparisons are more illuminating than those that look primarily at the establishment of Soviet control in Eastern Europe to explain what is happening in Afghanistan.

Bradsher refutes the claim that the overthrow of Daoud was a political revolution engineered by the Communist People's Democratic Party of Afghanistan (PDPA). Instead he documents it as a military coup in which the unpreparedness of the military to rule resulted in a rapid takeover by the PDPA. While he does not believe the Soviets were directly responsible for the coup, Soviet support encouraged it and, with the rise of the PDPA to power, fully backed the Communist government.

In addressing the question of motivation for the Soviet military invasion, Bradsher states that for the short term it was considered essential to maintain the PDPA in power, while for the long term the Soviets were not blind to the opportunity to move closer toward control of the Indian Ocean and the Persian Gulf.

Those anxious to see an independent, nonaligned Afghanistan will find little solace here, where Bradsher states that "Russian and Soviet power has historically thrust forward until it met some military or political reason for stopping." (p. 255) He also rejects the Finlandization of Afghanistan as a solution, noting the sharp divisions within the *mujahideen* resistance as well as their violent hatred of the Soviets, which precludes the organization of an alternative government. Moreover, the Soviets insist that Afghanistan remain within the Soviet sphere. One must agree with Bradsher's conclusion that the future is dark for Afghanistan and "worrisome" for others on the Soviet periphery.

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The February Revolution: Petrograd, 1917 by Tsuyoshi Hasegawa. Seattle: University of Washington Press, 1981, 652 pages, $25.00.

Tsuyoski Hasegawa contends that the February Revolution was neither a triumph of professional revolutionaries over the established order nor of good over evil. Rather, the

February Revolution was a fortuitous combination of two events: the revolt of the masses against the autocracy and the alienation of the liberal opposition from the tsarist regime.

Devoting his primary attention to the nine-day period from the beginning of the revolt to the abdication of the Grand Duke Mikhail, Hasegawa is, nonetheless, aware that the social and political factors that led to the revolution are too complex to be described out of context. Consequently, while two-thirds of the study is devoted to the events of February, Hasegawa makes a considerable effort to set the stage by detailing the social and political conditions in Russia between 1914 and 1917.

The Russia of that era was preindustrial and precapitalist; World War I forced the industrial revolution and all of its birth pains on the backward nation. As Hasegawa illustrates, the unifying effects of an external enemy—while they temporarily eased a tense political situation—soon gave way to even greater unrest. Combined with an exponentially increasing industrial work force, this situation produced a volatile political climate.

The central portion of Hasegawa's book deals with the uprising, the Petrograd Soviet, and the Duma . . . in short, with the de facto transfer of power. Hasegawa's use of primary source material is excellent. Each of the crucial seven days through 1 March 1917 is painstakingly recreated. Hasegawa manages to retain the human element through his chronicling the minute details of the actions of individuals and small groups—actions that were in themselves inconsequential but, in sum, proved vital to the success of the revolution.

Hasegawa clearly demonstrates that the February Revolution was not a spontaneous uprising; the masses had clearly defined, experienced leaders, and the groups that participated in the various activities were predictable by their regularity. Popular discontent, while one of the elements of Hasegawa's thesis, was an important but inconclusive factor. Perhaps the best example of this was the increase in patriotic fervor evident in the early days of World War I. That discontent had become a major negative factor by 1917 is clearly traced to government ineptitude and corruption. Hasegawa also notes that current historians often inflate the role of the Bolsheviks. Initially a weak, disorganized player, the Bolsheviks assumed a greater role only through coalition and fate; they were never the driving force behind the February Revolution. Finally, Hasegawa concludes that the liberals were powerless to act against the government but notes that the autocracy was powerless to act without liberal support. This, then, set the stage for the decisive moment.

The February Revolution has received relatively little attention despite the fact that its significance may eclipse that of the October Revolution. For this reason alone, Hasegawa's book is a significant contribution. The work is thoroughly researched, including excellent use of rare primary sources. Hasegawa's thesis is logical and well supported by the evidence; if he had any bias, he has done a commendable job of suppressing it. Consequently, *The February Revolution* rates top marks as a scholarly work.

Beyond that, however, the book has two other features which make it worthy of note: it is extremely readable, and it contains sections that should be of great interest to professional USAF officers.

For the Air Force officer, Hasegawa has included some sections that should be professionally interesting and important. Specifically, the book contains long passages on military life, the treatment of noncommissioned officers and enlisted personnel (and the subsequent effect of such treatment), and the role of the military in the government and the revolution.

Hasegawa has also captured the life-essence of the February Revolution, for his descriptions of events and people seem to come alive. Indeed, *The February Revolution* ranks with Harrison Salisbury's *Black Night, White Snow* as being among the most enjoyable ways to learn Russian history.

Thus, *The February Revolution: Petrograd, 1917* stands as a worthwhile contribution to our understanding of the revolution in Russia and one that will appeal to a relatively wide audience.

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The Russian Intelligentsia: From Torment to Silence by Vladimir C. Nahirny. New Brunswick/London: Transaction Books, 1983, 192 pages, $22.95.

The Russian intelligentsia is a subculture all to itself, and the study of it requires entrance into the peculiar *Zeitgeist/Weltanschauung* of that very special world. It is for this reason a somewhat forbidding, because altogether erudite if not arcane, academic field. On the other hand, it is as important as it is difficult, for the intelligentsia, however it is defined, has given us the Russian ruling class and the Soviet administrative apparatus that bedevil our newspaper headlines and our equilibrium almost daily.

The story of the intelligentsia is a tragic one because it involves for nearly every participant in it a fateful choice: that between something like involuntary thralldom to the hulking leviathan of Soviet government or the agonizing superfluousness of the persecuted dissidents. This kind of choice has been constant, though the names of the doctrines have been changed to confuse the innocent, for the past several centuries.

Vladimir Nahirny has written a remarkably fresh review and assessment of the intelligentsia. He has a genuinely astonishing knowledge of the Russian literature. Especially interesting is his analysis of the social origins of the intelligentsia. He disagrees fundamentally with Marc Raeff, who argued that the intelligentsia came from the pampered whiz kids of the Russian nobility. On the contrary, Nahirny shows that it was scarcely noble or Russian. Almost all of the writers in Russian history before Peter the Great were from the priestly class. More than half of the Russian scholars born between 1750 and 1799 came from priests' families. Only 26.2 percent of the members of the Academy of Sciences in the eighteenth century were Russian. From the foundation of Moscow University in 1755 to the end of the century, only 30.4 percent of the professors were Russian.

Nahirny notes the almost inhuman seriousness with which the intelligentsia devoted itself to the cause of humanity. "It was in . . . the sphere of 'truth,' in the company of the brethren of conviction, that they found a substitute for love,

friendship, human affection, and indeed, felt comfortable and at ease."

I missed here the work of Gregory Freeze on the eighteenth-century Russian clergy. In my opinion, it would have been appropriate to examine more closely the thesis of Martin Malia, who has dealt ably with the eternally teasing question posed by Mikhail Bakunin: I can understand the French bourgeoisie making a revolution to gain political rights, but how can I understand the Russian nobility making a revolution to lose them? Still, Nahirny's work is an informed and valuable addition to our literature on the intelligentsia.

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Soviet Armed Forces Review Annual, Volume 6 edited by David R. Jones. Gulf Breeze, Florida: Academic International Press, 1982, 433 pages, $47.00.

Soviet Armed Forces Review Annual, like earlier volumes in the series, includes review articles covering recent developments in the organization, equipment, and disposition of all branches of the Soviet military. New features include an overview section and a very helpful bibliography of works on the Soviet armed forces and strategic questions published in the West. Additionally, the 1982 edition contains special surveys on internal security and border troops and on Soviet interests in the Indian Ocean region.

Readers of *Air University Review* will want to pay special attention to the chapters on air defense forces by David R. Jones and air forces by Alfred L. Monks; the authors highlight important shifts apparently under way in the Soviet command structure. In the first instance, assets committed to the air defense of maneuver units of the ground forces (mainly surface-to-air missiles) are being brought under the administrative control of the national air defense service, PVO. This merger of tactical and strategic air defense seems to be in response to the advent of sophisticated low-level offensive penetration capabilities of the NATO air forces and the resultant need to provide defensive coverage at all altitudes. Such developments are instructive because they illustrate the manner in which Soviet defense planners perceive threats and respond to them and remind us that the other side must also contend with military-technological change.

In a similar vein, it appears that a reorganization of the Soviet Air Forces (VVS) is in progress, with the tactical component (Frontal Aviation) in some way being realigned into the new "theater of military operations" emphasizing the combined-arms doctrine and with the strategic bomber force (Long-Range Aviation or DA) being downgraded from major command level to some new, lower status. Not in this connection specifically, but nevertheless of considerable interest, are the details of qualitative improvements in Soviet aviation, including the introduction of new aircraft types and better air-to-air tactics.

Given the importance of matters related to the military budget and the impact of defense spending on the national economy in both the United States and the U.S.S.R., the chapter on the Soviet economy in this volume is all too brief. Also, some minor mistakes of fact detract from the overall solid quality of the individual essays. For example, the NATO code name for the SA-8 is Gecko (not Grechko, as reported), and the aircraft used as a surrogate for the MiG-21 in the AIMVAL/ACEVAL DACT studies was the F-5 (not the F-4, whose capabilities are not at all like the MiG-21).

Particular strengths of this collection are the many tables of data, compiled from varied sources, and the balanced perspective on national security interests, especially the inclusion of details from Marshal Nikolai Ogarkov's assessment of military-strategic issues.

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Tracks of the Bear: Soviet Imprints in the Seventies by Edgar O'Ballance. Novato, California: Presidio Press, 1982, 240 pages, $15.95.

Tracks of the Bear is a journalistic account of Soviet history and foreign policy in the 1970s. It begins on a polemical note, making such claims as "the Soviets are bully boys who need to be taken down a peg or two . . . ," and continuing with an emotional, shallow, and, I believe, error-ridden analysis of Soviet leadership. Subsequent chapters deal with an analysis of the "Soviet political-military mind," followed by discussions of Soviet progress in the East-West negotiations, Europe, the Middle East, Africa, South Asia, and Southeast Asia. Edgar O'Ballance continues by addressing the Soviet Navy and then concludes with a discussion of the early 1980s. In his conclusion, he calls on the United States to "have a strong, sustained foreign policy," to use economic aid as a weapon; to support resistance groups in Angola, Mozambique, and elsewhere; to continue to develop the Rapid Deployment Joint Task Force; and to prevent the further development of nuclear weapons by Third World nations. Six maps and an index support this text.

The book's greatest strength is perhaps its scope, which includes not only Soviet domestic politics but also discussions of Soviet policy in all of the world's major regions. Also, O'Ballance often refers to General George Keegan and other politically conservative experts who are infrequently quoted but nonetheless have a contribution to make to the subject. In addition, O'Ballance's observations are occasionally noteworthy. For example, I enjoyed his discussion of "mirror imaging," in which he says that Western leaders are wrong to expect that Soviet leaders will react in the same way as Western leaders to a given situation. Finally, the author's journalistic style makes the book very readable.

Against these strengths, the book suffers from such major weaknesses that I question its value to the knowledgeable reader. Of these, the most serious is that O'Ballance does not adequately footnote his material. I noted less than two dozen notations to other sources or references, and many of these were to O'Ballance's other books. This is even more serious in that the author often leaves solid ground to enter the realm of conjecture. In his Middle East chapter, for example, he claims that the KGB secretly aided Middle East terrorism and that many Soviet military personnel were killed in Middle East hostilities before 1971. Footnotes and discussions would help the reader by raising the exposition from conjecture to

analysis. In this respect, his worst footnote reads as follows: "Figures quoted are generally those given by the London-based . . . ISS, U.S. Defense Department, the Pentagon or the CIA." (p. 18) Such imprecise use of source and reference materials prevents the reader from checking and analyzing O'Ballance's figures. Furthermore, it demonstrates that the author does not appreciate that the figures of each of these organizations often reflect their positions, and a high or low figure can indicate their threat perceptions. By not identifying sources and by using data from several sources, O'Ballance confuses his discussion and makes it of little value to the military analyst.

A second major flaw is O'Ballance's polemical tone. For example, while calling the Soviets "bully boys" and making other similar statements might sound convincing to the frustrated or naïve reader, it should not be popular with the military or informed general public. Thus, I believe that O'Ballance's book is a disservice to serious analysis of Soviet political or military affairs, because it so popularizes these respected analytical endeavors that it places them on an emotional level where opinion prevails, often at the expense of truth.

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Strategic Studies and Public Policy: The American Experience by Colin S. Gray. Lexington: University Press of Kentucky, 1982, 256 pages, $19.50.

Not so very long ago, a "strategist" was a military commander or adviser who planned the use of armed force. A handful of officers—e.g., Clausewitz, Mahan, Douhet—wrote about strategy, almost as a hobby apart from their duties. One of the oddities of the thermonuclear age is that a strategist has become exclusively a writer about strategy, and almost all of those writers have been civilians. (Indeed, the only uniformed strategist named in *Strategic Studies and Public Policy* is General Glenn Kent, USAF.)

Political scientist Colin Gray is one of today's most prolific strategic writers. Son of an RAF Bomber Command navigator, he immigrated in 1976. To those readers familiar with his polemical writings, this book is a pleasant surprise—nowhere is the supposed "window of vulnerability," nor are advocates of minimum deterrence libeled with the smear of "MAD." But unnecessarily tart attacks on Henry Kissinger, Robert S. McNamara, and W. W. Rostow do appear. And he abjures mention of his protracted campaign for multiple-protective-shelter ("shell game") basing for MX.

Most of the book is analysis and theoretical justification of strategic studies, directed toward academia—his criteria for strategic "scholarship" could exclude participation by serving officers. The military professional may find the sections giving a short history of strategic writing more interesting. The best ideas were produced under U.S. Air Force sponsorship at the Rand Corporation in the 1950s, which Gray rightly labels "the Golden Age" of nuclear strategy. However, he gives the impression that most civilian strategists favor "assured destruction" theory; certainly academics do, but most Pentagon analysts and consultants share the oldest and wisest of military ideas: stronger is safer.

Readers interested in nuclear strategic theory will find this a competent summary of the so-called "war-fighting" school, now the dominant declaratory doctrine of the United States.

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The Third World in Soviet Military Thought by Mark N. Katz. Baltimore: Johns Hopkins University Press, 1982, 188 pages, $18.50.

Soviet interest and involvement in conflicts of the Third World so evolved during the Brezhnev era as to become one of the central aspects of both Soviet foreign and military policy. Mark N. Katz, in *The Third World in Soviet Military Thought*, has examined this thinking in order to assess its importance for Soviet foreign policy and its significance for the West.

Katz determined that there are six different aspects concerning Soviet military thought in conflicts involving the Third World. First is the relationship of local war to a world war; second, the nature and types of war in the Third World; third, the relationship of peaceful coexistence to local wars; fourth, the Soviet view of indigenous forces in the Third World; fifth, the Soviet view of American ideas about and actions in local wars, and finally, the role of the U.S.S.R. in Third World conflicts. (p. 10)

The Brezhnev era was examined because it was then that Third World conflicts became a major topic of Soviet military thought. Soviet doctrine concerning the Third World changed progressively from a period when little action was envisioned for the Soviet Union in the Third World to a very optimistic and active involvement in such areas. This has been followed (since 1976) by a pessimistic view about Soviet capability to achieve its foreign policy goals in the Third World without a large-scale, long-term, costly commitment of Soviet military forces to Third World conflict.

During the 1970s "the Soviets became increasingly convinced that the growing military strength of the Soviet Union could prevent local war from escalating into world war." (p. 124) Since 1976, the U.S.S.R. has encountered many of the same problems and obstacles that the United States has. As a result, the thought process has changed from one of optimism to pessimism. This "illustrates how the USSR underestimated the intractability of the Third World and the difficulty in both gaining and retaining influence in it." (p. 158)

The lessons each country has drawn from these experiences in the Third World have differed in at least two respects. First, the Soviets have reached the conclusion that the most reliable Third World allies have Marxist-Leninist governments (while the United States has only supported democratic governments some of the time). Second, "Soviet pessimism about the Third World . . . has given rise to greater Soviet military involvement in these conflicts in order to protect what the Soviets see as vital Soviet interests." (pp. 158-59) (The United States since Vietnam has been unwilling to become involved militarily in Third World conflicts.)

Katz concluded with a paradox. Soviet activities in the Third World are intended to gain allies but often have the

opposite effect. Conversely, U.S. policy is intended to prevent the spread of Soviet influence, but the opposite often results. To prevent this, American foreign policy must determine its goal is in the Third World. Then some attempt at determining Soviet intentions could be found.

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Aircraft of the Soviet Union: The Encyclopaedia of Soviet Aircraft since 1917 by Bill Gunston. London: Osprey Publishing, Ltd., 1983, 415 pages, $68.00.

Noted aviation author Bill Gunston has compiled an exhaustive encyclopedia of Soviet aircraft. Most of the book details the development of Soviet aircraft from the Revolution to the present. In fact, the detailing is so extensive as to be boggling. However, this is as it should be in this kind of publication; and scholars, buffs, as well as military professionals will find the book useful.

In the pages of *Aircraft of the Soviet Union*, one finds not only the MiGs, Sukhois, Lavochkins, and Tupolevs with which we are familiar but also the Golubkovs, Nikitins, and Kalinins about which we know very little. While Gunston does his usual excellent work at detailing the technical matters associated with aircraft development, his analysis of the "why" and "how" of Soviet aircraft evolution does not measure up to that found in Robin Higham and Jacob Kipp's *Soviet Aviation and Air Power: A Historical View*, which remains the authoritative work in this area. Nevertheless, one can recommend *Aircraft of the Soviet Union* to scholars and military professionals.

E.H.T.

Strategic Military Surprise: Incentives and Opportunities by Klaus Knorr and Patrick Morgan. New Brunswick, New Jersey: Transaction Books, 1983, 265 pages, $14.95.

In the fluid and dangerous world of international relations, governments are more concerned today than ever about their vulnerability to strategic surprise—an inevitable acute defeat by an unexpected attack. The phenomenon of surprise attack is not a new occurrence in the international political arena. It has only been recently, however, that attempts have been made to comprehend the significance of strategic military surprise. *Strategic Military Surprise* adds important and systematic dimensions to understanding such occurrences.

Klaus Knorr and Patrick Morgan have selected more than twenty cases which they label as strategic surprise drawn from the past 120 years. This volume, on the other hand, is not concerned with analyzing the limited surprise that occurs, as a matter of course, in ongoing military battles.

The Napoleonic Wars marked the turning point for innovative actions such as strategic surprise, resulting from improvements in communications, transportation, weaponry, and new military bureaucratic structures (e.g., general staffs) that enabled the management of huge armies that could inflict smashing defeats on major states. Prussia was the first state to realize and exploit the developments in its wars with Austria and France in 1866 and 1870, respectively. The book begins at this historical point and concludes with the Yom Kippur War of 1973. Today, the possibility of a strategic surprise is fueled by the growing strength of the Soviet military and fears in the West that Moscow might be tempted to strike at U.S. nuclear forces or to attack Europe.

A systematic analysis has been made of the reasons that lead states to attempt such attacks. In particular, the kinds of capabilities required for such undertakings and the dimensions that exist to make states vulnerable to strategic surprise are examined. Perhaps the most informative and instructive part of this volume is what political considerations contribute to a state's vulnerability.

The book concludes with a chapter on the lessons for statecraft that can be derived from studying strategic surprise. It includes an assessment of the degree to which states continue to be vulnerable in spite of improvements in the collection of intelligence information and in the relative effectiveness of essentially defensive weapon systems and postures. The authors close, however, on a pessimistic note by stating that, ". . . the business of minimizing strategic surprise faces odds that, though not exactly insuperable, are very formidable indeed." (p. 264)

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Vietnam: A Nation in Revolution by William J. Duiker. Boulder, Colorado: Westview Press, 1983, 171 pages, $18.50.

In *Vietnam: A Nation in Revolution*, William J. Duiker traces Vietnam's evolution, with attention to its government and politics, economics, culture, and society. In doing so the author has taken on a daunting task: that of writing a history of Vietnam, from early times to the modern era, in only 155 pages of text.

Although the book may be of use to the novice, the specialist will have some reservations about its analyses. For example, in turning to the Annotated Bibliography, one finds the work of Gareth Porter (described here as "one of the most respected critics of U.S. policy") and William Turley; omitted are such scholarly giants as P. J. Honey, Dennis Duncanson, and Bernard Fall—all of whom were critical of the Communist regime in Indochina.

As an aside, the author implies that Guenter Lewy's exhaustively researched *America in Vietnam* is "an apologia for the U.S. role in the war" by attributing this charge to "critics." Contrary to some current opinions, writing a scholarly work on recent Vietnam does not require that the United States be singled out for criticism. Too many scholars have been self-hobbled by their ideologies, and William Turley, an American professor (whose book is listed in Duiker's bibliography), has stated—apparently seriously—that the Vietnamese are now in Cambodia (Kampuchea) in order to help the Cambodians. He, like Harrison Salisbury before him, traveled to Hanoi to get the "facts." Such is the level of academic integrity to which much of the writing on Vietnam has

descended in this country in the last two decades.

Nothing is said of American Indochina policy under Franklin D. Roosevelt. That policy, shaped by Roosevelt's Francophobia, has in large measure shaped the present face of Indochina (whose people in recent times have suffered more hideously from their own tyrants than under foreign domination).

A continuing blind spot of virtually all American writers on an important period is reflected by the customary playback on the British occupation of Saigon in 1945. The British commander, General Douglas Gracey, is always assumed to have been bent on destroying the Vietminh hold on Saigon and returning the French to power, when in fact neither he nor his officers had any use for the French, criticized them severely, and continually pressed the French to grant independence to Vietnam. Gracey drove the Communist-led Vietminh from power in Saigon because they were a serious bar to his written directions to maintain law and order, a condition without which he could not disarm and repatriate the Japanese. This is a small but indicative passage in the book.

Concerning America's Vietnam War, the Cambodian regime of Sihanouk is called "neutralist." The available archival material shows in fact that Sihanouk, having concluded that the North Vietnamese would win the war, sided with the Vietnamese Communists in granting sanctuary to their forces, the use of Cambodian ports for their war supplies, and instructed his army to materially assist the North Vietnamese and Vietcong. Many American soldiers were killed by enemy supplies brought in with the connivance of these "neutralists."

After the fall of Saigon in 1975, the author suggests that there was some hesitation in Hanoi over unifying both Vietnams; this is interesting in that since the early 1940s the Vietnamese Communists had expressed an intention to unify all of Indochina, not just Vietnam (which they had always considered a single entity), under their aegis. In fact, in 1930 Ho Chi Minh had been instructed by the Comintern to change the name of his party from the "Vietnamese Communist Party" to the "*Indochinese* Communist Party."

The going gets stickier when the author analyzes "the triumph in Vietnam of communist doctrine and practice over Western bourgeois democracy." One reason not mentioned was that an entire society (described accurately as a "garrison state" by the late Bernard Fall) was mobilized for one enterprise—the making of war. It was supported throughout, at enormous cost, by steadfast Communist allies and was able to destroy a competing culture which was weaker in part because, for all its faults, it tolerated differences by a greater degree than did the Communists; in the end the South was abandoned by its own major ally. Thus, to suggest that the Vietnamese Communists won "after a generation of bitter struggle by their own efforts" may be stretching a point. The war was won because the Communists and assorted sympathizers worldwide locked ranks behind the Vietnamese Communists. The author anticipates an argument over the reasons for the "growing popularity" of Marxism, which was and is an alien creed to perhaps most Vietnamese and had to be constantly disguised by the party to make it more palatable to the masses.

Although at first glance there is an appearance of an evenhanded approach ("some charge that such and such produced great hardship, but on the other hand, others stated that..."), on closer inspection the knowledgeable reader will question some of the portraits presented here. Take, for example, the bloody crushing of the peasant revolt in Tonkin in 1956 (which appears in the section on the Catholics); this may lead the reader to think that religion was somehow principally involved in the uprising (no casualty figures are offered), rather than the brutalities and failures of the Communist "land reform" program. Experts have stated that as much as four percent of the population was killed by their own North Vietnamese Army.

There is unquestionably useful information of a general nature in this little book; one whose time is limited will get some benefit from reading it. However, *Vietnam: A Nation in Revolution* is a portrait with the warts selectively removed and the wrinkles smoothed. Its chief value lies in its timeliness and freshness, but serious students will want to turn elsewhere for a clearer look at the past.

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Paradoxes of Power: The Military Establishment in the Eighties by Adam Yarmolinsky and Gregory D. Foster. Bloomington: Indiana University Press, 1983, 154 pages, $15.00.

This book is a primer on the United States military and defense policy aimed at the general public. It is to be praised for covering a large number of major issues in its short span and for doing so in a readable manner.

Unfortunately, the work is marred by certain weaknesses. Among other things, the authors have opted for a zero-citation policy: no statistic, claim or allegation, no matter how controversial, is given a documentary source. Consider this assertion:

> The extent to which the output of scientists and engineers in the United States has been appropriated by the Department of Defense is quite staggering. Conservative estimates indicate that defense and space programs employ 20 percent of all American scientists and engineers engaged in research and development work. Other estimates go as high as 50 percent. (p. 67)

No citation is given for these "estimates." A moment's reflection tells us the point being alleged is absurd, exaggerating the reality by a factor of about 100. After all, "scientists" include anthropologists, geologists, botanists, etc., and "engineers" include chemical engineers, electrical engineers, highway engineers, and so on.

As this silly claim indicates, the authors are not neutral about the role of the U.S. defense establishment. They take the view that the military represents a menace to American society. Their analysis of this point does them little credit.

For example, they find cost overruns on weapon systems "distressing evidence" of a military establishment outside civilian control. (p. 94) But if a cost overrun is ipso facto evidence of a lack of civilian control, then no segment of the

U.S. government is controlled by civilians, for cost overruns abound everywhere. I note, for example, that New York City's Woodhull Medical Center was just completed at a cost of $311 million, nearly four times the $85 million originally projected. For a cost overrun on a gigantic scale, what about the U.S. Social Security system? The huge overruns on the Rayburn House Office Building show that civilians don't even control Congress!

Another "out-of-control" episode alluded to by the authors is an (unexplained and undocumented) "private bombing campaign" conducted by an (unidentified) air force major general. (p. 94) The authors themselves state that this alleged action was unsanctioned by military superiors, and hence, at best, a problem of malfeasance, concerning *military* control of the military. The alleged episode is therefore irrelevant to the civilian control issue.

This tendency of the authors to miss critical distinctions, to make mountains out of molehills in order to push their military-as-menace-to-society prejudice, renders this primer untrustworthy as well as unsophisticated.

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Soviet Style of War by Nathan Leites. New York: Crane, Russak & Company, 1982, 400 pages, $22.50.

Dr. Nathan Leites's book is one of the few published works for Western readers that deals with Soviet attitudes and performance on the battlefield in considerable detail. It contains extremely important, yet often violated, misunderstood, or simply forgotten principles and elements in the Soviet conduct of war. Dr. Leites has undertaken a task of crucial significance for anyone who needs to have a deeper and more subtle understanding of how the Soviets fought in their Great Patriotic War (1941-45) and how they may fight again in the future.

The book was written largely by using Soviet public sources, specifically memoirs of their wartime leaders, war histories, and articles in military journals and the military daily *Krasnaya zvezda* (Red Star). Research for the book must have been a tremendous undertaking.

This long book includes seven chapters; yet, inexplicably, no conclusions are provided. The author cites extensively (in often unduly long passages) from the writings of Soviet authors (and occasionally German, too) in portraying the Soviet doctrinal views and performance in respect to such important matters as (1) value of surprise, (2) indecisiveness and passivity, (3) offense, (4) defense, (5) failure to pursue the enemy, (6) rigid adherence to an original plan, despite repeated setbacks, (7) underestimating the enemy, and many, many others. Soviet experiences on the battlefield during the Great Patriotic War and postwar peacetime training activities are used to illustrate their views on specific matters in conducting combat.

Despite its title, *Soviet Style of War* pertains almost exclusively to the combat employment of ground troops. There are occasional, and mostly misplaced, references (for example, on pages 103 and 357) to naval activities and very little with regard to the air force or to naval aviation. The 14-page chapter VII entitled, "Inferences from the Displayed to the Hidden; Strategic Nuclear War" is almost a non sequitur. Moreover, it does not describe adequately what its title alleges. It would have been better if the chapter had been omitted entirely and conclusions written instead.

Dr. Leites's work contains much valuable information about Soviet proclivities in combat, but it also has some serious shortcomings. Perhaps the single most disturbing flaw is that actual Soviet performances in combat and Soviet peacetime activities are described together. Writers and students of the Soviet military should be cautious in taking Soviet historical writings at face value, not only owing to their customary exaggerations but also because of the well-known Soviet tendency to rewrite historical events according to the needs of a moment. Also, it would have been better, if Soviet combat performance during the Great Patriotic War had been assessed in more detail in the book by Germans who fought them rather than by Soviet authors. Soviet description of their own training activities should not have been equated with their actual performance. There is a wide discrepancy between what the Soviet claim in their writings as accomplished and what they actually carry out, especially in regard to combat training in peacetime.

However, Dr. Leites's book, despite its shortcomings, breaks new ground and cannot but contribute to better understanding of how the Soviets conduct war. One way of getting a more realistic picture of what the Soviets think and intend to do is by reading their open sources carefully. Not everything the Soviets write is propaganda or deliberately planted *dezinformatsiya*, although some of it, undoubtedly, is. However, Soviet military writings cannot be intended merely to deceive those in the West without confusing their own rank and file. Hence, it seems reasonable to conclude that the bulk of Soviet military writing reflects a reasonably faithful picture of what the Soviets really think. All too often the Western mind views the Soviet mind as a mirror image of its own. *Soviet Style of War* will help us perceive more realistically Soviet motives and behavior in conducting *their*, not *our*, style of war.

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Blacks and the Military by Martin Binkin and Mark J. Eitelberg, with Alvin J. Schexnider and Marvin M. Smith. Washington: The Brookings Institution, 1982, 190 pages, $18.95 cloth, $7.95 paper.

Military members are aware that social forces affect mission performance, and commanders have to be cognizant of the need for success of their personnel. Social changes in the military since World War II have affected blacks more than any other segment of American society. From the beginning of desegregation in 1948, to the gains of the Robert McNamara era, to the impact of Vietnam, blacks have moved toward full integration. Statistically, by 1981, in the enlisted force, blacks represented more than 33 percent of the Army, 22 percent of the Marine Corps, more than 16 percent of the Air Force, and 12 percent of the Navy. However, some have viewed this overrepresentation—blacks make up 12 percent of the nation's population—as a "problem." This attitude has come principally from nonmilitary scholars.

Martin Binkin and Mark J. Eitelberg, with Alvin J. Schexnider and Marvin M. Smith, have examined every aspect of the current discussion over the employment of blacks in the military, and the Brookings Institution has published the results of their research. The authors have set ambitious goals in collecting a wealth of material to stimulate research and encourage debate. Their effort is amply documented and accessible in the footnotes at the bottom of the page. However, they do not wish to draw any conclusions or attempt to settle the debate. They have collected the information; others must use it or continue the research. Still, the book has generated a fair amount of controversy because they have discussed the "problem" and because some people believe that their real purpose in writing *Blacks and the Military* was to advocate the return of the draft.

What are the issues affecting blacks as they serve in the U.S. military? There are several, but permeating all the rhetoric is the central question of whether there are too many in the armed forces. Some argue that this number imposes an unfair burden on one segment of American society, especially in potential combat casualties, while others believe that the large number poses certain risks to U.S. national security. Most of the arguments lean toward the latter and seriously question the government's wisdom in permitting the percentages of blacks to get to a high level. Interestingly, and a point not discussed, many Department of Defense military and civilian officials have denied that the overrepresentation is a "problem" or have simply ignored the whole issue.

Recently, the Army's personnel chief, Lieutenant General Maxwell R. Thurman, disputed contentions that the Army had too many blacks, or that they might bear an unfair burden of combat casualties, or that they might be unreliable in certain military operations; the high percentage of blacks, the general remarked, "doesn't cause me any problem at all." (*New York Times*, July 4, 1982) As a military person, I also question the validity of many of the arguments concerning blacks. But that does not mean that the whole issue should be ignored; periodically, it is refreshing and important to examine our military. But what is complicating the question of black participation is that it is part of a larger and more important topic that has not been resolved—the concept and role of military service in contemporary American society. And the Cold War environment continues to add confusion to the discussion. This does not lessen the value of *Blacks and the Military*. Military members need to be introspective and confront all issues affecting our chosen profession, and this work provides excellent food for thought.

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Fight for the Falklands! by John Laffin. New York: St. Martin's Press, 1982, 215 pages, $5.95 paper.

The swish of the missiles has barely died away, and the political and military aftershocks still jolt the Southern Cone, but British journalist-historian John Laffin has generated a book-length account of the 1982 Falklands War. From title to end of 201 pages of undocumented, large-type text, *Fight for the Falklands!* gushes forth the British version of the struggle.

A mutual intelligence failure set Argentina and Britain on a collision course. The Argentines misinterpreted the willingness of the British to make minor concessions and miscalculated British military strength and resolve. British Foreign Office analysts dismissed Argentine warnings as rhetoric of a military regime mired in political turmoil. Once the Argentines occupied the islands, Prime Minister Margaret Thatcher responded with "rapid, sustained action." Britain scored a diplomatic victory by gaining the European Economic Community's backing while assuming eventual U.S. support.

Britain's electronic arsenal and the skill of specially trained units guaranteed British victory in the early conflicts. With Downing Street's nod, Tigerfish torpedoes microchipped the *General Belgrano* to its icy death. British commandos destroyed aircraft, radar, and munitions in a flawless raid on Pebble Island.

After the "nonnegotiations" collapsed, Admiral Woodward unleashed the liberation invasion supported by more than 26,000 men and a hundred ships. Skillful diversions, just the right equipment, and lack of an Argentine land resistance explains the invasion's initial success. Incredibly, the Argentine Air Force handed the British 36 hours of respite after an initial D-day challenge. But they returned with kamikaze tactics to claim one British frigate after another as the Sea Dart missile's radar proved clumsy in combat. The land battle glowed occasionally white hot, but superior British mobility, equipment, and training spelled Argentine defeat.

Laffin's book offers much raw material for debate and insight. Fighter pilots' spines will tingle with accounts of Argentine tactics against missile defenses. Laffin's conclusion that Admiral Woodward got away with violating "a long standing rule of war . . . that air superiority is essential" demands amplification. Can "detailed planning, skill, courage," and a few vertical takeoff jets substitute for air superiority? One suspects that Argentina's low stock of Exocet missiles and the brevity of the land battle may have proved more important. Laffin also heaps new fuel on a traditional fire: the debate on the wartime roles of the press and official propaganda. His long-term solution to the conflict—construction of a U.S. base to serve "American geopolitical ambitions in the South Atlantic"—should also provoke discussion.

Laffin's pro-British sympathies heavily tint his account. He stresses British humaneness but omits mention of press reports that several Argentine prisoners died while searching for unexploded mines. He says nothing about the British helicopter crew reportedly rescued in southern Chile. He approves of British "calculated leaks" of disinformation while deriding Argentina's "extravagant propaganda." He displays a certain disdain for Argentines, whose men are "victims of machismo" and whose women "accept that they are being reared for early marriage or domestic service." Argentine leaders were ignorant of British traditions and "neither imaginative nor intelligent enough" to be more effective.

Reading this work is an important first step in under-

standing the course of the Falklands War and how electronic weapons affected its outcome. It also helps explain why, in the author's words, "neither side understood the nature of the other."

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U.S. Foreign Policy and Asian-Pacific Security edited by William T. Tow and William R. Feeney. Boulder, Colorado: Westview Press, 1982, 264 pages, $20.00.

The basis for *U.S. Foreign Policy and Asian-Pacific Security* was a panel on Asian-Pacific security that convened at the International Studies Association meeting in 1981. In addition to the papers presented at that gathering, contributions were solicited from Stephen Gibert and Robert Rau in order to expand the scope of the inquiry and lend a fuller measure of analysis to the topic.

The basic premise of this book is that the United States should adopt transregional strategies for both Europe and Asia which, while not so elaborate as to constitute a global security organization of non-Communist or anti-Soviet countries, would be fully capable of producing a greater return on U.S. security investments than is now possible. The specific intent of this collection of essays is to develop a framework of analysis for future and more sophisticated models of transregional security integration between the United States and its Asian-Pacific defense partners.

William Tow contends in the first chapter that the foundation necessary to build such a transregional security linkage with our Asian-Pacific allies already exists. He points to recent Japanese interest in increasing strategic dialogues with NATO powers as well as the growth of overall military interaction between Asian and European states.

Stephen Gibert of Georgetown University argues that, while rapprochement with the People's Republic of China (PRC) is a welcome development, the United States must not neglect its commitment to Taiwan. By proposing that the United States engage in such a juggling act in conducting our policies toward the PRC and Taiwan, Gibert indicates a serious misreading of the extent to which the PRC holds our break with Taiwan as the main ingredient in a continuation of friendly relations between the United States and the People's Republic of China.

Robert Rau believes that the members of the Association of Southeast Asian Nations (ASEAN)—which consists of Indonesia, Thailand, the Philippines, Singapore, and Malaysia—have come to recognize the need to develop their own resilience and military strength as a result of partial Western strategic retrenchment from Southeast Asia. Further, he reasons that the United States and its Western allies could enhance regional security by lending encouragement and support to ASEAN.

Sheldon Simon concludes in his chapter that the U.S. "contribution to Southeast Asian security for the 1980s will be neither as ubiquitous as the 1960s and early 1970s nor as minimal as most skeptics contend." What is needed, according to Simon, is a new modus vivendi by the United States, the PRC, Japan, and ASEAN with Vietnam and the U.S.S.R. This would permit the Asian-Pacific region to devote more of its resources to development rather than military preparations.

Henry Albinski lends some observations on why ANZUS (the alliance between Australia, New Zealand, and the United States) has been so stable and notes that exponents of a viable security framework for the Asian-Pacific region might well wish to keep it so.

In the final substantive chapter, William Feeney treats issues such as geographical, legal, and political/economic problems connected with the U.S. Asian-Pacific basing system. He accentuates the need to increase contact and cooperation among military personnel of allied and friendly regional states.

By way of conclusion, the collective analyses of the contributors are synthesized, and some tentative policy recommendations are offered. Taken as a whole, this book makes a strong argument for the adoption of the transregional option.

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Napoleon's Great Adversaries: The Archduke Charles and the Austrian Army, 1792-1814 by Gunther E. Rothenberg. Bloomington: Indiana Press, 1982, 191 pages, $18.95.

Students of the Revolutionary and Napoleonic periods will appreciate this short but encompassing study of the force which contributed the most manpower and was most often in the field against the French—the Army of the Habsburg Empire.

After an overview of the Austrian Army, Gunther Rothenberg follows it from the First Coalition of 1792 to the entry into Paris in 1814. Battles are discussed, but the emphasis is on administration and organization, the quality of leadership, the bitter and confused relationships between military and civil leaders, and the feeble efforts at reform. As his focal point, Rothenberg concentrates on the central military figure, Archduke Charles, brother of Emperor Francis I.

Rothenberg, the foremost American historian of the Austrian military, provides a fascinating look not only at the military but also at the political and social fabric of the Habsburg Empire. The emperor's distrust of his generals, especially his brother, and the constant interference he insisted civilians play in the organization and strategy of the army shows throughout. The unwillingness to recognize or implement even the most fundamental tactical and organizational changes is obvious. Most important, no one of importance, neither the reactionaries nor the enlightened conservatives such as Charles, was willing to accept any military reform that would require social or political change. Clearly, military defeat was more palatable than changing the status quo.

The very thoroughness of the picture Rothenberg presents, however, calls into question his own title. Reading the catalog of mismanagement, ill-preparedness, backstabbing, and operational blunders, one wonders how the word "great" can be applied to this army and its leaders. Certainly,

one can admire the sheer staying power of this polyglot Austrian Army. It is also true that this army did serve the political goals of its state, "not to achieve military glory but to defend and restore the dynastic order of the eighteenth century." Yet its performance on the battlefield was generally mediocre at best. Likewise, the portrait of Charles as an individual seeking only limited reform while often insisting on the old ways and lacking the drive to impose his ideas on his subordinates does not support the conclusion that "the Archduke was a great soldier."

If the description "great" applies to any part of the Habsburg military in this period, it belongs to the regimental officers and the rank and file who "displayed fortitude and professionalism" and "fought much better than could be expected." Unfortunately, this is the one area that remains obscure, presumably due to the paucity of source material.

Great or not, the Austrian Army was a constant adversary which, by whatever means, imposed the first battlefield setback on Napoleon. By providing this look at the other side of an oft-neglected hill, Gunther Rothenberg has contributed to our understanding of the entire Napoleonic Age.

Lieutenant Colonel Robert C. Ehrhart, USAF
SHAPE
Belgium

Modern American Armor: Combat Vehicles of the United States Army by Steven J. Zaloga and James W. Loop. London, England, and Harrisburg, Pennsylvania: Arms and Armour Press, 1982, 88 pages, $15.95.

At first glance, this is a typical picture book of the coffee-table variety, full of photographs of tanks in action and obscure experimental models that never entered production. However, *Modern American Armor* is a deft combination of reference book and specialized history. As a reference, this book includes virtually all forms of armored vehicles, such unusual types as the M993 Multiple Launcher Rocket System and the U.S. Marine Corps amphibious troop carriers. Each of the major weapons is accompanied by constant 1/76 scale drawings as well as explanations that note the recognition features that distinguish different models. This volume is, in fact, a companion to the authors' earlier *Modern Soviet Armor* and as such is an excellent reference for anyone who needs to distinguish between combat vehicles on sight.

More important for the general reader, *Modern American Armor* is a good brief history of how and why these vehicles have evolved since 1944. To cite but one example, the authors correctly identify the reasons why the M4 Sherman tank was frequently outclassed by its German opponents in World War II. According to American doctrine, the Sherman was mass produced as a reliable, mobile vehicle for armored exploitation, while specialized antitank or tank destroyer units defeated enemy armor. Such explanations greatly assist any reader seeking to understand why American combat vehicles have developed in specific ways.

Captain Jonathan M. House, USA
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The Army Gets an Air Force: Tactics of Insurgent Bureaucratic Politics by Frederick A. Bergerson. Baltimore: Johns Hopkins University Press, 1980, 216 pages, $14.00.

A decade ago the third largest air force in the world (after the United States Air Force and that of the Soviet Union) belonged to the U.S. Army. Frederick A. Bergerson, associate professor of political science at Whittier College and a veteran of the 1st Air Cavalry, seeks to determine the process by which the army acquired its own air corps. His approach is to analyze the Army insurgents in the bureaucratic maze as they obtained the right to develop their own air support.

Bergerson's primary thesis is that "when controversy occurs over basic issues of role, mission, and domain, in large-scale organizations under certain conditions a movement can develop which might be called a bureaucratic insurgency." To prove his thesis, the author stresses the importance of mission and the role of noncompliance in the process by which this comes about.

He contends that mission can act as a unifying force among those who wish to alter the official policy of their superiors. He examines the many degrees of noncompliance from direct disobedience of an order to partial compliance.

From Pearl Harbor into the 1960s, the U.S. Air Force thought itself to be solely responsible for air support of the Army. In the sixties, a small group of Army officers—whom Bergerson labels "insurgents"—realized the future significance of the helicopter. They managed to overcome opposition from their Army superiors, civilian authorities, and the Air Force through various bureaucratic maneuvers and techniques (described in detail in Bergerson's model) and systematically reconstructed the Army Air Force.

Bergerson's slender study provides a working model that may be useful to the analyses of other "political phenomenon." However, *The Army Gets an Air Force* is certainly not a quick read.

Dr. Stephen D. Bodayla
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Africa's Super Power by Paul L. Moorcraft. Published by Sygma Books and Collins Vaal, 1981, Johannesburg, South Africa, Distributed in U.S. by Battery Press, Inc., Nashville, Tennessee, 192 pages.

Military propaganda can be occasionally useful reading; although not usually valuable from a technical viewpoint, it can be from an emotional one. Paul Moorcraft's *Africa's Super Power* is an unabashed paean to South Africa's military machine, which the author sees poised to repel the "total onslaught" of Soviet-led forces against Pretoria. This coffee-table display-size book is crammed with admirable photographs of South African military equipment and heroic personnel but is a bit thin on specifics regarding number, capability, and deployment of forces. That is to be expected in a country where the government strictly controls information about its military. Students of South African military capabilities will do well to stick with *The Military Balance*. The text that supplements the photos is more lively

than one expects from official sources, but the substance of the writing carefully follows government-approved themes and is very selective when presenting facts to support South Africa's interpretation of the Soviet worldwide threat. Moorcraft acknowledges the assistance of several South African governmental organizations in producing the book; I have little doubt that his work underwent careful official scrutiny before being published.

That being the case, why should anyone not enamored with military pictures read *Africa's Super Power*? First, the author strongly imparts the bitterness of South Africans at their treatment by the United States and the United Kingdom since 1945. Pretoria sees itself as having been discarded by the countries it helped in the world wars and Korea, unwillingly driven into the role of international pariah. Further, Moorcraft all too clearly shows the extreme to which the Republic of South Africa has committed itself to the notion that South Africa is about to be sucked under by a Soviet-created maelstrom; that this bastion of Christian, Western civilization is facing imminent invasion from Moscow's surrogates, perhaps even direct intervention by Soviet forces as well. Thus, the only hope for the republic is to have a military powerful enough to deal with any threat from guerrilla war to conventional invasion. This extreme interpretation of the threat facing South Africa is dangerous on at least two counts: it tends to harden the isolated position of the government, and it makes clear assessment of Soviet goals in southern Africa very difficult. With planning blinded by the fear of imminent onslaught, South Africa sacrifices the flexibility needed to deal with what is a very long-range Soviet policy goal. The Soviets do see opportunities in southern Africa, and they will be supporting forces opposed to Pretoria in order to drain South African will power and strength. It will probably be a process stretching ahead for decades, and South Africa would do well to face the threat realistically rather than push the idea of imminent invasion.

In an indirect way, then, *Africa's Super Power* serves the interests of an American reader. It provides a glimpse of an obviously capable military force and it raises our awareness of a problem that will not fade away. That problem centers on an interesting combination: our need for strategic metals, the growing Soviet cadre of "advisers" working in southern Africa, the Soviet's expanding power projection capability, and our desire and ability to influence events in distant places. It is essential that we understand the stakes involved in southern Africa and the thinking of the major players. Moorcraft's book is a colorful start for anyone interested in the political-military situation in southern Africa.

Lieutenant Colonel David J. Dean
Center for Aerospace Doctrine, Research, and Education
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A Policy for Peace by Field Marshal Lord Carver. London: Faber and Faber, 1982, 114 pages, $4.95 paper, $9.95 cloth.

This slim but meaty volume argues that no sane policy can be rationally furthered by recourse to even "limited" nuclear war and that the stocks of nuclear weapons in Europe should be greatly reduced. Advocates of these reductions will be pleased to read such opinions from a former Chief of the British Defence Staff, and serious students of the nuclear question from all perspectives will profit from his detailed exposition of the historical and theoretical background of the issue.

After previewing his main conclusions, Lord Carver argues that the Clausewitzian notion of absolute war has been misunderstood and emphasizes the importance of subordinating military to political considerations in the conduct of war. The goal must be a victory in which all sides suffer as few casualties as possible, a consideration that is particularly urgent given the nature of modern weapons. He then summarizes the views of previous writers on nuclear war, particularly limited nuclear war, and shows how the assumptions that make such wars feasible are not valid. This discussion is placed in the historical context of evolving nuclear capabilities and doctrine.

It seems to me to be beyond serious question that we must reduce our reliance on nuclear weapons of all types, although many will take issue with Lord Carver's specific recommendations for doing so. These include reducing the stockpiles of weapons for limited nuclear war, maintaining only an invulnerable (and necessary) reserve for deterrence; making better use of manpower reserves by organizing them into NATO-linked "home guard" forces with light antiarmor weapons; reducing or even eliminating Britain's independent nuclear deterrent; emphasizing confidence-building measures with the Soviets; and accepting the present European borders and alliances as given, in view of the danger that an uprising in Eastern Europe could escalate into general war in a process of perception and misperception similar to that of 1914.

Readers interested in a crisp exposition of Lord Carver's policy recommendations can skip to the last thirty pages, but they will miss the intellectual and historical context provided earlier. My only complaint is that overlong quotations from Clausewitz, Herman Kahn, André Beaufre, and (especially) Henry Kissinger detract from the flow of the argument ably presented by the author in his own words. As an expensive primer for those who wish to learn or relearn the history and theory of the nuclear debate, it is first rate, and the author's conclusions deserve careful consideration.

Dr. John Allen Williams
Loyola University of Chicago

Above and Beyond: 1941-1945 by Wilbur H. Morrison. New York: St. Martin's Press, 1983, 314 pages, $16.95.

Wilbur Morrison's recently published *Above and Beyond* is the latest of the author's six books about various aspects of the history of air power, following *Point of No Return* (1979) and *Fortress Without a Roof* (1982). With these two books, the new work forms a trilogy covering the air war of World War II. *Above and Beyond* is a one-volume narrative focusing on the role of naval air power in the Pacific during the Second World War.

The author, a retired Air Force lieutenant colonel who served with the Twentieth Air Force during the war, provides

a fast-moving, action-packed account of the events with which he deals, based on his study of declassified navy documents, operations journals, and previously published war histories, as well as on numerous interviews with men who served in the Pacific Theater of war.

The text is more or less chronological in its organization and is clearly written to entertain rather than to educate. While how the war ended can never be in doubt for adult readers, they cannot help becoming emotionally involved in the exciting, life-or-death events Morrison describes: actions on the outcome of which the lives of the individual participants, the functional capability of entire fleets, and the destiny of the world's nations all depended.

The author keeps his conviction that air power is all-important in war on a comparatively low-key basis through most of *Above and Beyond*, vitiating its more forthright statement toward the end with the admission that "by a large margin, his [Admiral Chester W. Nimitz's] submarines sank more [Japanese] ships than the entire air effort." (p. 292)

A researcher looking for specific details of some action in the Pacific during World War II may happen to find what he needs in *Above and Beyond*, making the work momentarily valuable for him. Most readers, however, can be classified into three groups: lay, military, and scholarly. Curiously, Morrison's text proves unsatisfactory for members of all three groups.

The book deluges the reader with an endless succession of details, many of which are fully meaningful only to someone who thoroughly understands the geographic relationship to each other of the places mentioned on virtually every page. The average reader is no expert on the geography of the Pacific and will be left with a feeling of dissatisfaction.

Unless they are out merely to kill time or entertain themselves, military men will probably read *Above and Beyond* in the hope of gaining new insights into the strategy and tactics of modern combat. Their hope is going to be a forlorn one, though—lessons to be learned from World War II fighting have long since been extracted.

Because the book is simply not a scholarly one, historians and other scholars will be put off by the mass of trivial information included.

However, Morrison's *Above and Beyond* may well be a topic of conversation during the next twelve months. Thus, anyone who wants to participate knowledgeably should read it.

Major Steven E. Cady, USAF
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Jane's Military Review edited by Ian V. Hogg. London: Jane's Publishing Company Limited, 1982, 160 pages.

Probably the most enduring feature of *Jane's Military Review*, second edition, is its treatment of the Falkland Islands invasion. Published just months after the hostilities ended (and appropriately caveated as hastily compiled) it has nonetheless zeroed in on one major lesson to be drawn from the conflict: that we should beware of drawing the wrong conclusions too quickly from the results of that fray. Jane's commentator has addressed what the British strategy should have been rather than dwell on successes resulting from Argentine ineptness. For example, British air was supreme over the Falklands in spite of a lack of a British offensive counterair campaign. Similarly, the survival of Britain's two aircraft carriers should be a reinforcing argument neither for more and larger aircraft carriers nor against airborne early warning aircraft (which were not available).

My only criticism of Jane's treatment of the Falklands episode is that it did not go far enough with what has to be the paramount lesson learned: implied but not stated emphatically is the point that Britain had to fight the war they were least prepared to fight. Within the tight budget constraints of the 1980s, they had built a compact, economical military force designed to fit neatly into the integrated military structure of NATO. As a result, it was exactly the wrong force for a Falklands action: short on air transport, lacking airborne surveillance, and possessing no suitable long-range interdiction or antiairfield weapon systems. Although I do not wholly accept the statement attributed to a previous editor of *Jane's All the World's Aircraft* that, "History . . . repeats itself to such an extent that if one knew all history one would never make a mistake in life . . .," I agree that we tend to have to relearn some of the lessons of history, often at great cost.

Of considerable interest are the chapters that constitute a useful look at several aspects of today's NATO and its forces. Articles on the Central Army Group (a NATO principal subordinate command under Allied Forces Central Europe) and the German Territorial Army (the instrument of rear area security, personnel replacements, and other key functions for the German Army) fill in some organizational details while articles on the role of infantry and the current state of the NATO alliance deal with more subjective matters. While generally nonpolitical and objective, the closing article by Nicholas Stethem is more pessimistic than optimistic and may leave the reader with a nagging feeling of disquiet.

For those readers with a more technical orientation, there are articles providing an in-depth look at the current state of the art in military hardware, accompanied by a primer on how we have achieved our current state. A feature on "optronics" (optics plus electronics) gives a good layman's history of low-light/no light viewing devices. Night is now like day on the battlefield, and we need to get over our "fight-by-day/sleep-by-night" mind-set—our potential enemies will exploit it to the maximum. Articles on explosives and ammunition, tank guns, and other equipment are also interesting, informative, and authoritative. For the history buff and just to show how far we have come in 100 years, editor Ian V. Hogg provides excerpts from an 1882 equipment list that include an approval for an india-rubber chamber pot for the use of lunatics.

For posterity, *Jane's Military Review* provides a look at the military environment of 1982 seen in the perspective and context of 1982. As such, it is a welcome addition to the military professional's library.

Lieutenant Colonel William E. Boston III, USAF
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The French Riviera Campaign of August 1944 by Alan F. Wilt. Carbondale: Southern Illinois University Press, 1981, 208 pages, $15.00.

Of the major amphibious operations of World War II, Operation Dragoon, the Allied invasion of southern France in August 1944, is one of the least known. Alan Wilt's book is the first full-length account of the actions of all participants in the campaign, rather than just a German or particular Allied nation's view. It is a very well-researched and -written account of an operation that was a microcosm of the problems of coalition warfare and the Allied mastery of air, land, and sea combat which won the war.

Professor Wilt emphasizes the intense debate between British and American planners over whether the potential gains from the invasion were worth the investment of men and materiel. The British argued for concentrating Allied resources on the Italian campaign, while the Americans insisted that Dragoon was vitally important in reducing enemy pressure on the Allied foothold in Normandy. In the end, the dominant American position in the Western alliance forced the British to give way. According to Wilt, Dragoon was a great tactical success. Within a month, southern France was cleared of German troops, Allied forces in the south linked up with those in the north, and Allied supplies were moving through French Mediterranean ports. Unfortunately, large numbers of German troops escaped from southern France and rejoined their northern forces.

The strategic significance of Dragoon is harder to assess, Wilt believes, because though it cleared southern France, it weakened the Italian campaign and reduced the chance of an Allied breakout through Italy into central Europe. Thus, the Allies were unable to meet the Soviets as far to the east as some British officials wished. However, he concludes that the main importance of Dragoon was its clear indication of American preeminence in setting the Western Allied strategy during World War II.

The French Riviera Campaign of August 1944 is an excellent study of the political and military aspects of one of the major Allied operations in Europe and is a must for students of the European theater or coalition warfare. It is well illustrated with maps and photographs and contains extensive notes and bibliography.

Captain George A. Reed, USAF
U.S. Air Force Academy, Colorado

Yours to Reason Why: Decision in Battle by William Seymour. New York: St. Martin's Press, 1982, 338 pages, $17.95.

Former career officer in the British army and amateur historian William Seymour examines the strategic and tactical decisions in ten campaigns that begin with the Norman Invasion of Britain (1066) and end with Anzio (1944). These campaigns are all essentially on land, a medium for battle in which Seymour, a professional surveyor, feels at home and describes with a keen eye for the influence of terrain and weather. Some of the campaigns (Saratoga, Waterloo, Chancellorsville, Gettysburg) will be more familiar to American readers than others (Crécy, Agincourt, Oliver Cromwell's 1650 campaign in Scotland, and the Gaza battles of 1917).

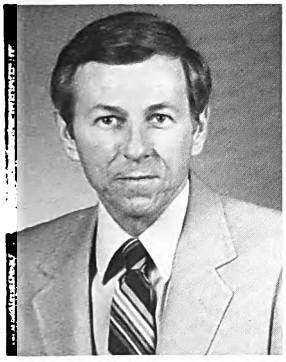
Seymour's purpose is to examine generals' choices at critical moments in campaigns and battles by reconstructing the plausible choices they faced. His alternatives are largely rational, based on the sort of situational assessment learned by all professional ground officers in the twentieth century. (The current Army formula is METT-T.) One difficulty with *Yours to Reason Why* is that Seymour combines his own judgment and the assessments of his principal generals. It is sometimes unclear whether, say, Napoleon and Lee actually assessed the situations the same way Seymour does. Seymour complicates the analysis by shifting the perspective among several commanders engaged in the same battle.

Written with some grace and solidly based on the better secondary accounts of its campaigns and battles, *Yours to Reason Why* does not, however, catch the physical and psychological stress in which field commanders operate. Intestinal problems, for example, probably clouded Napoleon's and Lee's tactical vision on two of their worst days of command (18 June 1815 and 3 July 1863). In addition, Seymour says little about the decision-making structure of his commanders, i.e., their staffs, their advisers, their procedures. The best appraisal on every score, interestingly, is Seymour's account of the Anzio campaign, in which the author fought as an officer of the Scots Guards. Seymour's performance at Anzio suggests that he might have done better with fewer campaigns and more detail, for he seems to have the potential to mix the best Keeganesque description with command and staff college rationalism.

Yours to Reason Why will appeal to war-gamers and amateur generals, especially since it contains serviceable maps and orders-of-battle. It does not, however, contain systematic unit assessments and combat effectiveness ratios. Nevertheless, Seymour has written an intelligent, engaging book that takes a careful look at the dilemmas of command in several important campaigns. His book is a modest contribution to the growing literature on operational history.

Dr. Allan R. Millett
Ohio State University

the contributors



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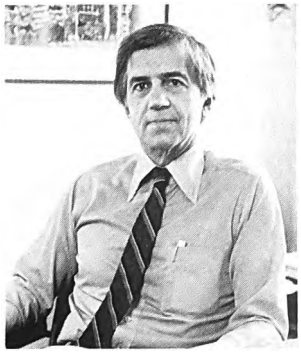

Albert L. Weeks (M.A., University of Chicago; Ph.D., Columbia University) has taught politics and history for the past 25 years at New York University and is a member of the Advisory Council of the National Strategy Information Center, Inc. He served in the USAAF as a navigator during World War II. Dr. Weeks has written for numerous professional journals, civilian and military, and is International Affairs Editor of *Defense Science 2001+*.

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AWARD

The Air University Review Awards Committee has selected "Of Saber Charges, Escort Fighters, and Spacecraft," by Major General I. B. Holley, Air Force Reserve (Ret), as the outstanding article in the September-October 1983 issue of the *Review*.

attention

The *Air University Review* is the professional journal of the United States Air Force and serves as an open forum for exploratory discussion. Its purpose is to present innovative thinking concerning Air Force doctrine, strategy, tactics, and related national defense matters. The *Review* should not be construed as representing policies of the Department of Defense, the Air Force, or Air University. Rather, the contents reflect the authors' ideas and do not necessarily bear official sanction. Thoughtful and informed contributions are always welcomed.

Address manuscripts to Editor, *Air University Review*, Bldg. 1211, Maxwell AFB, AL 36112. *Review* telephone listings are AUTOVON 875-2773 and commercial 205-293-2773. Manuscripts should be submitted in duplicate. Military authors should enclose a short biographical sketch, including present and previous assignment, academic and professional military education; nonmilitary writers should indicate comparable information.

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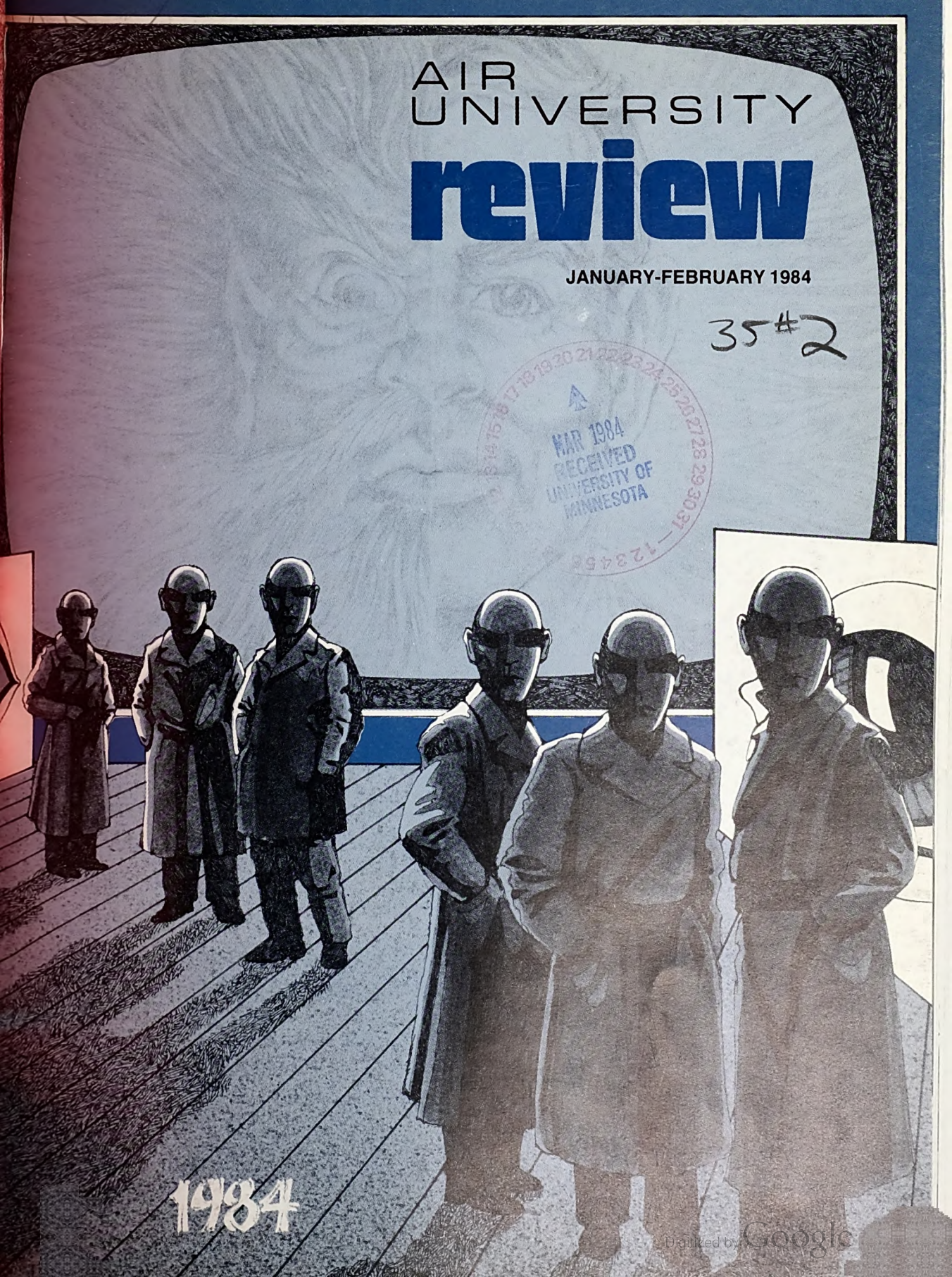
The Professional Journal of the United States Air Force

AIR UNIVERSITY review

JANUARY-FEBRUARY 1984



Professionalism and the *Air University Review*

In recent years the military has been taken to task for lack of serious intellectual involvement in its own profession, for its failure to posit new strategies and doctrines for waging war—in effect, for having abdicated its field to civilian minds. Whether this is a valid criticism is debatable, but one fact is not: for 36 years, the *Air University Review* (with its parent *Quarterly Review*) has been the professional journal of the U.S. Air Force, serving us well as a forum for dissemination of ideas from some of the brightest minds, both in and out of uniform.

In reviewing last year's editions, for example, we find that in September-October Major General I. B. "Bill" Holley, USAFR (Ret), has written a minor masterpiece, "Of Saber Charges, Escort Fighters, and Spacecraft," using episodes from military history to review the dynamics of doctrine. Captain Forrest Waller, in May-June, gave us a thoughtful analysis of the defense proposals from the reformers in "Paradox and False Economy: Military Reform and High Technology." In March-April, Major Lonnie Ratley presented a fascinating and useful history lesson, "The Luftwaffe and Barbarossa." Lieutenant Colonel David Dean's article in July-August, "Air Power in Small Wars: The British Air Control Experience," raised important questions about the role of air power in modern low-intensity conflicts. In January-February, Lieutenant Colonel Gerald Venanzi's "Democracy and Protracted War: The Impact of Television" questioned whether television had made it impossible for the people of the United States ever again to support a long war. The September-October edition examined in depth the issue of leadership and management in the Air Force. And there have been dozens of other solid, thought-provoking articles.

In this first issue of 1984, the *Review* looks to the future—and who better to show the way than the Chief of Staff himself, General Charles A. Gabriel, as he discusses his views on the future of the Air Force. Other feature articles examine our relationships with the power centers of communism, the Soviet Union and China.

As we enter this new year, we are reminded of George Orwell's novel *1984*. The hero lived in Oceania and worked at the Ministry of Truth, rewriting history to fit the needs of the ruling party. Fortunately for the free world, the system closest to Orwell's chilling forecast today is not in the Western world but in the U.S.S.R. *Air University Review* does not rewrite history, nor does it reflect only the party line—it *explores* history and serves as a forum for fresh, penetrating thought. In so doing, it makes a major contribution to Air Force professionalism and, in a larger sense, to the defense of the free world.

I have been asked by many junior officers: What can I do to improve my professionalism and my chances for success? My answer: for an easy, enjoyable, and rewarding first step, try reading the *AU Review*.

Charles G. Cleveland
Lieutenant General, USAF
Commander, Air University

AIR
UNIVERSITY
review

January-February 1984 Vol. XXXV No. 2

To be prepared for war is one of the most effectual means of preserving the peace.

George Washington, 8 January 1790

THE AIR FORCE: WHERE WE ARE AND WHERE WE'RE GOING

GENERAL CHARLES A. GABRIEL
CHIEF OF STAFF
UNITED STATES AIR FORCE

SINCE George Washington's time, the task of the military has been to prepare for a war we never want to fight. The United States Air Force, together with its sister services and allies, can prevent war only by having the capability to defend our national security interests wherever and whenever they may be threatened. As John F. Kennedy once said, "Neither smiles nor frowns, neither good intentions nor harsh words, are a substitute for strength."

After a tough period in the 1970s when defense budgets dropped, equipment aged, and we lost many of our most experienced people, things have turned around. The Air Force today is stronger than at any other time in its history. Our people, equipment, and state of readiness are all better than ever before. We have made great strides since the 1970s. Now that we are back on the right track, we need to ensure that our improvement efforts are not derailed because of indifference, inertia, or lack of foresight.

Aviation pioneer Giulio Douhet said: "Victory smiles on those who

anticipate the changes in the character of war, not upon those who wait to adapt after the changes occur." He was right! We need to maintain an Air Force capable of winning not yesterday's but tomorrow's wars.

And war has changed. The United States had three years to prepare for World War I and two years to prepare for World War II. But we might have only days or even minutes to prepare for another major conflict. Because of the "come as you are" nature of today's warfare, we are paying more attention to readiness and sustainability. Over the past two years alone, we have doubled our funding in these areas. And the results are encouraging. The combat preparedness of our units has improved markedly. Mission-capable rates are at all-time highs for the A-7, F-4, F-111, F-15, and E-3A aircraft. Tactical aircrews are now flying an average of 19 hours per month, up almost 50 percent from the 1978 low of 13 hours per month. Sustainability of our forces has also improved greatly. Our spares stocks can generate three times the tactical sorties we could fly in 1980. Airlift utilization rates are also up and increasing. Across the entire Air Force we are building stocks necessary to reach our sustainability objectives.

While we are making every effort to ensure that our current force is ready, we are, as Douhet suggested, also looking to the future. Since we will not be able to match Soviet numbers, we have to depend on better people, better training, and better equipment. We are doing very well in each of these areas.

We have always had high-quality people in the Air Force, and they are getting even better. Our people are smarter, better educated, more highly motivated, and as dedicated as any we have ever had. We are enjoying our best recruiting and retention rates ever. The first-term reenlistment rate is nearly double that of a couple years ago. Had we continued to lose pilots at the rate they were separating in 1979, we would have lost three out of every four after their initial tours. Today, we expect almost three out of every four to stay with us. In 1980, 83 percent of our new recruits had high-school diplomas. Today, 98 percent of new recruits are high-school graduates.

We cannot rest easy with these successes, however. While strong public support and significant pay raises have helped, the state of the economy has played a major role in our recruiting and retention success. With the economy on the mend, we are going to have to work hard to continue to attract the sharp, motivated people we need. We will continue to help ourselves in the recruiting retention competition by maintaining pay comparability with the civilian sector, by further improving the living and working conditions of our people, and by working hard on other people-oriented programs.

Our retirement system, for example, is an important influence on career retention, and yet it repeatedly comes under attack. I believe as did Theodore Roosevelt when he spoke more than 80 years ago, "A man who is good enough to shed his blood for his country is good enough to be given a square deal afterwards." Military retirement is a commitment to our men and women in uniform. Proposed changes to the system that adversely affect our people do irreparable harm to one of our most important retention incentives.

To ensure that our forces are prepared for combat, we will continue aggressive and demanding training. Exercises such as Red Flag give our aircrews realistic training against a variety of simulated enemy aircraft and ground-based defenses. Through the Joint Chiefs of Staff exercise program, we train as we plan to fight, as part of a combined, multiservice force. Through these exercises we get valuable experience in deploying and employing forces under the same joint operational command arrangement we would have in wartime. Even though we have made our training more realistic and demanding, our accident rate has dropped each of the last three years.

But people and training are not the whole story. Even with the best people and finest training, we cannot have an effective Air Force with-

out modern aircraft, missiles, and equipment. Much of our equipment today is old and outdated, and we are modernizing our forces to ensure that they counter not only today's threat but the demands of the future as well.

Strategic Forces

Our current strategic forces have served us well for far longer than we could have expected. The first B-52 flew more than 31 years ago, and many of our ICBMs date from the early 1960s. Meanwhile, the Soviets have fielded generation after generation of new and more powerful strategic weapons. Were we to fail to act, we would face the destabilizing prospect of substantial Soviet nuclear superiority and the resultant weakened deterrent posture. Consequently, strategic modernization is our first priority.

We have begun production of the B-1B, and the first flight of a production model is scheduled for December 1984. As our first new heavy strategic bomber in thirty years, the B-1B is more survivable and has greater weapons-carrying capability than the B-52 and will penetrate improving enemy defenses.

Additionally, we are developing an Advanced Technology Bomber (ATB) to take advantage of "stealth" technology. The program is proceeding as quickly as it can while still ensuring the aircraft's durability and maintainability across a wide range of combat applications. This evolving mix of B-52s, B-1Bs, and ATBs will provide us a flexible bomber force well into the twenty-first century.

Thanks to Presidential and congressional acceptance of the Scowcroft Commission recommendations, our ICBM force will also continue to be an essential element of the strategic triad, providing those unique attributes not possessed by our bombers and submarines. Early testing of the Peacekeeper missile has been completely successful, and we will have ten missiles in place in 1986 and all 100 deployed in 1989. The Peacekeeper will have ten independently targeted warheads and will have greater target flexibility and twice the accuracy of our current front-line weapon, the Minuteman III.

Looking a little farther into the future, we have established a program office for a small single-warhead ICBM, dubbed "Midgetman," which will have an initial operating capability in the early 1990s. We are also upgrading our strategic defensive forces by replacing the aging Missile Impact Predictor computers at Ballistic Missile Early Warning System (BMEWS) sites in Alaska, Greenland, and England. We are also modifying the BMEWS radar at Thule, Greenland, to enable the tracking of a larger number of objects with considerably increased accuracy.

To meet joint surveillance requirements, we will upgrade Distant Early Warning (DEW) line radars in northern Canada and Alaska with 50 minimally attended long- and short-range radars. And to extend our coastal coverage, we will deploy "over-the-horizon" radars looking east, south, and west to provide all-altitude coverage and early warning out to 1800 miles.

During the next decade we will also modernize our fighter interceptor force by replacing our F-106 aircraft. Active duty F-106s will be replaced with F-15s by 1989, and our Air National Guard force, which provides 10 of our 15 air defense squadrons, will switch over to F-16s.

Airlift and Air Refueling

More than 300 years ago, John Dryden wrote, "All delays are dangerous in war." Never has this been more true than it is today. Our airlift force provides us the mobility to respond when and where a crisis may arise and will enable us to minimize and eliminate those delays. Yet, while our airlift force is far and away the best in the world (with probably twice the capability of the Soviet Union's), our requirements for airlift are even greater. Many potential battlefields are four, five, even ten times as far from the United States as they are from the Soviet Union.

Therefore, increasing airlift capability is, after readiness and sustainability, our top priority for conventional forces. Through additional spares

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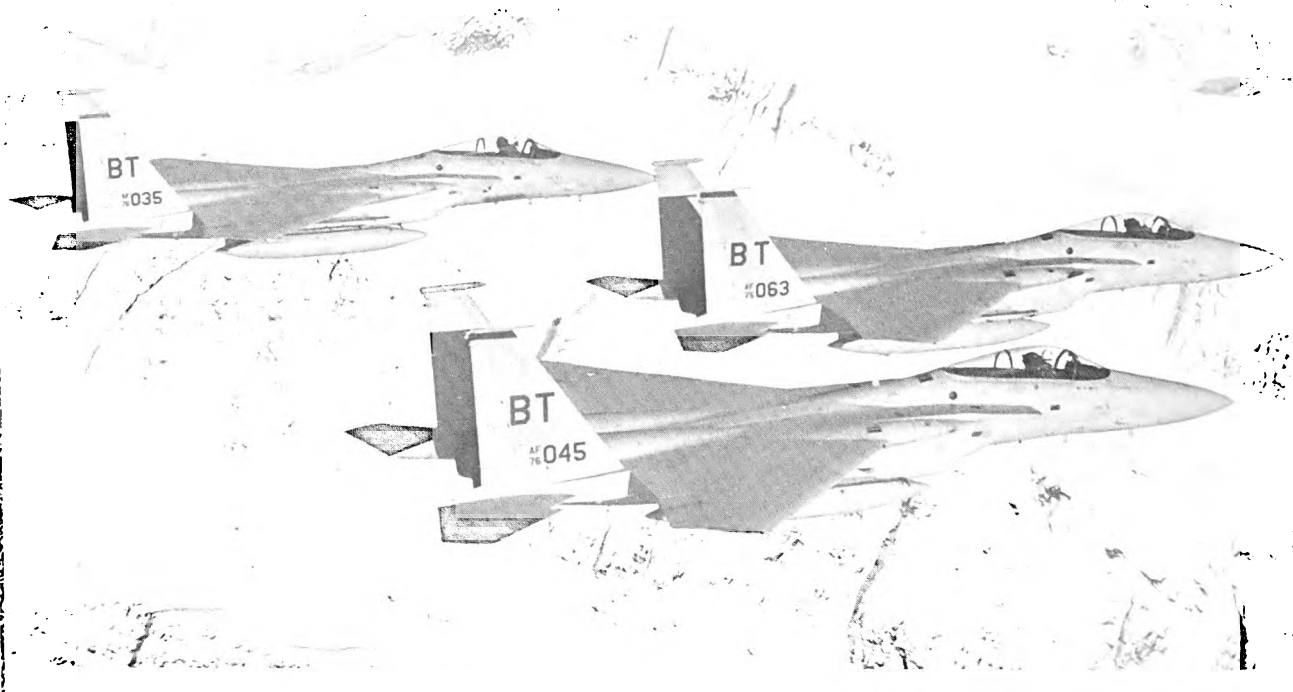
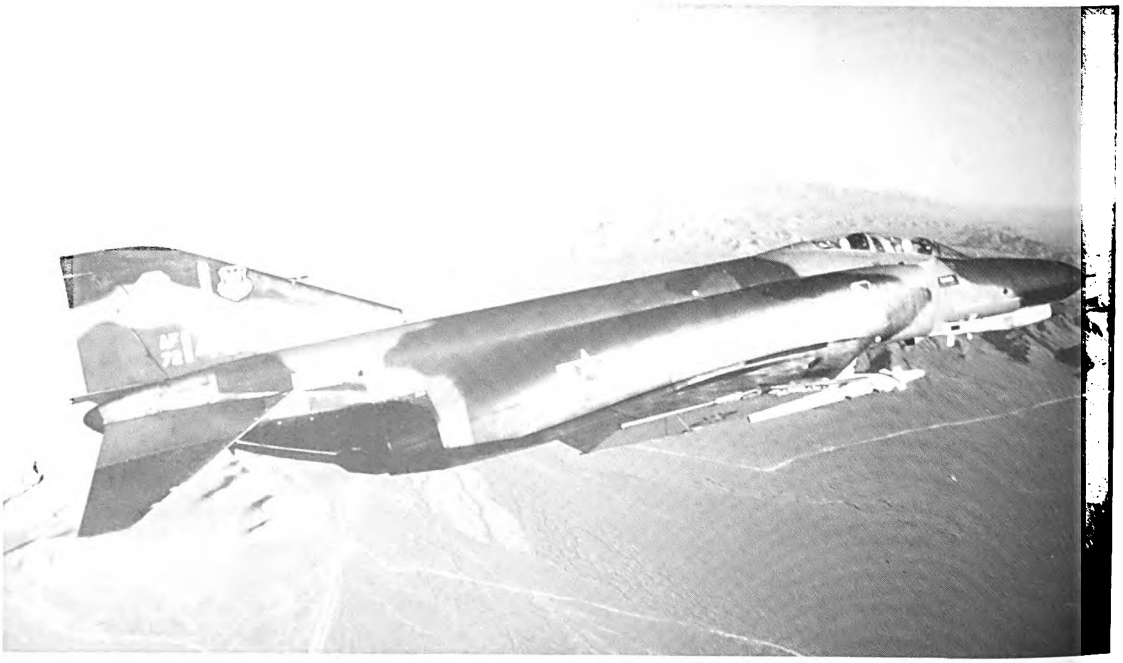
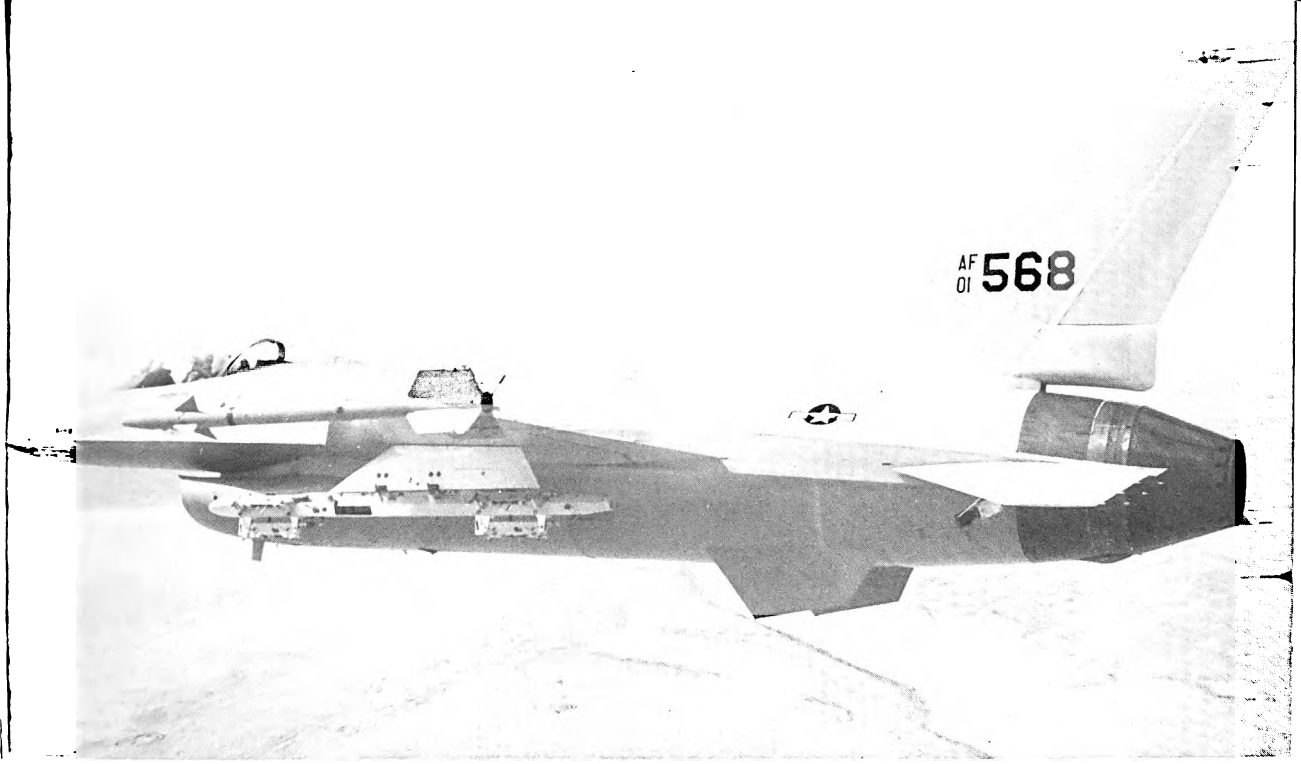
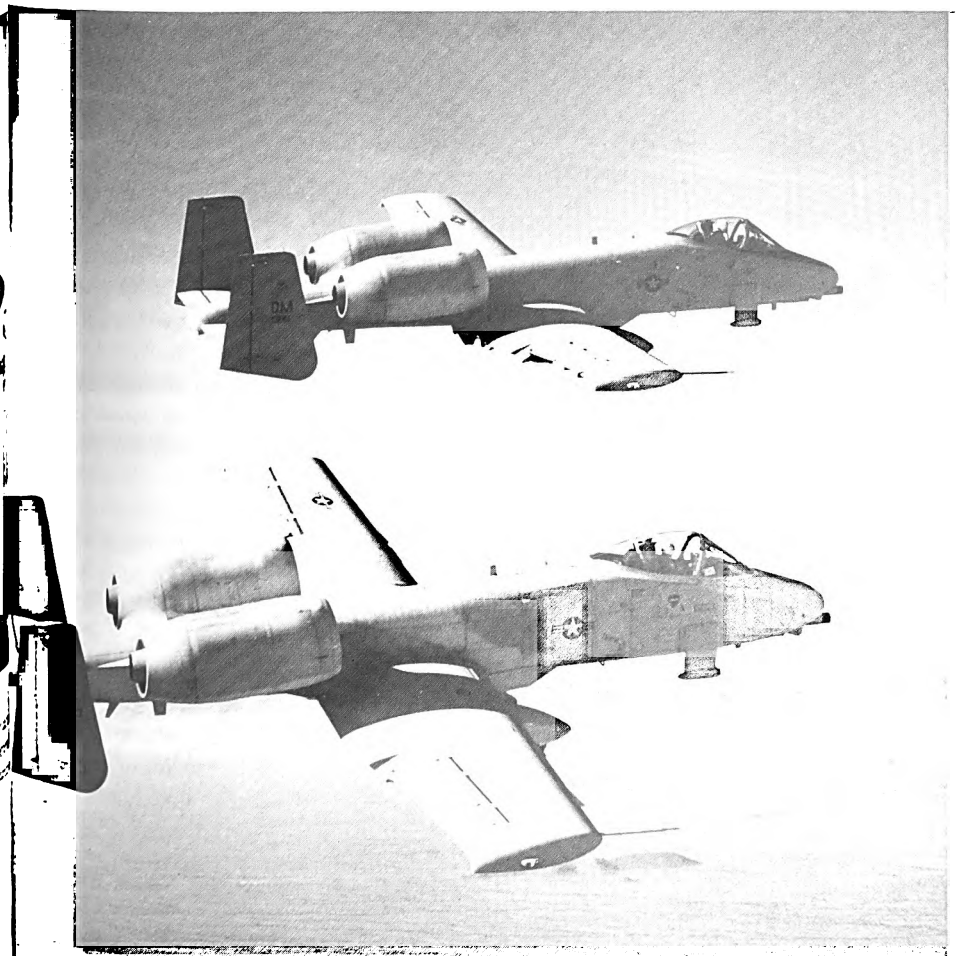
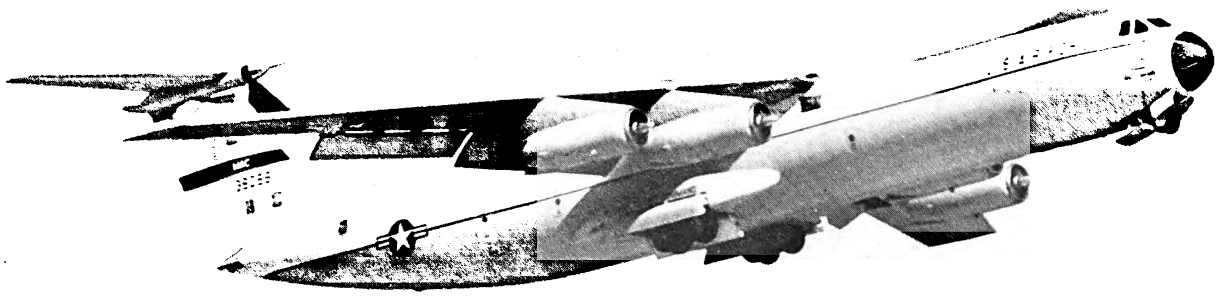




F-15s, F-16s, and A-10s will, by 1985, make up over half of our tactical force as they replace and supplement the venerable but aging F-4 Phantoms.







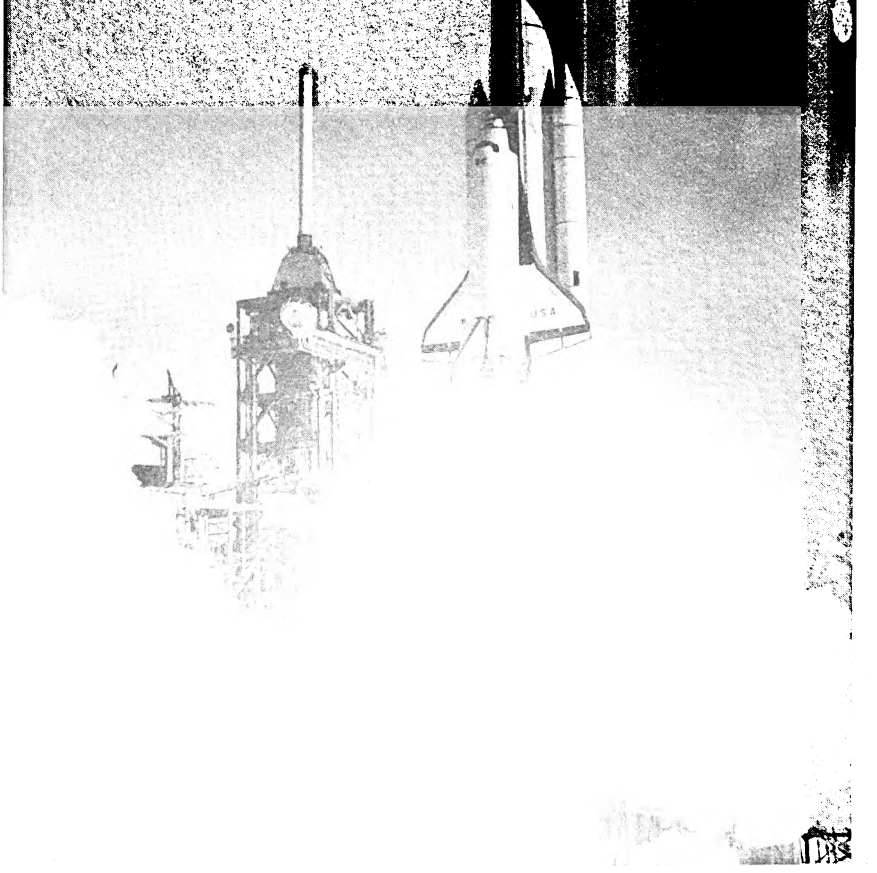
We have increased our intertheater airlift capabilities 25 percent in the last three years by, among other things, stretching the C-141s.

and stretching of the C-141, we have already increased intertheater airlift capability by 25 percent in the last three years. By adding more spares, modifying some commercial passenger aircraft to a cargo configuration, and buying programmed C-5Bs and KC-10s, we will increase that capability by another 75 percent by the end of the decade.

But even that is just a start. We will still need more long-range airlift capability to ensure that our fighter squadrons, Army divisions, and Marine Corps units can deploy rapidly to potential trouble spots. Moreover, despite years of talking about the problem, we still do not have the airlift capability to move Army combat units between austere airfields within a theater of conflict.

The C-17 will solve both of these problems and provide the combat link between a unit's home station and its theater operating location. With the C-17, for the first time, we will be able to pick up a heavy Army unit at Fort Hood, Texas, or Fort Carson, Colorado, and fly it directly to its combat location in Europe or Southwest Asia without being restricted to major airfields. This ability will eliminate the need to transship smaller "oversize" equipment by C-130 and will save the Army the major problem of road marching—sometimes for hundreds of miles—many of its outsize firepower and support vehicles.

In addition to airlift, almost all our deployments today require air refueling. Since 1960 the Air Force has increased its number of air-refuelable aircraft by fivefold. And because of the extra drag caused by externally carried cruise missiles, our bombers will require additional air



The Air Force is committed to the challenges of tomorrow. The ability to preserve the peace and, if necessary, to fight in space will be a part of that tomorrow.

refueling. In sum, our air-refueling requirements have increased dramatically and will continue to do so in the years to come.

To solve this problem we are upgrading our air-refueling force. In addition to fielding KC-10s, which provide us both airlift and air-refueling flexibility, we are modifying our KC-135 force, replacing the obsolete J57 engine with the more powerful and fuel-efficient CFM56 engine and updating or replacing 34 other systems. Combined with the ongoing wing reskin modification, these changes will enable the KC-135R to do the job of one-and-one-half KC-135As and will extend its service life well into the next century.

Tactical Forces

The worldwide conventional threat posed by the Soviet Union continues to grow. In most potential conflicts, our ground and air forces would be seriously outnumbered. Because the enemy would also determine the time and place of combat, we rely heavily on the speed, long range, flexibility, and firepower of our tactical air forces to deter and, if need be, defeat aggression.

In recent years we have been rebuilding our tactical force, and today our fighter aircraft are the best in the world. We are rapidly modernizing, and by 1985 one-half of our fighter force will be equipped with F-16s, F-15s, and A-10s.

Within our modernization program, we are expanding our capabilities to fight at night and under degraded weather conditions. Some will recall that almost 40 years ago the ability of Allied tactical air forces to support ground units during the Battle of the Bulge was greatly reduced by rain, snow, and fog. With only an average four-and-one-half hours per day of day visual weather during a European winter, a night/weather capability is vital. The low-altitude navigation and targeting infrared night (LANTIRN) system will help our A-10 and F-16 aircraft penetrate enemy defenses at low altitude,

at night, and under the weather and seek out and destroy enemy targets. We are also working on derivatives of the F-15 and F-16 and are determining through flight testing and analysis what modifications are necessary to improve our weather and night capabilities without sacrificing proven air-to-air performance.

While we modernize, we are also building our fighter force from the current 36 wings to a midterm goal of 40 wings and to a longer-term goal of 44 wings. As we retire older aircraft, we need 250 to 275 new fighters a year to get to our 40-wing goal and continue to equip these wings with first-line aircraft. Because of the ever-changing tactical threat and advances in technology, fighter modernization is a never-ending requirement. By the early 1990s, even our F-15 and F-16 designs will be 20 years old, and we will need a new generation of fighters to stay on top. While not yet committing to a specific design concept, we are working now to develop Advanced Tactical Fighter technologies.

Space

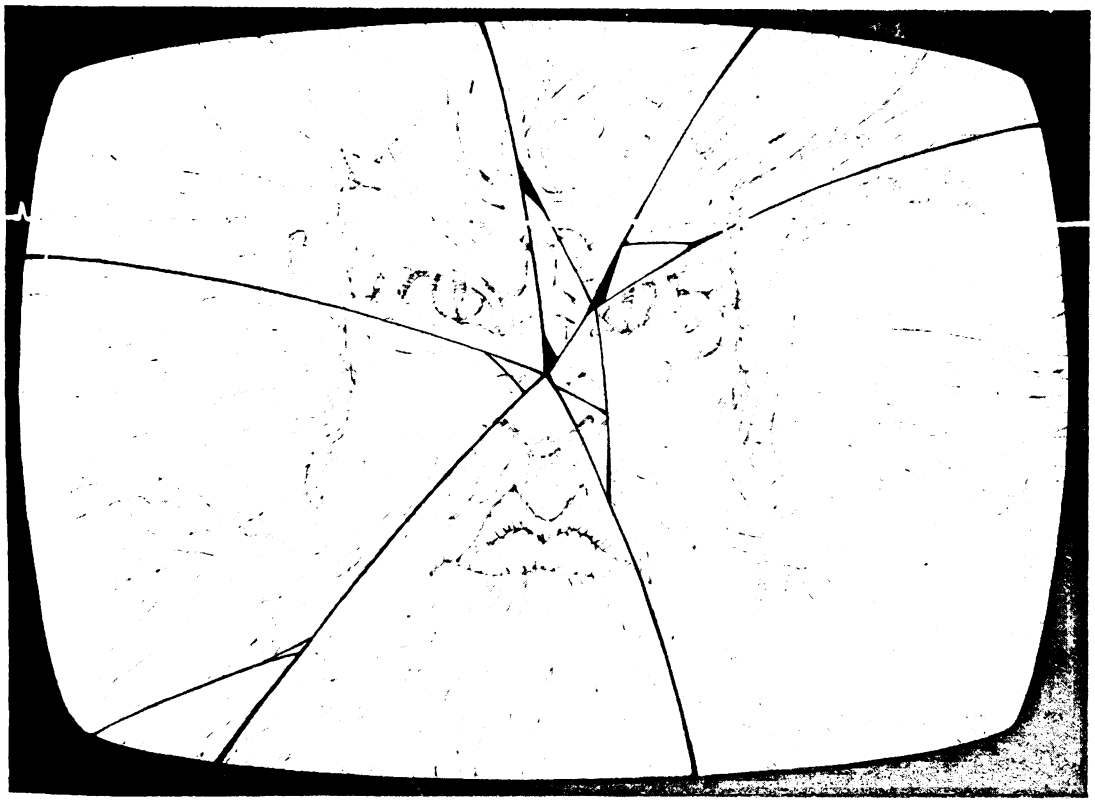
In September 1982, we established Space Command at Colorado Springs to provide focus and direction in the development of future space programs, systems, and operational practices. Additionally, to consolidate space-related research and development, we have created the Air Force Space Technology Center as an element of Air Force Systems Command's Space Division. These and other ongoing moves reflect the Air Force commitment to meet the challenges of space. Among these challenges is the need to maintain the freedom of space and prevent its use by our enemies as a sanctuary for aggressive systems. In the years ahead, we will be upgrading our space surveillance capability and improving on recent advances in weather predicting and communications. The next quarter-century will produce many more exciting advances in space technology, and the Air Force will continue its effort to capitalize on the efficiencies and advantages of space operations.

But we will also need to capitalize on efficiencies and advantages in many other areas possibly not even thought of today. Although I have not covered even a fraction of our ongoing programs and initiatives, I am convinced that we are heading in the right direction.

THE YEARS AHEAD will bring great change, and the Air Force will change with the times. I do not mean change for change's sake either. We are doing many things right, and they will still be right 20 years from now. But with the innovative, highly educated people who are entering the Air Force today, we need to look for better ways to do things, not fall back on the comfortable ways of the past.

The French philosopher André Gide wrote, "The most beaten paths are certainly the surest but do not hope to scare up much game on them." Like the hunter stalking the untrod path, the Air Force is entering an era unlike any in the past. The opportunities and challenges will be great.

Hq USAF



1984: A HISTORIAN'S REFLECTIONS

DAVID W. LEVY

IT IS a measure of the impact of George Orwell's novel *1984* that we find it difficult to enter this new year without some special uneasiness. Just as those of us beyond a certain age cannot hear the *William Tell* Overture without thinking about the Lone Ranger, so we cannot hear the numbers "1984" without thinking about that grim picture of Western society that Orwell drew for us back in 1949. For thirty-five years we have dreaded this moment, and now it is here. And yet when we reread Orwell's nightmare book, we must all be struck at how badly he missed the mark.

Orwell depicted a society of the most extreme and brutal centralization. At the top stood Big Brother, his face, stern yet somehow compassionate, gazing down from every wall upon a thoroughly cowed and helpless populace. He was surrounded by members of the Inner Party. Then came the regular members of the Party and, at the bottom, the proletariat. The nation was held together by a chilling fear—the Thought Police prowled the streets arresting people for harboring dangerous ideas; children were trained to spy on their parents and report suspicious conduct to the authorities; people had a peculiar way of disappearing, never to be seen again. There were no laws—only directives blared at the citizenry from the television screen. The central power encouraged membership in the Anti-

Sex League; it rewrote history to make its own actions and predictions seem infallibly correct; and it dealt out merciless torture and terrible punishments (keeping a diary was punishable by death). Everywhere—at offices, in homes, and on the streets—television cameras recorded everything, searching relentlessly for signs of deviancy (among the great dangers was muttering something incriminating in one's sleep). Big Brother made alterations in the English language in order to restrict thought, and he led this monolith of a society into never-ending warfare. The result of all this regimentation was to make "a nation of warriors and fanatics, marching forward in perfect unity, all thinking the same thoughts and shouting the same slogans, perpetually working, fighting, triumphing, persecuting—three hundred million people all with the same face."

Certain features of Orwell's society may remind us of activities in other countries, and some of his predictions may startle and alarm us because of their accuracy. Nevertheless, it seems appropriate, as we start 1984, to acknowledge that, as far as America is concerned anyway, Orwell's picture has so far proved to have been more wrong than right. It also seems appropriate, as we start 1984, to wonder why.

NOT counting natural disasters such as earthquakes and famine, and not counting conquest by outsiders, modern societies face two opposite dangers. On the one hand, they may devolve into the sort of brutal tyranny of centralized power that Orwell depicted. On the other hand, societies may disintegrate into a kind of anarchy as the cement of the community is dissolved by the acid of irresponsible private selfishness. Societies can be ruined, in other words, by excessive power concentrated into the hands of rulers or by an excessive individualism which so absorbs each citizen in personal pursuits that the habit of thinking about the needs of the whole society disappears.

It is crucial to understand that both of these dreadful possibilities have their origins in the noblest impulses of the human spirit. Tyranny inevitably begins out of the praiseworthy feelings of patriotism: a sense of the unity of the community, a belief in mutual responsibility for our fellows, a faith that our governmental institutions and leaders can, if given enough power and support, construct a strong and just society. And if tyranny starts with a sense of social responsibility, it is nourished along by the deeply felt need, in every society and in every person, for some semblance of social order. Similarly, anarchy inevitably begins out of the deeply felt need for freedom: a sense of the uniqueness of each person and the right of each to as much personal liberty as possible, so as to develop his or her individuality free from confining laws and regulations. And if tyranny is nourished by the instinct for order, freedom is nourished by the faith that a free society is the one which will ensure the steadiest progress.

These two opposite dangers—tyranny and anarchy—bear other complex and curious relationships to one another. In the first place, each tendency thrives by preying on its opposite. Thus a growing tyranny (as Orwell understood so well) marks out instances of excessive individualism as the gravest threat to its continuation, while a growing anarchy becomes increasingly impatient with governmental regulation. In the second place, history offers numerous examples of the way in which "corrections" to perceived situations are conditioned by what has gone before. Thus, in this country for example, the relatively weak centralization under George III led Americans, after the Revolutionary War, to the Articles of Confederation, an ineffective form of government characterized by a relatively weakened central authority. On the other hand, the more rigorous centralization of France in the eighteenth century, or of Italy under Mussolini in the twentieth, led to deeper suspicions of centralized authority, to more spirited attacks upon it, and to forms of government characterized by wild confusion and the inability to conduct the public business. Similarly, moments of

anarchical confusion—as in France before Napoleon, in Italy before Mussolini, or in Germany before Hitler—can lead to "corrections" of quite extreme centralization and tyranny.

All of us who drive automobiles understand this phenomenon. If our car is proceeding down the highway at moderate speed and if we have guided it prudently, staying in the middle of our lane, then adjustments to the left or to the right can be accomplished by the slightest movements of the steering wheel. But if we are driving fast and swerve to avoid an obstacle, our car careens wildly, and we compensate by more desperate spinning of the wheel, to avoid here the disaster of the shoulder and there the disaster of crossing the center line. So it often is in affairs of state. Some countries seem able to travel down the road of history with prudence; and some seem out of control, now perilously close to the disaster of tyranny, now skirting the edge of anarchy.

The secret of running a good society (like the secret in conducting a successful life) is to understand limits. Statesmen must find ways to nurture the noble impulses of both patriotism *and* freedom, to encourage the impulses for both altruism *and* liberty; they must respect and appreciate both the need for order and the hope for progress. But great care must be exercised so that what starts out as a sense of mutual responsibility or as a fear of disorder does not lead to a tyrannical centralization. And similarly, great care must be exercised so that what starts out as a love of liberty and the hope of progress-through-freedom does not degenerate into a distrust of all authority, a surrender of our responsibilities to create a more just community, and a society of dog-eat-dog individualism.

IN 1630, John Winthrop, the wise and intrepid leader of the Puritans, addressed himself to this very problem. The moment could not have been more dramatic. The Puritans had left England and were now aboard their ship in the middle of the Atlantic. They all understood that they were heading for a place where virtually no traces of European civilization were to be found. What would be the restraints on individual actions once the boat stopped and they all got off? How could an orderly community be created in the middle of the wilderness? How could they guard against the possibility that the strongest and most ruthless might take the possessions, the food, the wives of the weakest? When Winthrop rose to deliver his shipboard sermon, the dangers of anarchy were much on his mind, and it is not surprising that he spoke the message of community:

> Now the only way to avoid this shipwreck and to provide for our posterity is to follow the counsel of Micah, to do justly, to love mercy, and to walk humbly with our God, for this end, we must be knit together in this work as one man, we must entertain each other in brotherly Affection, we must be willing to abridge ourselves of our superfluities, for the supply of others' necessities, we must uphold a familiar commerce together in all meekness, gentleness, patience and liberality, we must delight in each other, make others' Conditions our own, rejoice together, mourn together, labor and suffer together, always having before our eyes our Commission and Community in the work, our Community as members of the same body. . . .

In the new land they were about to settle, Winthrop told his Puritan shipmates, they would have to submerge their individualism in order to build a strong and worthy community. They would have to think not of themselves but of their society.

If there is anything obvious about American life during the 250 years after Winthrop's sermon, it is this: our social, intellectual, economic, and political history constitutes a mighty rejection of John Winthrop's advice. If there is any dominant note in American history before the Civil War, it is the note of free individualism; and if there is any inexorable force, it is the centrifugal one. The land was simply too open and too free; the opportunities were simply too manifold. The scope given here to individual energy swept everything before it, and Winthrop's ideal of a "community" where we would

be willing to forgo our luxuries in order to supply others' necessities, that ideal never had a chance.

A few, of course, continued to speak in the accents of community loyalty. Some old Puritans, like John Adams, and some old Federalists, like Alexander Hamilton, worried about the effects of rampant individualism on the nation. But they were easily swept under by spokesmen of the eighteenth-century Enlightenment who exalted the individual in politics and in religion or by the early nineteenth-century Jeffersonian Democrats who, in the name of liberty, celebrated the free and independent citizen. There were some Southerners who claimed that they had created the ideal community in hundreds of small plantations; but their ideal was so intimately tied to an unacceptable social evil that it never penetrated into the consciousness of the majority. There were a few Catholic thinkers, like Orestes Brownson, who preached the glories and the orderliness of medieval communal harmony; but they were ignored by the Protestant majority who took their religious salvation in the same way as they took their economic opportunities—as individuals. And Americans, each pursuing his own interest, were united in only one curious particular: they were joined together in a steady and resolute march away from the social ideal of John Winthrop.

The Industrial Revolution, with its application of technology and science to the ordinary pursuits of men, spawned a vision of a common life that was growing steadily easier and more enjoyable. Nature that had always been seen as the master of man was now becoming his slave. Capitalism, which provided the social framework in which the tendencies of the Industrial Revolution were brought into harness, also promised progress. By pitting man against man with no restraints save the impersonal ones of the marketplace, by allowing the freest play of unregulated individual competition, capitalism seemed to offer both prosperity and freedom. Finally, the political breakthrough—the triumph of democracy and notions of equality—tended to assure citizens that their aspirations were legitimate and that the political channels for the exercise of equality would henceforth be open.

What interests us here is not the detailed story of these new currents of social change—industrial technology, capitalism, and democratic equality. What interests us is the fact that the coming together of these forces in the early nineteenth century gave rise, in America, to an attitude of buoyant expectation, a belief in automatic progress, an impatience with restraints, and a faith in the free individual—free to invent and improvise for technology, free to struggle and compete for capitalism, free to weigh and decide and participate for democratic politics. When the young French aristocrat Alexis de Tocqueville visited the United States in the 1830s, nothing about Americans struck him quite as forcefully: "They owe nothing to any man, they expect nothing from any man; they acquire the habit of always considering themselves as standing alone, and they are apt to imagine that their whole destiny is in their own hands."

If this constellation of beliefs has any "official" philosopher in America, it is surely Ralph Waldo Emerson. His boundless optimism, his faith in the general progress of mankind, was matched only by his enthusiasm for the free and unrestrained individual. "Let man stand erect, go alone, and possess the universe," he said. "The main enterprise of the world for splendor, for extent, is the upbuilding of a man. . . . The private life of one man shall be a more illustrious monarchy more formidable to its enemy, more sweet and serene in its influence to its friend, than any kingdom in history."

Emerson's notion that man should stand erect, go alone, and possess the universe, was, of course, a very long way from the advice John Winthrop had given two centuries before. And in the heady and excited optimism of nineteenth-century American individualism, had some contemporary Orwell warned about the tyranny of Big Brother and a society of repression, conformity, regimentation, and centralization, the pic-

ture would have seemed so out of harmony with American reality as to have been thought an impossibility.

By the start of the twentieth century, however, many things had changed. By 1900, it must have been clear to even the most superficial observer that the dream of being borne effortlessly into the happy future on the waves of hardy individualism, the dream of unrestrained freedom leading to steady progress, was in serious trouble.

It is certainly one of the chief ironies of American history that the dream was threatened by the very forces that gave it birth. By the start of the twentieth century everyone could see that the industrial technology, which had promised an ever-rising standard of living, also brought with it child labor, horrible slums, intolerable cities, dangerous mines and factories, and a kind of labor which involved, in the words of Robert Heilbroner, "the trooping to work of industrial pygmies in a landscape of hell; the trooping home from work to the disease and filth-ridden slums of the industrial cities; and not least, the draining from work of everything in it which was human, until man was used only as a machine." It was also apparent, by 1900, that unrestrained, free-enterprise capitalism, which had promised an automatic and self-regulating progress, also brought with it cutthroat competition and (worse) an exaltation of cutthroat competition. The willingness of the government to stand aside and let the economic struggle proceed had resulted in growing extremes of poverty and wealth, ever-worsening depressions, the rapid and wasteful depletion of natural resources, and a hunger for new markets and new areas of investment which thrust the nation into the new world of foreign involvement and imperialism. As the land grew scarce, as opportunities grew slimmer, as monopolies ate their little competition and grew stronger for the eating, it became obvious that capitalism, like technology, was capable of bestowing a mixed legacy of *both* good and evil.

Finally, it seemed plain to many by the start of the twentieth century that democracy did not produce all that had been hoped from it. The political form which had promised equality and opportunity and orderly change had not always delivered. Not even democracy could ensure equality in the face of the trusts. Nor did the bloody strikes and the bitter class conflict of the late nineteenth century provide very convincing evidence of democracy's ability to guarantee orderly change within the framework of the political structure. To many sensitive men and women of the period, democracy was merely another name for big city bosses marching hordes of ignorant immigrants to the polls in exchange for demeaning favors, political deals between corrupt politicians and the heads of big corporations, ignorant sloganeering to convince half-wits, or a massive political machinery incapable of direction, action, or genuine service to the common good.

In short, the same forces which had been greeted with such breathless expectation in 1800, the very forces which, it was prophesied, would bring America into the enjoyment of an unparalleled civilization of plenty and freedom—those forces seen in 1900 carried a less hopeful and optimistic message. And since that early optimism had provided the chief justification for both an untrammeled individualism and a weak central government, it was apparent that the twentieth century would be required to reopen those questions.

Our century has seen a general abandonment of Emerson's notion that it was possible to "stand erect, go alone, and possess the universe." Plain and powerful Americans alike have felt it necessary, in the face of the modern world, to band themselves together into groups. Businessmen led the way by forming pools, mergers, interlocking directorates, trusts, and huge corporations, all in a frantic attempt to avoid the cutthroat competition of freewheeling capitalist individualism. Workers surrendered the old belief that individuals were strong enough to

bargain, one man at a time, with their employers; they formed unions and began to bargain in groups. Lawyers, doctors, teachers, farmers, actors, veterans—all of them came to understand the futility of standing alone. American Negroes, who had tried for three-quarters of a century after emancipation to conform to the ideal of individualism, who had tried to enter the middle class one person at a time, at last came to understand (like all other Americans) that one's power and the realization of one's aspirations depend on the strength of one's group. Individuals rise in modern America when their groups rise. And despite the persistence of the noble rhetoric of free individualism, almost nobody seemed willing to confront the new environment by himself.

Insofar as the twentieth century has caused us to rethink our political arrangements, it has caused us to search for alternatives to the vanished faith in the noninterfering government. The old belief in free individualism, unhampered by a weak and limited central authority might have been satisfactory for Jefferson's day or for Jackson's or for Emerson's; but it was far from satisfactory for the needs of the twentieth century. The growth of government, the encouragement of feelings of community loyalty and social responsibility toward one another, the substitution of an ideal of national enthusiasm for an ideal of economic individualism—all indicate how far we have come from the old certainties. By the time of the Great Depression, there were very few Americans who did not believe that our government had inherited, in the modern economic situation, a pair of new responsibilities: government had to come to the aid of the powerless, and government had to take steps to control and regulate the too powerful. And to discharge those duties, it had to be more vigorous and powerful than ever before. It had been more than three centuries since John Winthrop had spoken his shipboard advice of communal responsibility and social unity, but that old Puritan would have understood the impulse.

In the ongoing twentieth-century debate between those who want to preserve the old individualism and those who want to encourage greater social unity and greater political centralization, the military has played an important part. In the first place, the military offers one of the most convincing examples of how effective a social organization can be if it is willing rigorously to suppress individualism in the name of some larger group purpose. Like the corporation and the labor union, the armed services have taught the lesson of strength through unity, of power through hierarchical ordering, centralized control, and the willingness to ignore personal freedom. In the second place, war and the fear of war (two conditions which have dominated the American situation since 1914) have made our country ever more tolerant of centralized authority and ever less tolerant of extreme gestures of individuality.

THE debate rages in our own time. On one side are those who advocate communal concern, the eradication of social injustice, and a government big and centralized enough to accomplish its purposes. They want greater controls over the wealthy, greater efforts on behalf of the poor, and the sort of social unity John Winthrop hoped for. Their opponents believe that this program is marching us briskly down the path toward tyranny and a government run by Big Brother. On the other side are those who advocate individual liberty, an end to social welfare programs, and a government willing to abolish, not increase, regulations. They want fewer controls over the wealthy, fewer efforts on behalf of the poor, and the sort of personal liberty, especially in the economic sphere, that was advocated by Ralph Waldo Emerson. Their opponents believe that this program is the first step on the road to an anarchy of private selfishness.

We are, of course, a long way from either dreadful danger—tyranny or anarchy—despite the exaggerated cries of some of the partisans.

Our automobile seems, to thoughtful foreign observers, to be cruising down the middle of the lane, making slight adjustments sometimes to the left, sometimes to the right. We seem, as we enter the fateful year of 1984, to be safe for the moment from slipping off the shoulder into anarchy or from crossing the center line into tyranny. Most Americans wish, no doubt, for further adjustments, in one direction or the other; but few of us would countenance the radical swervings, in either direction, that some nervous Americans fear.

And what of George Orwell's warning? Let us remember as we start 1984 that our President is well known for his advocacy of economic individualism, his lack of sympathy with social programs aimed at eradicating injustices, his impatience with federal restrictions, and his desire to "deregulate" industry. He wants very much to move us farther away from the notions of social responsibility, social unity, and governmental authority that have characterized much of our recent history. If you were to ask him, he would probably say that he felt our nation was drifting too near the edge of centralized tyranny. If you were to ask his opponents, they would probably say that he was guiding us too near to the edge of social selfishness and anarchy.

The trouble with Orwell's *1984*, the reason why his prophesy seems so far wrong today, is that it warns us only of the one danger—the danger of overcentralization, the death of freedom, and the police state. We must take his warning seriously, of course, and we must be on our guard. But we should recognize that there is another danger as well—in 1984 and the years ahead—the danger of rampant personal greed, the evaporation of our sense of duty to the community, and the drying up of the social sympathies which have made us into one people.

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AMERICA AND CHINA: THE COMING DECADE

DR. WILLIAM R. HEATON

THE resumption of consultations between China and the Soviet Union and the sharpening of Chinese rhetoric with respect to U.S. policy around the globe has resulted in numerous reassessments of the Sino-American relationship.[1] Evaluations of the changing relationship generally fall into one of two categories. The first category adopts a "rational actor" approach in which both countries calculate their relationship based on the balance of power and specific interests.[2] According to this analysis, China senses that the Soviet Union has become less of a threat, owing to preoccupation with problems in Afghanistan and Poland; therefore, it is no longer vital to form an anti-Soviet "united front" with the West. Moreover, China's disappointment with the United States on a variety of issues, notably technology transfer and Taiwan, has contributed toward China's loosening of its American ties. The "rational actor" approach also has the United States reevaluating the importance of the "China card" in dealings relative to the global strategic balance and relegating China to the role of regional power. The overall result is that both sides view the relationship as less crucial than it was previously deemed and have gradually drawn away from each other. There is always the possibility that changed perceptions could once again lead to a closer relationship.

Another analysis attributes changes in the relationship to issues of bureaucratic politics. In this perspective, changes in Chinese policies are a consequence of alterations in the volatile power mix wrought by ongoing factional struggles at the highest level.[3] Since most of the key questions in China are domestic economic and social problems, the coalitions that win out on these issues tend also to make decisions on foreign policy issues. China's move away from the United States is a result of Deng Xiaoping's compromises with his opponents; it is the price he pays for getting his way with respect to the succession problem and related domestic political issues. Similarly, the U.S. position stems from struggles between various factions within the Reagan administration and between the administration and Congress.

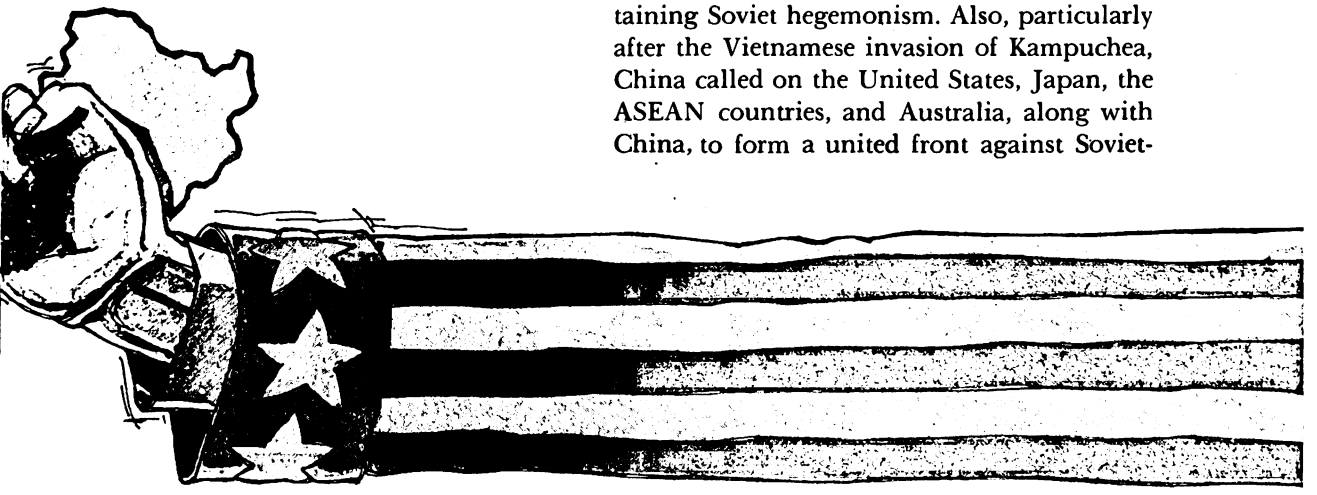
Both approaches can contribute to our understanding of what has happened in the relationship during the past few years. More important for this article, it can suggest some things that we should look at in trying to understand what may well occur over the next decade. Integrating the "rational actor" approach and the "bureaucratic politics" approach will enable us to consider ways in which the relationship has developed and will develop. As a result, I shall suggest ways in which I think U.S. policies can be creatively applied to improve the relationship between America and China.

China and the Balance of Power

In the decade following the issuance of the Shanghai communiqué, Sino-American relations developed in an uneven pattern. Steps toward normalization were made haltingly, the Taiwan issue being a principal consideration. China, for example, refused the effort made early in the Carter administration to establish normal diplomatic relations with the People's Republic of China while transferring the Liaison Office to Taiwan. Nevertheless, movement toward normalization of relations proceeded very quickly in the summer of 1978. Following the establishment of diplomatic ties on 1 January 1979, China and the United States entered a period of close cooperation, especially in rhetoric. This cooperation became even closer for a brief period following the Soviet invasion of Afghanistan. After the beginning of the Reagan administration, the relationship became more troubled, as indicated by a harshening of Chinese statements about U.S. policy.

From a balance-of-power perspective, several factors shaped the nature of specific policies during the decade. The most important factor, which has been identified by nearly all those who have commented on Sino-U.S. relations, was the increased perception of threat from the Soviet Union. The growth of Soviet military power globally, the buildup of Soviet forces along the Chinese border, and Chinese uncertainties about how the Soviet Union might use its military power to affect Chinese internal politics fed Chinese perceptions of insecurity. Under the concept of "a united front against hegemonism," Chinese leaders combined Maoist ideological principles with balance-of-power realpolitik to counteract Soviet pressure.[4]

In the early 1970s Chinese leaders had pronounced a "three worlds" theory of relative power and claimed that China, as part of the third world, could form a united front with other developing countries to counteract the hegemonism of the superpowers. As the threat from the Soviet Union increased, Chinese statements increasingly focused on the Soviet Union as the "antagonistic contradiction" and became less selective as to which countries qualified for united front membership. The NATO alliance was viewed as an important component in containing Soviet hegemonism. Also, particularly after the Vietnamese invasion of Kampuchea, China called on the United States, Japan, the ASEAN countries, and Australia, along with China, to form a united front against Soviet-



Vietnamese hegemonism in Southeast Asia. Beijing insisted that Soviet-Vietnamese policy in Southeast Asia was part of an overall strategy of Soviet global domination and must be strongly resisted.

The manifestation of the new united front definition in concrete policy terms included hastening negotiations with Japan to conclude a peace treaty in the fall of 1978, movement on the obstacles to normalization of relations with the United States, and efforts to upgrade relations with ASEAN countries while reducing support for the Communist-led insurgencies in these countries.[5] Chinese leaders argued that China was doing its share to challenge the hegemonism of the Soviet Union and called on other countries, particularly the United States, to make a greater effort to do likewise.

As is clearly evident from Chinese writings and statements, the Chinese perception of Soviet hegemonism began to shift in the early 1980s.[6] Instead of Soviet power's being an unabated expanding threat to China, it became overextended in Southeast Asia and Afghanistan. Moreover, Soviet difficulties in Eastern Europe, notably Poland, have made it highly unlikely that the U.S.S.R. would wish to embark on an offensive against China. As Chinese perceptions of the Soviet threat altered, so did Chinese policy. China became increasingly critical of U.S. global policy and was willing to escalate irritants in Sino-American relations to higher levels. Chinese rhetoric over U.S. arms sales to Taiwan increased, and issues over technology transfer, textiles, railway bonds, defecting tennis players and students, and Asian Development Bank membership seemed to dominate their view of the relationship, rather than a common sense of global threat from the U.S.S.R.[7] Also, China not only opened the door for consultations with the Soviet Union but moved to improve party ties with various European parties—notably the French Communist Party—and also sought to improve state relations with Soviet East European satellites.

Closely related to China's assessments of the Soviet threat is the Chinese calculation as to the role of the United States. Many students of Chinese foreign policy believe that the basis for the urgency with which China pursued a cooperative relationship with the United States against Soviet pressure in the late 1970s was its belief that the United States was the only country strong enough to balance the U.S.S.R., but the Carter administration was not sufficiently firm in resisting Soviet expansionism. It became the duty of the Chinese to bolster the United States. Similarly, the argument is made that now that the United States under the Reagan administration has taken a firmer line against the U.S.S.R., the Chinese perceive greater luxury in taking up the cudgel against both superpowers. Other students argue that the Chinese perceive that concessions can be gained from the United States by pressure. Since the United States needs China as a strategic counterweight to the Soviet Union, the United States will eventually bend to Chinese pressures.[8] They cite the 17 August 1982 agreement on arms sales, the decision to liberalize technology transfer, and U.S. concessions in reaching a textile agreement with China as evidence.

The view that China remains uncertain about the United States was expressed by Huan Xiang, Director of the International Affairs Center of the State Council and a prominent spokesman on U.S. affairs. Huan argued that the United States under Reagan "has scored some success in rebuilding American hegemony in the world," notably in developing its nuclear strategic arsenal, in intensifying its activities in Latin America, and in gaining a more favorable position in the Middle East. He also predicted, however, that contention between the United States and the Soviet Union would increase and that both would experience weakening of control over their allies. Huan predicted that Western Europe would continue to cooperate with the United States against the Soviet Union but that America would experience increasing friction with Japan. He also argued that while the United States had taken some limited steps to "pacify"

U.S.-Chinese relations, continued American interference in Chinese domestic affairs via the Taiwan Relations Act remained of great concern.[9]

While highly critical of U.S. policy, the Chinese have pulled up short of strong actions that could seriously damage the relationship. Initially, the Chinese insisted that they would downgrade relations if the United States did not agree to fix a date for the cessation of arms sales to Taiwan. Yet, in the 17 August communiqué, the United States did not set a date, and China did not downgrade relations. When the United States took steps to restrict Chinese textile imports following the failure to reach a textile agreement, China reacted by restricting U.S. agricultural exports to China but in commodities which had already declined considerably.[10] The U.S. decision to grant political asylum to tennis player Hu Na resulted in the cancellation of some official exchanges, but the effect was limited. China continues to attach considerable importance to acquiring technology and to sending students to the United States. The relationship with the United States is deemed sufficiently important by China that the Chinese leaders have tried to prevent irritants and problems from becoming major catastrophes.

There are, of course, other main factors that could be considered. Beijing's perceptions of the situation in the region, particularly relations with Japan, Korea, and Southeast Asia, are of great importance. Briefly, though, Chinese policies have been attuned to assessments of the relations of the two superpowers and the regional and global balance. Without judging the relative merits and faults of the Chinese assessments, our "rational actor" model shows that Chinese perceptions have varied over time and that policies have been geared to evaluations of superpower intentions and policies. The Sino-U.S. relationship has been affected both positively and negatively as Chinese perceptions have shifted. In just one decade we have witnessed a jerky move toward the United States and now a jerky move toward greater equidistance between the superpowers (though I would argue that China today is closer to the United States than to the U.S.S.R. and is likely to remain so). From the "rational actor" standpoint, jerkiness is likely to remain a principal feature of Sino-American relations.

Chinese Perceptions: The Impact of Bureaucratic Politics

The shifts in Chinese policy are explained not merely by changes in perception of the global and regional power equation. The past decade has witnessed sharp struggles among the Chinese leadership over policy issues, including foreign policy. Indeed, factionalism among the Chinese leadership is an important variable that must be considered in any analysis. Though information on the exact composition and nature of groupings among the Chinese leadership is difficult to come by, much can be inferred from public statements, articles in the press, and so on.

My own view of factionalism in China is that there are few factions in the true sense. Certainly it is not like that of Japan, where factions within the various parties have a formal character cemented by personal loyalties and the system of fund-raising and electoral districts. I see groupings in China as informal shifting coalitions; a degree of permanency is imparted by *guanxi* (personal relationships), but coalitions sometimes form and dissolve on policy questions. The group that most closely resembled a true faction was the "gang of four" purged after Mao's death in 1976. The dynamic of shifting coalitions is brilliantly revealed by the downfall of Lin Biao in the early 1970s, the rehabilitation of Deng and other Cultural Revolution victims in 1973, the struggle against Zhou Enlai and Deng by the "gang of four" leading to his purge in 1976; then, after the death of Mao, Hua Guofeng briefly emerged and attempted to consolidate his power, only to be undermined and eventually purged by a resurgent Deng, who is now attempting to have his preferred successors effectively installed. Many students of China have

categorized the various coalitions based on personal ties, policy preferences, position in the leadership (e.g., military, region, center), and even ideological outlook.[11] Without attempting to assign particular people to particular categories, I would like to suggest that there has been a good deal of bureaucratic infighting and that this has dramatically affected policy.

Specifically, since the death of Mao and the rehabilitation of Deng Xiaoping, China has experienced a struggle between two modes of leadership. The Maoist mode is characterized by an emphasis on charismatic authority, normative incentives for economic development, and equality in social development. The Dengist reform alternative emphasizes routine bureaucratic authority, material incentives for economic development, and the acceptance of social distinctions based on productivity. Since his rehabilitation in 1978, Deng has incessantly waged war on the Maoist mode. In matters of political authority, he has pushed for the renunciation of Mao's leadership style, fostered the rehabilitation of cadres previously denigrated during the Cultural Revolution (including the arch enemy Liu Shaoqi), demanded the growth and consolidation of political institutions, and increasingly pushed to get the military out of civil decision-making. In economic affairs he has strongly supported the adoption of responsibility systems in agriculture and industry, which has given individuals more leeway in making a living. The growth of responsibility systems is already provoking differences in wealth; these, in turn, will have a social consequence.[12]

Deng's efforts have not been without opposition. He was able to get grudging acceptance of many of his proposals at the third plenum of the 11th Central Committee, but it was several more years before he could purge those who advocated the two "whatevers," that is, those who were not receptive to rapid changes in policy. He finally succeeded in purging Hua in stages, as Premier in the summer of 1980 and as Party Chairman at the 6th Plenum of the 11th Central Committee in 1981. Deng's most important priorities have been getting his chosen successors in place and in reforming the Party apparatus. He has made compromises in other areas to obtain his objectives. He joined in the closing of "Democracy Wall" and the clampdown on the dissident movement, which he had originally encouraged. He compromised with Chen Yun over economic management issues and supported the economic readjustment of the early 1980s, though he was concerned about its implications for Chinese relations with Japan and the United States. He has also compromised over the questions of relations with the Soviet Union and the United States.

With respect to the issue of Sino-U.S. and Sino-Soviet relations, Deng apparently preferred close cooperation with the United States and strong opposition to the Soviet Union. In 1979, Deng clearly envisioned the United States as part of the united front against Soviet hegemonism. At the same time, while some of Deng's reforms were being criticized in 1980 during a period of economic reassessment and readjustment, the U.S. Presidential campaign brought up Taiwan. Deng apparently believed that the Taiwan question could be put on the back burner and resolved over a long period of time, but Taiwan was quickly made into a contentious issue among the Chinese leaders.[13] Over the next two years China became increasingly critical of U.S. policy toward China and Taiwan and of U.S. global policy in general. This discontent reflects Deng's compromises with other leaders as does the decision to seek consultations with the Soviet Union.

Thus we can see that important policy changes reflect struggles among the Chinese leadership. China's attitude toward U.S. relations with Taiwan cannot be wholly explained by a rational actor model of China's assessment of the superpower balance. It is more clearly understood when the dynamic of informal coalition politics is added in. China's move to greater equidistance between the two superpowers must also be understood in the context of internal

debate over alternative policies. In making predictions about the next ten years, one should remember that changing coalitions among the leadership will have a decisive influence on what policies are adopted.

American Perceptions of China

Just as Chinese perceptions of the United States must be considered from the standpoint of both the "rational actor" and "bureaucratic politics" approaches, so must American perceptions of China. Both models help us understand how the relationship has developed in the past decade. In his writings, Henry Kissinger has established that the principal impetus for U.S. overtures to improve relations with China in the early 1970s was to balance the Soviet Union, "either to restrain it or to induce it to negotiate seriously."[14] From the "rational actor" perspective, the development of U.S.-China relations in the early 1970s demonstrated a conscious desire on the part of American leaders to tune relations with China to relations with the U.S.S.R. Generally speaking, a policy of evenhandedness between the two countries was enunciated by successive administrations.

In fact, in spite of ups and downs noted earlier, the United States continued a gradual shift to a policy of favoritism toward Beijing. During the Carter administration, the growing power of the Soviet Union made some argue that a more cooperative relationship with Beijing was necessary to balance the U.S.S.R. National Security Advisor Zbigniew Brzezinski, generally credited with the "China Card" formula, strongly pushed for strategic cooperation with China, particularly after the Soviet invasion of Afghanistan. Debates between Brzezinski and Secretary of State Cyrus Vance over the issue of security cooperation with Beijing continued throughout Vance's tenure, but prospects for heightened cooperation seemed to be growing.[15]

This trend peaked during the Carter administration and has begun to decline during the Reagan administration. While the Taiwan, textile, technology, and other previously stated issues were at the surface of the turnabout, an underlying conceptual factor was the view that the import of China in the global balance had been overstated. Or, as Ray Cline succinctly put it, "The China Card is a deuce!" China was increasingly viewed as a regional power rather than a global power. The argument that an alliance with Beijing would gain weakness rather than strength was frequently heard. American officials portrayed Japan as the linchpin of American strategy and policy in the Pacific and relegated China to a secondary role.[16]

The argument over whether China should be counted as a global power or a regional power by the United States continues to be debated. Brzezinski, for example, argues that "China should be treated as a genuine global partner, not merely as a bilateral squabbler over secondary issues such as textiles or even Taiwan."[17] Similarly, an article by Banning Garrett and Bonnie Glaser faulted the Reagan administration for assigning less importance to China in U.S. global strategy and asserted that "a properly managed U.S.-Chinese strategic partnership will contribute to [the] global deterrence of the Soviet Union by increasing the likelihood of a coordinated two-front war should Moscow escalate a conflict."[18] On the other hand, Ray Cline declares that the idea that China can be a strategic counterweight to the Soviet Union is a "myth."[19] Similarly, Robert L. Downen calls for a "more realistic assessment on the part of U.S. policymakers regarding the limited strategic value of our ties with the PRC."[20]

Whatever side one wishes to take in this debate, there can be little doubt that the "rational actor" approach is crucial to an appropriate understanding of developments in Sino-American relations from the American perspective. Some of the issues that have emerged between the two sides in the past few years stem directly from a change in U.S. perceptions about the role China might be expected to play in the global

strategic balance. However, it is also important to touch on the "bureaucratic politics" component. Indeed, the amount and openness of the literature in the United States on this component, particularly when compared with that available for China, inclines the student toward the latter approach. We are tempted to view the evolution of our China policy as the outcome of debate between Vance and Brzezinski (State vs. National Security Council) or in the current administration between the ideologues in the White House and the bureaucrats in the State Department.

While there are numerous examples of the impact of bureaucratic politics on American perceptions of and policies toward China, I shall mention only two. First, the enactment of the Taiwan Relations Act and administration policies with respect to the question of arms sales to Taiwan reflect the outcome of wrangling among the White House, the Congress, and various executive departments. The decision whether to sell an enhanced FX aircraft to Taiwan, to continue the licensing arrangements for Taiwan production of the F-5, or to discontinue the sale of either had to take into account congressional interests (including the representatives from districts in which the aircraft were to be licensed or manufactured), organized lobbies, government agencies, political parties, and so on. The ultimate decision to continue the licensing of F-5s was as much the outcome of bargaining among the various groups as it was a "rational" judgment based on how it would affect Sino-U.S. relations. Likewise, the decision to grant political asylum to tennis player Hu Na involved the turf of a number of agencies, and while it was widely understood that the decision would likely harm Sino-U.S. relations, at least temporarily, the pressure brought to bear from conservative supporters of the President caused him to overrule advice from other quarters.[21]

We could, of course, go on at length on the role of bureaucratic politics in American perceptions, but these two examples amply illustrate the bureaucratic interplay that has always characterized the American approach. As has been noted, because of the structure and availability of information, there is a tendency to apply the "rational actor" approach when looking at the Chinese but the "bureaucratic politics" approach when viewing ourselves. Of course, nearly all of the bureaucratic actors invoke the "rational actor" approach in making their case. Thus, officials in the State Department may argue that a decision to sell certain arms to Taiwan damages the overall U.S.-China relationship and drives China closer to the Soviet Union, while others in the Congress argue that arms sales to Taiwan are necessary to promote U.S. credibility in the region and are therefore favorable to the overall balance of power.[22] (Parenthetically, I would add that those of us in DOD know that such arguments go on within agencies as well as between them).

I conclude that our perceptions like those of the Chinese will also be influenced by both rationally based calculations of the balance of power—both globally and regionally—and the outcome of debates among the decision-makers. Since the two political systems are considerably different, there will be obvious differences in how these perceptions evolve, but it is important to keep both in mind as we attempt to predict certain developments in the future and suggest some approaches that might be adopted by the United States.

Factors Affecting Sino-American Relations

If we reconsider major factors that have influenced Sino-American relations in the past decade, we can predict that most of them will continue to be relevant in the coming decade. The first of these is that the Soviet Union will probably constitute the principal threat to both countries over the next ten years. The Soviet Union will continue to pose a global challenge to the United States. Also, though there will be continuing negotiations between China and the U.S.S.R. and perhaps a continuing easing of

Sino-Soviet hostility, Moscow will remain as China's primary adversary.

The three fundamental conditions that China has stated as the basis for normalization of relations—namely, Soviet troop reductions along the border (including withdrawal from Mongolia), Soviet withdrawal from Afghanistan, and cessation of Soviet support for the Vietnamese occupation of Kampuchea—are not conditions that will be easy for the Soviet Union to accept.[23] Even if these conditions were to be partially met, the U.S.S.R. would still constitute the primary threat to Chinese security. Thus, from a balance-of-power perspective, Beijing must continue to seek means of counteracting Soviet pressure in the region. As long as the United States maintains its presence in the region, which it will almost certainly do in the next decade, our nation will figure prominently in China's calculations.

Another factor that will modify the first is that neither government will enjoy stability over the coming decade, and both will adopt policies reflective of political infighting and reassessed priorities independent of rational power calculations. In the United States, we will have three Presidential elections between now and 1993. There is already discussion of a Presidential visit to Beijing in 1984 as part of the campaign strategy. Electoral politics aside, each administration has gone through a China learning phase. Early in the Reagan administration, Secretary of State Alexander Haig pushed hard for a cooperative security arrangement with China, but following his departure, the importance of China was redefined. After a rocky beginning, there now seems to be some headway in reversing the downward trend in relations, but there is no guarantee that present U.S. policy will be maintained even if President Reagan is reelected.

Yet if there is a question of stability in the United States, how much greater is the issue when we consider China? Deng Xiaoping has been relatively successful in implementing administrative reforms and in getting his successors established. However, there has been strong opposition at key junctures with the result that Deng has been forced to compromise on many issues. We cannot be assured that Deng's reform structures will remain in place once he has departed the scene, which will almost certainly occur within the next decade. The Chinese Communists have not achieved a genuinely collective leadership since coming to power in 1949, and it is very likely that Deng's successors will fight among themselves after he leaves. In this environment, Chinese policy will be heavily influenced by shifts in the ruling coalition as ongoing struggles for power are resolved or partly resolved.

The principal issue between the United States and China over the next decade will continue to be Taiwan. I agree with John Garver that China will probably wage a political-psychological struggle with the United States on this issue while maintaining cooperation with the United States in balancing the power of the U.S.S.R.[24] By putting pressure on Washington over Taiwan, Beijing will hope to reduce U.S. support for Taiwan and gain Taibei's acquiescence to Beijing's overtures. Inasmuch as Taiwan remains a contentious issue among the Chinese leaders, it will be used by some groups as a political weapon.

It is my belief that the issue of Taiwan is largely symbolic for the PRC. The reunification of the motherland is a nationalistic concept, and nationalism has been a fundamental premise of Chinese Communist political legitimacy. The legitimacy of the Chinese Communist Party has been jeopardized over the past few years by criticisms of past leaders such as Mao and Hua and more recently by sensational exposures of widescale corruption. Consequently, Chinese leaders can ill afford to give up a nationalistic appeal. There are probably few Chinese who really care whether Taiwan is brought back into the motherland; however, the Chinese Communist Party stands to suffer a loss of legitimacy, particularly among the politically active Party members, if it sustains much more embarrassment and humiliation over the Taiwan issue.[25] Deng's latest

appeal to Taiwan concedes practically everything necessary for complete independence, except sovereignty.[26]

Although there has been a great deal of criticism of the 17 August communiqué on arms sales to Taiwan, I believe it offers both sides a way to get the issue relegated to a less volatile stature. The July 1983 announcement that the United States would supply $530 million of arms to Taiwan was met with only a mild protest, evidencing Beijing's desire to cool the issue. So long as the United States carries out its arms sales to Taiwan quietly and in accordance with the 17 August agreement, I believe it will be more difficult for some Chinese leaders to use the issue as a bludgeon against others. Nevertheless, we should fully anticipate that internal political pressures on both sides will cause the Taiwan issue to simmer as an irritant in the relationship.[27]

A third factor will be the role played by other states in the region. Over the next ten years, Japan will become increasingly important to both China and the United States. Although Japan will fluctuate on a cooperation-competition continuum with both countries, the relationship will probably become increasingly competitive overall. Chinese leaders assert publicly that Sino-Japanese friendship is improving and will endure, but underneath significant tensions remain. The Chinese press has been highly critical of what is perceived to be resurgent militarism in Japan. Furthermore, new activism by Japan in foreign policy, combined with an incentive for improvements in Japanese military capabilities, is viewed with some suspicion in China.[28] Also, the territorial dispute between China and Japan could erupt quickly if a disaffected leadership group in Beijing decided to use it as a political weapon.

Concern with a resurgent Japan will probably cause Beijing to seek moderation in its ties with Washington. China will want alternative sources of technology so as not to become overdependent on either the United States or Japan. The Chinese leaders will also perceive that a U.S. presence in the region will act as a constraint on Japanese rearmament. Consequently, we may expect that Beijing will see the United States as a counterweight to both the Soviet Union and Japan. While the United States may well continue to view Japan as being of greater importance than China to the regional and global balance over the next decade, increasing economic friction with Japan will result in bureaucratic pressures in the U.S. government to take actions that will trouble the American-Japanese relationship. Thus, the United States may come to view relations with China in a somewhat different light. Rather than viewing China primarily in the context of superpower balance, China may be increasingly viewed in the context of our relations with Japan. The United States will seek to compete with Japan for markets in China as the Chinese economy changes, and, in another ten years, may well be looking toward China as a balance for Japanese political and military power.

Besides Japan, events in Korea and South and Southeast Asian countries will also influence Sino-U.S. relations. Because of continuing Soviet pressure, China will be anxious to maintain a cooperative relationship with North Korea; yet the United States will not lightly ease its commitment to South Korea. If both Koreas are able to achieve stable successions, then Sino-American cooperation in easing tensions on the peninsula is possible. The United States may encourage increasing contacts between China and South Korea, and both sides may work to promote negotiations between the two Korean parties. However, there are many pitfalls, and the Korean question will probably continue to pose difficulties for U.S.-Chinese relations.

The United States has been supportive of the ASEAN countries in the Indochina conflict. The ASEAN countries want a Vietnamese withdrawal from Kampuchea but do not want the return of the Khieu Samphan-Pol Pot leadership. They are hopeful that Sihanouk will consolidate his position and emerge in a post-Vietnamese Kampuchea. Beijing believes that

only pressure will get the Vietnamese out and that the Pol Pot insurgents are the only viable force able to maintain pressure on the Vietnamese. For the United States, the solution of the Kampuchea question could ultimately contribute to denial of Vietnamese bases to the U.S.S.R. Several of the ASEAN countries believe that Beijing is a greater long-term threat to peace and security in the region than Hanoi. Consequently, increased U.S. cooperation with China, particularly in the military sector, could complicate U.S. ties with Southeast Asian countries. Also, if the present strategy of pressure against Vietnam to withdraw from Indochina does not begin to show results in the next two or three years, the United States may conclude that Beijing's hard line is not in the long-range interests of America.

Besides the geopolitical factors that will influence Sino-U.S. relations, we can expect that a number of specific issues will recur. I have already noted that such questions as technology transfer, railway bonds, textiles, human rights, and so on have had an impression on the record. The United States has made concessions on technology transfer, and Beijing is waiting to see how these will be implemented in fact. We have reached a new textile agreement, and I fully suspect that the Huguang railway bonds case will eventually be disposed of. Nevertheless, I believe that these kinds of issues will continue to come up from time to time. China is fully committed to maintaining a large number of students in the United States, perhaps the best approach in the long-term acquisition of technology.

The human rights issues will probably become more troublesome. A significant number of Chinese students have already sought political asylum in the United States, and a number of dissidents have begun circulating periodicals critical of the PRC. The human rights issue is one that has a strong political constituency in the United States, as we saw in the Hu Na case, and I fully suspect we will have more difficulty with the Chinese government over such issues. If Deng's bureaucratic reforms are successful, China could become organizationally more like the Soviet Union; certainly, there is no indication that the regime plans to ease its suppression of dissent in the near future. Consequently, I foresee that the human rights question will be troublesome over the next decade; however, the degree to which it is troublesome will depend on the state of the relationship in other areas. In other words, if the Taiwan issue is quiet and if negotiations over technology transfer, textiles, and other questions are going smoothly, I suspect that the Chinese will be more tolerant of inevitable criticism from American groups on human rights issues and will downplay defections.

When we bring these factors together, we come to the not-surprising conclusion that Sino-American relations over the next decade will be mostly cooperative, but with many areas of friction and disagreement. China will view the United States as a strategic counterweight to the Soviet Union and increasingly to Japan. It will also see the United States as an important trading partner and as a source for technology. Beijing will probably want to maintain a healthy student exchange with the United States as part of its technology acquisition program. As for the United States, even though China may be relegated to a regional role rather than a global one, no administration will go so far as to alienate China altogether. The areas of friction and disagreement will emerge from the domestic political environment in both countries. Disputes over textile imports, international organization memberships, and other problems will remain low-key unless volatile issues like Taiwan or human rights are mobilized by political interests in each country.

Suggestions for American Policy

In making recommendations for U.S. policymakers, I am optimistic that it is possible to adopt policies that will maintain cooperative relations with China in the best interests of the United States.

My first recommendation is simply that we take into account the fundamental conclusion of this article: that policies in both countries stem from both rational calculations of power and internal political dynamics. All policies arrived at on the basis of rational calculations will be modified by domestic constraints. U.S. policymakers must remember that our policies will influence what happens in Beijing. This is not to say that we should design our policies to support a particular group of decision makers in China, only that we must be aware that our policies will have an effect. In my view, rhetoric about our support for Taiwan and extensive publicity on arms sales provide ammunition for those who are against Chinese compromise on Taiwan. (It has done little to placate the dismay of the President's conservative political allies either.) Therefore, I believe we should adhere to the provisions of the Taiwan Relations Act but do it without a great deal of hoopla and fanfare. We should especially avoid rhetoric that offends Beijing's sense of sovereignty.

More important, we must adhere to the President's pledge not to get the United States involved in the resolution of the Taiwan question between the two sides; the Taiwan question must be resolved by the two parties themselves, and we should leave it at that. Obviously, U.S. economic ties with Taiwan and continuing arms sales will have bearing on how the two sides approach each other, but to offer to mediate or assist in negotiations would only get the United States more deeply involved and increase the likelihood that internal politics would disrupt the present state of relations.

With regard to security affairs, my recommendation is that Washington avoid close security cooperation with Beijing. Although I do not believe that the China card is a deuce, I do feel that the United States has already made whatever gains it can by using China to counterbalance the Soviet Union. Closer security cooperation raises internal political pressure on both sides; it increases the prospects that opposition groups in both China and the United States will make the relationship a matter of political controversy, and it sets the stage for a dramatic falling out later on. I hasten to add that a principal reason for lingering Sino-Soviet animosity now is their attempted close security cooperation of the early 1950s. Besides, close security cooperation with Beijing now raises concern among our other friends and allies in Asia, notably the ASEAN countries. Low-key cooperation will maintain whatever value the relationship has in countering the buildup of Soviet military power, primarily the psychological value. Beyond this, I do think that we can participate in some dual technology cooperation and even in limited arms sales, but we should proceed cautiously.

ONE CAN ONLY HOPE that the next decade in Sino-American relations will be a decade of moderation. I have already suggested that it will not necessarily be one of stability because of the multiplicity of factors involved. Though there will be several difficult points of contention, I believe most of them can be weathered by gradualism and muddling through. Some have criticized the ambiguity in the Washington-Beijing relationship, but I believe that ambiguity is a natural state and need not be turned into hostility. Thus, our principal strategy for the coming decade should be to manage problems as they arise with an eye toward primarily cooperative relations. We can participate constructively in the modernization of China while avoiding excessive security cooperation; occasionally, this cooperation will require concessions on our part and also patience and even, at times, firmness. Though this participation will be difficult, it offers the best hope for securing American interests over the next decade.

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Notes

1. Some articles of interest include: Robert A. Scalapino, "Uncertainties in Future Sino-U.S. Relations," *Orbis*, Fall 1982, pp. 681-96; also by Scalapino, "In Quest of National Interest—The Foreign Policy of the People's Republic of China," 28th Bernard Moses

Memorial Lecture, University of California, Berkeley, October 28, 1982, University of California, 1983; Allen S. Whiting, "Sino-American Relations: The Decade Ahead," *Orbis*, Fall 1982, pp. 697-719; Donald S. Zaboria, "Gauging the Sino-Soviet Thaw," *The New Leader*, November 29, 1982, pp. 3-5; Edmund Lee, "Beijing's Balancing Act," *Foreign Policy*, Summer 1983, pp. 27-46; Harry Harding, "Change and Continuity in Chinese Foreign Policy," *Problems of Communism*, March-April 1983, pp. 1-19; John F. Copper, "Sino-American Relations: On Track or Off Track?" *Asia Pacific Community*, Summer 1982, pp. 13-24; Robert G. Sutter, "Future Sino-Soviet Relations and Their Implications for the United States," JX1428 China D (Congressional Research Service, Library of Congress, December 30, 1982).

2. For example, Thomas Robinson states: " . . . Since China has been the weakest of the three [superpowers], it has had to accommodate its general international orientation and many of its specific policies to power realities within the triangle. Thus, for Beijing, the most important questions have always been: which of the superpowers is the greater enemy? and is the danger so high that major compromises must be made with the other?" "China's Dynamism in the Strategic Triangle," *Current History*, September 1983, p. 241.

3. On factionalism in Chinese politics, see Lucian Pye, *The Dynamics of Chinese Politics* (Cambridge, Massachusetts: Oelgeschlager, Gunn, and Hain, 1981). Pye has reservations about the application of factional politics to foreign affairs; see pp. 34-36. Michael Ng-Quinn also argues that analyzing factions has limited utility in understanding Chinese foreign policy. He maintains that the best approach is using the international system as the level of analysis, "The Analytic Study of Chinese Foreign Policy," *International Studies Quarterly*, June 1983, pp. 203-24.

4. William Heaton, *A United Front against Hegemonism: Chinese Foreign Policy into the 1980s* (Monograph 80-3, National Defense University, March 1980).

5. William Heaton, "China and Southeast Asian Communist Movements: The Decline of Dual Track Diplomacy," *Asian Survey*, August 1982, pp. 779-800.

6. Qi Xin, "From Strategic 'Alliance' to U.S.-China Bilateral Relations," *Chi-Shi Nien-Tai* [The Seventies], April 1983, pp. 51-54; Joint Publications Research Service (JPRS) #4005, pp. 77-84. Also see Xing Shugang, Li Yunhua, and Liu Yingna, "Soviet-U.S. Balance of Power and Its Impact on the World Situation in the 1980s," *Guoji Wenti Yanjiu* [International Studies], January 1983, pp. 25-31; Foreign Broadcast Information Service, *Daily Report*, China, 21 April 1983, pp. A1-A12.

7. "Eliminate Obstacles in Sino-U.S. Relations," *Wen Wei Po* (Hong Kong), 20 February 1983, p. 2; *Daily Report*, 24 February 1983, p. W1-W2. Also see "Chinese Ambassador to the USA on Sino-US Relations," *Beijing Review*, May 16, 1983, pp. 14-15.

8. Thomas Robinson, "Choice and Consequences in Sino-American Relations," *Orbis*, Spring 1981.

9. Huang Shuhai, "Huan Xiang Reviews Current International Situation," 2 parts, *Ta Kung Pao* (Hong Kong), August 16, 17, 1983; *Daily Report*, 19 August 1983, pp. W1-W7. Also see A. Doak Barnett, "China's International Posture: Signs of Change," *China Briefing 1982* edited by Richard C. Bush (Boulder, Colorado: Westview Press, 1983), pp. 85-102.

10. In July 1983, a new textile agreement between China and the United States was signed, and in August, China lifted its embargo of U.S. agricultural products. Trade in the first half of 1983 had declined from the same period in 1982.

11. A recent example of factional groups is that of Victor C. Falkenheim who categorizes the groups as diehard leftists, conservative reformers, and liberal reformers, "Political Reform in China," *Current History*, September 1982, p. 259.

12. For an excellent analysis of Deng's reform policies, see H. Lyman Miller, "China's Administrative Revolution," *Current History*, September 1983, pp. 270-74. Also see Michel Oksenberg and Richard Bush, "China's Political Evolution: 1972-82," *Problems of Communism*, September-October 1982, pp. 1-19.

13. On the development of the Taiwan issue, see John W. Garver, "Arms Sales, the Taiwan Question, and Sino-U.S. Relations," *Orbis*, Winter 1983, pp. 999-1035.

14. Henry A. Kissinger, "What Should Come out of This Trip," *Washington Post*, January 30, 1983, p. C8.

15. Cyrus Vance, *Hard Choices* (New York: Simon and Schuster, 1983).

16. Leslie H. Gelb, "U.S.-China Ties: Lower Expectations," *New York Times*, February 2, 1983, p. 3.

17. Zbigniew Brzezinski, "Convincing Europe and China," *New York Times*, January 31, 1983, p. 25.

18. Banning Garrett and Bonnie S. Glaser, "The Strategic Importance of Sino-American Relations," *USA Today*, July 1983, pp. 15-16.

19. Ray S. Cline, "U.S. Foreign Policy for Asia," *A U.S. Foreign Policy for Asia: The 1980s and Beyond*, edited by Ramon H. Myers (Palo Alto, California: Stanford University Press, 1982), pp. 1-15.

20. Robert L. Downen, "The Shifting Foundation," paper prepared for workshop of American Bar Association at Stamford, Connecticut, 20 May 1983, p. 26.

21. Developments in the decisions pertaining to the FX and Hu Na cases have been obtained through numerous discussions with U.S. government officials and involved parties.

22. A major debate within the U.S. government has been over the issue of security cooperation with the PRC and, more specifically, over the prospect of arms sales to China. For example, see the papers and discussion in "The Implications of U.S.-China Military Cooperation," a workshop sponsored by the U.S. Senate Foreign Relations Committee and the Congressional Research Service (Washington: Government Printing Office, January 1982).

23. In an interview with *Mainichi Shimbun* on 15 August 1983, CPC General Secretary Hu Yaobang stated that it would take 20 or 30 years for China and the Soviet Union to normalize their relations completely and that the era of close Sino-Soviet cooperation, the early 1950s, would never be restored.

24. Garver, p. 1030.

25. For a discussion of this position, see William R. Heaton, "Assessing the U.S.-China Connection," unpublished manuscript (Washington: National War College, 1983).

26. Deng's latest offer was made in a meeting with Professor Winston L. Y. Yang of Seton Hall University. See Yang Li-yu, "Deng Xiaoping's Latest Concept on Peaceful Reunification," *Chihshih Nientai* [The Seventies], August 1, 1983, pp. 17-19; *Daily Report*, 4 August 1983, pp. W1-W6. An abbreviated version of the key points is in the *New York Times*, August 21, 1983, p. 20. Hu Yaobang confirmed to *Mainichi Shimbun* that Deng's statement was the collective position of the Chinese leadership.

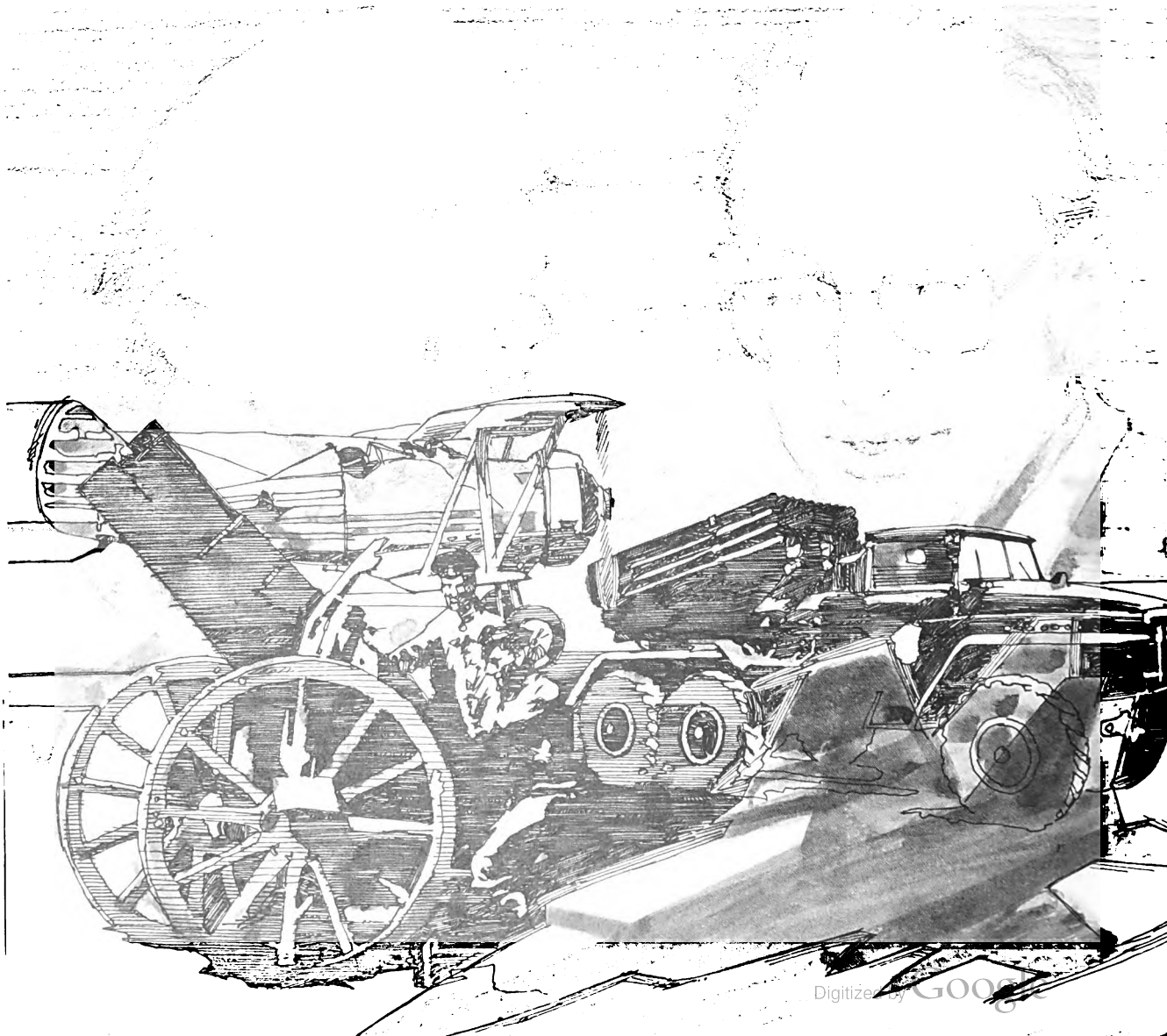
27. The Chinese approach to Hong Kong is related to the Taiwan question. Although China has said that it would recover sovereignty over Hong Kong by 1997, Chinese leaders have tried to assure Hong Kong residents and foreigners that no measures will be adopted to damage Hong Kong's economic well-being. Beijing believes that a satisfactory resolution of the Hong Kong issue could help its appeal for the reunification of Taiwan.

28. In addition to the controversy over Japanese textbooks and films, Chinese media have been reporting more general "unfavorable" trends in Japan. A Xinhua commentary on 20 August 1983, entitled "A New Trend on the Japanese Political State," noted an "adverse current." The commentary observed that there was a movement within the Liberal Democratic Party to amend Article 9 of the Japanese Constitution, that members of the Diet were making regular visits to the Yasukuni Shrine, that Prime Minister Nakasone had pushed for a drive to make Japan a "big political power," and that Japanese arms exporting to the United States and other countries was increasing. The commentary said that these trends were of "grave concern" to the Japanese people and were causing worry abroad. *Daily Report*, 23 August 1983, pp. D2-D3.

TOWARD 1984: FOUR DECADES OF SOVIET MILITARY POLICY

DR. JOHN ERICKSON

IT REQUIRES no great intellectual feat to discern that Soviet military developments can be evaluated with a variety of interpretative methods, each of which has its own merit and advantage. Such discernment may be a matter of looking at military doctrine in its widest context, force structures and deployments, command arrangements and command appointments, weapons technology and military research and development, or it could consist of scrutinizing particular institutions, such as the General Staff, the Military Districts, or individual



arms and services. In general terms, a very plausible model of change and interaction can be derived by surveying the cycle or cycles of the formulation of doctrine, the development of corresponding armament norms, and the consequent diversification of command and control mechanisms *(upravlenie)* to produce battlefield effectiveness, survivability and flexibility, all within the combined arms framework. Indeed, all these components—doctrine, deployment, weapons technology, command arrangement—can be combined into an intricate matrix, which can indicate types and rates of change within the system as a whole or within select sectors. The systems approach is one that is apparently being adopted with some enthusiasm by Soviet specialists, one objective being to investigate responsiveness and adaptiveness to change (thereby generating, among other things, a new and complex vocabulary related to *voennaya sistemotekhnika).*

On the other hand, a rapid scan of Soviet military policies, programs, and postures over the past four decades hints that the insights of an actuary could be as useful as the skills of the military analyst. Ten-year cycles seem to obtrude themselves, each cycle stamped with its own characteristics—be it doctrine, weapons development, deployment reorganization, or command style—yet inextricably interlocked. While identifying these periods (which seemingly do no injury to the periodization devised by Soviet analysts themselves), we might also stamp them with a particular feature:

- 1943-53, justifiable pride at victory but disfigured by the later Stalinist immobilism;
- 1953-63/4, nuclear introspection, a fundamental tussle over doctrine, marred, distorted, and increasingly disturbed by Khrushchev's own predilections and vagaries;
- 1964-74, satisfaction with the attainment of parity, even to the point of winning a margin of advantage; and,
- 1973/4-83, the 'technocratization' of the command, the search for flexibility and sustainability *(zhivuchest)* within the entire system, rethinking and restructuring but the satisfactions of the previous decade consumed by a sense of foreboding, not least in view of an imminent military-technological competition with the United States and arcs of threat growing apace in a strategic environment subject to rapid deterioration.

The growing asymmetry of the two systems, Soviet and American, can only project a long shadow over the coming decade, a warning note recently issued by Marshal Nikolai Ogarkov, Chief of the Soviet General Staff. *Foreboding* is not too strong a word, for his remarks are redolent of it.

The Soviet Army emerged from the war, especially its latter phase from 1943 to 1945, with confidence suffused with pride at having broken the back of the Wehrmacht, once doctrine, armament norms, and command flexibility had been brought into proper alignment. While wartime experience provided a basis for the further development of norms and numbers, the postwar period was dominated by Stalinist military science, not to say Stalin's own tyrannical hold on military developments, leading to a strange and tense paradox, namely that the petrification of doctrine did not impede the progress of weapons development, with the advent of a Soviet atomic bomb, accompanied by the test of a ballistic missile (the R-1) and the creation even in 1946 of the first missile unit based on a Guards Mortar (Katyusha) Regiment. Nevertheless, the rigidities of Stalinism and Stalinist military science cramped Soviet military developments insofar as they precluded choice in priorities, ordained as they were by Stalin himself.

The death of Stalin is generally acknowledged as a major turning point, unlocking the immobilism and unleashing a decade of doctrinal introspection and structural modification—all signaling the onset of attempts not only to assimilate the nuclear weapon but also to integrate it into classically configured strategic

principles (thus marking the fundamental and enduring divergence between Western and Soviet approaches to defense and deterrence). Strategy, operational art, and tactics had to be related to a revised understanding of the nature of war—and to those main tasks on which a combatant state must concentrate in order to secure victory in war. Confused, obscure, and even contradictory though these debates and discussions were, they have retained their importance, not only for the affirmation of the combined arms principle and the need to coordinate military power as opposed to Khrushchev's insistence on the primacy of the rocket-atomic weapon but also for the decisiveness of the initial period of a nuclear war, which would, in any event, be of short duration.

Coincidentally, the Soviet military command learned two harsh lessons during this turbulent decade:

- that a policy and posture based on a position of strength must perforce possess that strength (which Khrushchev, for all his missile diplomacy, did not possess);
- that professed parity must be rooted in real norms and numbers and, conversely, the retreat to minimum deterrence (already rejected when Malenkov aired it) and peaceful coexistence espoused by Khrushchev could only mean consigning the Soviet Union at worst to permanent strategic inferiority or to the foreclosing of options with forces structured only for one-variant war.

In what straits would the Soviet Union find itself if this deterrence failed?

Neither Stalin's rigidities nor Khrushchev's missile adventurism had solved the problems of Soviet policies and priorities in the nuclear age. These hard-won lessons, however, were put to good use in the ensuing decade, beginning with the package presented to the Twenty-third Party Congress—a program neither a simple reversal of Khrushchev's radicalism nor a reversion to ultraconservatism, showing the firm grip of the resurgent General Staff as now back in Marshal Zakharov's hands. The new policy hinged on a recognition that nuclear war was a realistic contingency, requiring both a revision of the inferior strategic status of the Soviet Union and further investment in damage-limitation capabilities (including the centralization of civil defense organization). Nor did the provision for theater operations—at any level of warfare and weapons—lose out in this process, with the Ground Forces emerging in 1967 in revamped form, their status as an independent arm was fully restored. The suspended animation enacted by Khrushchev, who saw little need for large ground forces, evidently did not impede modernization which speedily turned out more armor, improved artillery, battlefield air defense systems, and the formidable BMP (infantry combat vehicle). Yet another of Khrushchev's bugbears, tactical aviation, also underwent rejuvenation and resuscitation.

The rethinking between 1965 and 1967 and the military buildup throughout the subsequent decade have proved to be of fundamental importance in Soviet military policy, which is committed to an active struggle for the creation of *definite capabilities* for achieving victory. The ICBM buildup, begun in the mid-1960s, was no improvised crash program but the purposeful pursuit of parity, which generated not only counterforce capability—conforming to the classic concept that the aim of battle is the destruction of enemy military power—but a margin of advantage (duly confirmed in the outcome of the SALT I negotiations). An antiballistic missile system was also admitted into a newly invigorated concept of defense in the reshaping of an offensive-defensive mix. Norms and numbers were as important as ever, but expansion coupled with greater diversification in strategic missile forces promised selective strategic targeting, inducing the beginnings of that flexibility for which the Soviet command had long pressed. This in turn prompted a shift in doctrine, away from the preemption first adumbrated in the mid-1950s and suffused through Sokolovskii's work to a form of nuclear *kontrpodgotovka,* by no means first strike as

such, more a strategic disruptive strike—though this might not of itself cripple the capitalist foe, hence the recourse to and reliance on an all arms solution.

Much of this remained to be worked out, not least the fit between strategic and theater operations. At the same time, however, increased attention was paid to organizing command arrangements and the coordination of the military-economic effort, producing the interlocking system of a nuclear command with the Defense Council *(Sovet oborony)* at its head and the General Staff sustaining centralized operational control. Marshal M. V. Zakharov's achievements were far from unimpressive and were reinforced in turn by the Grechko-Brezhnev compact that was both personal and military-political in scope.

The latter part of this third decade certainly provided its own satisfactions with the Soviet attainment of rough parity—an inexact description for an inexact situation—as well as the refurbishing of its general-purposes forces. Viewed over time, doctrine and armament norms (including nuclear firepower) were now much more closely aligned, making the "revolution in military affairs" no longer a mere catchphrase. Yet, by way of balance, a significant shift in Soviet military thinking after the mid-1960s was the recognition that theater warfare might open with an extended nonnuclear phase. This notion later became more pronounced in the early 1970s (though it was not to be construed as a move from a nuclear to a conventional strategy, a dichotomy that was and is alien to Soviet military concepts).

The death of Marshal Grechko, preceded by the death of Marshal Zakharov and the succession of Kulikov to the General Staff in 1971, marked both an end and a beginning. Starting from the concept of a combined-arms force operating on a theater battlefield—the *point de départ* of the mid-1950s—by the early 1970s this was maturing into planning and preparation for coordinated operations *in a global framework*. Rethinking and restructuring now went almost hand in hand, a process accompanied by the increasing technocratization of the Soviet officer corps, the advent of Dimitri Ustinov as Defense Minister, and the arrival of Nikolai Ogarkov at the General Staff in 1977.

Although the pursuit of norms and numbers has not abated, greater attention is being paid to the system and its responsiveness, in particular, to regulate the relationship between centralized strategic control and decentralized battle management. Insofar as the matter is in the hands of Ogarkov, the search is on for both greater flexibility and survivability in the Soviet system, a requirement born of both revised threat assessments and improved Soviet capabilities. If anything, the contingency of more protracted war seems presently to pervade Soviet thinking, but that may be too brusque an explanation of the changes brought about since the mid-1970s and projected further into the 1980s. One prominent feature has been the establishment of strategic regional commands (built around the TVD concept), together with the reorganization of theater forces. These same theater commands are intended to form a key intermediate echelon of command and control between the strategic direction provided by the General Staff and major field forces. With flexibility in force packages and effective command, control, and communications, rapid deployment and redeployment should be facilitated for a larger scale of military operations as opposed to the wartime fronts—the *strategic* operation within the theater of combat operations. While the buildup in intercontinental missile forces has proceeded apace, this has not led to the neglect of regional nuclear strike forces (e.g., the SS-20) or to a failure to appreciate the increased effectiveness of *conventional munitions*. Concurrently, major reorganization has occurred in the air defense forces to provide all-round air and aerospace protection with the creation of the *Voiska PVO*, the merging of the forces of the Air Defence Command *(PVO Strany)* with the Soviet Army's own air defense troops to produce a huge new operational entity, while the Soviet Air Force

has been even more drastically reshaped; the former air armies of the Military Districts have been turned into air forces designed to provide support to the field forces at all levels, even as strategic air strike elements have been formed from five air armies (24th, 4th, 30th, 46th, and 36th) covering all theaters.

Coordination appears to require greater integration in this scheme. Marshal Ogarkov's reference to Soviet strategic nuclear forces has about it more of the ring of a Soviet triad (ICBMs, SLBMs, and bombers), an integrated strike force in which the mix can be reshaped as circumstances demand. The reorganization of air defense systems does at least begin to meet threats posed by the cruise missile and the manned bomber, while for offensive operations the acquisition of a new Soviet manned bomber and the development of a long-range cruise missile furnish a degree of versatility to existing flexibility, though some time is still needed to modernize the SLBM force completely and fill out theater nuclear systems. So far, the Soviet command cannot be displeased with the state of the correlation of forces or with the preliminary results of the restructuring of Soviet forces prompted, in part at least, by the findings of the General Staff/General Staff Academy think tank assigned to this task. Such restructuring and repackaging meet some of the requirements of coordination for globally spread operations even if it could conform to a Soviet version of a strategy of *tous azimuths*, but a certain foreboding has begun to shine through—expressed by Marshal Ogarkov in his discussion of revolutionary new American weapons and American technology for command and control capable of qualitatively changing the management of strategic operations. The Soviet command must look, therefore, to its own *sistemotekhnika* as a matter of urgency: a missile moat is not enough.

THE CYCLES of Soviet military development, the division by decades, may well be something of a circumstantial or actuarial illusion after all. By looking both backward and forward, we may see but one sustained cycle, with elaboration, diversification, and sophistication piled on a few tried and tested strategic concepts, which afford both continuity and consistency. It is tempting but misleading to interpret this process in Western terms and through Western terminology, such as the first strike, or superiority, or any other rubric. I am inclined to think that the fundamental Soviet quest, embracing past, present, and future, is for nothing less than military invulnerability, the achievement of which would encompass both offensive and defensive designs. This is at once an expression of great power combined with a great and possibly growing sense of insecurity, a syndrome that shows no sign of dissipating: military impregnability is the single, continuous theme, whatever the decade.

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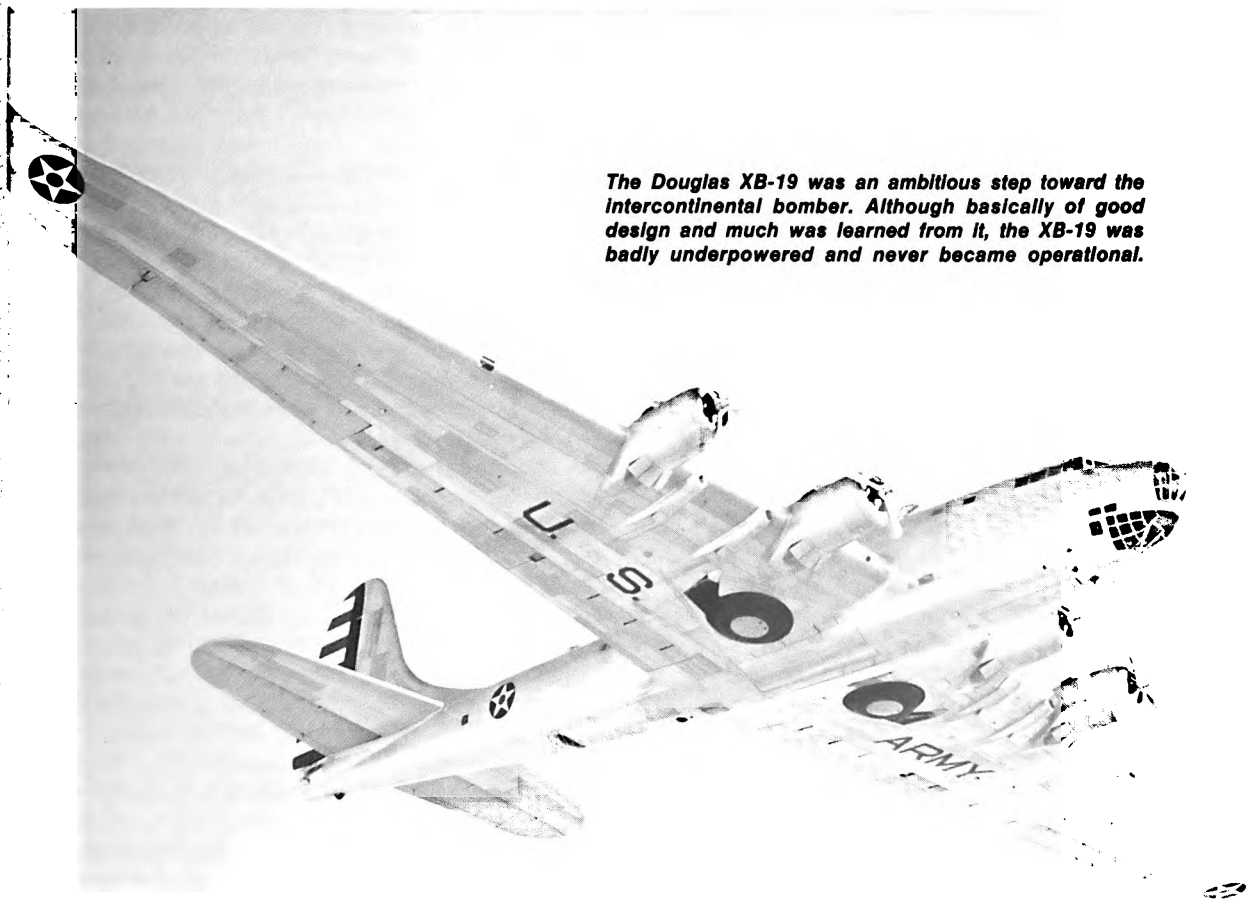
The Evolution of Jet Fighters: A New Point of View

WALTER J. BOYNE



The Douglas XB-19 was an ambitious step toward the intercontinental bomber. Although basically of good design and much was learned from it, the XB-19 was badly underpowered and never became operational.

WHEN the whistle of the jet engine was first heard in 1939, it was a clear but unrecognized commentary on a major reversal in design process. Prior to that time, airframe development had been limited by engine development; every new operational requirement was keyed to the often tortuous delays occasioned by the introduction of a new engine of greater horsepower. Oftentimes airframe designers were too optimistic and anticipated greater power than was actually realized; as a result, outstanding airplanes like the Boeing XB-15 and the Douglas XB-19 were underpowered and thus not brought into production. The basic reason was simple: the design of more powerful reciprocating engines was both more expensive and more time-consuming than the design of airframes that could employ them.

This dependence on engine power can be traced in the serial development of famous fighters like the German Messerschmitt Bf 109 or the British Supermarine Spitfire. The initial prototypes of these aircraft flew, respectively, with the Rolls-Royce Kestrel V engine of 695 horsepower and the Rolls-Royce Merlin "C" of 990 horsepower. The Messerschmitt quickly switched to a German engine, of course, and successive requirements for increased performance were met by introducing new subtypes of the Junkers Jumo and Daimler-Benz liquid-cooled V-12 engines. The last variant of more than 33,000 Bf 109s built, the K-6, was powered by a 1550-horsepower Daimler-Benz DB 605 engine that could, with methanol injection, reach 2000 horsepower for short periods. The Spitfire, of which 20,334 were built, had in its Mark 22 version a 2050-horsepower Rolls-Royce Griffon. As an American yardstick for comparison, the North American XP-51 flew with a 1150-horsepower Allison, while the last version, the P-51H, had a 2218-horsepower Packard Merlin.

Thus, in the roughly ten years between the first flights of the European prototypes and the end of the war, conventional fighter demands were met by tailoring airframes to engines that had just about doubled in power.

More powerful piston engines were being brought into production in every country. Through greater volume, increased supercharging, and vastly greater complexity, the goal was to increase the horsepower limit. In England the Rolls-Royce Eagle, a 24-cylinder "H" style engine, was bench run in 1944 and ultimately achieved 3450 horsepower. In Germany, a 3900-horsepower BMW 803 engine was bench run; it was a 28-cylinder air-cooled, four-row radial, similar to the Pratt & Whitney R-4360 in the United States. The latter was flown in a Goodyear F2G Corsair before V-J Day and ultimately, of course, became a workhorse engine in the Convair B-36, Boeing B-50 and other multiengine aircraft.

The largest piston engine ever built, however, the Lycoming XR-7755, was a liquid-cooled, 36-cylinder, four-row radial engine that was intended to generate 5000 horsepower. Not even bench run until after World War II, the XR-7755 represented a peak in reciprocating aircraft engine power but was never required, for which maintenance crews were undoubtedly very grateful.

As the piston engines increased in power, so to a greater degree did their mechanical complexity, weight, size, maintenance requirements, fuel consumption, and cost. By unusual engineering achievement, the jet engine arrived on the scene at a horsepower equivalent to where the reciprocating

engine was peaking out. In addition, the jet engine had a relatively simple construction that did not require the same investment in heavy machinery and was relatively lightweight and low in cost. While initial fuel consumption was high and reliability low, the jet engine improved rapidly in both these areas.

Perhaps even more important, from the standpoint of increasing absolute speeds, the jet engine eliminated the requirement for a propeller, with its inherent complexity and limitations.

Given the terrible urgency of wartime conditions, it is a tribute to both Sir Frank Whittle and Dr. Hans von Ohain that the inspired courses they pursued in the invention of the first jet engines were tolerated in their respective countries. At the time they were advocating the radical new style of power plant, the upper limit of piston engine development was not clearly perceived, while the need for thousands of more powerful engines was. Their genius attracted sufficient backing to enable the jet engine to come into being at exactly the time the reciprocating engine had reached its developmental limit.

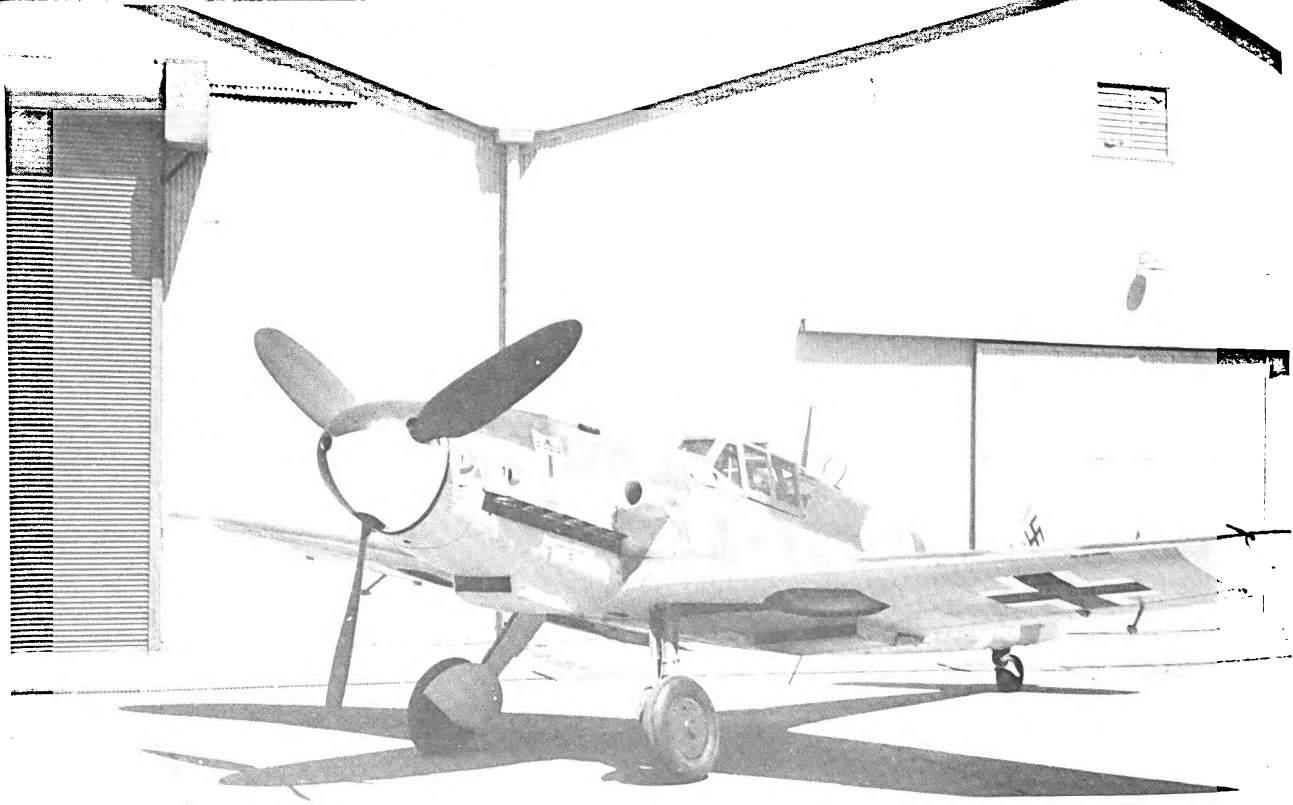
The number of pioneers in the turbine engine field was very small; besides Whittle and von Ohain, the only contributor of comparable stature was Dr. Franz Anselm, who developed the axial-flow Junkers Jumo 004 used in the Messerschmitt Me 262, the world's first operational jet fighter.

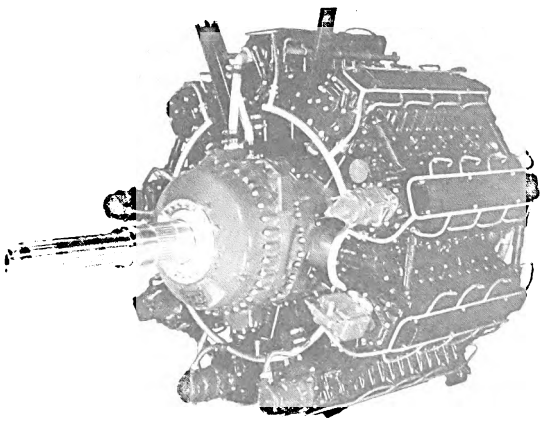
When the war ended, the piston engine fighter was still predominant, but the future was clearly signaled with the Me 262, the Arado Ar 234, the Gloster Meteor, and the Lockheed P-80.

After the war the situation changed dramatically; the piston engine was abandoned by designers first for fighters and then bombers; it was not long before transport and utility aircraft would also be turbine-powered. Engine and airframe designs were in abundance. Designers became encouraged by the fact that for the first time engine power was becoming available in greater increments, over a shorter development time, than ever before; engines and airframes could be designed almost in parallel.

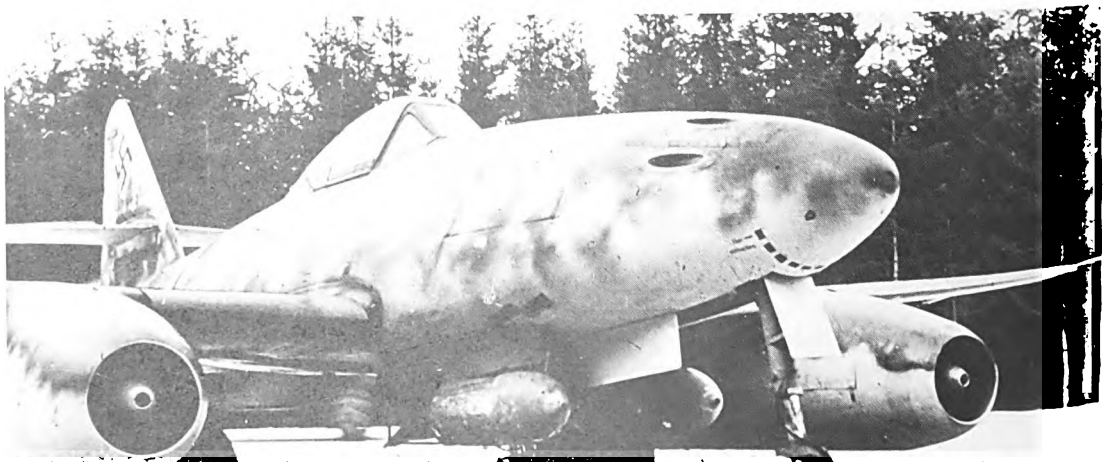
The situation was exploited, and there was a flowering of designs in numbers that probably will never be seen again. Jet engines appeared to be relatively simple to manufacture in terms of machine capability, and everyone sought to get into the act. Allison, Curtiss-Wright, General Electric, Lycoming, Marquardt, Pratt & Whitney, Westinghouse, and others competed in what seemed to be virgin territory. Soon, however, the list began to dwindle as manufacturers found that the degree of engineering skill necessary to reach new levels of power and reliability was difficult to muster.

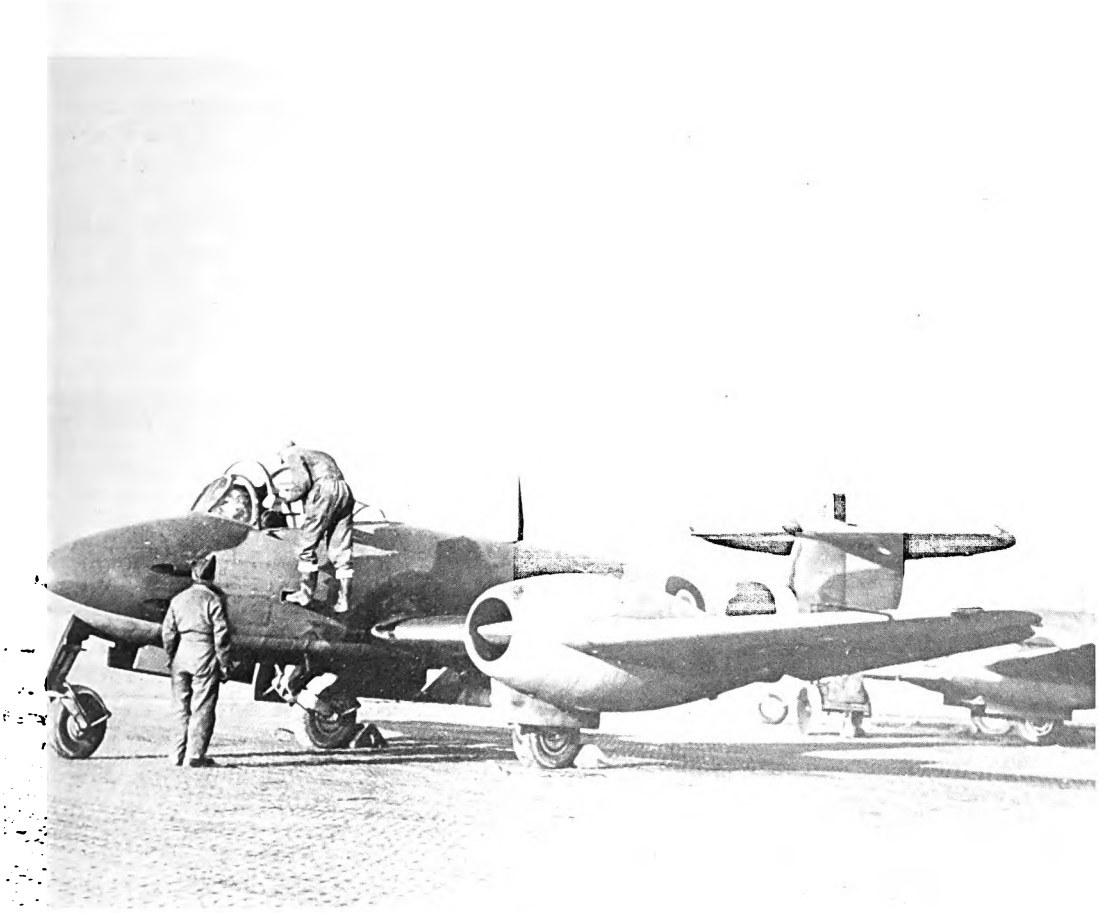
Airframe developers followed a similarly diverse course. The path of fighter progress was marked by a curious set of factors. Although the rapid development of engines enabled designers to overcome some discouraging new aspects of the fighter aircraft business, the specter of available power caused military requirements to be increased to levels that would have been considered absurd just a few years before. This had the effect of vastly increasing the development time necessary to bring an aircraft from concept to flightline because of the ever-increasing size, cost, and complexity. This combination of factors meant that not only would older fighters have a much longer service life than had been anticipated but that newer fighters would be procured in far smaller numbers than ever before.





The brilliant Willy Messerschmitt conceived the original Bf 109 (above) as "the biggest possible engine placed in the smallest possible airframe," and he engineered a fighter with a 690-horsepower engine; by the end of the war, the same diminutive airframe was packing an engine capable of 2000-horsepower sprints. . . . The biggest piston engine ever made was the Lycoming R-7755 (left). Its 36 cylinders were designed to produce 5000 horsepower.

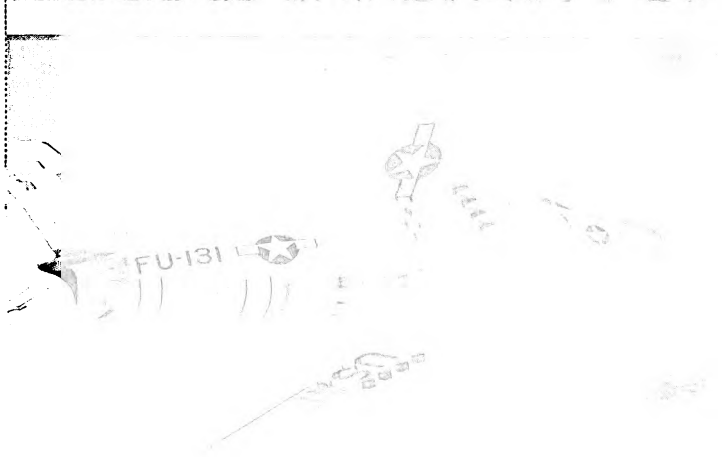




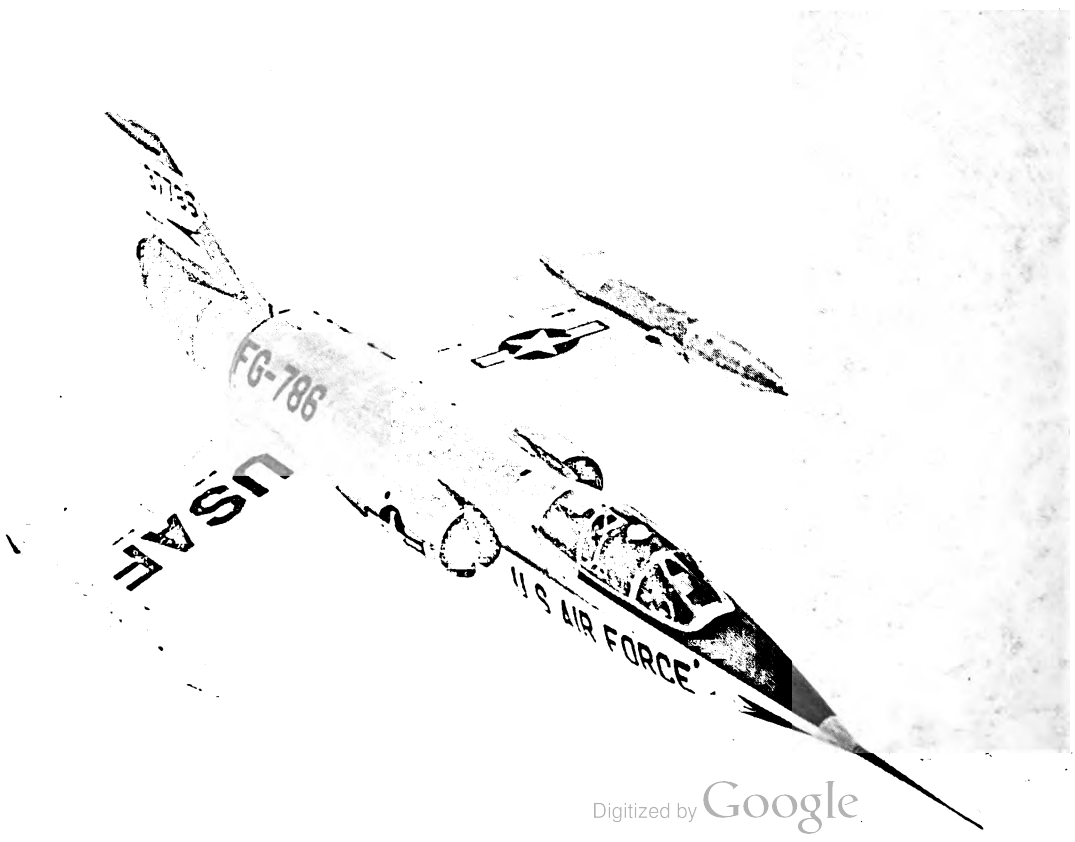
A German pilot took up the classic Messerschmitt Me 262 (facing page, bottom) for its first flight in early 1942. . . . More than eleven months later, on 5 March 1943, the British flew their first operational jet, the Gloster Meteor (above). It entered squadron service on 16 April 1944 but no Meteor ever encountered an Me 262 in combat.

To utilize the thrust expected to be available and meet the increased requirements, aerodynamicists were forced to evolve a whole series of new airframe innovations, almost always of greater and greater sophistication and complexity.

Thus, while sweptwings were adopted to enable aircraft to approach mach 1, it was necessary to apply the formulations of Whitcomb's area rule to design airframes to slip smoothly through the supersonic region without excessive drag buildup. In a similar way, the need to combine long-range, good load-carrying capabilities, and high speed with reasonable takeoff and landing distances led to the development of variable-geometry aircraft. Other practices ranged from the subtle change of wing airfoil and camber to aerial refueling to the inclusion of a second crew member, always a problem in fighter pilot psychology. With these new advances came problems of



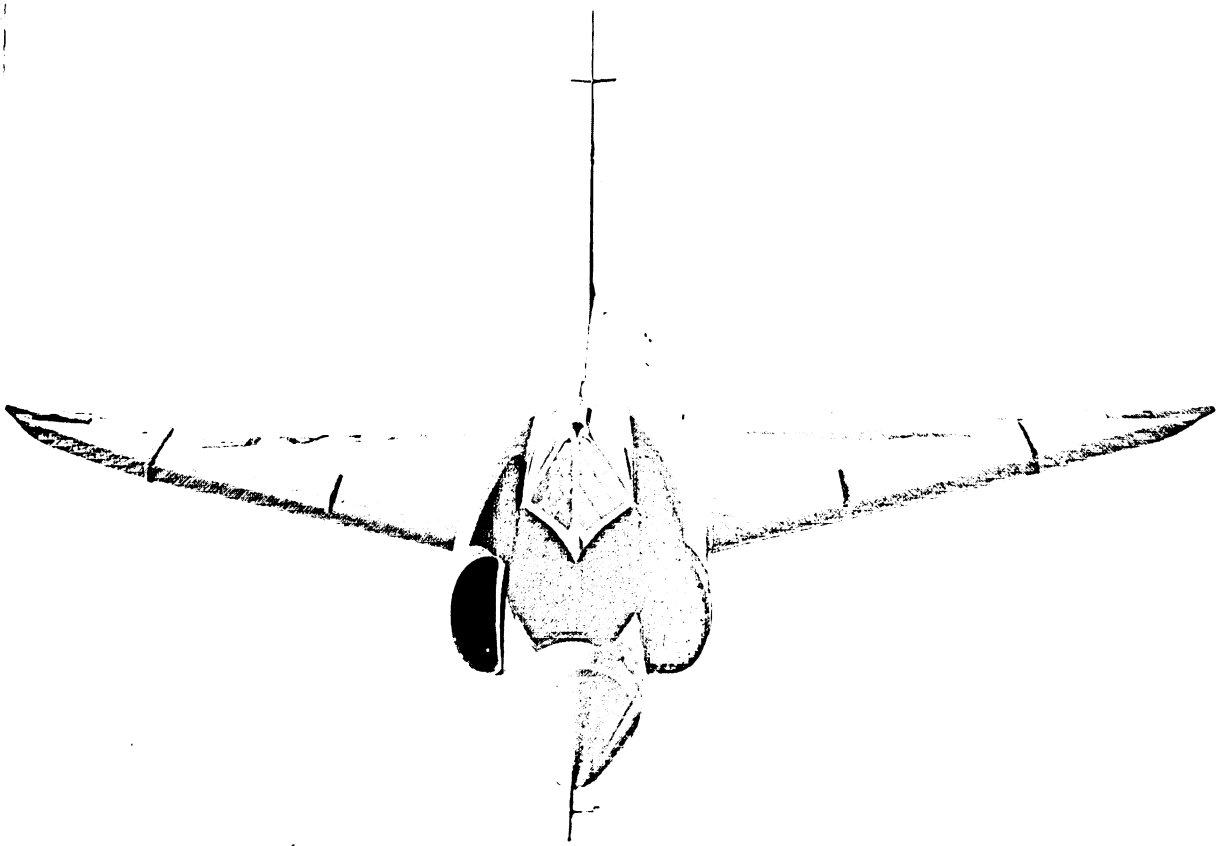
The first operational U.S. jet fighter, the Lockheed P-80 (above), used a development of the Whittle engine, the General Electric I-40 (later J33) of 3850 pounds static thrust. It was the start of a long line of successful Lockheed fighters. . . .North American, riding on the success of its Mustang fighter, produced the remarkable F-86 (left), an airplane which was loved by its pilots in most of its models. The Sabre adopted sweptwing technology to achieve a transonic capability. From the F-86A to the F-86H, power advanced from 5200 pounds of static thrust in the General Electric J47 to 8920 pounds of static thrust in the GE J75.... Hottest of all the Lockheed fighters was the supersonic F-104 (below). The Starfighter was built in great numbers and serves in a wide variety of roles in a number of air forces. On the ground, the knife-sharp leading edge of its wings have been fitted with a cover to prevent possible injury to pilots and ground crews.

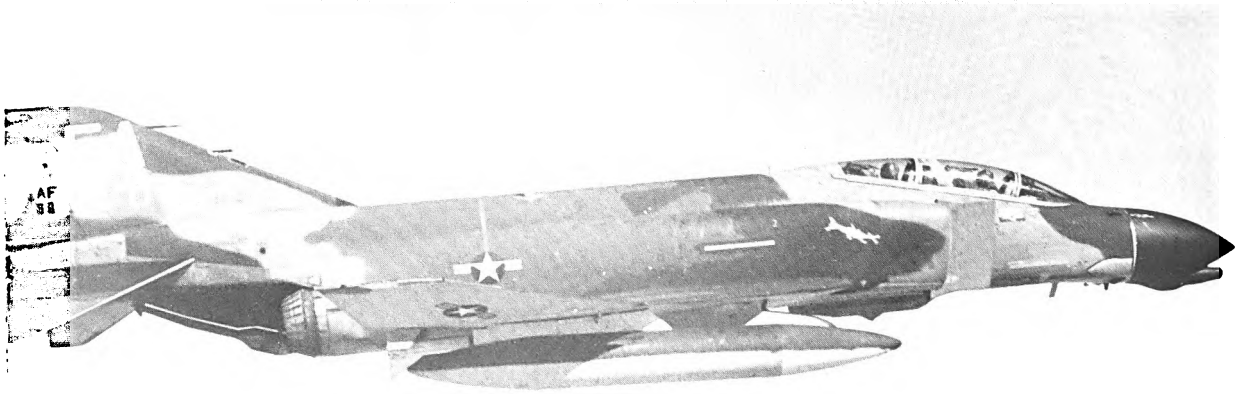


structural strength, fatigue, corrosion, training, repair, etc.

One can trace this pattern of increased power, size, and complexity in the aircraft delivered to the United States Air Force. The Lockheed P-80, first operational USAF jet fighter, led to the F-94 Starfire, and ultimately to the F-104 Starfighter with its razor-thin wing. The sweptwinged North American F-86 was improved through a long series of design changes before being replaced by the far larger and heavier supersonic F-100. Convair entered the field with two much-advanced fighters, the delta-winged F-102 and F-106, before developing the controversial F-111, the first swing-wing aircraft in the USAF inventory. Northrop achieved success with the F-89 Scorpion before turning, in advance of all of the other manufacturers, to a lightweight fighter in the form of the F-5.

Convair's F-102 was not supersonic until it was modified with the area ruled fuselage (coke-bottle shape) apparent in this view. With the nipped-in waist, the F-102 Delta Dagger was easily supersonic and served with distinction for years as an interceptor and later as a drone. More than 25 squadrons of the Air Defense Command employed the F-102A during its peak years of service, a quantity which seems almost unimaginably large by today's standards. The aircraft was powered with the versatile, dependable Pratt & Whitney J-57 engine, which generated 17,000 pounds of thrust with afterburner.

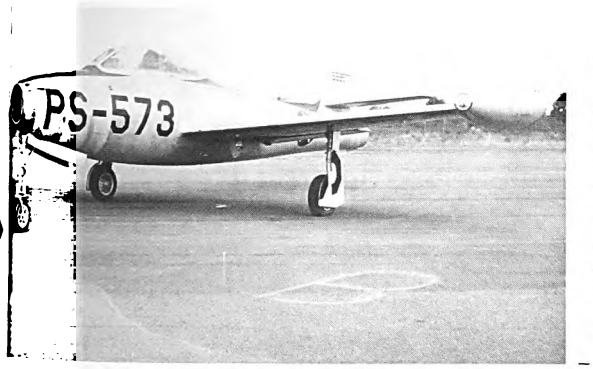




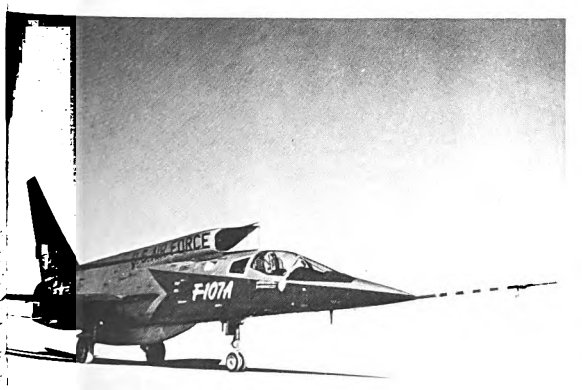
Perhaps the greatest jet fighter of all time and certainly the most widely used by Western forces, the McDonnell Douglas F-4 (above) has been on the scene for more than 25 years. There are prospects of reengining the aircraft with a derivative of the Pratt & Whitney F-100 engine. The F-4 has set many records, scored many victories, and won the hearts of many pilots. . . . Northrop sensed, before any other major U.S. airframe manufacturer, the need to develop a low-cost, lightweight fighter with competitive performance. The F-5 has had a phenomenal sales record and serves in numerous air forces.

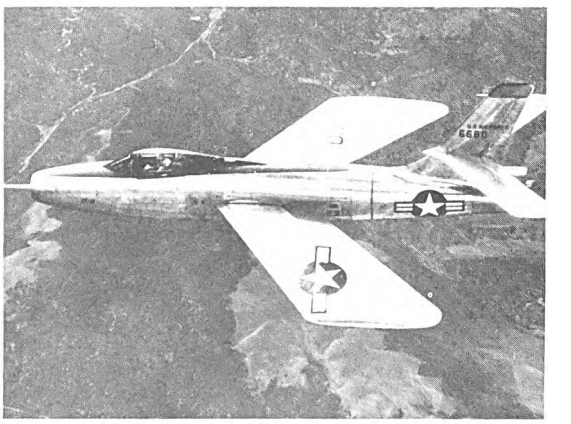
McDonnell Aircraft, after years of being a Navy supplier, evolved the long-range, supersonic F-101 Voodoo and followed this with the immortal F-4 Phantom II, perhaps the most important jet fighter in history.

Republic (subsequently a division of Fairchild Industries) created the F-84 almost in parallel with the P-80, and the design matured into a long line of rugged, successful warplanes. From these evolved the immortal Thud, the indefatigable F-105 that carried a major burden in the air war over North Vietnam.

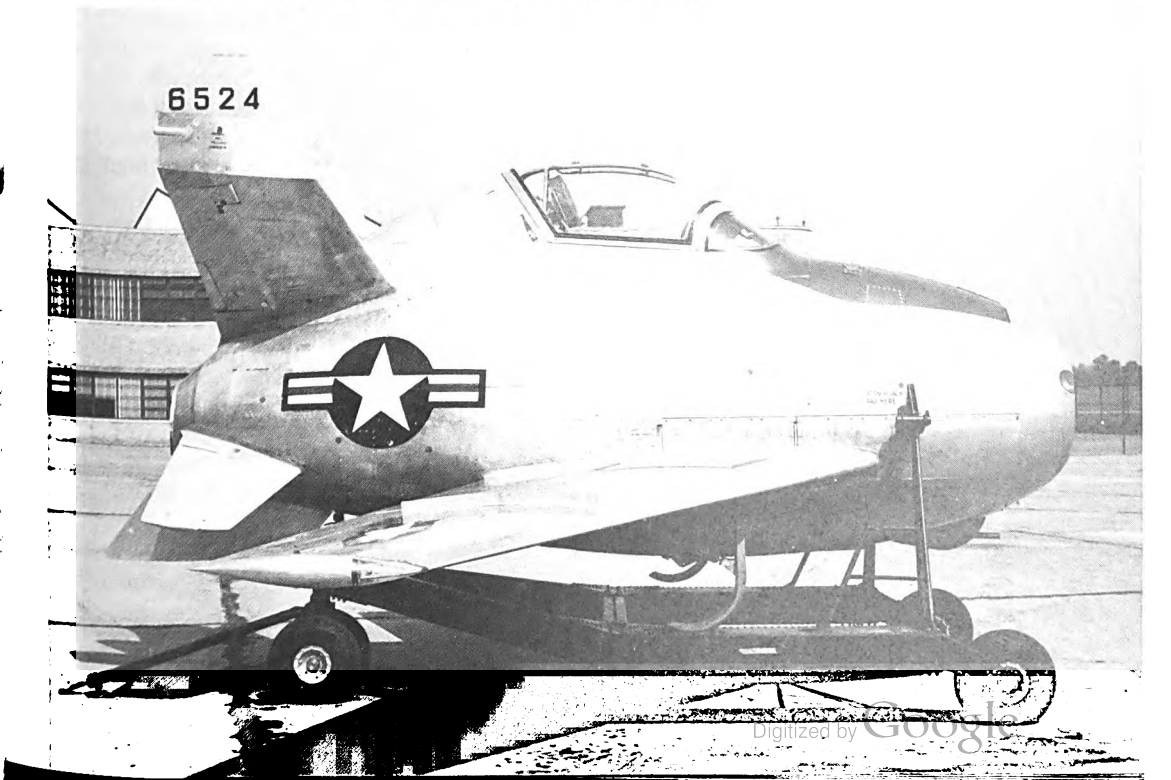


Just as North American followed the Mustang with the Sabre, so did Republic follow the Thunderbolt with the Thunderjet (left). Powered with a 3750-pst General Electric J35 engine, the Republic F-84 first flew on 28 February 1946. It set a speed record of 611 mph in September of that year. The Thunderjet continued the Republic tradition of rugged fighters with long takeoff rolls. . . . The North American F-107 (below left) seemed to be a winning design, but it did not go into production. Power for the aircraft was supplied by a 24,500 pound afterburning J75 engine. Its maximum speed was mach 2.2. . . . The Thunderceptor (below right) is powered by both a GE J47 jet engine and a XLR11-RM-9 rocket engine. Its wings had a distinctive inverse taper. Only two were built.





An idea that sounded good but was difficult to work out in practice was that of the McDonnell XF-85 Goblin. A parasite fighter developed for escort work with the B-36, it was designed to be carried in the belly of a B-36.



The General Dynamics F-16 is part of the new breed of fighters, infinitely more sophisticated than their predecessors and much more capable.

These fighters were the workhorse aircraft that provided the USAF with a worldwide capability from Korea to Vietnam, and they represent the main lines of development in response to the increased power of turbine engines. Interspersed with these aircraft were others designed to fill special niches. For various reasons, they failed to achieve operational status. Among the more interesting of these were the last fighter from Curtiss, the four-engined F-87 Blackhawk; the improbable-looking XF-85 Goblin, designed to be carried in the belly of a B-36; the mixed-power, inverse taper-wing Republic XF-91; and the fast, capable, humpbacked North American F-107.

Two other revolutions in aircraft design, both quite as important as the development of the jet engine, were also going on, but their effects have somehow been generally overlooked because they were so much slower in coming to maturity.

First was the almost painful evolution of the effective air-to-air missile. Expectations had been high for the rocket-powered missile ever since the first Le Prieur rockets were launched from Nieuport 17s during World War I. Somehow, missiles never reached their full potential until Vietnam, but even there their utility was vastly limited by the rules of engagement. Not until the most recent generation of missiles and fighter tactics did the concept of the missile-equipped jet fighter reach maturity.

The second revolution was in the multiple application of computers, not only to onboard use but also to the design of the aircraft and its systems.

Airborne computers were not "user friendly" even through the McDonnell Douglas F-4s. Space, weight, and the crew inputs necessary for optimum use were all excessive by today's standards. Perhaps even more important was the fact that only in the post F-4 generation of fighters, in the General Dynamics F-16 and the McDonnell Douglas F-15 and F-18, has there been sufficient use of computers in the basic design process.

As a result of these two revolutions, airframe design has for the first time entered the jet age and caught up with the jet engine in development potential. One can assume that computers of the future will enable simultaneous development of airframes, engines, and missiles that will avoid the timing mismatches of the past.

The evolution of fighter aircraft since World War II has been a fascinating process. From the straight wings of the P-80 through the sweptwings of the F-84F, past the swing wings of the F-111 and beyond the melded body and wings of the F-16, one can look to a future that might include such things as vertical takeoff, vectored maneuverability, and so on. The fighters of the future will undoubtedly be neither so numerous nor so diverse as the fighters of the past, but they will embody successive developments and will depend, as always, on capable crews that fly them for ultimate success.

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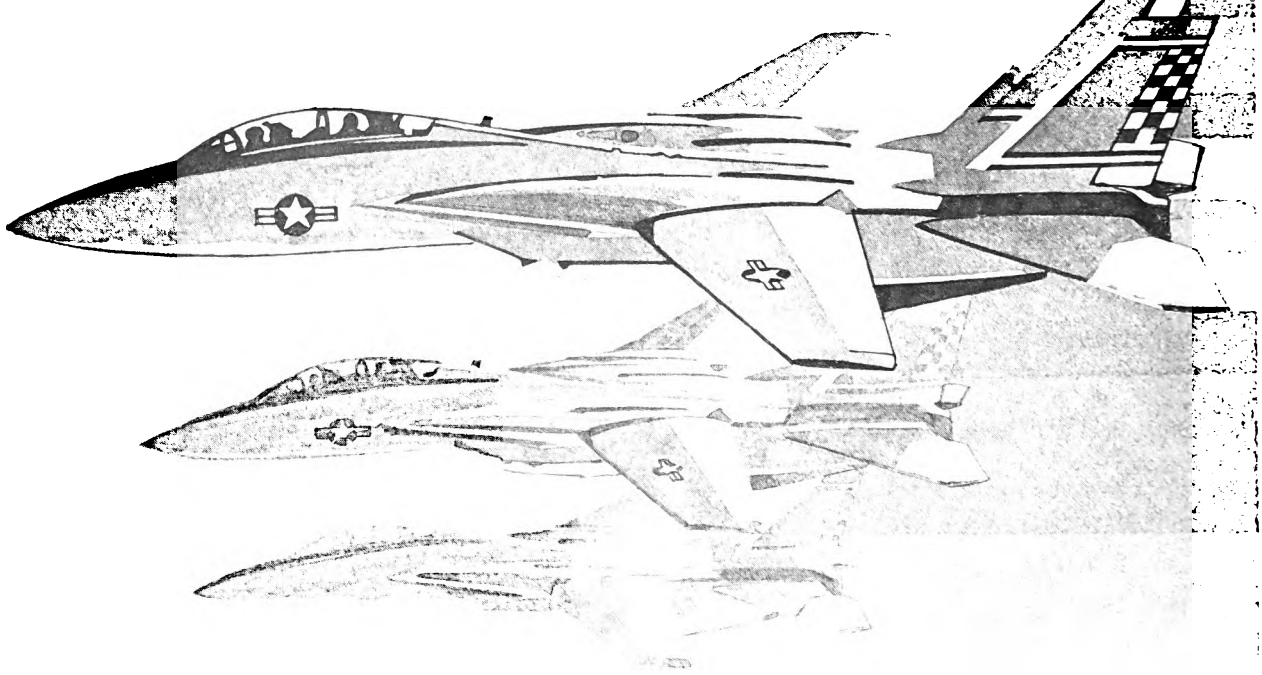
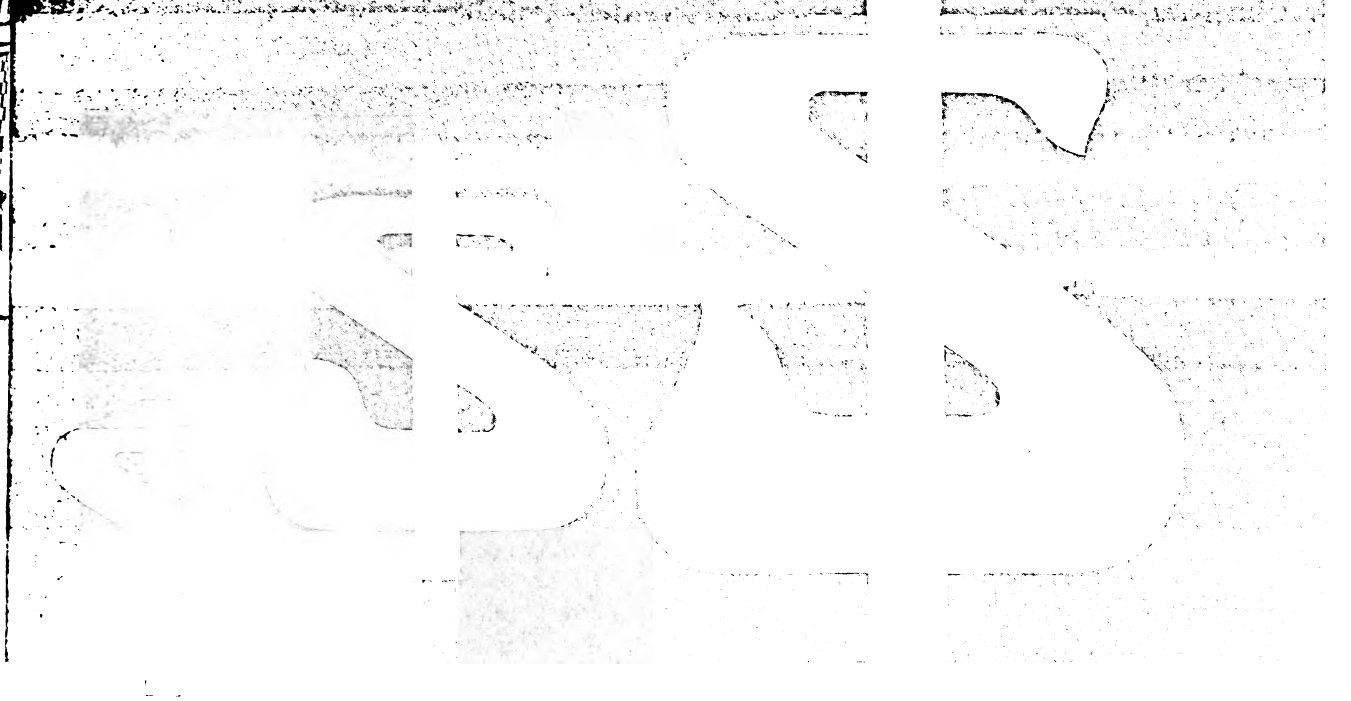


SOVIET DESIGN POLICY AND ITS IMPLICATIONS FOR U.S. COMBAT AIRCRAFT PROCUREMENT

REBECCA V. STRODE

THE COSTS of U.S. tactical aircraft have increased enormously over the past three decades, to the point that severe budgetary pressures now constrain the nation's efforts to procure aircraft in the numbers required to maintain its accustomed defense capabilities. The most expensive tactical aircraft currently under production, the Navy's F-14, is fifty times more costly (measured in constant dollars) than the most expensive World War II fighter.[1] If the postwar trend continues, the unit cost of a hypothetical "F-1985" might well exceed $50 million, or almost three times the price of the F-14. The consequence of higher procurement prices is fewer purchases, so that the U.S./Soviet numerical balance in tactical aircraft shifted over the decade 1965-75 from a 78 percent U.S. advantage to a 7 percent U.S. deficit. (See Table I, next page.)

Quantity, of course, is not the only measure of military capability; quality plays an equally important role, and it is precisely the high-performance characteristics of recent U.S. aircraft that have been largely responsible for the escalation in price. High performance and high costs both derive from two basic aspects of U.S. fighter aircraft design, versatility and technological sophistication. American aircraft have consistently embodied systems and components that have marked the bounds of the technologically feasible at the time of their construction. This trend in U.S. design was clearly endorsed by Rear Admiral T. R. McClellan, Chief of the Navy's Air Systems Command, in testimony



before the Senate Armed Services Committee. Asked why the Navy chose the Grumman F-14 over McDonnell Douglas's less expensive aircraft, Admiral McClellan replied, "In a fighter aircraft, sir, we try to get the maximum design we can."[2]

The second aspect of U.S. design, versatility, enables a single fighter to carry out a variety of missions: close support, air superiority, interception, and interdiction. Close support constitutes the tactical air forces' most immediate contribution to the battlefield outcome by striking directly at the enemy's deployed forces while they are engaged against friendly ground units. It requires the ability to fly at very low altitudes under heavy fire. Air superiority is achieved by destroying enemy air power on the ground and by maintaining air-to-air combat dominance in the sky. This mission puts a premium on energy-maneuverability, particularly the ability to turn inside an opponent and bear high-load factors, since air battles are generally not fought at maximum speed but in an "envelop" ranging from mach 0.6 at 10,000 feet, to mach 1.4 at 17,000 feet. The interception of enemy bombers and other aircraft requires speed, maneuverability, and range. Finally, modern multirole combat aircraft (MRCA) are designed to accomplish missions of interdiction; that is, to conduct deep penetration of heavily defended areas in order to attack well-guarded targets. Because this mission pits the pilot against a wide array of enemy radar, missile, and other air defense systems, interdiction requires great range and payload, low-altitude capability at mach 0.8-0.9, sophisticated avionics and navigational equipment,

Table I. United States/Soviet balance in tactical aircaft

1965			1975		
U.S.	U.S.S.R.	Ratio, U.S.:U.S.S.R.	U.S.	U.S.S.R.	Ratio, U.S.:U.S.S.R
5800	3250	1.78	5000	5350	0.93

Source: *United States/Soviet Military Balance: A Frame of Reference for Congress,* Library of Congress, Congressional Research Service, Washington, D.C.: Government Printing Office, 1976, p. 45.

powerful electronic countermeasures/electronic counter-countermeasures (ECM/ECCM) equipment, and efficient fire control systems—all of which translate into larger and more expensive aircraft than would be necessary for fighters not required to operate deep over hostile territory.[3]

Interdiction is the most controversial of tactical air missions because its risks and costs are high while its outcome, the reduction of enemy logistical support, constrains the opponent's military initiatives only in the long run and with debatable effectiveness. Yet it has played a major role in U.S. combat experience. During World War II, interdiction accounted for 51 percent of U.S. sorties in the European theater. During the Pacific Leyte campaign, where air superiority had not yet been achieved, most sorties were sent on counterair missions; nevertheless, almost 20 percent involved interdiction. In the Korean War, the share was 55 percent, and while precise figures are not available for the war in Southeast Asia, it is not unlikely that interdiction strikes accounted for 75-90 percent of all U.S. sorties.[4] Should the United States become involved in an air war within the next decade or so, multirole fighters would probably spend between one-sixth and one-third of their flight time on interdiction missions.[5]

While the versatility typically built into U.S. fighters may drive up their unit costs, less versatile aircraft would not necessarily be less expensive. Multirole aircraft provide several program, as opposed to unit, cost savings, including:

- developmental savings (it being easier to design one aircraft than several),
- production economies of scale, and
- maintenance savings through standardization.

Multirole aircraft also offer the important combat advantage of flexibility. Since aircraft are not lost in equal or predictable proportions in time of war, it is beneficial to have at one's disposal aircraft that can perform a variety of missions and hence can be shifted about as necessity dictates. The disadvantage of multirole aircraft is a certain loss of cost-efficiency due to the requirement that each possess the capability to fulfill several missions, even though performing only one at a time. Consequently, on any given assignment, a multirole aircraft is equipped with a number of systems that are superfluous to the accomplishment of its mission.

The advantages and disadvantages of mission-specific aircraft are the obverse of those enumerated for multirole fighters. On the one hand, single-mission aircraft appear to be more cost-effective, since they need not embody "superfluous" capabilities. On the other hand, such aircraft do not provide the economics of scale and standardization offered by MRCAs. As for combat, the advocates of more specialized aircraft argue that no multirole fighter can perform any single mission as proficiently as one specially designed for the task. However, those who favor MRCAs point to the loss of flexibility which a mission-specific force structure entails and contend that it is preferable to perform several missions reasonably well than one superbly and others not at all.[6]

Further examination of this debate lies beyond the scope of this article. Suffice it to say that a growing number of critics of U.S. procurement policy exist who feel that MRCAs place an inordinate fiscal burden on tactical air forces. It should be noted, however, that the argument of many of these critics does not stop at challenging the value of multimission fighters but goes on to question the need for maximum technologies in general, be they incorporated in multirole or mission-specific aircraft. The F-111, for example, is mission-specific (for deep penetration) but at the same time very expensive (unit cost = $15 million) due to sophisticated capabilities. Now it is clear that the use of state-of-the-art technology increases cost as well as capability, and insofar as there are budgetary constraints, there will be a tradeoff between quality and quantity. The task, then, reduces to determining the extent to which combat advantages accrue to technologically superior aircraft.

ADVANCED American fighters have confronted inferior Soviet aircraft on several occasions, and it is instructive to examine the results. In the MiG Alley of Korea, the F-86 Sabre was pitted against the MiG-15 deep over hostile territory, a condition that favored the North Korean, Chinese, and Soviet pilots. Yet the American aircraft—larger, more complex; indeed, the most expensive fighter the United States had yet built—achieved a remarkable kill-ratio against its Soviet opposite and thus proved to be clearly cost-effective. But the results of more recent battles have been more ambiguous. The currently deployed F-4 Phantom and MiG-21, for example, have met over both Vietnam and the Middle East, and while the American plane again proved to be the better fighter, its margin of superiority was not always so great as to justify its cost in the unequivocal manner of the F-86. The exact combat ratio between the F-4 and MiG-21 in the Vietnam War remains classified, but William White of the Brookings Institution has estimated it to be about 2:or 3:1 in favor of the Phantom. During one short period for which data are available, the summer of 1972, air-to-air combat resulted in the loss of 12 MiG-21s, 4 MiG-17/19s, and 11 F-4s, yielding a kill-ratio of about 1.5 MiGs for every Phantom shot down.[7] In the October 1973 War, Israel's 550 combat aircraft—127 of which were F-4 Phantoms—were highly effective in air-to-air combat against Soviet-built MiGs but proved vulnerable to the Egyptian Army's surface-to-air missiles (SAMs).[8]

Where national security is at stake, cost-efficiency analyses alone are hardly persuasive, and it must again be stressed that the F-4 did win the battle for the sky in both Vietnam and the Middle East. But to the extent that cost-efficiency criteria are valid considerations in determining force structure, the F-4's performance might be seen as somewhat disappointing. Almost three times as heavy as the MiG-21 and with a 38 percent greater combat radius, it costs about three times more to produce when measured in dollar terms.[9] But is it three times more effective, or do technological improvements at some point become subject to diminishing returns?

Critics of current U.S. force structure believe the latter to be the case and contend that saving could be realized without significant loss of combat effectiveness by limiting the missions and capabilities of tactical aircraft. Proponents of this policy frequently look to the Soviet Union for an example of an alternative procurement policy, claiming that the U.S.S.R. has secured its defense at lower cost by restricting its tactical air forces to air superiority and ground-attack missions, with little regard to interdiction; by building simple, mission-specific aircraft rather than MRCAs; and by resisting the temptation always to push technology to the limit when designing new aircraft, opting instead for quantity over quality. A closer inspection, however, reveals this analysis to be seriously flawed. In the first place, it is not at all clear that Soviet tactical air forces truly "cost less" than their American counterparts. Second, the argument confuses past capabilities with current policy and then unjustifiably projects that policy into the future. The purpose here is to provide a more accurate understanding of Soviet design policy and suggest the implications that that policy holds for future combat aircraft production.

Missions, Performance, and Design

It is true that the U.S.S.R.'s Frontal Aviation forces have generally not undertaken deep interdiction missions and that the service's aircraft are primarily designed for air superiority or ground attack. They are also more mission-specific than the major U.S. fighters. The MiG-21 and -27 are designed for air superiority; the Su-7 and -17 for close support; and the Su-24 for penetrating ground attack against hardened targets. Within *Voiska PVO,* too, aircraft are designed for specific, limited roles. Pilot training, for example, concentrates on ground control interception, not free air combat, and the

MiG-25, while performing high-altitude, high-speed interception ably, is far less capable in other roles. The Su-9 was designed as a point defense interceptor; the Yak-28, as a low-altitude interceptor. The Tu-28 was built specifically for long-range intercepton.[10] None possess the multirole capabilities of U.S. fighters.

It is also true that Soviet aircraft do not exhibit the same level of technology as U.S. aircraft. But one should not underestimate Soviet equipment, for in some areas it performs very well. The U.S.S.R.'s electro-optical and laser systems are highly capable, as are its ECM and infrared equipment. But overall, Soviet designers do not build into their aircraft the high-performance characteristics typical of U.S. forces. Their onboard computers are less sophisticated, and they fall far short of the United States in the use of composites and miniaturized avionics.[11] Indeed, the MiG-25 in which Lieutenant Viktor Belenko defected in September 1976 did not even make extensive use of advanced metals. The aircraft was constructed primarily of steel, with titanium found only in structures subject to extreme heating, such as the wing leading edges. The resultant weight penalty reduced the amount of equipment that could be carried, and this constraint was still further exacerbated by the aircraft's use of vacuum tubes rather than solid-state circuiting in its electronics. A comparative examination of climb, acceleration, turn radius, and radar capability reveals the superiority of the F-15 and F-16 to late-model MiG-21s and the MiG-25, and even the older F-4 compares not unfavorably.[12]

Underlying the differences between U.S. and Soviet aircraft are divergent approaches to aircraft design. The United States has emphasized complexity, versatility, and technological sophistication and has been willing to sacrifice a certain amount of quantity in exchange for higher quality. Within the Soviet Union, however, radically different practices were fostered among the research and development (R&D) community during Stalin's rule and have remained persistent features of Soviet design policy to this day. The five most prominent of these recurrent patterns are simplicity, commonality, prototype modeling, incrementalism, and reliance on foreign technology.

The simplicity of Soviet designs relates to their modest performance specifications, just sufficient to allow completion of the minimum tasks required and no more. Simplicity is evident in the designs as a whole, in the utilization of conventional, readily available construction materials, and in the lack of detailed finishing. Commonality refers to the use of standardized parts and assemblies on various types of aircraft whenever possible. Alternatively, an entire aircraft series, on reaching obsolescence in its original role, may be modified to fulfill some new system requirement. (This is not, however, the multirole principle found in NATO designs, in that Soviet aircraft have usually not been designed with more than one function in mind. It is only after an aircraft can no longer perform the specific mission for which it was originally created, or when an unforeseen requirement has arisen for which no aircraft yet exists, that an attempt is made to find a new use for the older series.) The ASh-82 engine, for example, was used to outfit the World War II-vintage La-5 fighter, the Tu-2 frontal bomber, and the Pe-8 long-range bomber. Indeed, twenty years later it was still in service on the Il-14 passenger carrier and the Mi-4 helicopter.[13] Similarly, the Su-7 ground-attack fighter and the Su-9 interceptor, although fitted with different wings, armament, and equipment to suit their particular roles, nevertheless possess identical fuselages and tails.[14] To take another example in a somewhat different vein, the M-4 Bison, though currently being phased out of its bomber role, is being modified to serve as a tanker, and a version of the old Tu-95 Bear has been developed to operate in an antisubmarine warfare capacity.[15]

The third feature of the U.S.S.R.'s design process, prototype modeling, specifies the purpose to which research, development, testing, and evaluation are being directed. In the Soviet Union, newly designed aircraft fall into two

categories, "test" *(opytnye)* and "experimental" *(eksperimental'nye)*. Test models are designed to serve as prototypes of forthcoming series production aircraft, and the emphasis is placed on feasibility and existing technologies. Experimental aircraft, on the other hand, are not intended for series production but are built to test a particular new technology or flight characteristic—record-breaking speed, new maneuvers, a new design principle, etc.[16] Prototype modeling, then, provides a link between the static traits of Soviet design policy (simplicity and commonality in series production aircraft) and the dynamic features that foster innovation (incrementalism and foreign input).

The conservatism of Soviet aircraft design policy is nowhere better exemplified than in its stress on innovation through incremental improvement. The approach blends well with the nation's predilection for commonality, since when only modest, step-by-step changes are introduced to upgrade performance, follow-on aircraft are left with many of the same features as their predecessors. While experimental prototypes (I and Ye series) occasionally introduce major improvements in technology, the predominant pattern has been gradual upgrading. Even what appear to be discontinuous advances in the performance characteristics of deployed aircraft have, in fact, been achieved little by little through prototype testing. The transition from the MiG-19 to the delta-wing MiG-21, for example, involved five intervening prototypes: (1) the Ye-50, a sweptwing aircraft with an upgraded MiG-19 engine; (2) the Ye-2A, a sweptwing model equipped with the future MiG-21 production engine; (3) the Ye-5, a delta-wing prototype with the same fuselage and engine as the Ye-2A; (4) the Ye-6, a preproduction series very similar to the Ye-5; and, finally, (5) the production version, the MiG-21F/Fishbed-C. This model itself has undergone extensive upgrading since its introduction in 1960, so that the most recent version has twice the range and payload of the original.[17]

The other major avenue to qualitative improvement employed by the Soviets is to borrow from Western technology and experience. Numerous examples could be given, from the jet engine to integrated circuitry. Such innovation may take the form of partial borrowing or complete replication *(bez otsebiatiny)*. As A. Fedoseev, an applied scientist who recently defected from the Soviet Union, explains: "The themes of new military developments are taken from foreign technical journals and intelligence information on foreign equipment, and often arise as a result of obtaining actual examples of the equipment from abroad."[18]

Sources of Soviet Design Policy

Conservatism and simplicity are evident in all aspects of Soviet design, but the reasons for their prominence are not so easily identified. Do they result from the free choice of the nation's leaders in light of various cost-benefit analyses? Or do they reflect the limited options available to a country plagued by economic irrationality, bureaucratic ossification, and negative historical experience? Those who see in Soviet force structure an alternative to the escalating costs of defense procurements generally accept the former explanation, and the Soviets do claim to find in their approach practical advantages which do not inhere in the more complex United States designs. However, there is strong evidence that the deeper source of the conservatism and technological modesty found in Soviet aircraft designs lies in the systemic inadequacies of the Soviet polity.

Certain benefits do accrue to that Soviet design policy. Aircraft can be completed more quickly, for instance, if they are unencumbered by nonessential accessories and are derived from previous models.[19] In addition, simplicity facilitates pilot training and eases the pilot's task under the difficult conditions of combat.[20] World War II in particular drove this lesson home to the Soviets. As former test pilot M. Gallai explains:

> "A plane does not live by speed alone"! Consequently, all our efforts were directed toward getting

> the new fighters "off," with the goal of making them reliable and accessible to any pilot of average qualifications. (In a major war, you won't get very far on aces alone!)[21]

With this in mind, the Soviets not only designed simplicity into their MiG-3s but, on receiving American lend-lease aircraft, straightway stripped them of their nonessential equipment—extra fuel lines, gauges, etc.[22]

Commonality, too, makes good sense. It reduces the logistics problems associated with providing spare parts, saves time and resources, and makes it easier for pilots to switch from one type of aircraft to another.[23] Prototype testing minimizes uncertainty and avoids the problems that can arise when one attempts to manufacture unproven designs. Through prototype testing, costs and performance can be scrutinized before substantial commitments to a project have been made.[24]

Like simplicity and commonality, incremental innovation can facilitate pilot training and performance. For example, a MiG-21 was modified in the 1960s to provide an experimental analog to the Tu-144 supersonic transport then in development. The "Analog" MiG had its tailplane removed and was fitted with a scaled-down version of the Tu-144's ogival wing in order to accustom the test pilots to the wing's aerodynamic effects before they took the larger plane into the air.[25] But far more important is the impact of the incremental approach on quantitative measures of military power. Once again, the U.S.S.R.'s wartime experience played a crucial role:

> The fact is that any measure—even the most effective—is not suitable if its realization would hold up the output of combat aircraft from the assembly line for even a few days. The front can't wait! Over the field of battle in those days our aircraft were already fewer in number than the enemy's. This gap had to be reduced, or at least not increased. Therefore, in the course of designing aircraft, the necessary results had to be obtained with relatively few means—only those which could be incorporated without holding up production.
>
> This was a good school! The ability to achieve improved tactical-technical characteristics without having to turn the whole aircraft design upside down became one of the most important elements in the work style of our aeronautical engineers and scientists, even in relatively calm times, when there was no special need for it.[26]

The Soviets do not like to discuss their reliance on foreign technology, but one can surmise that this method of innovation reduces R&D outlays not only on individual projects but on applied science as a whole. Thus, when the technology, materials, and equipment needed to replicate a Western aircraft or other weapon have been lacking, entire new branches of industry have been created. According to Fedoseev, the government believes this to be an infallible method of determining how best to allocate the nation's research funds and order investment priorities.[27]

But for all the advantages of Soviet design practices, there are costs as well. Overreliance on foreign technology, for instance, may bring short-term savings on R&D, but it exacts a tremendous toll over the long run by inhibiting domestic experimentation and ultimately weakening the nation's scientific base. That the U.S.S.R. spends some 40 percent more on R&D than does the United States, yet continues to exhibit inferior technology, is a clear manifestation of this dilemma.[28] Moreover, while incremental innovation can provide steady, gradual improvements in aircraft capabilities, it inhibits the realization of major advances and thereby exposes the Soviet Union to the risk of sudden obsolescence due to technological breakthroughs in the United States.

Logistics savings provided by commonality and interchangeability of parts may not be sufficient to offset the logistics burden of servicing faulty equipment. Here an instructive illustration may be taken from civil aviation, about which information is more accessible. When the U.S.S.R. entered the export market for jumbo jet liners, it priced its Tu-154 at only half the cost of the Boeing 747 in order to compensate for the aircraft's marked technological inferiority. Several sales were made to developing nations, but

within six months, these buyers had canceled all contracts. Even with its much lower purchase price, the Tu-154 could not justify its operational costs: time between overhauls, for instance, was but 600 hours, compared to 3000 for the 747.[29] Commonality of parts constantly in need of repair is hardly a positive characteristic.

Finally, although the relative simplicity of Soviet aircraft would seem to translate into lower unit costs than those obtaining in the United States, this may not be the case. Dollar cost comparisons estimate only what it would cost to replicate Soviet equipment in the United States; they do not indicate the true cost of that equipment to the U.S.S.R. Given the vast differences between the two countries' economic systems, resource endowments, labor productivity, and industrial-technical capabilities, these two costs may vary widely even in fiscal terms, not to mention the more complex issue of opportunity cost. It may be that the Soviets build unsophisticated aircraft because that is all they are capable of producing, and even such as they build are extremely expensive in terms of human and material resources consumed (and denied to the economy as a whole). Certainly this would be the conclusion suggested by the performance of the civilian industrial sector.

There are, however, important distinctions between military and civilian production processes in the U.S.S.R. which partially mitigate the impact of overall inefficiency on armament production. To an extent not true of the civilian sector, something akin to consumer sovereignty may be discerned in military production, the consumer being, of course, the Soviet government. Weapons producers respond to the demands of the Ministry of Defense, which delineates detailed specifications that the new equipment must satisfy. Quality control standards are more demanding and inspection commissions less susceptible to supplier pressure. In the civilian sector, quality control is the responsibility of the Department for Technical Control (*Otdel tekhnicheskogo kontrolia* or OTK), but since OTK inspectors receive bonuses from the enterprise and therefore benefit when the plant does well, they can usually be persuaded to accept defective products if correction would so disrupt the production schedule as to jeopardize plan fulfillment. Where weapon systems are produced, however, the OTK inspection is followed by a special military inspection. The *voenpredy* ("military representatives") who conduct this examination are permanently attached to a particular enterprise but are completely independent from its management. Their wages are paid by the Ministry of Defense, not the enterprise, and hence they have no vested interest in the enterprise bonus system. The *voenpredy* are instructed to pay no heed to production delays that might result from the rejection of defective output. While this presumably improves product quality, rejections are reportedly quite frequent, which must drive up costs.[30]

Perhaps the feature that most distinguishes military production in general and aircraft production in particular from the civilian production process is the existence of competition among military design bureaus. Competitive designing has been the rule in the aviation industry since 1939-40, when more than twenty designers were instructed to come up with two or three basic types of aircraft. Competition occurs in all aviation projects, civil and military, at the initial, preproduction stage (when broad, tentative ideas are put forward), but for military aircraft it continues among two or three bureaus all the way down to the prototype testing phase. But while competition remains an important feature of aircraft research and development, there is some evidence (admittedly incomplete) that it has abated over the years. In 1945-49, 37 percent of identified prototypes were put into production; in 1950-54, 44 percent; in 1955-59, 57 percent; and in 1960-65, 50 percent.[31] Unfortunately, more recent data are not available, but it may be that rising R&D costs have made it increasingly difficult to shelve designs on which considerable resources have already been expended. Occasionally, both competing prototypes are accepted for series production.[32]

Despite these departures from nonmilitary practice, military industrial production—especially in such high-technology fields as aircraft development—remains hampered by many of the same scarcities, irrationalities, and disincentives that plague the civilian sector. The design philosophy that has emerged from these circumstances has simply attempted to make the best out of a bad situation. Quantity is not chosen *over* quality; it is accepted for lack of any other option. For reasons to be explained later, the Soviet R&D community has simply been unable to produce the sort of sophisticated equipment found in Western air forces and has hence been obliged to make a virtue of necessity. This interpretation was trenchantly summarized by the famous designer Andrei N. Tupolev:

> The country needs aircraft like it needs black bread. Of course, you can imagine pralines, tortes, etc., but to no purpose—we haven't the ingredients to make them. From this it follows:
>
> (a) that we must develop a doctrine concerning the missions which aviation is to perform, and that doctrine must be based on a realistic conception of the capabilities of projected aircraft;
>
> (b) that, on the basis of technology and production processes which have already been assimilated, we must turn out long production runs of those aircraft which correspond to that doctrine;
>
> (c) that if these aircraft fall somewhat behind those in the West in terms of technology—to hell with them; we'll get by on quantity; and
>
> (d) that, in order to prevent quality from falling *too* far behind quantity, the design bureau should (i) concentrate on the technology of constructing experimental aircraft, without being burdened with responsibility for series production, and (ii) work on two basic tasks: designing aircraft intended for production and designing purely experimental aircraft used to achieve technological breakthroughs.[33]

As indicated in this passage, Tupolev traced several aspects of Soviet design policy—the creation of simple, "black bread" aircraft in large quantities, for limited missions, by means of prototype modeling—to the short supply of materials and equipment apparently endemic to the planned economy. This situation is somewhat alleviated in the production of weapons, due to the top priority enjoyed by the military sector. Nevertheless, problems remain. In order to accommodate the plan, researchers are required to specify at the beginning of the year all the supplies they will need throughout the entire twelve-month period. Yet a researcher cannot know in advance which materials he will require for experiments of which he has not yet conceived. As Fedoseev notes:

> I could never comprehend why they would entrust me with millions in the plan system (and sometimes even wastefully), yet not trust me to spend literally a few rubles to encourage people, to raise their interest in their work, or to purchase an instrument or some material directly from a store. After all, *I* knew how to make my planned work less expensive.[34]

One response of Soviet industrial officials to the problems of supply has been to keep the production process as much as possible within their own organization, be it the enterprise or the ministry. Consequently, the aviation industry is highly concentrated, at both the development and the manufacturing level. Design bureaus are few and of the thousands of components that make up an aircraft, 90-95 percent are produced by the Ministry of Aviation Industry.[35] But such ministerial "empire-building" creates its own set of problems. Transportation costs, for example, will often be needlessly high as parts are procured from a plant perhaps several hundred miles away, yet within the same ministry, rather than from a plant producing identical components, but for a different ministry, right in the same city. Moreover, as military equipment grows more complex, it becomes more and more difficult, even in the face of ministerial protectionism, to insulate weapon production from the deficiencies of the rest of the economy. Thus Brezhnev, at the Twenty-fifth Party Congress, insisted that planners and producers take greater cognizance of the interdependencies that exist among branches of the economy, and Major General M. Cherednichenko soon responded that the defense industries had taken the secre-

tary's admonition to heart and would act on it.[36] To what extent procedures have changed, however, is unknown.

The role of the party at the operational (as opposed to the declaratory) level is itself ambivalent. Within the civilian economy, one of the chief functions of *obkom* and *raikom* officials is to overcome supply bottlenecks, primarily by authorizing violations of the plan.[37] Presumably, the same holds true for defense industries. But such has not always been the case, and while recent evidence is lacking, past experience indicates that on occasion the party may even obstruct the flow of supplies. A. Yakovlev recounts in his memoirs that for more than five months in 1946 no progress was made toward constructing a design bureau called for in the plan. Neither materials nor workers had been provided. The Minister of the Aviation Industry, Mikhail Khrunichev, complained to Stalin:

> . . . the local organs not only do not help, but even hinder . . . You see, the Obkom Secretary has been detaining the construction workers sent to us there, figuring that they are more useful in reconstruction work.[38]

This episode, coming soon after the war, may be atypical, but the reconciling of conflicting claims on scarce supplies remains a major task of the party *apparatchiki*, one they may not always be able to fulfill. As for the ministry itself, it does its best, as indicated by Khrunichev's appeal. But here, too, problems of supply are sometimes so severe that the government simply resigns itself to their inevitability and urges producers and scientists to do the same. General Artem Mikoyan once complained to a group of Canadian industrialists, for instance, that the Ministry of the Aviation Industry would not allow him to use as much titanium in his designs as he would like, and engine designer Kuznetsov confirmed that he had met with the same difficulty.[39]

Even designs that have been approved for series production and hence presumably utilize only available materials remain jeopardized by unforeseen shortages. Gallai notes that demands from the production engineers "grab the designer by the throat," as costs and breaches of contract by "tens and hundreds of supplying plants" make the original design unworkable.[40] It may take an entire year to convert the design into a blueprint that can be produced,[41] and the process is far from orderly. Designer O. Antonov has remarked:

> It is common knowledge that the director of a plant engaged in series production and the chief designer who plans the machines or other items produced by the plant often get along like cats and dogs.
>
> It is common knowledge that the introduction of a new and better product, or even a proposal to improve and modernize an item already in production, sometimes meets a hostile reception by the director.[42]

Taut planning and short supplies not only result in production delays but also slow the pace of modernization at the plant. In response to a recent appeal by O. Antonov for improved quality in the production of sophisticated equipment, the Novosibirsk aviation enterprise director G. Vanag replied that everyone recognized the need for innovation, but until resources are provided, few results can be expected. Too often, Vanag complained, the enterprise is left "to fight one-on-one against difficulties which [the planners] themselves are simply unable to handle."[43]

While supply problems have placed limits on the sophistication the Soviets have been able to achieve thus far in their combat aircraft, such difficulties could conceivably be overcome by allocating a still greater share of the country's material resources to this sector at the expense of civilian consumption. There is, however, a deeper source of the simplicity (or, one might say, backwardness) characteristic of Soviet designs, the roots of which go back to the early years of Soviet rule, particularly the 1930s, and which is much less amenable to solution. It is the network of disincentives to innovation which pervades the scientific and industrial communities and atrophies their performance potential. Reluctance to experiment with new methods and concepts has been ingrained through historical memory and current experience; through excessive bureaucratization and rigid planning; and,

above all, through the basic distrust in which the scientific community is held by the Soviet government.

Obstacles to Innovation

Of the bureaucratic impediments to innovation, some arise from the ministerial system of organization and others from the planning mechanism. As noted previously, the industrial ministries have attempted to build self-contained "empires," partly in an effort to reduce supply difficulties but perhaps more to consolidate and enhance the authority of their various agents, be they enterprise directors or government officials. Consequently, enterprises, research organizations, and individuals subordinated to one ministry often lack contact with their counterparts elsewhere, and these communication barriers hinder the flow of information across ministerial lines.[44] The result is duplication of effort and slower progress. Ministries may hesitate to endorse technological drives which would necessitate reliance on organizations outside their control. The Minister of the Aviation Industry, for example, might be reluctant to force the pace of innovation if such a policy would depend for its success on input from the Academy of Science. A slower pace that remained within the capacities of the ministry's own research institutes and experimental design bureaus might seem preferable to dependency on nonsubordinates.[45]

Within the mechanism of central planning, the Soviets have been unable to define criteria of success which guide economic units to optimum output. Early efforts at cost-efficiency calculations specified weight as the unit of account, the goal being greater weight at lower cost. The perniciousness of this standard in aircraft production soon made itself felt, for it removed the incentive to build aircraft with the lightweight materials needed to obtain high thrust-to-weight ratios.[46] But even when gross output targets were superseded by financial indicators in 1965, the defense industries may have used the newly instituted profitability norms to justify risk aversion and discourage innovation rather than improve efficiency through technological advance.[47] Even tying bonuses directly to innovation has failed to produce the intended effect. The bonuses tend to lose their merit/incentive character over time and become an expected component of the researcher's salary. Moreover, there is a tendency toward artificial innovation, wherein existing products are given but minor modifications and new names in order to meet innovation quotas.[48] When bonuses can be obtained by such simple measures, there is little incentive to undertake major innovation programs, particularly since they may temporarily require a reduction in the other plan indices (gross output, profitability, etc.) by which success is measured.

The most important incentives encouraging innovation are prestige, financial benefit, and career advantages provided to designers whose prototypes are accepted for series production. But the process also encourages conservatism insofar as designers believe that their designs will have a greater chance for approval if they resemble aircraft accepted previously.[49]

Apart from the simplistic, often irrational, incentive structure developed by the central authorities, the plan framework and its bureaucratic accouterments retard innovation through their inflexibility. Before beginning a project, a research team must draw up two documents: the "technical assignment" (*tekhnicheskoe zadanie* or TZ) or the "tactical-technical requirements" (*Taktiko-tekhnicheskie trebovaniia* or TTT) and Plan Form No. 4. The TZ or TTT defines the proposal and must be approved by (1) the director of the team's scientific-research institute, (2) its *voenpred,* (3) a representative of the military client, (4) an agent of the Defense Ministry's coordinating organization for military research, and (5) the particular ministry to which the research group is subordinated. The procedure at best takes months and can draw out for as much as two years. The various authorities involved often have divergent interests and place incompatible demands on the project. Plan Form No. 4 is a cost estimate and time schedule for the pro-

posal and specifies the types and quantities of all materials and equipment that will be needed. It must be signed by the research group's ministry—and often by the Minister himself—as well as by all concerned enterprises, suppliers, and planning organs.[50]

The TZ, TTT, and Plan Form No. 4 cannot be changed without permission of the ministry, which is rarely given. If, during the course of research, it becomes evident that an anticipated procedure is no longer necessary, still it must be performed in order to fulfill the plan. "Thus," writes Fedoseev, "having expended a tremendous amount of nerves, labor, and time on the TZ or TTT and Form No. 4, the researcher dons the cruelest corset, binding himself hand and foot."[51]

The plan framework, into which defense contracts must fit, and the rigidity of the approval process just described conspire to freeze aircraft designs at an early stage. The MiG-25 high-altitude interceptor is a case in point. Designed to counter the B-70 high-altitude, supersonic bomber, which the United States had under development in the early 1960s, the fighter would appear to have lost much of its raison d'être when the B-70 program was canceled. Yet production of the MiG-25 has continued to the present; indeed, it did not even make its maiden flight till after the B-70 program had been dropped. While its high speed and ceiling grant it continued value in a reconnaissance role, as an interceptor its relatively poor performance in low-altitude regimes at a time when the air threat to the Soviet Union has shifted decidedly toward low-flying attackers (both aircraft and cruise missiles) has considerably degraded its effectiveness. It might have been wiser from the Soviet perspective to have canceled the MiG-25 altogether and to have undertaken the development of a new interceptor of radically different design, but the momentum of the program was apparently too great to overcome. Such are the costs of bureaucratic inertia, plan rigidity, and risk avoidance.[52] Thus, while much can be said for a steady state production process, its negative concomitants ought not be ignored. The gradualist approach to design so commonplace in the Soviet Union makes rapid adjustment to changing situations that much more difficult, especially when the new conditions call for major departures from previous designs.

The Communist Party leadership has at times sought to overcome excessive caution in the scientific community by exerting pressure for discontinuous leaps in technology. In this regard, design bureau chief O. Antonov has noted that it sometimes "takes a fight" to push through an innovation: "The Party has several times rolled up its sleeves, gone after one industry or another, and, dragging it out of the morass of gradualism, given it a powerful push in a direction that the country required."[53]

On the other hand, party and government officials have also on occasion offered resistance to innovative proposals put forward by researchers. Gallai, for example, although generally endorsing the nation's incremental approach to force improvement, nonetheless criticizes the obstacles presented by the "conservatism" of the leadership and bureaucracy.[54] The problem is also described in Yakovlev's memoirs. In 1951, Stalin told Yakovlev to stop work on several new designs, explaining:

> We already have a good plane in the MiG-15, and there is no sense in building new fighters in the near future. Better just to modernize the MiG.[55]

This attitude disturbed Yakovlev for two reasons: first, cancellation might lose him the trust his designers had in his leadership abilities; and second, he knew that:

> If all experimental work were organized around modernizing existing series of aircraft and not on building new, more advanced ones, before long we would inevitably fall behind . . . I felt it was necessary to create something qualitatively new.[56]

Yakovlev therefore began work in conjunction with the engine designer Mikulin on a fighter with an improved thrust:weight ratio, the Yak-25 reconnaissance aircraft. Stalin was impressed and ordered Artem Mikoyan to use the same engine on an interceptor. The result was the

MiG-19, another illustration of incrementalism and commonality in Soviet aircraft design.[57]

Party conservatism in matters of applied science derives in part from the leadership's lack of confidence in the abilities of Soviet scientists. Fedoseev reveals that research engineers in the U.S.S.R. are frequently ordered to copy Western equipment without modification and are not allowed to make improvements even if such are clearly needed. Later, no doubt, the United States or other originating country will correct the problem, but unless the U.S.S.R. obtains an example of the improved model, no correction will be made on the Soviet copy.[58]

Ultimately, the leadership's lack of confidence in the skill of Soviet scientists probably derives less from past performance—the deficiencies of which can largely be attributed to the defects in the economic and incentive structures already discussed—than from the basic distrust the leadership feels toward all intellectual segments of the society. This distrust impacts negatively on the quality of Soviet science in a number of ways. First, it has fostered censorship, which weakens the country's scientific base by limiting the number of people to whom access to foreign scientific and technical materials is allowed.[59] This element has probably lessened somewhat with time and may continue to do so. A more serious problem derives from the harsh sanctions imposed for failure and the fear which the threat of such sanctions engenders.

The system of unlimited liability for failure reached its apex under Stalin, who felt that the "epidemic of improvements" degraded weapon designs. He encouraged designers to resist demands for innovations from the military consumer, saying:

> The designer shouldn't be at everyone's beck and call; he above all others answers for the machine, and if he is given unfounded, irresponsible demands, he must protest.[60]

Stalin's advice often turned into an angry warning. At one confrontation, Yakovlev recalls:

> He pointed his finger at us and threatened, "Remember: a designer must be firm; he must protect his aircraft from irresponsible advisors. It's hard to make a good machine, but very easy to spoil it. And it's the designer who'll have to answer for it!"[61]

The sanction for errors included criminal prosecution under laws "on technological discipline," and punishment was extremely severe. A man could lose his job and see his career ruined even for petty mistakes and delays, while significant failures could mean imprisonment or even death. Moreover, the system was arbitrary, with even the best designers being incarcerated in various *sharagi* or special prison-laboratories in which scientists and engineers were forced to do research. Such was the fate of the great designer Tupolev and many of his subordinates during the 1930s and 1940s.[62]

Such sanctions are no longer imposed for errors in design, but they still remain in the memory of historical cognizance of many scientists in the U.S.S.R. today. The phenomenon was not unique to the Stalin period; even under Khrushchev, the aircraft designer Aleksandr A. Arkhangelskii was imprisoned for his failure to produce a successful prototype of the Tu-110. And still today, not a chart is drawn, not a formula computed, without someone's signature at the bottom. An error can still cause severe detriment to one's career, prestige, and living standard.[63] Given the price that failure may exact, combined with the quite comfortable lifestyle which moderate success will bring, it is not surprising that designers hesitate to contract into ambitious projects. Risk aversion is the salient characteristic of the Soviet aircraft R&D community. It is this which encourages design simplicity, modest, incremental innovation, and heavy reliance on proven foreign technology.

Those who see in the Soviet Air Force an example of a limited-cost force structure fail to appreciate the true cost that industrial inefficiency and economic irrationality impart to the U.S.S.R.'s defense programs. In addition, misinterpretations arise when the dearth of positive incentives and the existence of actual disincentives to innovate are equated with a deliberate

cost-effectiveness decision. Past performance as well as current developments indicate that the relatively unsophisticated technological level of Soviet aircraft derives rather from lack of ability than want of desire. As the capabilities of the R&D community improve, therefore, one can expect Soviet designs to grow more complex.

This trend can already be observed in the recent, growing emphasis among the Frontal Aviation forces on deep interdiction missions, particularly with the deployment of the Su-24 and MiG-27. It can also be seen in the latest prototypes of Soviet tactical aircraft currently being tested at Ramenskoye Airfield. The Ram-K, a variable-geometry air superiority fighter believed to have been designed as the follow-on to the MiG-25, appears to be "a close approximation" of the Grumman F-14, according to a Pentagon spokesman. The Ram-L, a Sukhoi analog to the McDonnell Douglas/Northrop F-18, will be equipped with advanced medium-range air-to-air missiles (AMRAAMs) of the type now in early development in the United States as the aircraft reached full deployment in 1983. Finally, the Ram-J or T-58 ground-attack aircraft, which is already in production and whose deployment is imminent, resembles the Northrop A-9, the aircraft rejected by the United States Air Force in favor of the Fairchild A-10 close-support aircraft.

All three prototypes evince progress toward more complex, more expensive fighters; and the Ram-K/L exhibit considerable multirole capability. The trend, then, seems to be away from the single-mission aircraft produced by the Soviet Union heretofore. Among the advanced systems now in evidence are terrain-avoidance radar; Doppler navigational equipment; look-down, shoot-down, and side-looking airborne radar; Gatling-type guns mounted in pods; laser-guided weapons; and real-time electro-optical surveillance equipment—precisely the sort of equipment that has escalated U.S. fighter costs.[64]

THE implication of this interpretation of Soviet aircraft design policy is that the U.S.S.R. will produce aircraft of as high a quality as it is capable. Just what technological levels will be reached is difficult to project, as it depends on the extent to which the government can rationalize its economy and improve its incentive structure. As Stalinist repression fades into the more distant past and a new generation of researchers comes to the fore, fear of innovating may subside somewhat. But unless deeper changes transpire in the leadership's attitude toward intellectual segments of society, it seems doubtful that risk aversion will disappear altogether. One might expect, therefore, to see a more rapid pace of technological advancement in the future but one still somewhat behind that of which the United States is capable.

Even given this interpretation of Soviet policy toward aircraft design, it might still be the case that the United States should move toward cheaper aircraft in greater quantities. But in weighing this alternative, it is essential that Soviet trends not be ignored. Since technological inferiority is not the preferred Soviet strategy, one cannot assume that the capabilities of Soviet aircraft will remain static. Consequently, if the United States opts to reduce unit costs by procuring less sophisticated aircraft, it must be willing to see its margin of qualitative superiority over the Soviet air forces gradually erode.

This is not necessarily an unacceptable situation, since technological superiority does not always translate into greater combat effectiveness. For example, the short service life of Soviet equipment is less a penalty in military than civilian aviation. Since civil aircraft are generally designed for approximately 30,000 hours of flight service, while designers of combat aircraft aim for only 5000, a component whose durability is far too low for civilian use may be perfectly satisfactory in military aircraft. To take another example, consider the MiG-21C captured by Israel during the 1967 war. Although gaps of up to one-eighth inch were found in the butt joints of the skin panels, the drag penalty of such shoddy finishing was minor. Faced with a choice between poor workmanship and delays on the

production line, the Soviets, as one observer noted, "showed no hesitation in choosing the former and getting the hardware."[65] Choosing the proper balance of quality and quantity, weighing technological sophistication and cost reduction, is an extraordinarily difficult task, but correct decisions cannot be made without due regard to the aircraft with which one's own pilots might have to contend in some future conflict. The nature of Soviet design policy suggests that the U.S.S.R.'s fighters will be the most complex and capable aircraft that the Soviets can produce.

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Notes

1. Measured in constant 1975 dollars, the F-14's flyaway unit cost is approximately $17,000,000; that of the World War II F4U Corsair, $350,000. See William D. White, *U.S. Tactical Air Power: Missions, Forces, and Costs* (Washington: Brookings Institution, 1974), pp. 47-48.

2. U.S. Congress, Senate, Committee on Armed Services, *Fiscal Year 1973 Authorization for Military Procurement, Research and Development, Construction Authorization for the Safeguard ABM, and Active Duty and Selected Reserve Strengths, Part 6: Bomber Defense, Tactical Air Power, and F-14, Hearings*, 92d Congress, 2d sess., 1972, p. 3788.

3. White, pp. 63 and 69.

4. The large number of interdiction flights during the Southeast Asian conflict is in part a reflection of the lack of strong air opposition by the North Vietnamese, a factor that reduced the need for counterair strikes. Thus, because the supply of U.S. air power was abundant and the demand for alternative missions limited, the heavy reliance on interdiction during the Vietnam War may not be indicative of normal U.S. tactical air doctrine. See White, p. 67.

5. The estimate of an industry specialist.

6. White, pp. 56-58; and Bonner Day, "Pros and Cons of a Multimission Fighter Force," *Air Force*, April 1979, pp. 60-61.

7. White, pp. 45 and 65-66.

8. Of the 114 Israeli aircraft lost, all but 20 were shot down by SAMs, whereas some 400 of the 500 Arab aircraft lost were shot down in air-to-air combat. See Nadav Safran, *Israel: The Embattled Ally* (Cambridge, Massachusetts: Harvard University Press, 1978), pp. 275 and 311.

9. White, p. 65. This estimate should be accepted only in conjunction with two caveats. First, the estimated dollar costs of Soviet aircraft are conjectural. White, for example, estimated the MiG-21's price tag to be $1.3 million, while the Israelis believe it to be $2 million (1975 dollars). Second, and more important, dollar cost comparisons are often misleading in that they do not reflect the true burden a weapon system places on the Soviet economy. A weapon that costs $2 million to replicate in the United States might be far more costly to the Soviets, in terms of resource allocation and opportunity cost, due to systemic industrial and research inefficiencies. That such inefficiencies do exist in Soviet aviation R&D is a point this study seeks to demonstrate.

10. U.S. Department of the Air Force, *Soviet Aerospace Handbook* (Washington: Government Printing Office, 1978), pp. 40 and 45.

11. Composites are nonmetallic construction materials (such as graphite epoxy) which have higher strength:weight ratios than commonly used aircraft metals (aluminum, steel, titanium). With weight savings of 25-50 percent over conventional materials, they also provide high thrust:weight ratios. In addition, composites improve vibration damping, enhance resistance to fatigue, and retard environmental damage. Composite materials will not rust or corrode, and hence they extend vehicle durability and reduce operational costs. The United States began development of advanced composite materials for Air Force applications in 1963 and currently uses them on the F-111 horizontal stabilizer, F-5 fuselage, F-15 wing, F-16 forward fuselage, and B-1 horizontal and vertical stabilizers.

12. *Jane's All the World's Aircraft, 1975-76*, edited by John W. R. Taylor (London: Jane's Yearbooks, 1977), pp. 386-88 and 500-01; *Jane's All the World's Aircraft, 1976-77*, edited by John W. R. Taylor (London: Jane's Yearbooks, 1978), p. 445; and George Panyalev, "MiG-21bis and F-16A Air Combat Potential: A Comparison," *International Defense Review*, 1978, No. 9, pp. 1431-32.

13. M. Gallai, "Ispytano v nebe," *Novyi mir*, No. 4, 1963, p. 51.

14. Arthur Alexander, *R&D in Soviet Aviation* (Santa Monica: Rand, R-589-PR, 1970), pp. 21-22.

15. U.S. Department of the Air Force, *Soviet Aerospace Handbook*, pp. 50 and 92.

16. M. Gallai, *Tret'e izmerenie* (Moscow, 1973), p. 9.

17. Arthur J. Alexander, *Decision-Making in Soviet Weapons Procurement*, Adelphi Paper No. 147/148 (London: International Institute for Strategic Studies, 1978/79), pp. 34 and 49-52.

18. A. Fedoseev, *Zapadnia: Chelovek i sotsializm* (Frankfurt/Main: Posev, 1976), pp. 115-17.

19. Arthur J. Alexander, *Weapons Acquisition in the Soviet Union, United States, and France* (Santa Monica: Rand, 1973), p. 10.

20. Gallai, *Tret'e izmerenie*, pp. 32-33.

21. M. Gallai, "Ispytano v nebe: Okonchanie," *Novyi mir*, No. 5., 1963, p. 86.

22. Alexander, *R&D in Soviet Aviation*, p. 23.

23. U.S. Department of the Air Force, *Soviet Aerospace Handbook*, p. 93; and *Samolety Strany Sovetov* (Moscow, 1974), p. 183.

24. Alexander, *Weapons Acquisition*, p. 11; and Alexander, *Decision-Making in Soviet Weapons Procurement*, p. 34.

25. *Samolety Strany Sovetov*, p. 234; and Heinz J. Nowarra and G. R. Duval, *Russian Civil and Military Aircraft, 1884-1969* (London: Fountain Press, 1970), p. 201.

26. Gallai, *Tret'e izmerenie*, p. 33.

27. Fedoseev, *Zapadnia*, pp. 115-16.

28. U.S. Department of the Air Force, *Soviet Aerospace Handbook*, p. 94.

29. Information provided by an industry specialist.

30. Hannes Adomeit and Mikhail Agursky, "The Soviet Military-Industrial Complex and Its Internal Mechanism" (Kingston, Ontario: Queen's University Center for International Relations, 1978), pp. 19-25.

31. Alexander, *R&D in Soviet Aviation*, pp. 22-25.

32. This was the case with the Yak-15 and MiG-9 fighters and the An-10 and Il-18 transports.

33. A. N. Tupolev, quoted in G. Ozerov, *Tupolevskaia sharaga*, 2d

edition (Frankfurt/Main: Posev, 1973), p. 57.

34. Fedoseev, *Zapadnia*, p. 144.

35. D. P. Andrianov, M. Z. Gendel'man et al., *Management, Planning, and Economics of Aircraft Production*, translated by Translation Division, Foreign Technology Division, Wright-Patterson Air Force Base, Ohio (1964), p. 97.

36. Major General M. Cherednichenko, "Sovremennaia voina i ekonomika," *Kommunist vooruzhennykh sil*, September 1971, pp. 25-26.

37. For a thorough study of this point, see Jerry F. Hough, *The Soviet Prefects: The Local Party Organs in Industrial Decision-Making* (Cambridge, Massachusetts: Harvard University Press, 1969).

38. A. Yakovlev, *Tsel'zhizni: Zapiski aviakonstruktora*, 2d edition (Moscow: 1970), p. 485.

39. Alexander, *R&D in Soviet Aviation*, p. 12.

40. Gallai, *Tret'e izmerenie*, p. 271.

41. Alexander, *R&D in Soviet Aviation*, p. 16.

42. O. Antonov, "Why Does It Take a Fight to Modernize Output?" *Current Digest of the Soviet Press*, May 29, 1957, p. 6.

43. G. Vanag, "Upravlenie kachestva," *Trud*, January 6, 1979, p. 2.

44. Alexander, *R&D in Soviet Aviation*, p. 16.

45. Karl F. Spielmann, "Defense Industrialists in the USSR," *Problems of Communism*, September-October 1976, p. 60.

46. See S. A. Sarkisian, "Predvaritel'noe opredelenie zatrat na proizvodstvo aviatsionnykh izdelii—vazhnaia ekonomicheskaia problema," in *Predvaritel'noe opredelenie trudoemkosti i sebestoimosti izgotovleniia aviatsionnykh izdelii*, edited by D. P. Adrianov and S. A. Sarkisian (Moscow, 1962).

47. David Holloway, "Technology, Management, and the Soviet Military Establishment," Adelphi Paper No. 76 (London: International Institute for Strategic Studies, 1971), p. 6.

48. A good description of this process in the civilian economy may be found in Joseph Berliner, *The Innovation Decision in Soviet Industry* (Cambridge, Massachusetts: MIT Press, 1976), particularly Chapter 14.

49. Alexander, *Decision-Making in Soviet Weapons Procurement*, pp. 32-33.

50. Fedoseev, pp. 161-64.

51. Ibid., pp. 164-65.

52. Norman Friedman, "The Soviet Mobilization Base," *Air Force*, March 1979, pp. 67-70; and William Schneider, "Trends in Soviet Frontal Aviation," *Air Force*, March 1979, p. 81.

53. Antonov, p. 6.

54. Gallai, *Tret'e izmerenie*, p. 271.

55. Yakovlev, p. 491.

56. Ibid., pp. 491-92.

57. Ibid., p. 493.

58. Fedoseev, p. 116.

59. See also Adomeit and Agursky, p. 31.

60. Joseph Stalin, quoted in Yakovlev, *Tsel'zhizni*, p. 347.

61. Ibid., p. 348.

62. See Ozerov, *Tupolevskaia sharaga*, for an eyewitness account. See also Fedoseev, p. 117.

63. A graphic illustration of the pressures under which Soviet aircraft designers work was provided to a group of Canadians by Alexander Yakovlev when he said, "After considerable negotiations with the customer as to *what* will be produced, the designer signs the contract and symbolically hands over his testicles with the contract. When the aircraft is delivered as specified, he gets his testicles back." Quoted in Alexander, *Decision-Making in Soviet Weapons Procurement*, p. 60.

64. Clarence A. Robinson, Jr., "Soviets to Field Three New Fighters in Aviation Modernization Drive," *Aviation Week & Space Technology*, March 26, 1979, pp. 14-15.

65. William H. Gregory, "Soviet Union Seeks Balance in Technology," *Aviation Week & Space Technology*, March 18, 1968, p. 88.

Until they become conscious they will never rebel, and until after they have rebelled they cannot become conscious.

George Orwell
1984

The hallway smelt of boiled cabbage and old rag mats. At one end of it a colored poster, too large for indoor display, had been tacked to the wall. It depicted simply an enormous face, more than a meter wide: the face of a man of about forty-five, with a heavy black mustache and ruggedly handsome features. . . . It was one of those pictures which are so contrived that the eyes follow you about when you move. BIG BROTHER IS WATCHING YOU, the caption beneath it ran.

George Orwell
1984

The USSR is run according to the ideals of Marxism-Leninism by the Communist Party. It is, the Party believes, its historic mission to bring the USSR to full communism, and to assist the spread of Soviet-style communism throughout the globe. . . . In pursuance of this goal, the Party claims the right to control *every* aspect of human affairs in the USSR, and to direct every sector of Soviet society. The Soviet Armed Forces are no exception.

C. N. Donnelly
"The Development of Soviet Military Doctrine," 1981

GROUPTHINK: A PACIFIST POEM AND THE SOVIET PRESS

DR. MICHAEL J. DEANE
DR. ILANA KASS

ONE of the persistent apprehensions of Soviet leaders has been that the Soviet populace might internalize the leadership's "peace" propaganda that is intended solely for Western consumption. Thus, Soviet Party and state officials, responsible for protecting the Communist system in the U.S.S.R., and Soviet military officers, responsible for promoting ideological vigilance and combat readiness of the troops, have traditionally shared a joint interest in maintaining the citizenry's military-patriotic fervor at the highest possible level. In April 1979, however, vague signs began to surface in a Communist Party of the Soviet Union (CPSU) decree that all was not in order. The decree attributed an overall declining trend in the effectiveness of Soviet domestic propaganda to the extent that today's better educated people find the leadership's indoctrination efforts "boring" and "unconvincing." Two subsequent factors have only exacerbated the problem. First, the antimilitary arguments, launched by the Soviets as part of their "peace offensive" against NATO's decision to deploy the Pershing II and cruise

missiles in Western Europe, were—as Soviet media acknowledged—boomeranging and finding a receptive domestic audience. Second, Soviet troop involvement in Afghanistan, with mounting casualties but no end in sight, was—as Soviet media hinted—stirring some uneasiness among the Moslem population in the southern sector of the Soviet Union.

Only recently, however, the Soviet media have been more forthright in suggesting that these factors are being fused into a Vietnam-like antimilitary backlash among Soviet citizens. Moreover, during the early months of 1983, there were clear indications that pacifist tendencies had transcended the bounds of individual objectors and were receiving strong reinforcement from at least one major Soviet institution, the educational establishment.

Institutions in Conflict

The first step toward a direct and public confrontation was initiated on 11 December 1982, when *Teachers' Gazette (Uchitel'skaia gazeta),* the central newspaper of the Soviet Education Ministry and the Teachers' Union, printed an explicitly pacifist poem, entitled "We Shall Play War No More." According to *Teachers' Gazette,* the poem was written in the Daghestan language by Medzhid Medzhidov, a poet-teacher from the Moslem republic in Transcaucasus, and translated into Russian specifically for publication in the teachers' newspaper.

The following is our free translation of the Russian version of the poem:

Please, kids don't play war.
My grandpa never came home from war!
Enough steeling yourself in battles.
Enough shooting sticks made into rifles.
Come on, Aka, get out from the shelter, quick.
And you, Gamid, get down from the watchtower.
Throw down your weapon.
Don't cock your gun.
My neighbor came home from war with both his legs gone.
Old Aina is crying and crying.
War took away her only son.
We shall play soldiers no more.
We shall not kill each other or take each other prisoners of war.
Let's throw all the weapons from the mountaintop down into the abyss
So that such games will forever cease to exist.
Let's break all the cannons, till the last one is gone.
Let's make war forever be gone.
Please, kids, don't play war.
My grandpa never came home from war!

That the poem was translated into Russian and widely distributed in an official Soviet organ, in this case a newspaper targeted at teachers and educators at all levels, is both astonishing and unique. For in essence, the poem goes beyond appealing for an end to war games and hero worship, on which the entire Soviet military-patriotic indoctrination system is predicated, to call for private citizen actions to restrain the militarization of Soviet society and curtail Soviet war-fighting capabilities. As such, the poem cannot but be construed as an overt, direct challenge to the Soviet national ethos by the very institution constitutionally charged, in party and state decrees, with the responsibility for implementation of military-patriotic instruction and indoctrination of Soviet youth from kindergarten through the universities.

It should be noted at the outset that all the Soviet media are subjected to an elaborate, multifaceted, and tight network of censorship and control. Specifically, a poem of this sort should have been authorized for translation into Russian and publication by any Soviet newspaper only with the express permission of high-level officials. Since there can hardly be a mistake as to the actual nature of the poem and, hence, a simple error in judgment must presumably be excluded, one has to conclude that the publication was deliberate and that the poem reflects the perceptions of a significant undercurrent in the populace that the educational establishment desires to support.

The Soviet military, as an institution with a primary vested interest in the continuous militarization of society and effective patriotic indoctrination of future inductees, obviously felt threatened by the publication of the poem and

the pacifist sentiments it reflected. The ensuing reaction was most unusual in the Soviet context: utilization of the daily organ of the Soviet Ministry of Defense *Red Star (Krasnaia zvezda)* to challenge its institutional opponent's mouthpiece, i.e., *Teachers' Gazette,* and reassert its own position.

The military's first indignant response to the poem's publication was fired by *Red Star* on 13 February 1983. In an article signed by Colonel A. Khorev, the military charged angrily that the poem "is not a mere poem, but an invocation: children, don't play war and that's that! And the only argument advanced in support of this idea consists of the fact that many soldiers did not return from the last war." Censuring *Teachers' Gazette* for printing the poem and thereby causing "harm to the cause of military-patriotic education," Khorev asserted that such "incitement to a pacifist concord" is impermissible, particularly "today, when the imperialists are so brazenly brandishing nuclear-missile weapons." Taking its wrath one step further, the military urged the banning of future publications by the offending poet.

Curiously, *Red Star* reprinted five of the original stanzas of the poem "lest the reader think that the matter pertains only to a few unfortunate lines." In truth, Colonel Khorev deleted some of the most explicit pacifist imagery, including the references to the weeping mother and lost son, the neighbor who returned without legs, and the appeal to "throw down the rifle," crawl out of the shelter, and abandon "the watchtower." Nonetheless, Medzhidov's antimilitarist message was brought to the attention of millions of rank-and-file soldiers and officers who do not read *Teachers' Gazette* but do read *Red Star.*

While the poem's key message is universal in its thrust, the poet's nationality and, consequently, the poem's setting in a Moslem milieu (e.g., the Moslem names of the combatants on both sides) are highly significant. For one, at least in the initial stages of the war in Afghanistan, the lion's share of the Soviet contingent sent to fight there was comprised of draftees from the U.S.S.R.'s Moslem republics. The resultant antiwar sentiments were, presumably, superimposed on and fueled by inherent local nationalism and endemic opposition to the official Russification policy. In this context, the author's appeal to Moslems on both sides—Soviet and Afghan—to cease combat and fraternize on a pan-Islamic basis acquires a whole new dimension.

While these ramifications go far to explain the military's indignation, the clear echoes of the combat in Afghanistan—obvious to the average Soviet reader, who is attuned to and skilled in reading between the lines of the centrally controlled Soviet publications—make the military's decision to reprint even a part of the poem all the more puzzling. For with some 100,000 Soviet troops bogged down in Afghanistan for the third year now and with no end in sight, the message is sure to strike close to home to all Soviet citizens regardless of nationality.

To wit, the military followed up its initial censure, publishing on 27 February 1983 what was purported to be "a mother's response" to the Medzhidov poem and the military daily's censure. The woman, G. Voronina, professed "wholehearted support" for Khorev's criticism on the premise that "the time is not yet ripe for our children to abandon war games." Emphasizing the positive and active role of parents in "bringing up a citizen and a patriot," Voronina offered as an example her own son's progress from a toddler who dreamed of becoming a soldier and demanded military toys even before he was able to pronounce the words *weapon* and *missile* to a proud cadet in a military academy. By way of conclusion, she contended:

> Let our children understand from their earliest years, even before an ABC book is placed in their hands, that they have to be their great and peaceloving Motherland's defenders. Let them be made ready not only for labor, but also for defense. Let games help them be like Chapaev and Budennyi. . . .

On 30 April 1983, a *Red Star* editorial statement recounted once again the entire issue and reiterated Khorev's initial censure. The newspaper also printed some of the alleged "numer-

ous readers' reactions" sent to its editorial board following the 13 February article. According to *Red Star's* editors, those readers "expressed bewilderment that such pacifist doggerel could have appeared in such a respected and popular newspaper [as *Teachers' Gazette*]." It was with obvious satisfaction that *Red Star* took note of the deletion of the offending poem from Medzhidov's "just published book *Funny City*."

Red Star was considerably less pleased with the reaction of *Teachers' Gazette* editors. According to *Red Star's* report, *Teachers' Gazette* made do with an internal letter addressed to the military daily and signed by a relatively low-level functionary, which vaguely promised "to be more exacting" in the future selection of poems to be published on military-patriotic themes. Showing their displeasure, *Red Star's* editors characterized the response as "insufficient and unsatisfactory" and advised that *"Teachers' Gazette* should give its blunder a correct evaluation on its own pages so that none of its readers would take [the poet's] appeal seriously or be misled as to the poem's 'merits.' "

As of mid-November 1983, *Teachers' Gazette* had studiously ignored *Red Star's* attacks. Despite the diatribes, *Teachers' Gazette* has published no readers' critiques and printed no official retractions. For the time being, it would appear that the educational establishment intends to stand its ground.

The Larger Problem of Soviet Pacifism

While this exchange between *Red Star* and *Teachers' Gazette* is unprecedented in its nature and institutional ramifications, it was preceded by and should be viewed against the background of recent warning by the military's top leadership as to the "danger of pacifist sentiments" among the Soviet populace.

Central in this regard are the repeated public attacks on declining military-patriotic fervor among Soviet youth by the Soviet Chief of the General Staff, Marshal of the Soviet Union Nikolai Ogarkov. For example, in a major article published in the July 1981 issue of the CPSU's leading political-theoretical journal *Kommunist,* Ogarkov observed that the thinning ranks of Soviet war veterans are being increasingly outweighed by those who "have no personal experience of what war is" and who are "imbued with the idea that peace is the normal state of society." As a result, said Ogarkov, the issues of war and peace are no longer being approached from the class positions of Soviet ideology but from the purely pacifist standpoint that "any kind of peace is good and any kind of war is bad."

To underscore the seriousness of the problem, the Chief of the General Staff reiterated his concerns in a major 1982 monograph, *Always in Readiness to Defend the Motherland,* published by the Ministry of Defense publishing house *Voenizdat* and targeted at the Soviet officer corps. Verbatim, Ogarkov stated that for the postwar Soviet generation "peace is the normal state of society." As a consequence, he continued, Soviet peoples "do not sense and thus underestimate the danger of war, which has not ceased to be a grim reality of our day."

Furthermore, Ogarkov called on all party and civilian organizations to "convey to Soviet people, in a more profound and better reasoned form, the truth about the existing threat of the danger of war." Most pointedly, the Chief of the General Staff charged these organizations to "struggle against . . . the complacency, tranquillity, and elements of pacifism" emerging in Soviet society. In support of Ogarkov's concern, on 30 November 1981 the major party newspaper *Pravda* mandated that the Soviet media undertake efforts to "resolutely get rid of the touches of pacifism that sometimes emerge in certain information and propaganda materials."

Subsequent pronouncements by officers directly responsible for military-patriotic indoctrination targeted "residual religiosity" among the supposedly atheistic Soviet population and U.S. "propaganda diversion" as responsible for the overall erosion in the official value system.

Thus, for example, writing in a February 1982 issue of *Agitator Armii i Flota (Agitator of the Army and Navy)*, a political-indoctrinational journal for the rank-and-file servicemen, Major General N. Gusev vehemently attacked American propaganda for "attempting to foster ideas of nihilism, indifference to politics, nationalism and money grubbing," so as to "prevent the man wearing the uniform of a Red soldier from being totally devoted to communism."

Similarly, Major General Paiusov wrote in the March 1982 issue of *Kommunist Vooruzhennykh Sil (Communist of the Armed Forces)*, the organ of the Armed Forces' Main Political Administration, the Party's watchdog agency in the military:

> Overcoming the harmful influence of religious prejudices on the formation of moral-political and volitional qualities of Soviet troops demands special attention. Here we are speaking first of all about the struggle with ideas of abstract pacifism and religious "humanism," and unnatural "love" for one's enemies, "non-resistance to evil," the antipatriotic spirit of sermons about the "heavenly fatherland," the sinfulness of service in the Armed Forces and so forth, which interfere with the youth's ability to conscientiously carry out its duty of defending the socialist Fatherland.

On another level, the well-known Soviet novelist Anatolii Marchenko, writing in the government daily *Izvestiia* on 28 January 1982, singled out negative attitudes of adults toward patriotism and military service and their detrimental impact on induction-age youth as the source of trouble. Specifically, according to the author, parental apathy toward international tensions and infatuation with "material trappings of well being" are initiated by the younger generation, resulting in a joint perception of military service as an unnecessary hardship and a "waste" of time.

> Today's philistine, who, with zeal worthy of a better cause, instills in his over-grown child the rotten and thoroughly harmful idea that "the years of army service are wasted years," is neither illiterate nor naive. He listens to the radio, turns on the television, and, it must be supposed, looks at newspapers, if only at the headlines. He is informed about events on the planet. But what does he care about the planet or the country's fate. He yawns idly on hearing disturbing reports from some part of the globe far from his own apartment. He wants for his offspring the same quiet life, verging on indifference toward society's concerns, joys, and sorrows. Heaven forbid that this offspring should cough once more than necessary, tense his already puny muscles, or expend a nerve cell!

Party and Military Countermeasures

Not content with merely calling attention to the mounting problem, party and military leaders have undertaken positive steps to remobilize the population and rejuvenate the indoctrination forces. To this end, stimulation of military-patriotic fervor has been the central theme of several media campaigns as well as major conferences, such as the All-Union Lecturers' Seminar of January 1982, the All-Union Conference of Primary Party Organization Secretaries of May 1982, the Nineteenth Komsomol Congress of May 1982, the Conference of Ideological Workers of the Army and Navy of October 1982, the Tallin All-Union Scientific-Practical Conference of October 1982, etc.

Throughout recent efforts Soviet spokesmen have asserted that, in addition to love for one's own country, Soviet-style "patriotism" requires "hatred for the enemy." In essence, it is said that one cannot truly love the Soviet homeland without hating the United States. For example, *Komsomol'skaia pravda* of 18 May 1982 reported the following statement by Komsomol First Secretary B. Pastukhov at the youth organization's Nineteenth Congress:

> Education of patriotism is the education of a courageous soldier and defender of the Fatherland, one who is ruthless to its enemies. In the modern world, love for the socialist Fatherland is impossible without class hatred.

Even more explicitly, an officers' indoctrination article, published in a May 1982 issue of *Communist of the Armed Forces*, directed that "imperialism, headed by the United States," must be the target of "class hatred." The article

outlined five reasons why Soviet citizens and soldiers should "hate" the Western "enemy."

- We hate imperialism because it is the culprit of all wars of our era, including the two world wars. In World War II alone, more than 50 million people died, including 20 million Soviets—our grandfathers, fathers, mothers, older brothers, relatives, and loved ones.
- We hate imperialism because it is preparing a new world nuclear missile war, in the fire of which could be destroyed the great creations of human reason, and human civilization could perish.
- We hate imperialism because it dooms millions of people all over the world to hunger, suffering, and degradation and grows fabulously wealthy by the pitiless exploitation of the broad popular masses.
- We are irreconcilable to imperialism because it is a bulwark of aggression and violence, and the chief barrier on the path of the historically inevitable movement of mankind to the triumph of freedom, peace, and democracy. A vehement enemy of socialism, it increasingly attempts to undermine the bases of the new system, to deprive the peoples of the socialist countries their greatest achievements.
- We hate imperialism because bourgeois ideology morally cripples millions of people, preaches greed, chauvinism, and nationalism, and monstrously distorts our ideals and causes. We hate it because it is a break to social progress and the enemy of the world's peoples.

While "love for the Soviet Fatherland" has always been a staple of Soviet military-patriotic indoctrination, the "hate imperialism" aspect was considerably played down during the so-called détente period of the 1970s. Doubtless, its current emphasis is partially due to the worsening East-West climate of the 1980s. Yet it is also clear that the scope and vehemence of the campaign reflects the Soviet leadership's real concern with a festering domestic problem.

IT IS TOO EARLY to project the concrete scope of the emerging pacifist sentiment or predict its probable impact on Soviet war-fighting capabilities. Only the depth of the leadership's current concern to counteract the problem is obvious. Despite this fact, there have been no indications that the indoctrination apparatus has adopted any substantive changes, which might improve its effectiveness in military-patriotic propaganda. Moreover, since the leadership is demonstrating no inclination to cease either its anti-Western "peace offensive" or its Afghanistan involvement, the two main factors fueling the problem are continuing unabated. At most, it is clear that without major changes, the potential for a significant internal challenge to the leadership's prevailing policies and military efficiency looms in the Soviet future.

Bethesda, Maryland

air force review

AMERICA FACES THE ATOMIC AGE: 1946

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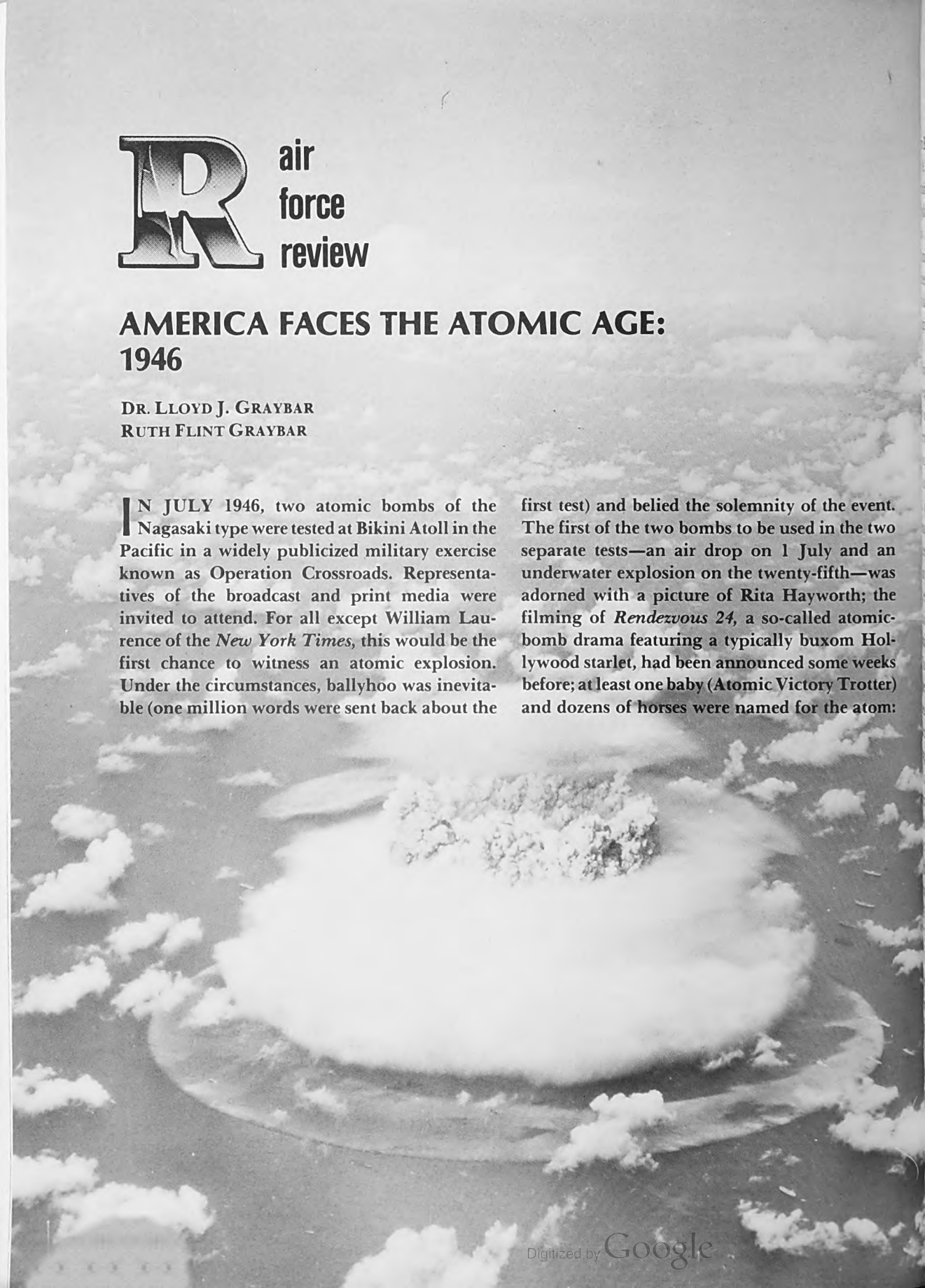
IN JULY 1946, two atomic bombs of the Nagasaki type were tested at Bikini Atoll in the Pacific in a widely publicized military exercise known as Operation Crossroads. Representatives of the broadcast and print media were invited to attend. For all except William Laurence of the *New York Times*, this would be the first chance to witness an atomic explosion. Under the circumstances, ballyhoo was inevitable (one million words were sent back about the first test) and belied the solemnity of the event. The first of the two bombs to be used in the two separate tests—an air drop on 1 July and an underwater explosion on the twenty-fifth—was adorned with a picture of Rita Hayworth; the filming of *Rendezvous 24*, a so-called atomic-bomb drama featuring a typically buxom Hollywood starlet, had been announced some weeks before; at least one baby (Atomic Victory Trotter) and dozens of horses were named for the atom:



Atom Buster, Cosmic Bomb, Sir Atom, to name a few. A French political cartoonist displayed considerable insight into the American penchant for hoopla when, shortly after the initial test, he drew a cartoon that depicted the heroes of Bikini—some pigs that had been among the numerous test animals studied there—receiving a ticker-tape parade on Broadway after their imagined return from the Marshall Islands test site.[1]

However, the Bikini pigs were soon found to have radiation sickness, additional victims of the way of death unique to the atomic age. Many observers began to recognize that Bikini was not an occasion for levity, and much serious discussion took place about the tests among the American people and in the media. As a new phenomenon—one for which history offered no precedent—there was a wide variety of opinion about the tests and the A-bomb itself. This article, examining both polls and journalistic impressions, will discuss the spectrum of this opinion.

These tests were not the only news of 1946 that centered on the nuclear question. Two related issues were being considered. One, which would take nearly a year to resolve, involved discussions being held in Congress about the domestic control of atomic energy. The Manhattan Engineer District, which had directed wartime nuclear development, would be terminated, its functions to be taken over by a new body. Two bills outlining the nature and duties of this agency had been introduced: the May-Johnson bill in September 1945 and the McMahon bill two months later.[2]

The second issue was the presentation in June 1946 of an American plan to the United Nations to establish international controls on atomic energy. Named the Baruch Plan after the chief U.S. negotiator Bernard Baruch, the plan called for the establishment of a United Nations commission that would have the right to conduct inspections of nuclear facilities throughout the world. Discussions continued throughout the remainder of 1946, with various proposals and counterproposals made by the United States, by the Soviet Union, and, on occasion, by other members of the U.N. Atomic Energy Commission. In particular, two measures dear to Mr. Baruch seemed to create controversy: waiver of the Security Council veto on questions having to do with violations of any forthcoming nuclear treaty and open inspection of the raw materials necessary for nuclear development.[3]

In the midst of these ongoing matters, atomic bomb tests were scheduled to take place at Bikini. The decision to hold the tests had been made late in 1945, following the announcement of rival Army Air Forces and Navy plans to conduct nuclear weapon tests on warships. The AAF proposed using only surviving Japanese warships as targets; the Navy's plan was broader and included both German and Japanese vessels but also an unspecified number (eventually almost six dozen) of U.S. ships of various types from battleship and aircraft carrier to submarine and landing craft. With some adjustments that took into account both air and ground force requirements and the recommendations of civilian consultants, the tests would be conducted as a joint exercise along lines envisioned by the Navy to be under the command of Vice Admiral William Henry Purnell Blandy, the U.S. Navy's ranking expert on the development of missiles and nuclear weapons.[4]

Originally slated for May 1946, the planned tests were criticized by several members of Congress (most conspicuously, Senators James Huffman and Scott Lucas and Representatives Jerry Voorhis and Helen Gahagan Douglas, all Democrats). The Federation of American Scientists, an organization with chapters in major universities and nuclear research centers, was also active in criticizing the upcoming tests and in mobilizing opposition to them. Both groups raised the question: could the tests be construed as a crude flexing of America's nuclear muscle to the detriment of already tense Soviet-American relations?[5]

To many opponents of the atomic tests, it seemed obvious that there was a high probability that the tests would indeed jeopardize U.S.-Soviet relations in the United Nations and else-

where and would prejudice chances for enactment of the McMahon bill whose backers were striving to ensure civilian control of America's atomic energy development. But how did the American public view these issues? In particular, how did the public perceive the power of the bomb in this first postwar year, and was there any widespread awareness that the atomic testing program seemed to work at cross-purposes with the other two nuclear questions, both of which implied restrictions on the development of atomic energy for military purposes.[6]

Some insight into these matters can be gained from polling data. On 13 February, the American Institute of Public Opinion (the Gallup Poll) released the results of two polls dealing with the forthcoming tests. One asked whether representatives of other nations should be allowed to observe the tests. The second inquired whether reports of the tests should be given to other nations. In both polls nearly two-thirds of the respondents answered negatively. Keeping what was naïvely thought of as the atomic secret was obviously the desire of these people. Only the college-educated seemed to have substantial doubts about the wisdom of keeping the secret, perhaps because, as an earlier survey had indicated, they thought it could not be kept for as long as five years, the time experts regarded as the maximum for the maintenance of America's nuclear monopoly.[7]

While Americans wanted to keep the secret, they also (some 70 percent) wished to see the United Nations prohibit the production of atomic bombs, according to the National Opinion Research Center. The large majority of that group also expressed a willingness for the United States to destroy the bombs already in its possession—if and when the United Nations found a way to stop the manufacture of A-bombs. Most Americans also seemed willing to have international inspection teams check on the observance of any forthcoming U.N. nuclear regulations, but only a small plurality (39 percent to 33 percent) of those who favored inspection were willing to see the secret jeopardized during the inspection process. Few would have given the secret to the United Nations.[8]

These polls indicate two things: that in a general way Americans were favorable to international controls on atomic energy as a weapon but that they wished to preserve the atomic secret, an indication that many regarded the A-bomb as something extraordinary. If anyone had to have the A-bomb, it should continue to be the United States. However, advocates of both views would very likely have said that their position was the best way to preserve peace. "Those who want the secret kept are more likely to feel the existence of the bomb may tend to avert war," concluded University of Michigan opinion analysts. "Those who favor turning it over to the U.N. are more likely to feel that it has made peace harder to keep."[9] Since the Truman administration was trying to work through the United Nations to control the atom but also was continuing to keep the bomb in its arsenal, as the plans for Operation Crossroads testified, it is not surprising that Americans were uncertain which of these courses their government was pursuing: 35 percent indicated belief that the United States was trying to work through the United Nations to promote peace; 34 percent felt that we were trying to keep ahead in developing the bomb; 18 percent said both; and 13 percent simply admitted indecision.[10]

The media as well as the pollsters often turned to the nuclear theme throughout 1946. Of the major stories that dealt with atomic matters, the Bikini tests were the single biggest attention getter. In the days immediately following the tests, Bikini attracted more than 20 percent of the front-page newspaper space and more than 5 percent of the editorial space.[11] The government itself recognized the importance of the story, doing its best to facilitate coverage of the two tests by providing a separate press ship and designating its own public information officer, Navy Captain Fitzhugh Lee.[12]

The actual tests, although the most dramatic phase of the Bikini operation, were by no means the only aspect to draw extensive coverage. Preparations for the tests continued for several months

and also received attention, much of it unfortunately overblown (such as one article that compared Admiral Blandy to Buck Rogers of science fiction fame). Other analysts were more restrained. A few endeavored to assess Crossroads in its interrelationships with the two other major developments in the nuclear field—the congressional debates and maneuverings that resulted in the Atomic Energy Act of 1946 and the U.N. discussions that ultimately failed to provide international control of atomic energy. The apparent connection between the Bikini tests and the McMahon bill came up in February 1946 when President Harry Truman named a civilian review board to report to him about the results of the tests. Many observers saw the link between this and the ongoing debate over establishing civilian control of atomic energy. "The President's decision to set up a civilian review board as a 'Supreme Court' on final evaluation of the forthcoming tests of the atomic bomb against naval vessels has sharpened the issue raised by the War and Navy Departments on the terms of the bill to control and develop atomic energy, sponsored by Senator Brien McMahon of Connecticut," argued Arthur Krock in the *New York Times*. "To the Army and Navy the President's latest decision is a step farther in that direction."[13]

The following month Truman decided to postpone the first of the tests from 15 May until 1 July, a date Blandy regarded as the last satisfactory one for holding the initial test. As it was, postponement was something of a gamble because weather conditions in the Marshall Islands were more variable in July; clear skies and predictable wind patterns were essential for the air drop, or Able test.[14]

The reason for postponement of the tests was to allow the more than 50 members of Congress who had been invited to witness the tests the time to stay in Washington to attend to needed legislative business dealing with labor matters and appropriations. However, the chance to announce a postponement, or cancellation, could have had a beneficial impact on the tense international situation. Critics of the tests certainly felt so. An important Big Four foreign ministers meeting to discuss peace treaties for Nazi Germany's European allies was scheduled to convene in Paris in May, and postponing the tests (the later the better, argued Secretary of State James F. Byrnes at a Cabinet meeting) might well improve the atmosphere at the beginning of the talks. Byrnes would have preferred canceling the tests, for he feared that holding them would make the United States seem like an "atomic dictator." The Navy and War departments demurred. Secretary of the Navy James Forrestal was one of the earliest advocates of the tests, and while grudgingly acquiescing in postponement, he did not wish to see them called off.[15]

Opinion was fairly closely divided about postponing the exercise. Polls revealed that there was much uncertainty about this question and, surprisingly, just a small plurality in favor of holding the tests. Major elements of the population, including women and those more than fifty years old, held no objection to cancellation. The college-educated, on the other hand, wanted to see Operation Crossroads conducted, at first glance a puzzling statistic to those who would expect the educated to be more liberal and more likely to question the uses of nuclear power. Although J. Robert Oppenheimer and several other outstanding atomic scientists argued that laboratory data could provide all the information the Navy would need about the A-bomb's effects on ships, the likeliest explanation is that the college educated simply viewed the tests—the experimental method—as a necessary way of obtaining data about the A-bomb's effect on the Navy. Some also might have had a pessimistic reading of the international situation in mind. For example, several newspapers questioned the postponement, fearing that it might lead to a decision to call off the test program altogether. The reasoning of syndicated columnist Ernest Lindley suggests why. Lindley took alarm from the fact that several congressmen opposed holding the tests at any time. "The advocates of cancelling the tests," insisted Lindley, "seem to be walking along the trail which nearly led us to disaster after the First

World War." Perhaps because they reasoned this way themselves or accepted the military necessity of Operation Crossroads, World War II veterans overwhelmingly favored proceeding with the tests.[16]

The postponement notwithstanding, preparations for the first test went ahead throughout the spring of 1946. Vessels congregated at Pearl Harbor and other major naval installations to have war damage repaired, watertight integrity checked and restored where necessary, and instrumentation installed that would measure blast pressure, heat, radioactivity, and other phenomena of a nuclear explosion. The ships then sailed to the large lagoon of Bikini Atoll where final inspections were made and the vessels were arranged in a carefully determined anchorage. As naval spokesmen stressed, the test ships were spaced so that graded damage from maximum to slight would be obtained.[17]

The first of the two tests was held on 1 July, the high-flying B-29 *Dave's Dream* dropping an A-bomb of the Nagasaki type. The battleship *Nevada,* a Pearl Harbor veteran, was to be the target ship, but the bomb missed by a substantial distance, several hundred feet according to press releases but in actuality by nearly a half-mile. Although one correspondent recalls hearing that the bomb had the "ballistic characteristics of a garbage can," senior AAF officers were surprised at the magnitude of the error, given the high quality of the bombing crew and the intensive training they had undertaken. At any event, no reason for the error was ascertained. While much of the hoped-for data could still be gathered from the array of instruments once the place of detonation was pinpointed, only five ships were sunk. Although a participant whose ship proceeded through the target array a few days after recalled that the voyage was like a "nautical trip through Hades," initial media impressions of the test showed disappointment. One radio broadcaster, heard on a nationwide hookup, quickly noted in apparent surprise that Bikini itself was still there as were the palm trees that fringed the lagoon. Many witnesses shared his surprise. Admiral John Hoover, a member of the Joint Chiefs evaluation board, believed that the bomb had not gone off as planned. Admiral William Parsons, the weaponeer on the Hiroshima bombing mission, felt that the Able-day bomb was less powerful than either the Hiroshima or Nagasaki A-bombs. A reporter compared the sound of the nuclear explosion to that of a "discreet belch" emanating from the far end of a bar. Radio listeners were also disappointed. One Bostonian observed of the test: "There were more explosions in that first [Red Sox] game at Fenway yesterday!" A "dud-by-dud" description, complained another Bostonian, his mind also on baseball.[18]

In a more ominous vein, the *Chicago Tribune* observed editorially that the test demonstrated that the perils of the atomic bomb had been exaggerated by internationalists hoping to see the bomb outlawed. "The danger now," worried the *Baltimore Sun,* "is not that the experiment will be construed by other nations as an intolerable act of provocation, but that it will cause a 'great sigh of relief' both here and abroad." Taking his cue from the atomic scientists, broadcaster Raymond Gram Swing had predicted much the same months before.[19]

Soon, however, more sober reports began to be noted, especially about the mounting incidence of radioactivity. Many reporters began to file stories that stressed the awesome force of the bomb, apparently in an effort to counteract the misleading impression that the first of the Bikini bombs was not that devastating and that the development of the A-bomb was to TNT as TNT had been to gunpowder, the conclusion that one witness feared would be drawn. Whether the motive of these writers was to counteract a publicity letdown, as the publication *Twohey's Analysis of Newspaper Opinion* suggests, is not clear. Some reporters, at least, seem to have been motivated by a desire to rebut the disconcerting flippancy of such comments as "the next war's not going to be so bad after all." For example, Anne O'Hare McCormick, writing in the *New York Times,* declared:

> In peacetime the atom bomb is more reverberant than it was as the final thunderbolt of war as a warning that war has found a way to end mankind before mankind has found a way to end war. Perhaps the chief usefulness of the macabre thriller on the atoll, which seems as unreal as it seems ill-timed, is to compel attention and give reality to the great debate in the United Nations on the control of atomic energy.[20]

The second test—a subsurface one—was scheduled for 25 July. In this test the bomb was to be suspended several dozen feet beneath the ocean's surface. Although fewer reporters were on hand for this test, Bikini still rated more newspaper space than most stories of the day, which included the developing cold war and, on the domestic scene, demobilization, inflation, and strikes.[21]

Those observers who remained seem to have been much more impressed with this test—"At first we thought that Baker had 'shot the works,' " exclaimed one excited onlooker—partly because several capital ships were sunk and partly because the lethal effects of the radioactive spray that had cascaded upon the ships were soon evident. Weeks later the Navy could still refer to many of the surviving ships as "radioactive stoves." It was now argued that the sum result of the two tests demonstrated that war could no longer be considered a legitimate instrument of national policy.[22]

Other journalists, however, persisted in believing that the much-heralded tests had been disappointing and felt that the public reaction to the atomic bomb now seemed to be one of apathy. William Laurence, the highly respected science reporter of the *New York Times,* declared that the average American "had expected one bomb to sink the entire Bikini fleet, kill all the animals aboard, make a hole in the bottom of the ocean, and create tidal waves that would be felt for thousands of miles." Since nothing of the sort had happened, he feared that the bomb had become just another weapon to the American people. Laurence was not alone in this belief. "It was hoped in some places," argued the *Los Angeles Times,* "that the Bikini tests would clear heads [of bomb happiness], like a strong whiff of smelling salts. But they didn't." The *Nation* lamented that this indeed seemed to be the case, while Norman Cousins, in the *Saturday Review,* said, "Then you realize that the atomic bomb is no longer a novelty on the face of the earth, no longer a phenomenon. After four bombs, the mystery dissolves into a pattern. By this time there is almost a standardization of catastrophe."[23]

Despite such forebodings (the *New Republic* to the contrary considered the atom bomb obsolete and was more worried about the use of poison gas against population centers since it did not destroy property), it is not at all clear that the Bikini tests had the consequences thoughtful journalists feared. For instance, while some might be inclined to discount the American Legion's declaration that the atomic secret should be kept, many others shared this belief. The University of Michigan Survey Research Center conducted pretest and post-test studies, asking whether the discovery of the A-bomb had made it easier to keep peace in the world and whether people were worried about the bomb. More people answered "yes" in the follow-up poll. Those who thought the United States should keep the secret actually increased after Operation Crossroads, seemingly believing, as the *Arizona Republic* stated, that the bomb was America's "ace in the hole." Therefore, considerable respect seems to have remained for the atomic bomb.[24]

After the Bikini tests were over, the other two issues that kept nuclear energy at the forefront of the news in 1946 still had to be resolved; one soon was. The McMahon bill was enacted a day after the Baker test, and the members of the new Atomic Energy Commission were appointed in October. The law provided that no military men would serve on the commission, so in principle civilian primacy in nuclear affairs was established. Nevertheless, military participation was provided for by means of a liaison and review board, and, as we all know, civilian control did not mean that the military applications of atomic energy would be denied.[25]

Negotiations at the United Nations continued for months. In December, hopes were raised that

an agreement might be forthcoming, but they were soon dashed. Baruch resigned as chief U.S. negotiator in January 1947, by which time the talks were at an impasse. Long before, several commentators had raised the question whether the Bikini spectacle might prejudice the success of the U.N. negotiations. I. F. Stone argued in the *Nation* that Bikini had damaged international amity by showing that "the atom bomb is part of our active war equipment and an integral part of our future military strategy." Freda Kirchwey and former Vice President Henry Wallace made similar observations as did broadcasters Raymond Gram Swing and Alexander Gabriel.[26] Speaking over the radio from Bikini, writer Norman Cousins said:

> The real issue (at Bikini) is not whether an atomic bomb can sink a battleship, but whether the peoples of the world can prevent an atomic war. And so we have today two contrasting acts in the biggest drama of all time .... In a way these two acts seem to symbolize the choice before us. If we go one way, the way of the American (U.N.) proposals, we make a good beginning in the struggle for world law .... But if we go the other way it means that sooner or later other nations are going to have their own Bikinis.[27]

Whether Operation Crossroads itself made the difference these critics suggested is doubtful, given the flaws of the Baruch plan and the apparent Soviet determination to develop their own nuclear arsenal.[28] Certainly the two highly publicized nuclear explosions made a poor backdrop for the resolution of international differences and for talks aimed at demilitarizing atomic energy. But some, like Anne O'Hare McCormick, could argue the opposite: that by reminding the world of the horrors of nuclear war, the tests would hasten the acceptance of controls. This was a theory the *Washington Post* had advanced as early as January 1946. Nevertheless, the United States and the Soviet Union were drawing farther apart, separated by ideology and by divergent interests in several areas of the world: Central Europe, the eastern Mediterranean, and the Far East. After all, perhaps the only area of agreement in both the American and Soviet U.N. proposals was the one noted by pacifist A. J. Muste, an advocate of destroying America's nuclear stockpile. Both say to the other, he wrote, "I cannot trust you and will not take any risks, but I ask you to trust me and take the risks involved."[29]

The nuclear issue was just one of several matters disputed by the United States and the Soviet Union. Like many other issues of the emerging cold war, it was one with which Americans were ill-prepared to deal on an intellectual level. As historian Ralph Levering has ably demonstrated, American wartime friendship for the Soviet Union did not have deep roots, and it quickly yielded to feelings of confusion and distrust. Both American leaders and the American people confronted postwar questions with uncertainty, and as the Survey Research Center concluded, thinking about the A-bomb was only imperfectly integrated into thinking about world affairs in general.[30]

AMERICANS seemed to have moved far more swiftly toward acceptance of an internationalist stand than anyone could have anticipated at the beginning of 1946, but on the subject of the atomic bomb they remained of a divided mind. At the start of the year, Colonel Robert McCormick of the *Chicago Tribune* argued that the solution to the nuclear question was for the United States to have more and bigger atomic bombs than anyone else. There were undoubtedly others, many less conspicuously placed than McCormick, who shared this view. Nevertheless, most Americans—even so fervent an anti-Communist as Hearst columnist George Sokolsky—were prepared to pay at least lip service to the need to control this awesome weapon. Until such controls could be established on ironclad terms, they were, however, unwilling to see it dropped from the American arsenal or to see the so-called secret shared. For regardless of its merits, the fear of unilateral disarmament that worried Ernest Lindley was bound to be of concern to others. A study by sociologists Janet Besse and Harold Lasswell of

a dozen syndicated columnists reveals great uncertainty about the appropriate means of dealing with the A-bomb. The columnists, these scholars argue, were "as serious, confused, and groping as any other group of citizens."[31] Operation Crossroads was undoubtedly of importance to the armed services, especially to the Navy in helping to establish that ships, properly equipped, could survive nuclear attack,[32] but the Bikini Atoll tests were even more significant for the extended discussion they generated on the meaning of the atom bomb.[33] While this debate did not lead to the formulation of any imaginative new plans to check the development of nuclear weapons, it did show something of the profound hopes and fears, cynicism and naiveté, with which Americans confronted the nuclear era.[34]

Much has changed since 1946: the proliferation and the magnitude of the weapons involved, the multiplication of delivery systems, the much more sophisticated insight into the hazards of radiation, most of all the fact that the United States has long since ceased to have a nuclear monopoly. Yet the debate occasioned by Operation Crossroads is instructive, for it makes clear that the questions that now trouble concerned Americans had their advent at the beginning of the atomic age.

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17. Shurcliff, pp. 28-92, 175-91; David Bradley, *No Place to Hide* (Boston: Little, Brown, 1948), pp. 3-36.

18. L. Graybar, interview with Admiral Rivero, June 28, 1980; Admiral John T. Hayward to L. Graybar, February 6, 1978; Admiral Frederick Ashworth to L. Graybar, February 27, 1979; L. and R. Graybar, interview with Lieutenant General Roscoe C. Wilson, June 4, 1983; General Curtis E. LeMay to L. Graybar, June 18, 1983; "Analysis of Able Day Bombing," report submitted to General Carl Spaatz, July 11, 1946, Simpson Historical Research Center, Maxwell Air Force Base, Alabama; "Joint Task Force One, Technical Director's Report, Introduction and Conclusion," pp. 45-46, submitted to members of the technical staff of Joint Task Force One, July 12, 1950, Box 6, Papers of Ralph A. Sawyer, Bentley Historical Library, University of Michigan; Major General William E. Kepner to General Carl A. Spaatz, June 15 and July 5, 1946, in Boxes 27 (Diaries) and 256, Papers of Carl A. Spaatz, Library of Congress; Don Mozley to L. Graybar, July 5, 1983; Robert L. Ellis to L. Graybar, January 17, 1983; Shurcliff, pp. 104-09, 192-94, 200-01; Joint Chiefs of Staff Evaluation Board, "Description of Test A," Manhattan Engineer District Records, Box 26, Record Group 77, National Archives Building; Forrestal Diaries, July 1, 1946, p. 1123, Princeton University; *New York Times*, July 2, p. 18; *Boston Globe*, July 1, p. 6; the "discreet belch" comment is found in Bob Considine, *It's All News to Me: A Reporter's Deposition* (New York: Meredith Press, 1967), p. 202. A few reporters, in their anxiety to get their stories out, wrote their accounts before the test, perhaps accounting for some of the misleading and at times contradictory information about the force of the Able-day bomb. Admiral Lee to L. Graybar, January 16, 1981.

19. *Chicago Tribune*, July 3, 1946, p. 12; *Baltimore Sun* paraphrased in Department of State, "Daily Summary of Opinion Developments," July 2, 1946, General Records, Box 11; transcript of broadcast, February 1, 1946, Swing Papers, Box 29.

20. Unnamed newspaperman quoted in Lawrence Wittner, *Rebels against War: The American Peace Movement, 1941-1960* (New York and London: Columbia University Press, 1969), p. 167; Twohey Associates, *Newspaper Opinion*, July 6, p. 4; McCormick in *New York Times*, July 1, p. 30, July 2, p. 18; *Washington Post*, July 2, p. 8; *Louisville Courier-Journal*, July 2, p. 6; *Los Angeles Times*, July 4, I, p. 1; *Arizona Republic*, city edition, July 7, p. 12; "A for Able," *Commonweal*, July 26, 1946, pp. 348-49.

21. Twohey Associates, *Newspaper Opinion*, July 27, p. 7; Shurcliff, pp. 36, 145-72; *Washington Post*, July 5, 1946, p. 3. According to Shurcliff, 75 media representatives were present at this test; 114 had attended Test Able.

22. *Los Angeles Times*, July 26, 1946, II, p. 4; August 6, II, p. 4; Barnet Nover in *Washington Post*, July 27, p. 7; *Nation*, August 17, 1946, p. 170; S. D. Kirkpatrick, "A-Bomb Tests as Viewed by the Editor," *Chemical Engineering*, August 1946, pp. 94-96, 125-26.

23. *New York Times*, August 4, 1946, p. 3; *Nation*, July 6, 1946, p. 2, and August 17, p. 170; *Los Angeles Times*, August 6, II, p. 4; *Arizona Republic*, city edition, August 6, p. 12; *Saturday Review of Literature*, August 10, 1946, pp. 16-18. Prior to the test Norman Cousins had argued, "It may be that we have forgotten too much since Hiroshima. . . ." "The $200,000,000 Reminder," *Saturday Review of Literature*, June 29, 1946, pp. 20, 37.

24. Survey Research Center, "Public Reaction to the Atomic Bomb," pp. 8, 14; *Chicago Tribune*, October 5, 1946, p. 3; *Louisville Courier-Journal*, July 2, p. 6; *Arizona Republic*, city edition, December 4, p. 6; *San Francisco Examiner*, December 30, 31, p. 1; *New Republic*, "Bikini," July 8, 1946, pp. 5-6.

25. Hewlett and Anderson, *The New World*, pp. 530, 621-23, 648-50; Donald A. Strickland, *Scientists in Politics: The Atomic Scientists Movement, 1945-46* (Lafayette, Indiana: Purdue University Studies, 1968), pp. 125-35; *Washington Post*, May 16, 1946, p. 6.

26. John W. Spanier and Joseph L. Nogee, *The Politics of Disarmament: A Study in Soviet-American Gamesmanship* (New York: Praeger, 1962), pp. 52-88; *Nation*, July 6, 1946, p. 2, and September 14, p. 281; Freda Kirchwey, "Roots of Suspicion," *Nation*, August 31, 1946, pp. 228-29; Henry Wallace, "The Path to Peace with Russia," *New Republic*, September 30, 1946, pp. 401-05; Lee DuBridge, "What about the Bikini Tests?" *Bulletin of the Atomic Scientists*, May 15, 1946, pp. 7, 16; DuBridge, letter to the editor, *New York Times*, May 5, 1946, IV, p. 8; ibid., September 22, 1946, II, p. 5; Gaddis, p. 269; transcripts of radio broadcasts, April 5 and June 28, 1946, Swing Papers, Box 30.

27. "General Reaction to the U.S. Plan for Atomic Energy Control; A Survey of Radio Opinion," June 16, 1946, pp. 138-39, Box 64, Papers of Bernard Baruch, Mudd Library, Princeton University.

28. Arnold Kramish, *Atomic Energy in the Soviet Union* (Stanford, California: Stanford University Press, 1959), pp. 77-96. Media hopes for agreement on an atom-control plan plummeted in July of 1946, largely because of Soviet behavior at the United Nations. Distrust of Russia had been increasing sharply even before. Hopes again rose in late 1946 but soon fell. Articulate opinion blamed Russia for the expected failure to reach agreement. See Department of State, "Current American Attitudes toward Russia," June 12, 1946; Department of State, "U.S. Opinion of Russia in World Affairs," January 9, 1947, pp. 2-3; Department of State, "Monthly Survey of American Opinion on International Affairs," March 1947, pp. 5-6, all in General Records, Boxes 11 and 45. Hope, nevertheless, was not lost. See Joseph and Stewart Alsop, *Boston Globe*, January 6, 1947, p. 10.

29. Twohey Associates, *Newspaper Opinion*, June 1, p. 5, July 20, p. 6; M. Rubinstein, "Science and Atomic Policy," *New Times*, March 15, 1946, p. 10, and January 9, 1947, p. 2; *New York Times*, July 4, 1946, pp. 4, 6; Stewart Alsop in *Atlanta Constitution*, July 1, p. 8; *Los Angeles Times*, July 12, II, p. 4; Dorothy Thompson in *Boston Globe*, July 5, p. 10; *Louisville Courier-Journal*, June 19, p. 6; *Washington Post*, January 25, p. 8; Muste, letter to the editor, July 2, p. 8; July 17, p. 8, Lindley, August 3, p. 7; Wittner, p. 169.

30. Walter Lippman in *Minneapolis Morning Tribune*, January 3, 1947, p. 6; Levering, *American Opinion and Russian Alliance*, pp. 207-09; Alonzo L. Hamby, *Beyond the New Deal: Harry S. Truman and American Liberalism* (New York and London: Columbia University Press, 1973), pp. 87-119; Survey Research Center, "American Opinion on the Atomic Bomb," p. 57.

31. Janet Besse and Harold Lasswell, "Our Columnists on the A-Bomb," *World Politics*, October 1950, pp. 72-87; Warren I. Cohen, *The Chinese Connection: Roger S. Greene, Thomas W. Lamont, George E. Sokolsky, and American-East Asian Relations* (New York: Columbia University Press, 1978), pp. 71-90, 286-91; Colonel Robert McCormick in *Chicago Tribune*, January 6, 1946, I, p. 20. For elaboration of the appeasement analogy, see Les K. Adler and Thomas C. Paterson, "Red Fascism: The Merger of Nazi Germany and Soviet Russia in the American Image of Totalitarianism, 1930's-1950's," *American Historical Review*, April 1970, pp. 1046-64.

32. The Bikini tests helped the Navy by demonstrating that fleets had not become obsolete. Prior to the tests, Walter Lippmann had even asked Secretary of the Navy Forrestal, "Will not the Bikini tests, if successful, expose the Navy to an involuntary suicide?" Modifications in ship design also began to be made in light of Bikini data to minimize the disastrous effects of radioactive spray and fallout. Graybar, "Bikini Revisited," pp. 122-23, and Admiral William H. P. Blandy, "Bikini: Guidepost of the Future," *Sea Power: Magazine of the Navy League of the United States*, December 1946, pp. 7-9. Lippmann's interview with Forrestal may be found in the Forrestal Diaries, June 6, 1946, p. 1097, Princeton University.

33. In addition to the *Bulletin of the Atomic Scientists* and the work by Alice Kimball Smith already cited, primary source material from the various chapters of the FAS testifies to the extensive controversy the nuclear issues of 1946 engendered. This material is located, ironically, on the approximate site of Fermi's Stagg Field pile, in the collections of the Regenstein Library, University of Chicago.

34. There had been a flurry of criticism over the use of the A-bomb in the immediate aftermath of World War II, but it had come largely from a few disparate groups and individuals, rarely from the mainstream, and had been muffled by the celebration of victory. See Michael J. Yavenditti, "The American People and the Use of Atomic Bombs on Japan: The 1940s," *Historian*, February 1974, pp. 224-47.

QUALITY OF AIR FORCE FAMILY LIFE

myths and realities

DR. GARY LEE BOWEN

MOST of us have our own views of Air Force family life. For some, this view is the sum product of a long and broad history of professional and personal experience with Air Force families. For others, the view is more parochial and sometimes limited to personal experiences in the Air Force. Unfortunately, the breadth of one's view is not necessarily the product of time in the Air Force. Often junior members and their families are more sensitive to and aware of the situation and needs of Air Force families than are senior members and their families. One thing is certain, however: whatever the basis and extent of one's views about Air Force family life, everyone has an opinion.

Over the past several years I have had the opportunity and privilege of meeting and establishing friendships with Air Force families and leaders all over the world. In the process it was my good fortune to gain many firsthand accounts of life in the Air Force. Whether the comments were received during a formal briefing report or in the course of an informal discussion over dinner, I have found Air Force families and leaders astute in their observations and candid and articulate in their remarks about Air Force family life. It bears repeating, however, that the basis for these observations varies; often two people will view the same situation in very different ways.

During my association with the Air Force, I participated in two large-scale surveys of Air Force family life. The first survey, *Families in Blue* (1980), dealt with the problems, gratifications, and needs of Air Force families in the continental United States (CONUS) and Europe in the fall of 1979. The information for the second study, *Families in Blue: Phase II* (1981), is an extension of the first survey, adding information on Pacific Air Forces (PACAF) families to the existing data base. At present, information is available from a random sample of 1862

married persons (931 couples) and 161 single parents in the Air Force.[1]

When the available data were summarized in briefings and reports, an important conclusion was reached: many of the survey findings on Air Force families are not consistent with the observations that Air Force leaders and families have of Air Force family life. Since the purpose of research is to arrive at valid and reliable knowledge, this article discusses ten common misconceptions about Air Force family life. It is not possible to document how many Air Force individuals give credence to these myths, but they surfaced often enough during the research to merit discussing them here. The assumption is made that to understand the realities of Air Force family life, it is first essential to recognize the unrealities.

Myth Number 1: *Many Air Force marriages are experiencing difficulty.*

The Air Force family is indeed a resilient institution. Regardless of base or location, most Air Force marriages are doing well. More than four out of five Air Force couples are in their first marriages, and the majority report high marital adjustment, positive communication patterns, and satisfactory sexual relations.

The marital experiences of Air Force couples do vary, however, by rank and their stage in the family life cycle. Overall, marital quality is highest for couples in the mid- to senior-enlisted ranks (E-4 to E-9) and for those in the junior-officer ranks (O-1 to O-3). On the other hand, it is lowest for men in the junior-enlisted ranks (E-1 to E-3) and for wives of senior officers (O-4 to O-6). Differences in the marital quality of Air Force couples are also apparent across the family life cycle. In general, husbands and wives with adolescent children experience more marital dissatisfaction than childless couples and those with younger children.

One difficulty that Air Force marriages commonly experience is inadequate companionship. Of the dimensions of the marital relationship investigated—adjustment, communication, sexual relations, and companionship—Air Force husbands and wives were least satisfied with their marital companionship. Still, more than three-fifths of Air Force couples report satisfactory companionship in their marriages.

The problem with companionship for many couples is the lack of time they have together. As a result of long hours, frequent extra duty, and TDY assignments, many Air Force couples have less time together than they would like to have. This is particularly true for civilian wives of Air Force members. While it is often argued that it is not the quantity but the quality of time that couples have together that is important, some quantity is necessary to promote quality.

Dissatisfaction with marital companionship varies by the family life cycle. Husbands and wives with adolescent children were twice as likely to report problems with companionship in marriage than those in other stages of the family life cycle. Since these spouses are in the more senior ranks of the Air Force, it is likely that the additional responsibilities and pressures that parallel rank promotions curtail the amount of time these spouses can spend with one another. This situation probably accounts for the relatively low satisfaction that these couples report concerning companionship in their marriages.

The greater difficulty that Air Force couples have with companionship in their marriage is highlighted for one primary reason—satisfaction with companionship is a vital dimension of the quality and stability of today's marriages. As the barriers protecting marriages have lessened and become more permeable (obligations toward the marital bond, religious constraints toward divorce, family and community pressures to remain married, etc.), the internal dynamics of marriages have become even more important to the vitality of the marriage relationship.

Given the decreasing barriers to marital dissolution and the importance of internal dynamics in relationships today, marital companionship takes on new meaning in contemporary marriages. While the facts clearly support the vital-

ity of marriage in the Air Force today, any promotion of companionship in marriage should lead to an even higher level of marital functioning among these couples.

Myth Number 2: *Marital difficulties are endemic to marriage between Air Force husbands and Asian wives.*

Given the number of American service personnel in the Far East, it is not surprising that a number of spouses are Asian-born. Since the normal and expected adjustments of marriage are compounded by blending the values of differing cultures, it is often assumed that these marriages experience much more difficulty than U.S.-wife marriages.

This assumption, however, is not supported by our survey data. The marital quality experienced by husbands and wives in Asian-wife marriages in PACAF is quite similar to other Air Force marriages in PACAF. This is true whether the comparison is made concerning satisfaction with marital communication, satisfaction with marital companionship, satisfaction with marital sexuality, or satisfaction with the overall marital relationship.[2]

It must be remembered, though, that all these Asian-wife families were residing in PACAF at the time of the survey. The real test for these marriages may come when these Asian wives move from their own cultural surroundings to those of their husbands. Of course, the success of this transition will largely depend on the wife's cultural orientation, her preparations, her ethnic identity and family loyalty, her personality, the sensitivity and supportiveness of her husband to the adjustment process, and the family's ability to establish a viable support system.

In addition, although there are no differences in the marital quality per se of Asian-wife marriages and U.S.-wife marriages, there are differences worthy of note. First, Asian wives express greater relative dependency on their U.S. husbands compared to other Air Force wives. This finding is most clearly seen when we consider the satisfaction that Asian wives experience with the time they have together with their Air Force husbands. Despite the finding that Asian wives spend considerably more time with their husbands than U.S.-born wives, they are especially vocal in desiring even more time with their spouses. Since the Asian wives in the survey were all residing in PACAF at the time of the study and were therefore in relative proximity to their cultural heritage, the need for more companionship and time with their husbands may be compounded upon return to the United States.

Second, when Asian-wife couples experience difficulties in their marriages, these difficulties tend to be more severe than for other Air Force couples. In other words, Asian-wife marriages tend to be of either high quality or low quality but not much in between. While the percentage experiencing high-quality marriages is similar to that of other Air Force couples, the percentage in low-quality marriages is somewhat higher than among other Air Force couples. Marriages between Air Force men and U.S. wives tend to be spread more evenly along the continuum of high to low quality.

Furthermore, compared to U.S.-wife marriages, Asian-wife marriages show more potential vulnerability to marital dissatisfaction and instability. The findings most clearly supporting this assertion come from data concerning the commitment of Asian wives to the marital relationship. While Asian wives are not more prone than U.S. wives to consider a separation or divorce, nearly one-quarter of Asian wives regularly question the wisdom of their marital decision. This figure is considerably higher compared to U.S. wives and husbands as well as to Asian-wife husbands. Moreover, although both husbands and wives in Asian-wife marriages are committed to making their marriage a success, husbands, as a group, report greater commitment. These findings may reflect the difficulties encountered by Asian wives when attempting to adopt new values, behaviors, and attitudes while still in a familiar geographic location.

Myth Number 3: *Air Force men and women are very traditional in their sex-role values and preferences.*

In the last decade or two, there have been profound changes in the notions about which activities and roles are appropriate for men and women. Increasingly, the shift is toward greater sex-role equality and flexibility. This results in behavior that seems most appropriate at the time, regardless of traditional expectations, duties, rights, and responsibilities.

The Air Force community has not been immune to the trend toward less traditional, egalitarian sex roles. In an increasing number of marriages, especially those in the junior-enlisted and officer ranks, the partners are questioning traditional roles and expectations. Today, 28 percent of Air Force couples are nontraditional in their sex-role preferences. Another 40 percent are transitional; that is, either the husband or wife is nontraditional but not both. In fewer than one-third of Air Force marriages both husbands and wives are traditional in their sex-role preferences.

Changes in sex-role preferences can be seen most clearly in the role of the wife in the Air Force. In contrast to the role that has been expected of them by military tradition, many Air Force wives are, for instance, less willing than in the past to subordinate their individual needs and desires for the "good of the service" and the needs for their spouses' military careers. Not only is the dual-military marriage becoming more commonplace but ever-increasing percentages of civilian wives of Air Force members are seeking employment outside the home.[3] In fact, civilian-wife employment is now the model pattern in the Air Force, and only 28 percent of Air Force families today fit the traditional pattern of military husband, dependent homemaker wife, and children.[4] Although many of the wives are working for financial reasons, the supplementary motivation of greater independence and influence in the family plays an important part in determining their decisions to work.

Myth Number 4: *Most parents feel that the Air Force is a good environment in which to rear children.*

It has often been said that children are our most valuable resource. This is especially true for the Air Force. Not only are the children of military members more likely than their nonmilitary peers to become members of the Air Force, they are also more likely to emerge in leadership and career positions. Clearly, any investment that the Air Force makes on behalf of the children of Air Force members is an investment in its own future.

Despite the strong tendency of Air Force members to marry and have children, Air Force parents vary a great deal in their attitudes toward the Air Force as providing a good environment for rearing children. In fact, fewer than half of Air Force husbands, wives, and single parents see it as a good environment. Most feel that the transient and disruptive nature of the Air Force lifestyle does not provide a stable and secure environment for children to mature in. Such feelings are not only likely to make parenting more difficult but may actually have a marked effect on the retention decisions of Air Force men and women.

Myth Number 5: *Parent-child relations in Air Force families are a major source of stress and strain.*

Despite the pressures and problems connected with parenthood, the rewards and satisfactions of rearing children are many. Unlike most roles, however, the parent role is seldom given up. While the majority of parent-child difficulties are not serious, stress from these relationships may seriously impair family functioning. When this happens, the job productivity and commitment of the member parent or parents can easily be jeopardized.

Although it is often assumed that parent-child relations in Air Force families are a source of strain and stress, this does not appear to be the case. Nearly three-quarters of Air Force husbands and wives and the majority of single par-

ents in the Air Force are satisfied with the relationship they have with their children. Moreover, four out of five Air Force husbands and wives feel that their children have had a positive effect on their marital relationship, and almost all would still have children if given the choice to reconsider.

Few Air Force parents are actually dissatisfied with their parent-child relations. Of those who are dissatisfied, there is a slight tendency for mothers and fathers of older children to report poorer parent-child relationships. It is likely that these parents are having difficulty dealing with the normal development transition of the teen years.

Despite the greater tendency of single parents to be concerned with their parent-child relationships than married men and women, the majority feel quite capable as parents. More than half feel they can be just as effective rearing children as can two parents, and few feel that a two-parent household is intrinsically better. This finding leads one to believe that the greater concern of single parents toward their parent-child relationships may be more of a result of discrepancy between the parent role and self-expectations than anything else.

Myth Number 6: *Family separations are good for families.*

It is often assumed by Air Force leaders and by family members themselves that family separations caused by unaccompanied tours, TDYs, and so forth are good for families. This assumption is usually premised on the belief that separations cause family members to become more independent from one another, providing each with the necessary time to pursue individual interests and self-discovery. In other words, separation is equated with more independence and individual time for family members which, in turn, is equated with stronger family ties.

While it is true that family separations can be beneficial to some families, the Air Force data suggest this is not the general case. For most families, separations place a great deal of strain on families, particularly those with employed spouses, child-care limitations, and limited resources. More than half of Air Force husbands and single parents and approximately one-third of Air Force member wives, for instance, report family difficulty during TDY separations. When a husband, wife, or parent is temporarily gone, this creates additional responsibilities for the remaining family members, often on short notice. Although some families adjust easily to this situation, most do not.

Family strains caused by TDY assignments vary, however, by rank and command area. Comparatively speaking, junior officers and members in PACAF report TDY strains less often. On the other hand, the greatest strains with TDY are among junior-enlisted personnel and among members in the continental United States. It may be that members overseas see TDY assignments as a relief from the isolation encountered overseas.

Myth Number 7: *Single parents make poor adjustments to Air Force life.*

Single parents are often viewed as a problem by Air Force leaders. For the majority of single parents in the survey, however, there appear to be few major problems. Although the adaptive capacity of single parents can vary according to their previous life experiences, personal strengths, and social supports, four out of five have their lives in order, show a high level of personal adjustment, and are committed to the mission of their command. These ratios are as high or higher than those of married Air Force members. The one in five experiencing difficulty is most often in the first year transition to single parenthood or in the lowest ranks. There is no evidence to suggest, however, that single parents do not go on to adjust to the demands of military life.[5]

The biggest problems for single parents are isolation and loneliness, especially the latter. In fact, single parents (62 percent) report feelings of loneliness twice as often as Air Force husbands (30 percent) and somewhat more frequently than Air Force wives (46 percent). Given this

finding, it is not surprising that the most common difficulty that single parents mention is lack of adult companionship and support. It is likely that the single parent in the Air Force feels like a "fifth wheel," neither single nor married but in transition.

Still, most Air Force single parents are coping well. To classify them as a problem population may jeopardize the commitments of a highly committed percentage of the force.

Myth Number 8: *The Air Force environment is a close-knit community of people who care for each other.*

Contrary to the image portrayed by some and my own initial expectation, there is an unusually heavy emphasis on family independence among both married and single-parent families. This is particularly the case for Air Force husbands. Although the Air Force environment is rich in acquaintances, neighbors, and work associates, the majority of Air Force families do not feel genuinely close to the people in their Air Force community. Moreover, they are quite hesitant to call on them as a resource in times of stress and crisis. In fact, given a major personal or family problem, most Air Force families say they would contact no one; they would solve the problem themselves. Instead of the Air Force's being a community of families, it appears to be more a collection of families in a common community, much like their civilian counterparts.

The most viable source of social suppport for both single and married Air Force families is their own parents. Husbands, wives, and single parents not only feel closer to their parents than to other sources of support but are also more likely to turn to them for support under stress. The problem, of course, is that parents are often too geographically inaccessible to offer tangible assistance.

While Air Force families have stronger ties to parents than to other sources of social support, relationships with neighbors and work associates are their weakest lines of support. Less than 10 percent of Air Force husbands, wives, and single parents feel close to their neighbors or work associates; even fewer are likely to consult these support sources in times of personal or family crisis. It may be that the high membership turnover and heterogeneity in Air Force communities are responsible for the lack of involvement that Air Force families have with their neighbors and work associates.

Compared to neighbors and work associates, friends are a more important source of social support for Air Force families. Still, Air Force families are less likely to feel close to friends and are more reluctant to call on them than on parents in times of personal and family need. Compared to Air Force husbands and wives, however, single parents are more likely to have close friends and consult them during stressful times. It may be that single parents seek more contact and support from friends because they do not have a spouse to turn to.

Overall, this information suggests that the majority of Air Force families rely primarily on themselves and not on the support of others. The strong sense of independence among Air Force families usually comes as a surprise to Air Force leaders. In fact, most begin immediately to qualify the data by accounts of story after story in which Air Force families have aided one another in times of crisis. While the data do not deny the occurrence of this kind of assistance, they do point out the relative isolation of many Air Force families and their reluctance to turn to one another in times of difficulty. This relational isolation can leave families vulnerable to stress.

Myth Number 9: *Family stress is more common overseas than in CONUS.*

Despite the potential strains that might accompany an overseas tour, the overall family stress levels are not found to be any higher overseas than in CONUS. Moreover, families overseas in PACAF are as likely to be satisfied with their family life as those overseas in USAFE.

These comparisons hold constant for both married couples and single parents and whether the analysis is made on the husband-wife relationship, the parent-child relationship, the connectedness that Air Force families feel to the Air Force community, or the satisfaction that members and their families have with the quality of Air Force life.

Overall, these findings suggest that Air Force families make the necessary adjustments regardless of command area location. One cannot conclude, however, that there is a uniformity of experience between command areas. The similarity between satisfactions within command areas may be more a result of adjusting expectations to experience than actual similarity of experience. Whatever is behind these similarities in family-life satisfaction between command areas, however, it is likely that the Air Force base itself serves as an equalizer, providing a common core of activities for Air Force families regardless of their location.

Myth Number 10: *Family interests are not relevant to the accomplishment of the Air Force mission.*

Despite the fact that Air Force leadership has realized the relationship between family factors and job factors for a long time, support for Air Force families has been slow to develop. Leaders have often emphasized mission concerns to the exclusion of family concerns, as in the phrase, "If the Air Force had wanted you to have a wife, they would have issued you one." It is now realized, of course, that without family support the Air Force mission can be hampered. The link between family well-being, job morale, productivity, and mission readiness is increasingly being understood.

This fact was clearly supported in the *Families in Blue* reports. Among Air Force men, other than treatment by superiors, the second most important predictor of high job morale was spouse support. In other words, if a wife supports her husband's Air Force career, there is strong likelihood that his morale will be high. Among Air Force women, however, spouse support was a less influential predictor of job morale. On the whole, member women receive comparatively little support from their husbands for their Air Force jobs, especially those women who experience frequent TDYs, long hours, and extra duty. As a consequence, Air Force women are often more dependent on their social network system, particularly other Air Force women, for support than their Air Force husbands. In making the decision of whether to remain in the Air Force, however, spouse support was the strongest predictor of this decision for both husbands and wives. Clearly, the importance of family life to job morale, career commitments, and, consequently, mission readiness is undeniable.

Given the link between family variables and job commitments, the Air Force is increasingly directing energy and support toward improving Air Force family life. The *Families in Blue* reports and the establishment and evaluation of family support centers are notable examples of Air Force commitment to its families. However, services and programs directed toward Air Force families must continue to compete for scarce resources. In times of financial austerity, management by objectives, and program accountability, it becomes increasingly important to quantify the success of work on behalf of Air Force families. Otherwise, an attitude may develop that recognizes yet negates the traditional importance assigned to the Air Force family and its inextricable link to the Air Force mission.

FAMILIES are a vital part of the mission support system on which the Air Force depends. They can assist Air Force missions by supporting members, encouraging them through difficult periods, and complementing their responsibilities with the relaxation and comfort of a ready support group. On the other hand, families that feel misunderstood, abused, or neglected can strain the commitments of members and put pressures on them to find other more attractive alternatives.

Given this situation, it is imperative that Air Force leaders and service providers be sensitive and responsive to the needs of Air Force families. This requires an understanding of Air Force family life based on fact rather than assumption, real needs instead of assumed needs.

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Notes

1. Dennis K. Orthner, *Families in Blue* (Greensboro, North Carolina: Family Development Press, 1980); Dennis K. Orthner and Gary L. Bowen, *Families in Blue: Phase II* (Greensboro, North Carolina: Family Development Press, 1982).

2. Compared to other Air Force marriages in PACAF, Asian-wife marriages are more common in the enlisted ranks, especially in the grades E-4 to E-9. Since marital quality is highest for couples in the mid- to senior-enlisted ranks, this may serve to inflate the reported quality of Asian-wife marriages and make comparative analysis more tenuous.

3. Richard Carr, Dennis K. Orthner, and Richard J. Brown III, "Living and Family Patterns in the Air Force," *Air University Review*, January-February 1980, pp. 75-86; Allyson Sherman Grossman, "The Employment Situation for Military Wives," *Monthly Labor Review*, February 1981, pp. 60-64.

4. Carr, Orthner, and Brown, p. 75.

5. In a worldwide study of Air Force single-member sponsors and military couples with dependent children, it was found that single members were requested to go TDY less often, had more loss time, required more response time for contingencies, and, in summary, were having an impact on readiness (Study of Impact of Personnel Issues on Air Force Mission Effectiveness, January 1982). Thus single parenthood probably requires adjustments from both the Air Force and the single parent.

The invasion of the family by industry, the mass media, and the agencies of socialized parenthood has subtly altered the quality of the parent-child connection. It has created an ideal of perfect parenthood while destroying parents' confidence in their ability to perform the most elementary functions of childrearing.

Christopher Lasch
Culture of Narcissism, pp. 291-92

All marriages between Party members had to be approved by a committee appointed for the purpose, and—though the principle was never clearly stated—permission was always refused if the couple concerned gave the impression of being physically attracted to one another. The only recognized purpose of marriage was to beget children for the service of the Party.

George Orwell
1984, p. 57

. . . the two-parent family in which the father works and the mother stays home taking care of the children is no longer "typical." Not only are more couples getting divorced and more children living in one-parent homes, but more wives are working. An estimated 47 percent of all married women held jobs in 1977 as compared to 40 percent in 1970. Also, couples tend to be having fewer children, and many couples are opting not to have children at all.

America Wants to Know
Compiled by George Gallup, p. 541

R in my opinion

THE WARRIOR AND THE PACHYDERM

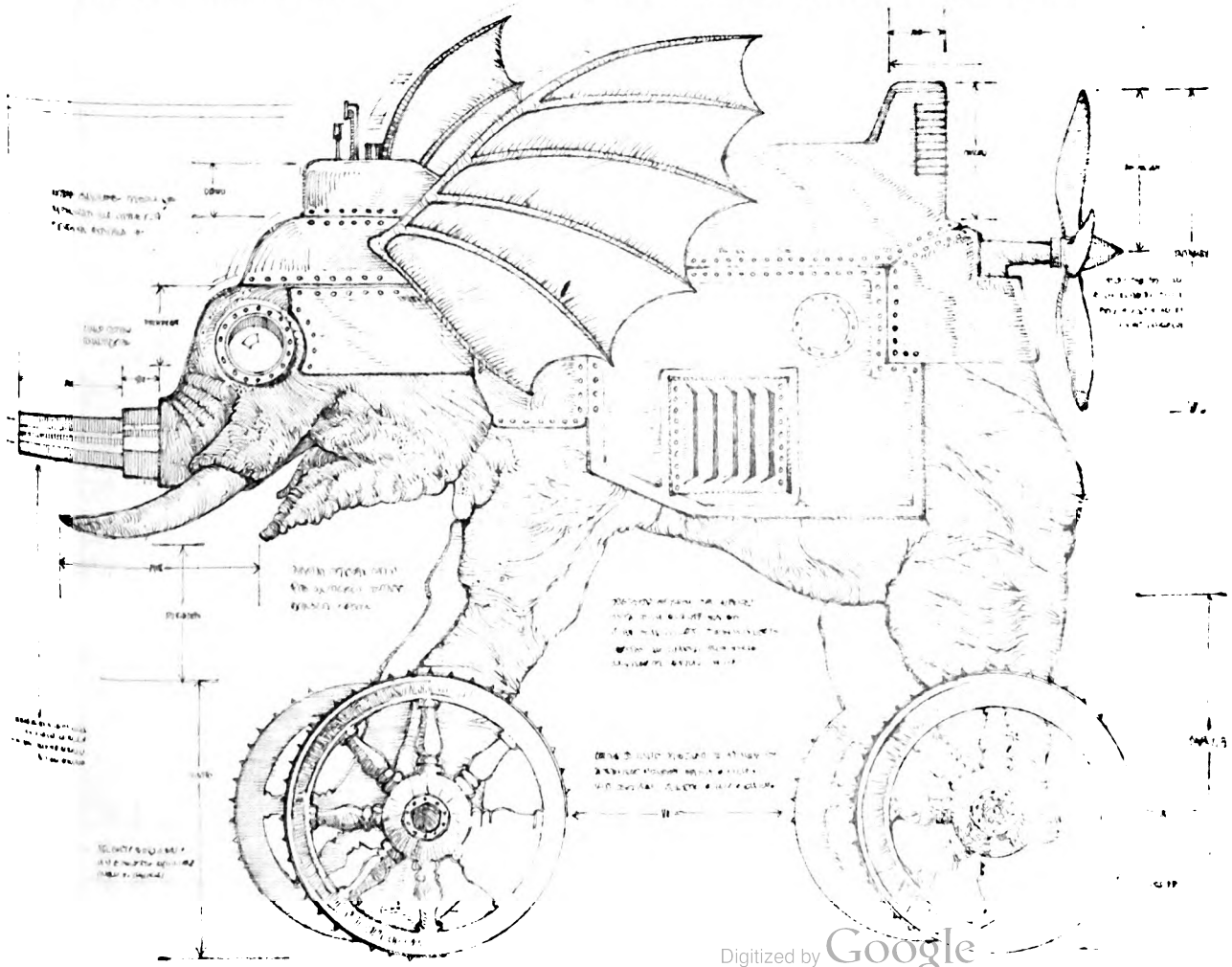
MAJOR DAVID W. KEITH

Generals cannot be entrusted with anything—not even with war.

Georges Clemenceau*

*Perhaps Clemenceau is more often credited for having phrased it as "War is too important to be left to the generals."

HOW many times have you heard or read this or similar statements in recent years? And how many times have you cringed at the thought of some fresh-faced whiz kid systems analyst, government or corporate, telling you how to do your business, complex or not? Quality versus



quantity. Military reform movement. Chemical, biological, and nuclear weapons. Rules of engagement and the laws of armed conflict. Second echelons and Leninist-Marxist ideologies. Ecosystems and natural resource beds. And the list goes on and on—almost ad nauseum.

There is no question that war today is complicated. But complicated warfare is not a particularly new idea. Alfred Thayer Mahan commented in the nineteenth century that he who seeks one best approach to war is destined for disappointment. So what can we do to defend ourselves better? Too often military officers, especially Air Force officers, respond by becoming technical experts in a specialized field rather than grappling with broader issues. Consequently, we open the door to those same analysts we quite often despise for their gnat-like questions. In the analysts' lack of battlefield technical skills, we find sufficient comfort to allow us to ignore the fact that their innate intelligence often combines with sound analysis skills to spawn questions which are quite uncomfortable for most career officers, even if the answers to these questions are not so easily produced. Rather than open ourselves to questioning our professional foundations, we find it easier to lash out at those "poor unenlightened simpletons." If only they knew all that we know. Then they would be credible. Then they could see that we have all the answers. But, alas. . . .

Now, into the midst of all this blissful complacency, the Chief of Staff has had the audacity to burst our apathetic bubbles by asking us to study, of all things, the art of war. Through Project Warrior, General Lew Allen challenged everyone connected with the Air Force to become serious students of how to fly, fight, and, by the way, win. Technical skill alone will not hack it anymore, he indicated, because modern war is complex; it is interrelated. Because it is interrelated, technical expertise confined to one specialized field is simply not enough.

I have always felt that I was a professional officer: about 2000 flying hours; four years as a Stan/Eval type and a couple more as an instructor; I was even shot at in Southeast Asia. So naturally, I became rather concerned about the possibility that maybe I was missing the boat on this professionalism thing. I thought and thought, but I still wasn't quite sure I realized just what it was the Chief was asking me to do. Day and night I searched. Then, one evening as I drifted off in the direction of forty winks, I felt myself floating over a scene in some strange place. Below me was a small group of men and a large grey animal. My curiosity was certainly piqued. My dream, which was similar to those wise fables I tell my daughters, took a singular turn.

ONCE upon a time in a country far away (or was that long ago in a galaxy far, far away?—no matter) there were three very senior military men who happened to stumble upon a strange grey Thing during a distant campaign. The first, an army general by trade, examined the Thing and at once gasped: "What a great opportunity. This is as big as a house, has skin like the finest armor, and a built-in cannon. The only thing missing is wheels, though I can see the posts where the axles were obviously mounted."

The general turned to the noble warrior on his left, an admiral by trade, and said, "I think I shall call this Thing a 'fighting machine.' With it I'll rule the heartland." (It seems the general was also an amateur geopolitician.) "My forces will be invincible! Alexander, eat your heart out. Logistician, figure out how to get wheels on my machine and hitch a team to it right away. World conquest awaits."

All the while the admiral, still well to the left of the army general, had been silent. But the pressure was so heavy now, he was very anxious to speak. "Can't you see that Thing isn't a land warfare machine? How could anyone be so narrow-minded? Why, any fool can see that it was designed for shallow-water naval warfare. Look at the streamlined shape of the hull and the fore-mounted snorkel. Shiver me timbers, with a machine like that, not a castle moat in the world could hold me out. Logistician, get this

vessel down to the river for sea trials. Let's choke a chokepoint!"

Now, in the meantime, the youngest of the three, a strapping chap who was a general in the avian and balloon corps, landed between the general to the right and the admiral to the left from his apparently superior vantage point on high. "I can see it all," he began. "This isn't a land machine or a sea machine. It obviously was designed by a retired combat veteran bombardier. Look at the wings near the front, and that protuberance is obviously a prop. What a bomb load a battlebird like that could haul. We'd be the terror of all the world's battlefields. Logistician, fit this bomber with rails and general-purpose bombs, and let's get to it. Somewhere there's a decommissioned battle galleon just waiting to be sunk!" (It seems our aviator had slept through most of his aerodynamics lessons.)

Now you can imagine the ruckus that followed: First, the army and the navy ganged up on the upstart aviator. Then, the aviator and the admiral against the general. Then everyone for himself. Meanwhile, the logistician was at each. Not that the Thing was taking this whole hoorah-rah lightly. All of a sudden it let out a bellow that would wake a zombie. They all stopped in their tracks, though no one knew just how to take the horrible sound.

"Did you hear *that*?" the general asked. (He had assumed the leadership role by now, being the senior service and all.)

"Can't be an alert horn way out here," answered the aviator.

"Nor general quarters," added the admiral.

"Well, it sounded like it came from the Thing," returned the logistician. "I think we ought to check it out."

Meanwhile, the Thing moved and bellowed again and caught everyone's attention.

"My gawd," yelled the army general. "It's alive. My land war machine is alive. It won't need wheels after all. Now it can go anywhere. Rape, pillage, and plunder; here I come."

"Hold on just a second, haybreath," retorted the admiral, "you're right, the thing is alive, but I still say it's an underwater, moat-crossing siege breaker."

"And I think you're both nuts," countered the still unenlightened aviator. "That's a born heavy bomber if I've ever seen one."

Within a split second the battle was on again, with everyone at everyone else's throats.

"Hold it just a blinking minute!" screamed the logistician, almost swallowing his pipe. "I have heard just about enough of this childish balderdash. We're making fools of ourselves. Let's just calm down and talk this whole thing over."

"First, you, general. Switch places with the aviator, and you, aviator, with the admiral. Now, try to look at this situation through each other's bomb, gun, or torpedo sight."

"We have each been seeing the world through our own point of view. Kind of reminds me of the parable of the three blind men and the elephant (but then that's another story and probably a different dream). Here's the way I see it. It seems to me that first we need to get on the same wavelength and then figure out why we came to this out-of-the-way wherever-we-are. There must be some purpose, some objectives, so to speak, that will help us determine how best to use this Thing. Why is it that we're here to begin with? Anyone have any ideas?"

"Well," entered the general. "We are here to win the war the best way we can?"

"Yeah," added the aviator. "But don't forget why we started fighting. Remember? We were called up because of the invasion. We had to repulse the invaders and restore our borders. And maybe add a new market or two for the chariot and abacus industries."

Then it was the admiral's turn. "Remember, too, that we wouldn't have been in this mess to begin with if the council had let us keep up-to-date. Why, with these old weapons and poorly trained troops, it's a wonder we weren't attacked sooner!"

"Now we're beginning to get on track," the logistician picked up. "From my perspective that's exactly why we're here. But also from my

perspective we want to end the war quickly before we run out of what few resources the council did provide us. (Aren't councils all alike?) Okay, we're together on why we're here. Now we need to figure out how the Thing can best serve our needs. It would seem to me that the first thing we need to do is agree to look for a way we can all get the most from it. We've got to work together, not against one another. Right?"

"I don't know!" snapped the general. "The army is obviously more important since everyone who is anyone knows that you can't win a war without occupying the enemy's territory. And, of course, a little terror to keep the civilians in line never hurts. So I think I should have first crack at the Thing. And if the R&D bucks don't work out in this project, I can always shift them to that new mobile catapult for the Rapid Deployment Force."

Almost simultaneously the aviator and admiral erupted. "You! The most important? Ha! Without our support and responsiveness to bail you out of jams and get you where you're going, where would you be? You'd still be thumbing your way to the campaign."

"Okay. Okay. Oh—kay!" answered the general. "So we're all important. Let's figure out how to use the Thing and get going. I've got battle plans awaiting. We've decided why we're here. It seems that the logistician has some good ideas. Let's let him go on."

"All right," said the logistician. "We agree that our purpose is to prevent attacks on the motherland, protect our borders, fight when called, and end the war as quickly as we can. That would seem to mean that we should figure out how we can best use the Thing to achieve those objectives."

Suddenly the air was shattered by an earsplitting bellow that put the earlier ones to shame. In the wink of an eye the Thing, which had been still for so long, charged at the small group. They dived out of harm's way just in time to watch the grey hulk trundle past and stop at another clump of grass about 50 meters away.

"By the powers of evil, what a monster," gasped the general. "The Thing certainly has power. But before we can use it, we must learn how to control it. With that size, it could easily crush our troops. Of course, maybe it'll crush a bunch of the opposition also. And even my giants aren't strong enough to hold the Thing back. And that bellow certainly rules out surprise attack. But on the other hand, it could make my army sound like legions. With this one machine, I can overwhelm, shock, and deceive the enemy. Now doesn't that make sense for the army?"

This time the admiral and the aviator did have to concede a point to the general.

Crawling out of his sheltering ditch, the logistician reentered the discussion. "Okay, let's assume that we can figure out how to control this beast. And maybe we can even figure out how to keep it quiet during night sneak attacks. We're still not out of the woods. I have been noticing how much the Thing has been eating while we've been here. As a supplier, I can guarantee that, regardless of its virtues, we must limit the Thing's area of operations to those theaters where forage is plentiful. Otherwise, our food trains will get so long that our enemies will completely bypass our forces and attack only lightly defended supply wagons. And we can't feed the Thing just anything. Some forage may make it sick. Then the maintainers will really have their hands full. A sick Thing will be more of a hindrance than no Thing at all. It certainly won't do us much good when the fighting starts. Besides, for what this Thing may cost to operate, and the problems controlling it, we might be better off using more cheap chariots instead."

"No," responded the general. "I agree we could have some problems, but this machine is just what I need: power, mobility, and shock value. I know we can solve the problems. We will need to design saddles, but that shouldn't be a major problem. I'll get my staff cracking on the tactics. With our focus on objectives, I can figure out the best employment strategy. And yes, logistician, I'll consider your comments on forage. We must keep these Things healthy so

we can use them. If only we could figure out how to control them."

Just then a young man wandered into view. "So there you are, Jumbo, you naughty beast. Why did you wander away? Now come over here right now, else I'll have to get the two-by-fours out. And I hope you haven't been bothering these gentlemen."

The 5000-pound elephant waddled over to the boy and rolled over onto its back like a little puppy.

"He loves to be scratched on his belly," the boy said to the startled group. "My name is Hannibal, and Jumbo here is my pet elephant."

JUST then I heard a clanging bell ringing, and I woke up as the general was saying something about a direct commission into his newly formed elephant corps. As I stumbled through my morning rituals, I realized that there were some points to be gleaned from my dream. First, the main reason we get paid in the military is to protect our way of life. Unfortunately, sometimes that means fighting a war. Often, in trying to do our own jobs in the Air Force, we forget there are other services that have some valuable experiences of their own. Sometimes, in our zeal to do our own job the best we can, we lose sight of the fact that maybe someone else could do it even better.

Also, I realized that, no matter how much fun firebreathing is, without a team effort, bombs will never arrive on target. Without the intelligence guys, we don't know where the bad guys are. Without the commanders, there's no one to make a decision about when, where, and how to attack those bad guys. Without controllers, we won't know where the good guys are so that we don't kill them by accident. Without trainers, we won't know what to do when the time comes or how to do it. Without suppliers, there won't even be any bombs to drop. And without maintainers, no one to load them or fix the planes when they break. Medics, feeders, recreators, tinkers, tailors, soldiers, and spies. The list goes on and on. The combat crews get the glory and more than their share of the bullet holes, but the team wins the game.

What is the Air Force's Project Warrior? Merely an attempt to get all of us, and not just the blue suiters, to realize that the guy who fixes the cleats, in his own way, is just as important to the Super Bowl championship as the winning quarterback who puts them on. Officer or enlisted, we each need to see our own role in winning the wars we hope never to fight but must always be ready for. We need to realize that only an appropriate blend of weapons and tactics, logistics and command and control will see us through to victory. The key is in each of us. The question is, "Will we be ready when the time comes?" We must be. There are no prizes for second place.

Or put another way. We need to remember a few points. "The bomber is only as good as the bombardier." "Organized fingers make a fist, and the brain leads that fist to a knockout." And above all else, "Feed an elephant spoiled hay and you won't have any trouble finding him, but he won't be on the battlefield."

Hq USAF

THE ENDANGERED SPECIES

SENIOR MASTER SERGEANT KEITH L. MOORE
UTAH AIR NATIONAL GUARD

I'M ONE of those creatures P. T. Barnum made famous when he declared, "There's a sucker born every minute." My biggest problem is that I'm a believer. I believe everyone. I'm optimistic to the extreme. I expect everyone to be completely honest with me. Of course, I fall prey to snake-oil salesmen, used-car dealers, and politicians. However, I'm not unique. You can still find a sucker or two around if you look for them.

I can't remember when I wasn't a sucker. At twelve years of age I put on my first uniform. Pearl Harbor was bombed on my eleventh birthday, and I took it rather personally. A year later, when I was old enough, I joined the Boy Scouts. I stood, with my arm to the square, and solemnly promised, "On my honor I will do my best to do my duty to God and my country. . . ." Perhaps I took that oath a little too seriously. A kid must be a sucker to be in the Boy Scouts. Surely a man shouldn't be held responsible for childhood promises.

Three years later, as a junior in high school, I joined the ROTC. Anyone who would take ROTC had to be a sucker. Those killed in action during World War II were being returned home for burial. There I was, one of the Honor Guard, firing the salute, listening while taps was played, and watching as the flag was folded and presented to the next of kin. All able-bodied men were still at war. Just a few high-school kids and a few old veterans from World War I were left to welcome home the dead. Yeah, there I was, with a lump in my throat and tears in my eyes, the sucker. They were my heroes, and someone had to care about them.

During my senior year, I joined a newly formed Air National Guard unit, which allowed me to wear the same uniform as those who had fought and died for freedom. The war was over by then, though, and anyone who joined the guard, of course, had to be a sucker. I was proud to be serving with war veterans. I enjoyed summer camp so much that year that I went regular. Only a sucker would do a thing like that because only bums joined the service in peacetime.

Four years later I hung up my uniform, and for six long months I drifted around in civvies, waiting for the local guard unit to come home from the Korean conflict. Finally they were released, and I could become a sucker again.

Since the early '50s, I've been a weekend warrior, a guard technician. Only a sucker would put up with all that stuff for that length of time, but only the suckers went to Vietnam while the others sat it out in Canada. Only a real sucker would volunteer for ten-day active-duty tours in a war zone, flying supplies over and rows of long metal casket containers back home, with the same tearful, lump-in-the-throat routine as in high school.

Yes, I'm one of those suckers, one of those leeches, one of those double-dippers who—with both wife and self working full-time—has never grossed $30,000 a year. I've really had it made, though, for I've been privileged to serve my country. I've been to enough foreign countries to appreciate how great it is to live in the United States. I've been able to buy a home, raise my family, and worship the way I choose. No one has ever fired a shot at me (that I know of), and I haven't had to shoot at anyone else either. Maybe—just maybe—if I had, I'd feel a bit different.

After more than thirty-five years' service, I still get tears in my eyes and a lump in my throat when our flag comes into view. I'm still a sucker for parades and heroes. I can't even get through a verse of "America, the Beautiful" without

choking up. In spite of dull TDYs, long "Sun down-Gear up" flights, BX prices higher than those downtown, and rebuilding thirty-year-old airplanes over and over again because of what is called "austerity programs," I'm still a sucker.

Barnum's saying is fast becoming as obsolete as the B-17. I'm afraid that suckers are no longer being born at their original rate. I wish they were. They may even be going out of style. If there were more of them, I'd feel a lot more comfortable and secure about the world my grandchildren are going to inherit. There seem to be too many people thinking only in terms of self. "What's in it for me?" they ask.

What this country needs is a few more suckers like Henry "Hap" Arnold, William Mitchell, James H. "Jimmy" Doolittle, and Ira C. Eaker. We need more suckers who will wear a few stripes and accept the increased demands and sacrifices without quitting. We need their spouses who will also sacrifice, support, and follow them, thus becoming suckers in their own right.

The Air Force needs crew chiefs who will live intimately with every system and peculiarity of their "bird." Suckers who feel a deep sense of pride and accomplishment watching that "bird" take off into a cold streaked dawn and then pace and worry until it delivers its pilot home safe again. We need officers who are actually suckers enough to care about "the mission," the welfare of the troops, and then their own personal welfare, in that order. We need leaders everywhere who know and perform their jobs as thoroughly as they expect their followers to know and perform theirs. We need civilians, in air logistics centers, who won't settle for "close-enough-for-government" work. We need quality assurance folks who demand contract excellence from contractors and vendors. We especially need patriotism, unselfishness, and self-discipline. It's certainly a tall order, isn't it? We need them just the same.

I HOPE I'm wrong, but it looks as though the suckers are fast going the way of the dodo bird. Soon this endangered species is going to be extinct, killed off by indifference, selfishness, and cynicism. It's hard to remain a dedicated sucker when, all around you, the major interests are self-promotion, avoiding responsibility, and getting rich. It's difficult to reconcile oneself to twelve-hour shifts, working outside in all kinds of weather, and a life of fatigue uniforms and grease, when there are fat cats living a country-club existence, with the weekends off, and getting twice the pay. Even a sucker can't feed his family on job satisfaction and patriotism for long. Isn't it ironic that the sucker is always the one called on to forgo a cost-of-living raise so as to set the example for the rest of the nation?

So far, the suckers have held the line. They've met the challenges, sacrificed for the mission, and hung in there. Will there be enough suckers tomorrow to continue on?

Before long, this sucker will have joined the ranks of those who have served their time and faded quietly into the shadows. Specters in forgotten uniform styles, "Pinks," "HBTs," "ODs," and "Suntans." Ghostly squadrons in Spads, Jugs, Sabers, and Thuds, waiting, watching, to see if the torch they proudly bore will burn on.

Long live the sucker. God forgive us all if we allow them to become extinct. Maybe this endangered species will survive and prosper. With all my heart, I pray that it will!

151st Air Refueling Group
Salt Lake City, Utah

Sergeant Moore's article received Honorable Mention in the annual Ira C. Eaker Essay Competition.

fire/counter fire

ANALYSIS BY HYPERBOLE: A RESPONSE

WILLIAM S. LIND

FOR someone who objects to exacerbating tensions and adding heat to a debate, Colonel Alan Gropman does an admirable job of both.* Unfortunately, his tone is more righteous than his facts can support.

Gropman makes a number of assertions about what the Pentagon thinks and believes. One way to test these assertions is to compare them with what it does. He asserts:

• "All the uniformed leaders and nearly all the ranking civilians I know put matters in the same priority" as the military reformers: people first, strategy and tactics second, and hardware third. In fact, at the first sign that defense spending would have to be reduced this year, these uniformed leaders and ranking civilians cut out the whole military pay increase. The service chiefs may have said they would rather cut procurement, but they gave Congress no list of procurement cuts.

• "Regarding ideas, all the services put officers at least equal to their best in their respective doctrine and strategy offices . . . " What do we mean by "best?" The services train program managers very carefully for their jobs, but what training do they provide for tacticians and strategists? How much military history and theory is taught in our schools? Where is the identified corps of strategists that is a counterpart to the corps of managers? What are the career rewards for new ideas about tactics and strategy that match those for successful program management?

• "Lind cites a quotation from a military reform briefing—'weapons that don't work or can't be bought in adequate quantity will bring down even the best people and the best ideas'—which would suggest that the Defense Department leadership thinks otherwise." The Senate, by a 91-5 margin, passed an amendment to the FY 1984 Defense Authorization bill, establishing an independent director of operational testing and evaluation in the Pentagon. The purpose of independent operational testing is to get weapons that work. The Defense Department leadership opposed the amendment. The Defense Department leadership routinely requests fewer weapons than it says it needs. The Navy requests 15 big carriers and 100 attack submarines but says it needs 24 carriers and about 140 submarines. The Air Force is building toward 40 wings of tactical aircraft by 1989 but says it needs more.

• "There is only one way to define quality and that is tactically, and I know no ranking officers who do not think of it in that way." Then why have we bought so many weapons of demonstrably poor tactical quality, like the AIM-7 series missiles, which destroy surprise and are so easily outmaneuvered; the Maverick, which commits the pilot to a suicidally vulnerable 15 seconds or more of wings-level delivery; and (compared to the F-16) the F-15?

I could point out a number of other inaccura-

*Colonel Alan L. Gropman, "Analysis by Hyperbole," *Air University Review*, September-October 1983, pp. 89-91.

cies and red herrings in Gropman's article—e.g., if "technological superiority has most often provided the margin for victory," I would be working for the Reichstag, not the Senate—but it is more useful to look at two of his basic, underlying errors.

The first is expressed when he says, "The M-1 tank comes in response to the size and numbers of Soviet tanks. The big carrier comes from the need for the United States to be able to project real power around the globe. The F-15 comes from the need to defeat large numbers of enemy aircraft threatening us and our allies." These rationales don't hold up—if I am worried about the large number of enemy aircraft, I am not going to buy F-15s when I can buy twice the number of better F-16s for the same price—but the key point is that they are exactly that: rationales. We are not buying these weapons for military reasons, even though the defense establishment wraps them in military rationales. We are buying them because the defense establishment includes powerful bureaucratic empires built around some individual examples, like the big carrier, and around complex technology generally. That establishment is chock-full of people who know a lot about technology but little about combat; it has an incestuous relationship with defense contractors, who make higher profit margins from complex than from simple systems; and it emphasizes weapons it invested bureaucratic prestige in early in their development, like the F-15.The bottom line of most of our defense decisions, especially hardware decisions, is not military analysis but intra-institutional bureaucratic politics.

Colonel Gropman's second basic error comes when he argues in favor of "better technology" and suggests that the reformers oppose it. The point of my original article was that the issue is *not* whether we want that which is "better" and that which is "quality" but how to *define* "better" and "quality" in militarily useful ways. The reformers do not propose returning to M-1 rifles or P-51s or battleships. Examples of advanced technology (though relatively simple) weapons we support include the F-16, the Sidewinder family of air-to-air missiles, and the 30-mm cannon on the A-10 with its depleted uranium ammunition. What we oppose is the trend toward increasing technological complexity with its attendant costs of fewer numbers, more maintenance time, lower availability rates, fewer training opportunities, and less total force capability. Technology can be used to our advantage or to our disadvantage. The debate over weapons between the reformers and the establishment is about how to use technology, not about technology itself.

Alexandria, Virginia

WINNOWING FACT FROM OPINION*

COLONEL ALAN L. GROPMAN

It is better to know nothing than to know what ain't so.

Josh Billings

WILLIAM S. LIND'S response here to my disagreement with his original article is more stale wine in the same old bottles. Most disconcerting is his "matter-of-fact" style woven throughout both the first piece and his answer to my retort. Many of his "facts" are simply

*The author gratefully acknowledges the research assistance of Staff Sergeant John Simpson.

opinions, and many of these are not grounded at all in solid research.

One example, which I will dwell on at length, speaks volumes, demonstrating Lind's superficial understanding of military history. Lind objects to my comment that "technological superiority has often provided the margin for victory." He argues, conversely, that if my statement were true, he would "be working for the Reichstag, not the Senate." German technological superiority during World War II is a myth. There were, of course, singular German technological successes (e.g., the Me 262 jet interceptor), but the weight of technology was on the Allied side and it contributed to our victory.

The Germans believed in the aerial bombing theories of Giulio Douhet yet failed to develop an adequate, let alone superior, bombsight, and Germany failed here with outstanding optical facilities. In addition to the fact that Germany had no bombsight equal to the American Norden, all attempts by Germany to build a heavy bomber were tragic farces. (One notes also the German failure to produce an atomic bomb.) The Germans, furthermore, failed to see the utility of the British Chain Home radar system until it helped defeat them in the Battle of Britain. Moreover, although the Germans believed the United Kingdom to be their key enemy in the late thirties through mid-1941, they failed to produce forces capable of conquering an island seapower. Furthermore, German tanks and artillery were often inferior to those used by their opponents, especially in 1940 when the Germans achieved their greatest triumph.

The truth is this: Germany was defeated by technology in large part, and by logistics in the main, and the latter is affected greatly by the former. Certainly the British and American operational research departments were successful in defeating every piece of Germany's wizardry during the war except the V-2 rocket. The relatively light load (2000 pounds and less) of the V-2 and its wild inaccuracy reduced the need to develop a countermeasure. One needs to look no farther than the Normandy invasion to gain a full appreciation of the depth of Allied technological superiority. One explains the German victories (except for the significant defeat in the Battle of Britain from 1939 through the autumn of 1941) by superior German land-fighting doctrine (especially armored doctrine); troop cohesion, leadership, and training; and tactical (as opposed to strategic) genius—certainly not technology. It was not that Germany did not have brilliant scientists and technologists, but rather that the Nazi regime between 1933 and 1945 was so inept and corrupt that it could not effectively use its many resources.

Similarly, Lind is unable to separate fact from opinion regarding the F-15 and F-16. He writes, matter-of-factly, that the F-16 is the better airplane. One asks: better how? The F-15 is an all-weather airplane that climbs faster to a higher altitude, is faster straight and level, has the greater range, carries the larger payload, and is more adaptable because of its greater capacity. The F-15, furthermore, has a slightly higher in-commission rate.

Lind's implication that the F-15 is of poor tactical quality does not square with the views of Air Force fighter pilots. The F-15 has a superior radar/avionics suite that enables it to have twice the detection range (four times the detection volume) of the F-16. Perhaps more to the point is the fact that these two airplanes do not perform the same mission. For all-weather interception the F-15 is superior, but for close-in air-to-air combat the F-16 is better (although the F-16 is being used today more and more as an air-to-ground fighter). The F-15 will, over time and with the advent of superior standoff weapons both air-to-air and air-to-ground, probably prove more useful to the Air Force because of the flexibility that its size and internal space give it.

Lind's argument that he can buy twice as many F-16s for the money as F-15s is inaccurate: an F-16 costs more than 70 percent the price of an F-15. More significant, he fails to deal with the questions of finding, training, and paying

the extra pilots and mechanics to fly and fix all these extra aircraft. Where, furthermore, is the ramp space to store them, the shelters to protect them, and especially, in Europe, the airspace to train the pilots?

Regarding the rest of Lind's retort, my remarks are essentially a repeat of my first answer. He argues that if the chiefs really cared about their people, they would have offered the Congress systems to be cut and then applied the money saved to pay raises. Lind knows better. To offer any system because it had a relatively low priority would mean simply the loss of the system; the saving would not be used to give the military a pay raise. The chiefs are not in a bargaining position. Regarding the qualities of military people serving as strategists, I would offer the differential promotion rates for those in strategy-formulating positions to counter Lind's opinion that the services put weaker people in these positions. On DOD opposition to the so-called "independent" director of operational testing and evaluation, I would note that the office proposed in the legislation would be within the Office of the Secretary of Defense, *under* the Secretary—so much for independence. There is such an office now in the Under Secretary of Defense office for Research and Engineering. DOD opposed the legislation because it found the new office to be duplicative in some senses and to divide the operational testing and evaluating process in others. Ultimately, they believed, such a new office would fragment an already difficult job.

The services are criticized by Lind because they request fewer weapons than they say they need. The needs, however, are expressed in their respective planning force documents, which are fiscally unconstrained evaluations of the forces required to defeat the threat with a reasonable assurance of success. When the services begin to build their programs, however, they are given strict financial guidelines in which to schedule their requirements against their resources; and there is never enough money.

Finally, nobody wants complexity—everybody wants simplicity—but the way to achieve *simplicity with effectiveness* is through technology. Everybody opposes increasing technological complexity if it costs more and produces fewer numbers that are also less effective (Lind's straw man). But given the fiscal and manpower constraints facing the United States, the relentless pursuit for technology to multiply effectiveness is essential. In the near future, standoff weapons will allow our forces to kill more tanks safely than in the past. The long-range radar of the F-15 allows it to assess enemy formations at great ranges and employ ordnance (like the long-range, all-aspect, supersonic AIM-7) beyond visual range and in all weather conditions. Ask a fighter pilot how important it is to get the first tallyho and the first kill.

Lind's criticism is that of one who has not participated in the hurly-burly of developing a force structure, who has never been confronted with choosing a system when faced with the inevitable compromises with which a democracy must contend. It is much easier to criticize the results of this process than to devise a better approach. After all, Lind and his criticism are a part of the process. We need critics like Bill Lind to keep us on our toes by constantly challenging our choices and forcing us to rethink our decisions.

Hq USAF

commentary

To encourage reflection and debate on articles appearing in the *Review,* the Editor welcomes replies offering timely, cogent comment to be presented in this department from time to time. Although content will tend to affect length and format of responses, they should be kept as brief as possible, ideally within a maximum 500 words. The *Review* reserves the prerogative to edit or reject all submissions and to extend to the author the opportunity to respond.

ON DEFECTIVE LEADERSHIP

Major Robert J. Holub

THE article "Defective Leadership: America's Greatest Peril" is one of the most powerful I have seen published in an Air Force periodical.* I would like to thank Lieutenant Colonel G. E. Secrist for summing up so completely all my own frustrations with our current military leadership.

The defect he labeled "Obsession with Image Enhancement," or, as I like to call it, the looking-good syndrome, struck particularly close to home. It was a tragic bit of irony that this article appeared at the same time that high-ranking U.S. officers had to defend their role in the Beirut massacre of Marines. Phrases like "absolutely no defense," "no way it could have been stopped," and "no way we could have predicted this type of attack"—all have filled the press. They offer little hope that we will learn any hard lessons from this tragic event.

From personal experience, I have seen buildings painted and then destroyed, fences taken down and put up three different times, miles of curbs sandblasted, and signs repainted for aesthetic reasons. All of these actions were in the name of base beautification in a command that had publicly lamented shortfalls in wartime stocks of munitions and spare parts. In a choice between several more pallet loads of ammunition and "looking good," it was obvious what had won.

Thousands of copies of AF Regulation 35-10, *Dress and Personal Appearance of Air Force Personnel,* have been printed and distributed to Air Force personnel. I would like to see equal attention given to works such as Colonel Secrist's article. Copies should be sent to every officer in the Air Force. To quote from the article, "A leadership crisis of substantial magnitude has placed the United States of America in great peril." I could not agree more.

Langley AFB, Virginia

*Lieutenant Colonel G. E. Secrist, USAF (Ret), "Defective Leadership: America's Greatest Peril," *Air University Review,* September-October 1983, pp. 12-19.

Major Holub is Military Airlift Command advisor, Detachment 6, Hq Air Weather Service (MAC).

MORE ON DEFECTIVE LEADERSHIP

Staff Sergeant Dan DeRooy

IN response to the article by Lieutenant Colonel G. E. Secrist, "Defective Leadership: America's Greatest Peril" (September-October 1983), I would like to add a few remarks concerning the enlisted force.

In the past much of our rhetoric has emphasized that the "enlisted force is the backbone of the military service." But upon taking a close look at reality, we find that this backbone is, in many cases, in need of repair. For one thing, enlisted leadership has evolved in an environment where many decisions are made with a focus toward the betterment of one's career instead of the accomplishment of the mission. This phenomenon is similar to the officer-related careerism described in "Defective Leadership." Secondly, the enlisted Weighted Airman Promotion System (WAPS) does not give extra points for those people who have attained a college education. Instead, this system recognizes time in grade (TIG) and time in service (TIS) with extra points.

Today, an increasing number of people are entering the Air Force enlisted force with more than just the required high-school education. Additionally, many individuals are earning college degrees while in the service, either through the Community College of the Air Force (CCAF) program or one of the other educational programs available. Yet, there is no promotion-related recognition (other than upon initial enlistment) given to an individual who has earned college credits. This means that an enlisted person who has a college education cannot favorably compete with others who are given extra points under WAPS for lengthy periods in grade and in service.

I do not think this situation is serving the best interests of the Air Force. It tends to force those enlisted people with a degree to reconsider their military career. College-educated personnel are aware of the higher pay and increased recognition that are given by some civilian companies for a college degree. Since the Air Force does not adequately recognize enlisted personnel for their educational achievements, they may tend to feel that they would be better off in civilian life.

By encouraging college-educated enlisted personnel to leave and failing to give adequate recognition to those who stay in the service, the current promotion system is producing primarily career-(not mission-)oriented leaders/decision-makers who have only a modicum of formal higher education to go along with their extended time in grade and years of service.

Because of this situation, I believe it is time for the Air Force to rework its WAPS. Although I cannot lay out a new system in such a short piece as this, I can briefly describe some of its salient characteristics. For one thing, the new system should be designed with the total-person concept in mind. Recognition should be given for college academic achievement and annual aerobic testing. Also, greater emphasis should be placed on high WAPS scores in themselves. Extra points for time in grade and time in service should be reduced. The attainment of extra points on a WAPS test for TIG and TIS without acknowledging college education does the Air Force an injustice by not recognizing those intelligent, probably more progressive and productive, individuals who will (in the long run) be an intrinsic asset to the Air Force.

Beale AFB, California

Staff Sergeant Dan DeRooy is presently assigned to the 9th Security Police Squadron, Beale AFB, California, as the Squadron APR-Awards and Decorations Monitor. He holds an M.P.A. from Golden Gate University.

REALISM AND IDEALISM IN SOUTHERN AFRICA

Dr. David R. Mets

DR. Valentine J. Belfiglio's article, "The Soviet Offensive in Southern Africa" (July-August 1983), strikes me as offering very bad advice to the United States. He would have us cooperate with the South African government in opposition to presumed Soviet inroads in the region even to the point of deploying peacetime military forces to that country. The advice is unsound for two reasons. First, his estimate of the importance of South Africa is exaggerated. Second, he grossly underestimates the difficulties his proposals would generate both domestically and in other regions of Africa—in fact, in the entire Third World.

Belfiglio offers up the good naval bases and airfields in South Africa as being assets to American national security. He further says that the Cape of Good Hope is vital because it is near the oil line of communications from the Persian Gulf to Europe and America. That notion does not stand up to careful analysis. It is unlikely that the Soviets would cut off the oil at the Cape when it would be much cheaper and safer for them to do it at the head of the Persian Gulf or at its outlet. By striking at the source of the oil flow, the Soviets could do twice the damage—they would simultaneously stop the flow of oil to the West and Japan—with less than half the effort. Thus, the questions become: Airfields on the way to where? Naval bases on the way to where? Moreover, Belfiglio overlooks the negative impact of his proposal in that U.S. support of South Africa might offend black African states to the point where they halt the flow of strategic materials from Africa itself. Nigeria is now one of America's chief oil suppliers, and her government has avowed that it will cut off oil to the United States were we to support South Africa. Some of the other sub-Saharan states possess mineral deposits that rival those of South Africa in importance—Zaire, for example.

In my opinion, Dr. Belfiglio also overestimates the lasting effects of Soviet activities in sub-Saharan Africa. After nearly four decades of frustration with foreign aid programs, Americans should know better than anybody else that gratitude on the part of the recipient is seldom very profound and never very persistent. The prevailing attitude seems to be: What have you done for me lately? The Soviets are already experiencing some of this. Third World states seem to know that when guns are needed for a revolution, they are more readily available from the Soviets than from Americans. But after the revolution has been won, then butter becomes more important than guns, and butter is more easily secured from the United States. Not only must the dictators of black Africa have the security forces to sustain themselves in power but also they must deliver on their earlier promises that decolonization would bring their supporters to the economic promised land. Many of the leaders have discovered that the economic aid necessary to develop their economies is much more readily obtained from the United States and Europe than from the Soviet Union. Thus, though the Soviets and Cubans certainly did provide vital aid to the winners in the Angolan struggle, lately the Angolan government has been cozying up to the United States in hopes of winning economic help from us. Thus, we see the spectacle of Cuban troops standing guard over Gulf oil refineries on Angolan territory. The foreign exchange provided by those refineries is simply too vital for the government to risk in the name of ideology.

It seems to me that Dr. Belfiglo's figures are open to question on various grounds. First, he says that 51 percent of South Africa's exports go to EEC and that 55 percent of her imports come from Europe as though that should be significant to the American decision-maker. Stated in those terms, the figures seem large, but they really are an unimportant fraction of the total trade of the Common Market and still less important as a factor in U.S. overseas trade. It is

true that some minerals received from South Africa are quite important, but many of them could be obtained elsewhere at a somewhat higher price. In any event, a power that took control of South Africa would still have to find markets for her goods. This being so, the United States need not pay any price at all or run any risks to maintain access to South African resources. Belfiglio also asserts that 25 percent of U.S. oil needs to come around the Cape of Good Hope, but that seems impossible since we import but a quarter of our total consumption and very large portions of that quarter come from Venezuela, Nigeria, and Mexico.

Some years ago, George Kennan, in *Cloud of Danger*, asserted that only Japan and Western Europe were regions of vital interest for the United States. The only other area possibly worth a fight would be the Middle East. As for the rest of the world, he argued that they will never love us, we cannot solve their problems, and all we can really hope for is their respect. It appears to me that this is still a valid analysis, at least where southern Africa is concerned. The loss of South Africa, were there any real chance of that happening, might be inconvenient, but I doubt that it would be a "major setback." Furthermore, such a loss might not be permanent. Moreover, in the economic sense, some of the countries of sub-Saharan Africa are economic basket cases. Their loss to the U.S.S.R. might even constitute a net loss for the Soviets and a gain economically for the United States. For example, some believe that fully a quarter of the Cuban gross national product is provided by Soviet aid. Without the Cuban drain, that money might well have been spent on Soviet military forces and other things more dangerous to us than the presence of the Cuban mercenaries in Angola and Ethiopia. Afghanistan is costing the Russians dearly, and they cannot feed their own people as well as they desire. It seems to me that we ought not assume that every Soviet presence in the Third World is a gain for them and a loss for us anymore than our ten-year presence in South Vietnam was a loss for the U.S.S.R.

The weakest point in Dr. Belfiglio's article is the ease with which he dismisses the domestic difficulties his proposed policy would generate. Even if no other group in the United States objected to it, there would probably be strong opposition to the policy among American blacks. Though they constitute only about a tenth of the electorate, they are a swing group that no political candidate can ignore. On top of that, the majority of American voters are registered as Democrats, and insofar as they are motivated by ideology, that factor would certainly operate strongly against Belfiglio's program—in my opinion so strongly that it would be well beyond the bounds of practical politics.

His notion that Americans could "persuade South African officials gradually to initiate majority rule," presumably to quiet ideological concerns of U.S. citizens, seems unfounded. While white South Africans are but a 20-percent minority in their own country, they are a hard lot. They are further hardened by examples of blood and mayhem that have followed the coming of majority rule in Zimbabwe—and things there are not getting any better. Many of their people were among the mercenaries in Zaire who witnessed the numerous massacres that took place there in the process of decolonization. To build a policy on the expectation that white South Africans will ever willingly make meaningful reforms in the area of civil rights is unwise. They look upon the granting of majority rule as suicidal for whites, and on matters of personal survival no man is likely to compromise.

Vietnam taught us that U.S. policy cannot succeed without majority backing or at least majority consent. This means that U.S. decision-makers should reject any idea of cooperating with South Africa for any purpose if it entails the deployment of forces to the area or even faintly implies condoning apartheid.

Niceville, Florida

Lieutenant Colonel David R. Mets, USAF (Ret), (USNA; Ph.D., University of Denver) is Professor of History and International Relations, Troy State University, Florida Region.

REALITY AND FICTION IN SOUTHERN AFRICA

Dr. Valentine J. Belfiglio

I AM pleased that Dr. Mets took the time to pen his thoughful critique of my article, "The Soviet Offensive in Southern Africa." However, upon reflection, I see little in his comments to dissuade me from the views I expressed.

Professor Mets doubts that the Cape sea route is important to Europe and America because "it is unlikely that the Soviets would cut off the oil at the Cape when it would be much cheaper and safer for them to do it at the head of the Persian Gulf or at its outlet." Should we now sit back and relax, safe in the knowledge that the Soviets would never interdict oil shipments along the Cape route because Mets says so? I think not. A document published by the Organization of the Joint Chiefs of Staff (JCS), entitled *United States Military Posture for FY 1983*, clearly points out that the African continent "is circumscribed by vital sea lines of communications." According to this document: "In 1980, about 50 percent of the Arabian Gulf oil shipments passed around the Cape of Good Hope; hostile forces anywhere on the African periphery could threaten the Western oil lifeline." (p. 8) The Cape route will continue to remain vital to the Western world for the remainder of this century for the transport of both oil and crucial strategic materials.

Another problem I find with the Mets critique is an indication that he may not have read my article closely enough. For example, he asserts that "Belfiglio overlooks the negative impact of his proposal in that U.S. support of South Africa might offend black African states to the point where they halt the flow of strategic materials from Africa itself." In fact, I specifically address this matter in the article on page 85.

Mets misreads my article a second time when he asserts that I overemphasize "the lasting effects of Soviet activities in sub-Saharan Africa." No one can be certain what the lasting effects of Soviet activities in sub-Saharan Africa will be. My major concern is that current Soviet adventurism "in southern Africa poses a clear and present danger to the national interests of the United States in that part of the world." (p. 84) The JCS document already cited supports this contention. It points out that:

> The rapid expansion of Soviet influence in Africa during the past decade constitutes the second general threat to US and Western interests in the region. Marxist regimes in Angola and Mozambique depend heavily on support by the Soviets or their surrogates, and in turn provide footholds from which the Soviet Bloc may attempt to deny military access and resources critical to the West. (pp. 8-9)

In September 1982, the Subcommittee on Security and Terrorism of the Judiciary Committee of the United States Senate conducted a thorough investigation of the Soviet threat. The subcommittee report, entitled "Soviet, East German and Cuban Involvement in Fomenting Terrorism in Southern Africa," noted that available evidence showed that the Soviets continue to support terrorism "under the guise of aiding struggles for national liberation." (p. 28) Furthermore, the report supports my position, not that of Mets, with regard to the strategic importance of Africa, noting the significance both of southern Africa's proximity to "the strategic sea routes around Africa" and Africa's "growing importance as a source of critical minerals." (p. 1)

Where strategic minerals are concerned, Dr. Mets does admit that "some minerals that are received from South Africa are quite important." However, he believes that "many of them could be obtained elsewhere at a somewhat higher price." Mets implies, but he does not openly admit, that other strategic minerals could not easily be obtained elsewhere. A report to the U.S. Senate Committee on Foreign Relations, entitled "U.S. Minerals Dependence on South Africa" and dated October 1982, argues that "The Western industrial world depends

heavily on South Africa for chrome, manganese, vanadium, and platinum." This report also asserts:

> The United States is almost completely dependent on imports of chromium, manganese and platinum, either in the form of ore or ferroalloys. It is particularly dependent on South Africa for imports of chrome and ferrochrome and platinum. . . . South Africa has a highly sophisticated minerals processing industry, particularly when compared to developing country minerals producers such as Zambia and Zaire. For a variety of reasons, the U.S. capacity to process various ores is decreasing. . . . As our capacity to process ore deteriorates, our ability to shift from South African sources of processed minerals to other developing country sources of unprocessed ore will correspondingly decrease. (pp. 2-26)

In the area of trade statistics, Dr. Mets asserts that my figures for trade between South Africa and Europe and America, which are based on data supplied by the U.S. Department of Commerce, "are open to question on various grounds." But he offers no recognized source for challenging these figures. He then claims that "a power that took control of South Africa would still have to find markets for her goods." Mets fails to demonstrate conclusively why the United States could not be excluded from a list of market nations. Then he makes a very curious statement: "The loss of South Africa, were there any real chance of that happening, might be inconvenient, but I doubt that it would be a 'major setback.' " This premise conflicts with the findings of U.S. congressional committees which allude to "the economic and strategic importance of southern Africa to the United States and the free world."

In one other major respect, Mets seems to have misunderstood my position, although I believe it is clearly stated in my article. He states: "The weakest point in Dr. Belfiglio's article is the ease with which he dismisses the domestic difficulties his proposed policy would generate. Even if no other group in the United States objected to it, there would probably be strong opposition to the policy among American blacks." Yet on page 85 of my article I state: "closer South African-American relations would antagonize many Afro-Americans."

Finally, Professor Mets doubts that the United States and its allies can "persuade South African officials gradually to initiate majority rule." I remain unshaken by this unsupported opinion.

While I am flattered that Dr. Mets took the time to prepare his response to my article, I do not believe that he has seriously challenged the basic ideas and conclusions it contains.

Denton, Texas

Dr. Belfiglio is Associate Professor of Government at Texas Woman's University.

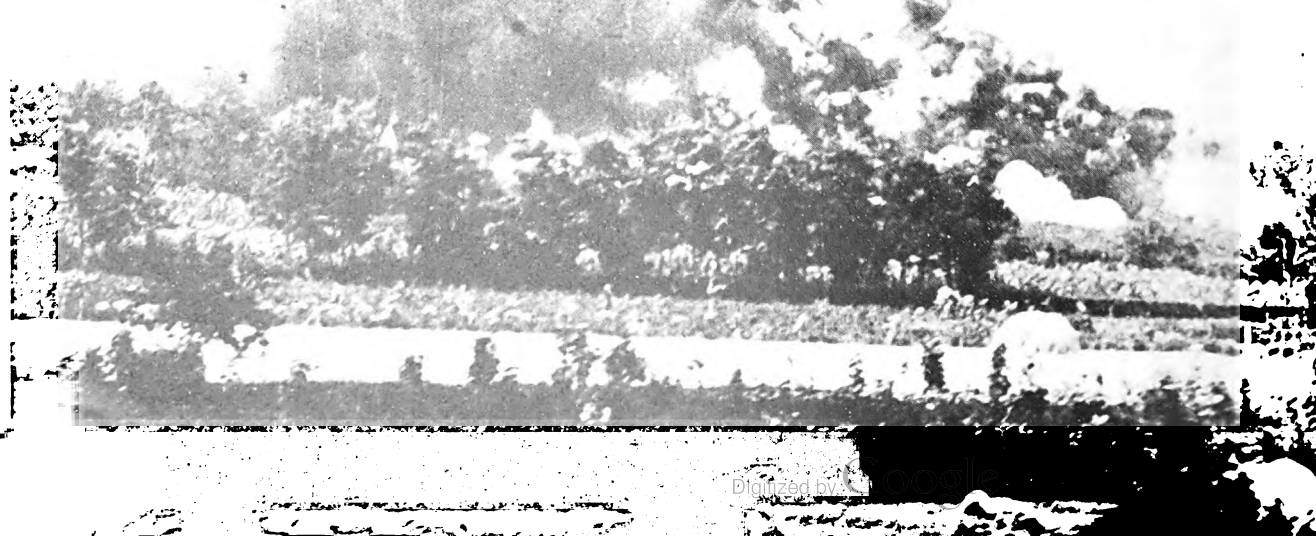
books, images, and ideas

AIR STRATEGIES OF THE PAST AND FUTURE

DR. PERRY D. JAMIESON

FOR the last two generations, students of military affairs have argued about the effectiveness of strategic bombing with the same zeal that Reformation theologians debated the nature of the sacraments. Professor Lee Kennett deserves considerable credit for avoiding polemics and writing a scholarly survey history of strategic bombing.† For some, *A History of Strategic Bombing* will provide a brief introduction to this controversial subject, and for others it will

†Lee Kennett, *A History of Strategic Bombing* (New York: Charles Scribner's Sons, 1982, $15.95), 222 pages.



serve as a reminder of the troubling issues associated with the air offensive. Professor Kennett's book is so concise and clear that some readers will fail to appreciate its accomplishments, a readable overview of an extraordinarily complex subject.

The technological revolution of the late nineteenth century made it possible for manufacturers to improve weapons more rapidly than diplomats could secure arms control agreements. Between the two Hague conferences of 1899 and 1907, aviation technology made greater progress than arms negotiations. Kennett believes that although air power might have been banned in its infancy, "what helped save it was the argument that actually it represented 'progress' in warfare, a means to bring speed and precision to military operations and thus make wars less bloody." (p. 179)

Air strategy developed differently from one country to another, influenced by the economic and social histories of individual nations. Kennett emphasizes geography, and no doubt the close borders of the major European powers were an important factor in military planning. The German attack on London in 1917 marked a sharp turn in British strategic thinking, leaving the English with a deep concern for the safety of that great city. The French were wary of any strategy based on urban attacks, since the proximity of their cities to Germany rendered them vulnerable to reprisals. French planners thus turned their attention to a *points sensibles* strategy that concentrated on military targets in the enemy's production and supply network. Geography also influenced the air operations of World War I, and this experience in turn shaped postwar policy.

Early in the interwar period, diplomats tried to establish restrictions on air warfare. The Washington Naval Conference of 1921 and 1922 offered them a poor model because the formulas used to limit capital ships could not be applied to airplanes. The Hague Draft Rules of 1923 included a set of "Rules of Aerial Warfare," but these were vague at crucial points; it seemed very likely that governments would claim the exigencies of war and violate the aerial rules when it suited their purposes. The growing fear and distrust across interwar Europe prevented any viable agreement on air power. The fundamental dilemma was older than the Old Testament: a man believed he could trust himself, but not his neighbor, with destructive weapons.

Kennett's survey of the air forces and combat doctrines of the major powers in the 1930s reveals how air strategy differed from country to country, yet the decade also had unifying themes. The dominant one was the problem of air defense, which no nation solved. Technology improved offensive air power, while complacency and economics retarded air defense; in 1939, Europe went to war with much antiaircraft materiel that dated from World War I.

One difficulty in writing a history of strategic bombing is the obligation to retell the familiar story of the World War II air war. Kennett meets this challenge with a thoughtfully written survey. His account of the Battle of Britain assesses the importance of the belated German planning, inaccurate German intelligence, British resolve and courage, and the German decision to shift resources to Operation Barbarossa. Kennett summarizes clearly the high points of the European air war: the difficulties of the Allied mobilization; improvements in German air defenses between 1939 and 1943; the controversy over nighttime versus daylight bombing; the build-up of Allied air power in the Mediterranean; the introduction of the P-51B Mustang with auxiliary gas tanks; increasing American participation in the war and the general growth of Allied strength; improvements in Allied electronics, including the development of more sophisticated spoofing and jamming techniques; and the advances of the ground troops that destroyed the Luftwaffe's early-warning radar system. Kennett's treatment of the Pacific theater focuses on the competition in American planning between precision and incendiary bombing, and the eventual adoption of Major General Curtis E. LeMay's strategy of massive nighttime fire

raids on Japanese cities. The Tokyo raid of March 1945 and the others that followed created the "climate" in which "the ultimate air weapon of the war made its debut." (p. 176)

Professor Kennett ends his survey with an evaluation of World War II strategic bombing. Ethics aside, he concludes that

- area bombing produced disappointing results,
- American precision bombing was successful, and
- British bombing produced more widespread, but less critical, damage than American bombing.

Perhaps the greatest single difficulty in measuring the success of strategic bombing lies in intelligence, in the ability to evaluate the value and capacities of targets before—as well as after—they are attacked.

The intelligence problem surfaces several times in Kennett's narrative. If it appeared that strategic bombing in Europe in 1943 and 1944 was not gaining the results some expected of it, the state of the German economy and mobilization must be taken into account. Germany was not fully mobilized for war in 1939. "When Allied bombers began serious efforts to apply the brakes to German production in 1943," Kennett observes, "Albert Speer was just moving it into high gear. Well into 1944, his efforts effectively counteracted theirs." (p. 184)

KENNETT'S book is traditional military history. Carl Jacobsen's and Donald Snow's works fall into the more amorphous category of contemporary military policy and strategy. Research in these subjects is hindered by certain difficulties encountered in all efforts to understand the recent past. Works on contemporary topics nearly always are dated by the time of publication. There is also the challenge of putting developments into their larger context, when only half that context—the preceding events—are known and when these events are so recent that their significance is difficult to evaluate. What place will Soviet intervention in Afghanistan hold in the history of the Cold War? No one writing in 1982 could be certain. In addition to these general problems, military topics present their own obstacles. The researcher enters a labyrinth of complex strategies and high-technology weapons. Research on some topics will produce more information than an author can evaluate in a lifetime; in other fields, the researcher encounters security constraints on Western documents and even greater restrictions on Soviet sources.

Professor Jacobsen is more interested in broad issues of foreign and military policy than in military strategy.† He begins *The Nuclear Era* with an assessment of the origins of the Cold War and concludes that there were more similarities than differences in American and Soviet approaches to foreign policy. Jacobsen believes that "both Moscow and Washington were wont to follow the behavioral patterns of their imperial predecessors." (p. 19) At the end of World War II, the United States was much stronger than the Soviet Union, and the Soviets tried to compensate for this by deceptive policies. The United States overreacted, and the Cold War followed. Both nations pursued chauvinistic foreign and military policies, and the remorseless power of their weapons put the world in unimaginable danger. This explanation of the Cold War sets the tone for most of the rest of Jacobsen's book.

The Nuclear Era is a series of brief essays which, while often irritating in their assumptions, touch on some ideas that are worth further consideration. The author develops a trouble-

†Carl G. Jacobsen, ***The Nuclear Era: Its History; Its Implications*** **(Cambridge, Massachusetts: Oelgeschlager, Gunn & Hain; Nottingham, England: Spokesman, 1982, $20.00), 130 pages.**

some argument that, by the early 1980s, much of the third world no longer believed that the United States was the moral superior of the Soviet Union. He accepts the contention, widely voiced since the early 1970s, that the economic positions of both America and Russia, relative to the rest of the world, are in sharp decline. Jacobsen scores his strongest points in a chapter on the spread of nuclear weapons. Raising the specter of a horizontal proliferation that may extend to terrorist groups and irresponsible national leaders, he points out, "The Idi Amin of the 1970s had not enjoyed access to nuclear arms; a successor of the late 1980s and the 1990s might well." (p. 104)

The fundamental weakness of *The Nuclear Era* is that it is grounded in such strong assumptions about the course of the Cold War and the nature of the arms race that it will alienate many readers before they reach its more sophisticated arguments. I doubt that the book will have much influence on the military policy debates of the 1980s. Liberals will find little in the book that is new, and conservatives will dismiss it as revisionist claptrap.

Professor Snow's book on American nuclear strategy will attract a wider audience than Jacobsen's work. Snow tries to envision what American nuclear strategy will be like in the years ahead, and *The Nuclear Future* begins with an overview of how our present strategy has evolved.† It first considers the Eisenhower administration's doctrine of massive retaliation, a strategy which was undermined when the introduction of intercontinental ballistic missiles (ICBMs) and fission-fusion bombs made it seem likely that, if this strategy were carried out, the United States—as well as the U.S.S.R.—would be devastated. Massive retaliation was replaced by mutual assured destruction, a strategy which Snow contends was rendered suspect by the Soviet strategic buildup of the 1970s. A debate followed between proponents of mutual assured destruction and advocates of some variation of a limited nuclear options strategy. The latter in turn had their critics, some of whom believed that "planning for the use of nuclear weapons in a broader range of situations increases the number and kinds of circumstances in which the weapons are used and hence potentially lowers the nuclear threshold." (p. 17) There is an ominous uncertainty about how the Soviets would react to the execution of a limited nuclear options strategy. Would the use of atomic weapons remain tactical and controlled, or become the doorway to Armageddon? Snow ends his survey of the development of nuclear planning with a consideration of the countervailing strategy embodied in the Carter administration's Presidential Directive 59, which drew together three strands of thinking from the nuclear policy debates of the 1970s: selected options, assured destruction, and essential equivalence.

Professor Snow concludes, from his survey of American nuclear planning from the 1950s through the early 1980s, that successive administrations have developed nuclear strategy without directly recognizing how technological changes have altered, and are altering, the nature of deterrence. Two significant changes in the nuclear arena since the early Cold War years are the introduction of multiple warheads and the increasing vulnerability of land-based ICBMs. During the 1970s, multiple independently targetable reentry vehicles (MIRVs) and dramatic increases in missile accuracy raised the issue of the vulnerability of America's ICBM fields. Professor Snow reviews the many arguments for and against MX procurement, but he is less interested in whether MX deployment is a "good" or "bad" idea than he is in the problem

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†Donald M. Snow, The Nuclear Future; Toward a Strategy of Uncertainty (University, Alabama: University of Alabama Press, 1983, $25.00 cloth, $12.95 paper), 189 pages.

of ICBM vulnerability and the uncertainty it will add to future strategic planning. Land-based missiles, as presently deployed, are becoming increasingly vulnerable and eventually will pass from the scene. Snow expects that this process will be presaged by a growing awareness of the possibilities of ballistic missile defense (BMD).

In Snow's estimation, the Reagan administration has headed for an MX deployment along lines that will promote interest in BMD and probably will encourage sentiment for amending or abrogating the 1972 Anti-Ballistic Missile (ABM) Treaty. The University of Alabama Press published *The Nuclear Future* before President Reagan's March 1983 speech on future technology weapons, an address that strengthened Snow's predictions. Professor Snow displays considerable enthusiasm for a layered BMD system, while acknowledging its technological difficulties and the arms control issues it would introduce. He reviews the primary questions raised during the 1960s debate over ABM—its technical effectiveness, cost, and implications for deterrence (would ABM be destabilizing?)—and anticipates that these same issues, particularly effectiveness, will be revived in a second ABM debate.

Complexity and uncertainty are the central themes of *The Nuclear Future*. Snow contends that MIRVed missiles, ICBM vulnerability, laser and charged-particle beam weapons research, and BMD studies have brought and will bring increasing uncertainty to nuclear planning. He develops a sound, if generalized, argument from past experience that uncertainties and unforeseen complications often have interfered with the timing and execution of military operations and that untried weapons rarely have performed in war precisely as expected. There will be broad agreement with Snow's contention that MIRVs and increased missile accuracy already have enlarged the uncertainties of strategic planning, and future technological breakthroughs will probably create further complexities.

If these propositions are valid, how are American leaders to make sound military policy in the future? Snow urges that they "accept and make the best of the very real uncertainties involved in predicting the outcome of employing nuclear weapons as the central reality for strategy." (p. 158) He advocates increasing the difficulties of Soviet planners by diversifying American forces beyond the current triad and using arms control to manage the transition from the present strategy to one that recognizes, and in fact is based on, the element of uncertainty. The history of weapons technology supports Snow's thesis, and even those who disagree with his prescription will have to contend with the unsettling possibility that his diagnosis is accurate.

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SMALL WARS AND LARGE LESSONS

battle history and historical awareness

DR. JOHN F. GUILMARTIN, JR.

ABOUT forty-three years ago, a reinforced divisional task force of the Imperial Japanese Army (IJA) entered combat against Soviet forces in one of the most utterly forsaken spots on the face of the earth, the Khalkin Gol

Valley of Outer Mongolia. In a scenario that seems more credible today in light of the assorted small wars of the early 1980s, Japanese forces of the semi-independent Kwantung Army occupying the puppet state of Manchukuo initiated operations against local Soviet forces in retaliation for incursions against the border claimed by the Japanese.

The Soviet riposte was effective—embarrassingly so to the Japanese—and hostilities quickly escalated from company to regimental level. With summer approaching, the Kwantung Army resolved to teach the Soviets a lesson and struck across the Khalkin Gol River, hastily bringing up its air arm in support.

Secure in its stereotyped characterization of the Soviet soldier as "submissive, docile, and prone to blind obedience," the Japanese moved with serene confidence against an enemy who posessed a marked qualitative superiority in mechanized and armored equipment and, at least potentially, a vast quantitative advantage in virtually every category of materiel across the board. While aware of the Soviet advantages, the IJA placed great stock in the sound training, physical toughness, intelligence, and initiative of its soldiers and junior officers in particular. Nor—let it be carefully noted—were these presumed areas of Japanese superiority illusory; they were very real, indeed. As the U.S. Army and Marine Corps were shortly to discover, the Japanese infantryman was tough, smart, astonishingly determined and resourceful, and, at least at battalion level and below, exceedingly well led.

Particularly in night fighting, Japanese Army planners were convinced that the superiority of the individual Japanese soldier and of Japanese thinking would inevitably tell. Such beliefs, well founded and firmly held, are the stuff of high morale and combat effectiveness; they can also, if clung to too tenaciously at too high a level, point the way down the short, sure path to disaster.

The Japanese, after initial success, met with a debacle at the hands of superior Soviet forces under General Georgi K. Zhukov, which were brought up more quickly and in greater numbers than the Japanese had thought possible. The Japanese force, reinforced by an additional infantry division and backed by some fifteen air regiments, was driven back against the village of Nomonhan, whence the incident got its name. It was preserved there from rout or destruction when the advancing Red Army halted at the claimed Soviet border. Meanwhile, the Japanese Army Air Force (JAAF) had won the massive air battle that swirled overhead, decimating the Red Air Force, though with virtually no effect on the outcome of ground operations.

The initial Japanese incursion in force was in June. By late August, the Red Army's victorious tankers and mechanized troops had halted their pursuit. By mid-September, patrol activity had ceased, and the tubes of Zhukov's conquering artillery fell silent. The Red Air Force, its ranks thinned by the Great Purge of 1938 and the JAAF alike, licked its wounds and considered its professional deficiencies. Consummation of the Nazi-Soviet nonaggression pact of 23 August 1939 shifted international concerns and perceptions, a shift soon reinforced by the German invasion of Poland, and the brief, vicious war flickered from the screen of world consciousness.

WHAT lesson can be drawn from this far-off war by today's Western military professional? It would be difficult to imagine an area more remote from our concerns than the Khalkin Gol, lying halfway between Lake Baikal and the Yalu River. Similarly, it would be hard to imagine a military institutional outlook further removed from present Western sensibilities than that of the Japanese Army of the 1930s. In an important sense, though, this remoteness can be turned to advantage; identifying with neither Soviet nor Japanese, we can, at least potentially, be more objective in our analysis.

Dr. Edward J. Drea, of the U.S. Army Combat Studies Institute at Fort Leavenworth, Kansas, gives us the opportunity to take full advantage of this factor with his study of ground combat at

Nomonhan.† Combined with earlier study of the aerial component of the struggle,[1] Dr. Drea's work presents relevant data on morale, motivation, and leadership. It also sustains some powerful conclusions about the way in which appreciation of those factors can bear on military planning. Some disturbing hypotheses emerge.

Drea, a student of Japanese history and culture with a strong professional interest in tactical matters and the psychological aspects of combat, approaches his subject on three levels. First, he presents an effective, encapsulated overview of the Nomonhan incident, setting the stage for his analysis. Second, he effectively broadens our understanding of the dynamics of battle. Finally, he places his tactical analysis within the context of Japanese Army doctrine and carefully examines the lessons that were drawn from the Manchurian conflict. That he has chosen infantry combat as his subject should not deter those primarily interested in other aspects of armed conflict. Arguably, here in the crucible of small-unit dynamics under fire, the psychological issues common to all forms of combat are thrown into the sharpest relief. Looking closely at this most significant exposure of the Imperial Japanese Army to combat prior to its entry into the war against the United States, Drea seeks to deduce how the Japanese Army shaped its doctrine in light of hard-won experience, a matter of general concern to students of the art of war.

His chosen method is the intensive, in-depth study of a small unit in a manner reminiscent of the late S. L. A. Marshall. As the focal point of his effort, Drea selected a unit large enough to have played a significant and sustained operational role in the events in question yet small enough to be grasped and understood in human terms. Exploiting a previously unused repository of unit war diaries in the Imperial Japanese Army Archives, he chose the 2nd Battalion, 28th Infantry Regiment, a unit heavily engaged at Nomonhan as the flank guard of its parent division. Under intense pressure for an extended period, it was not totally the prisoner of forces beyond its control. Circumstances dictated that the 2/28th give its utmost but permitted it to do so in its own way and over a period of time sufficiently long for operational strengths and weaknesses to reveal themselves and for patterns of leadership and response to emerge. The results are fascinating.

The saga of the 2/28th carries lessons that merit our serious consideration, the more so as the cultural distance between subject and reader permits dispassionate reflection on causes and effects.

Drea's account of the battalion's near-destruction in two months of intense and nearly continuous combat against superior Soviet forces forms the core of the study. The impressively complete notes, Japanese and English bibliography, and appendixes are a major scholarly achievement in themselves. The sharp analysis of Japanese pre-World War II infantry doctrine (and the IJA was an infantry army) should be mandatory reading for those seriously interested in Japanese participation in World War II.

Drea's rationale for conducting his study at the battalion level is powerful; his reasons for choosing this particular battalion are convincing. The preliminary chapters, setting the historical stage, describing weaponry and organizational structures, and analyzing the Japanese theory and practice of leadership, Japanese standards of training, and Japanese ideas con-

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†**Edward J. Drea, *Nomonhan, Japanese-Soviet Tactical Combat, 1939*, Leavenworth Papers No. 2 (Fort Leavenworth, Kansas: Combat Studies Institute, 1981), xi + 114 pages; bibliography and 3 appendixes; available from the Combat Studies Institute, U.S. Army Command and General Staff College, Fort Leavenworth, Kansas 66027.**

cerning the strengths and weaknesses of the Soviet enemy, are well done. The battle narrative is gripping; it is difficult not to feel a powerful empathy for the 882 officers and men thrown into an attack against superior armored and mechanized forces, with utterly inadequate artillery and antitank support, fighting first for their objectives and then for survival, displaying remarkable loyalty, tenacity, and initiative in the process.

Lessons abound, both positive and negative: The troop performance extracted by selfless junior officers who led by example is awesome. Conversely, the heavy price paid for inadequate logistical planning, in terms of troop suffering and, ultimately, defeat, speaks with at least equal eloquence. Finally, and most important, the stereotyped characterization of the Soviet soldier held by the IJA proved almost unshakeable, even in the face of repeated and costly failures of attempts to capitalize on superior Japanese aggressiveness, initiative, and flexibility. Indeed, it seems that the very reality of defeat solidified institutional memory of those occasions when things went as they should have.

Japanese troops *were* better at night, and the essential irrelevance of their excellence at this very difficult form of combat to the outcome of Nomonhan was somehow missed. Missed, too, was the significance of the manifest Soviet superiority in combined arms operations at regimental level and above. As late as the Battle of Okinawa in the summer of 1945, midlevel Japanese commanders and staff officers were pleading with their superiors for permission to launch an all-out night attack, convinced that if they could thus engage the American forces, the tables would be turned. On this occasion, as on others in the Pacific, the request was granted; the result was a bloodbath.[2]

The inadequacy of Japanese antitank weaponry at Nomonhan (the 2nd Battalion, 28th Infantry Regiment's four 37-mm antitank guns quickly ran out of ammunition and accomplished little) was masked, in professional appreciation, by an understandable pride in the fortitude and skill that enabled men to attack and destroy tanks on an open, grassy plain with hand-thrown bottles of flaming gasoline. One of the most remarkable episodes in Drea's account involves the commander of the unit's machine-gun company. Faced with a Soviet tank penetration of the battalion perimeter and lacking anything better, he led a handful of men in a bayonet charge, samurai sword swinging—and the tanks withdrew in apparent astonishment.

This sort of thing can be addictive. The Japanese forces went to war against the United States in 1941 not only with the serious deficiencies in materiel apparent at Nomonhan but with doctrinal flaws that made them worse.

The JAAF also achieved a truly remarkable record of success against the Red Air Force above the Nomonhan Plateau. The hard-pressed Japanese fighter squadrons, outnumbered by as many as 5 to 1 by the end of the campaign, compiled an enviable kill ratio in the neighborhood of 2½ to 1. They did so by capitalizing on a high level of individual flying experience and the superb maneuverability of the lightly built Nakajima-type 97 fighter. But by late August, their resources were exhausted, both logistically and in terms of human endurance; they still held air superiority, but disaster was not far away.[3]

While the Japanese Army Air Force, apparently as a result of Manchurian experience, released a fighter specification that broke with tradition by emphasizing speed and firepower as opposed to pure maneuverability (it resulted in the Ki-44 Tojo, probably the best Japanese fighter of the midwar period), there is no real evidence that the JAAF ever really faced up to its logistical inadequacies and the inherent brittleness of near total operational dependence on a small cadre of highly experienced fighter pilots. The price was paid in New Guinea in 1943 and early 1944, when the JAAF proved hopelessly inadequate to the task of maintaining complex, high-performance aircraft (notably the Kawasaki Ki-61 Tony with its liquid-cooled engine) under primitive jungle conditions, and the USAAF swiftly chewed up its remaining expe-

rienced cadres in a blistering battle of attrition.

In both instances the lesson is clear: for the planner, justifiable pride in individual skill and valor not only is not enough, it can be positively dangerous. The kind of one-for-one superiority demonstrated so convincingly at Nomonhan by Japanese infantry soldiers and their officers and Japanese fighter pilots alike is, at least potentially, the most dangerous of narcotics.

For today's free-world military planner and commander, the implications are apparent: the operational character of combat changes as the scale of combat increases, often drastically so. Nomonhan is an excellent example; if one looks at company- and platoon-level actions (particularly if one does so selectively, as Japanese Army analysts no doubt did), one forms one picture; if one looks at combined arms operations at brigade level and above, one forms quite another.

We should be cautious, therefore, in drawing too many encouraging conclusions from the performance of Gurkhas, Royal Marine Commandos, and Scots Guards in the South Atlantic War, where operations, however skillfully conducted, never rose above brigade level. A similar cautionary note applies to our own sucesses on Grenada. Similarly, F-15 air-to-air kill ratios over Bekáa Valley, while a legitimate source of pride to builder and flyer alike,[4] tell us very little about what to expect from entire F-15 fighter wings fully committed in a broader conflict, flying from bases under air and ground attack, pressed to the limits of their logistical support.

WE LEAVE other similar examples to the reader's imagination. Drea and the Combat Studies Institute have done an excellent service in documenting an unusually clear example of the critical interrelationships among tactical excellence, selective perception, and doctrinal self-deception. That Drea has combined this with a culturally and psychologically sensitive and thoroughly documented analysis of the dynamics of small-unit performance under fire marks him as a scholar of exceptional promise from whom students of the art of war will hope to hear more.

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Notes

1. Eiichiro Sekigawa, "The Undeclared Air War," *Air Enthusiast*, in three installments, vol. 4, nos. 5, 6, and 7 (May, June, and July 1973).

2. James Belote and William Belote, *Typhoon of Steel, The Battle for Okinawa* (New York, 1970), p. 219.

3. Sekigawa, pp. 28-29.

4. For example, the first two sentences in Jess Gorkin, "What We've Learned from the Israeli Air Force," *Parade* (October 16, 1983), pp. 50-53: "Who Are the World's Best Fighter Pilots? Many military experts will tell you it's a toss-up between the American and Israeli combat airmen." Nowhere in this popularized (and therefore surely officially sanctioned) treatment in the Sunday newspaper magazine supplement are air operations above individual aircraft and element level—the United States and Israeli forte—even mentioned.

POTPOURRI

Kronstadt 1917-1921: The Fate of a Soviet Democracy by Israel Getzler. New York: Cambridge University Press, 1983, 296 pages, $44.50.

Perhaps the most decisive event of the year 1917 was the February (March, New Style) Revolution in Russia, for it was in February that the tsarist autocracy was overthrown. This event, in turn, set the stage for what is called the October Revolution, the assumption of power by the Bolsheviks. In February and again in October, political organs flashed the slogan: "All Power to the Soviets." And because of the events of October and the ensuing Bolshevik consolidation of power, we have come to associate the word *soviet* with the Communist Party of the Soviet Union. Yet things were not always that way. *Kronstadt 1917-1921* puts the word *soviet* back into its original revolutionary context and chronicles the bastardization of the soviets into rubber stamps of the Communist Party.

Kronstadt, a naval fortress and base in the Gulf of Finland, played a pivotal role in the Russian Revolutions of 1917. It was at the forefront of the February Revolution as its sailors led soldiers and workers to a speedy and relatively bloodless victory over their former masters. The Kronstadters took the slogan "All Power to the Soviets" to heart and established a pluralistic council in which several parties participated. The council (a "soviet" in Russian) and public meetings in Anchor Square became the focal points of what may have been the most enlightened democracy Russia has ever known. Distrustful of attempts by the provisional government in Petrograd to consolidate power, the Kronstadters jealously guarded their autonomy. In July—and again in October—Kronstadt's forces (neatly co-opted by the Bolsheviks) marched on Petrograd in crusades they thought would transform all of Russia into a Kronstadt-model democracy of soviets. Thus they became the shock troops behind the Bolshevik rise to power. But the honeymoon was relatively short-lived, for, by 1921, Kronstadt became disillusioned with bolshevism.

Kronstadt's "problem" was its belief in democracy and the slogan "All Power to the Soviets." Kronstadt began to recognize "democratic-centralism" and "the dictatorship of the proletariat" as euphemisms for the dictatorship of the Bolshevik Party, and this put Kronstadt and the Communist Party squarely and irrevocably at odds. The tsarist autocracy had been replaced by a party "commissarocracy"; the slogan "All Power to the Soviets" by the slogan "There can be no soviet power without the Communist Party." Kronstadt broke with the central government on 1 March 1921. Blockaded, naïvely clinging to the hope that truth would triumph, and adamantly refusing White Russian assistance, the Kronstadters fought under the slogan: "All Power to Soviets and Not to Parties." Kronstadt held out until 17-18 March, and then the Kronstadt experiment with soviet democracy quietly ended.

Israel Getzler's treatment of the Kronstadt affair is the best objective description available of a relatively little known but very important chapter in Soviet history. The work is heavily footnoted—perhaps *too* heavily, since many of Getzler's statements could be accepted standing alone—from almost exclusively primary source materials. His descriptions of persons and events are vivid and relevant to understanding the significance of the Kronstadt affair. In short, *Kronstadt 1917-1921* is interesting, readable, and well researched. At the same time, these very strengths lead to two criticisms.

Getzler's stated purpose was to concentrate on the "golden age" of soviet power and democracy in Kronstadt from March 1917 through July 1918. This he did very well, but his book suffers from an identity crisis in that the title and a significant portion of the text deal with the last two years of Kronstadt's experiment as well. Unfortunately, Getzler tells just enough of that story to whet one's appetite. Thus the last portion of the book—the third Kronstadt revolution, the climax of the whole affair—contrasts poorly with the highly detailed descriptions of Kronstadt's first year. Getzler's rationale is that others have covered this period. Nevertheless, the closing portions of the work become almost anticlimactic, detracting from the overall impact of the book. What we need is *one* good book to tell the *whole* Kronstadt story. Getzler held out that promise but fell short.

The other criticism, the cost of the book, is beyond Getzler's control. With his style and attention to detail, Getzler has created a book that could appeal to a fairly wide audience. Yet the book's cost will significantly reduce that audience. A large number of nonspecialists would enjoy and profit from reading *Kronstadt,* but one cannot suggest in good conscience that they buy a copy. That is unfortunate because *Kronstadt 1917-1921* is very well done.

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A History of Cambodia by David P. Chandler. Boulder, Colorado: Westview Press, 1983, 237 pages, $25.00.

Once upon a time far far away, a pastoral little kingdom basked in peace and plenty. Nothing much happened for 2000 years. Then, communists from across the mountains and bombers from beyond the seas wrecked the kingdom's tranquillity. It did not live happily ever after.

Cambodia was a different place. Professor David Chandler's short but incisive history, the first scholarly survey of Kampuchea's past published in any Western language since Adhémard Leclère's *Histoire du Cambodge* (1914), describes the travail of a conservative people regularly racked by revolution. In place of coherence and continuity, Kampuchea's turbulent memories offer only a confusion of competing past.

Han Chinese chroniclers first noticed Southeast Asia's Mon-Khmer principalities just as ideas leaking from India

Indianized their peoples. Jayavarman II (enthroned 802) transformed the clutter of Khmer states into a mighty Hindu empire, one which overspread and subdued much of the peninsula. Jayavarman VII (enthroned 1181) recreated the Angkorean empire as a Buddhist realm. As Buddhism's distrust of all worldly pretension eroded Angkor's power, Thai-Lao peoples compressed and punctured Kambujadesa's collapsing frontiers. From the midfifteenth century, when the Siamese sacked Angkor, until the 1860s, when French protectors replanted the kingdom's mobile monarchy at Phnom Penh, Kambujadesa imploded. Only the advent of the French prevented Chakkri Siam and Nguyen Vietnam from dismembering Kampuchea's corpse. Through the next eight decades the Third French Republic's *mission civilisatrice* did, however, gut Cambodge's soul. Japanese co-prosperity terminated France's Indochinese imperium, but it was not until the mid-1950s that the Fourth Republic quit trying to reconquer what France had already lost. Cambodia emerged from a 400-year nightmare bitter, exhausted, vulnerable, and xenophobic. America's brief Indochinese adventure twinkled quickly by, prolonging Indochina's agonies just long enough to intensify Cambodia's paranoia and revivify Vietnam's ferocious irredentism. In 1975 Kampuchea went mad.

Chandler's crisp but critical text weaves together the best current scholarship to fabricate an enlightened understanding of, and an empathy for, Kampuchea's desperation. His treatment of the country's medieval dark age is particularly illuminating: given the paucity of sources through which a historian can plumb the centuries following Angkor's fall, Chandler's synthesis must be considered definitive. The only chapter to raise a skeptic's hackles is the last, a 20-page glimpse of Cambodia's most recent four decades. The period is not Chandler's specialty; some of the sources he cites for it provoke doubt. For example, the fact that in 1961, a Viet secretary-general of the Khmer communist movement published an article detailing how the Viet Minh exported and controlled Cambodia's communist *apparat* during the French War should cause one to question tendentious retroactive affirmations that Khmer communism was always Khmer in origin and character. Yet with or without the last chapter—which does have points to commend it—the book shows why Cambodia was cocked to go berserk. It is too bad that *A History of Cambodia* was not in print before the Cambodian quagmire tempted the United States to risk stepping in.

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With Shield and Sword: American Military Affairs, Colonial Times to the Present by Warren W. Hassler, Jr. Ames: Iowa State University Press, 462 pages, $29.50.

Professor Warren Hassler has set himself a commendable and ambitious task: to provide an integrated survey of American military affairs, including policy, operations, and analysis of the leadership of military men and politicians. The narrative sweeps along from King William's War (1689-97) to President Carter's military policy. It is at its best when dealing with operational matters, particularly those of the army. The analysis of American military leadership is generally favorable: President Wilson fares least well among the political leaders, General Henry Halleck among the military.

In a survey of almost three hundred years of American military affairs, there is bound to be dissatisfaction with material either included or excluded by the author. One is struck, for example, by the lack of attention given to America's most recent wars. The space allocated to a topic is not the only criterion for judging the ability with which it is handled, but often it is a reasonable one. Here, for example, more attention is given to the Spanish-American War than to the wars in Korea and Southeast Asia combined. The Southeast Asian war is covered in only three pages, totally inadequate in light of its length, intensity, and significance. Those interested in air power also will be disappointed. The strategic air campaign in Europe during World War II is allotted only one page of text. The Doolittle raid on Japan is given almost as much attention, and there is more discussion of Custer's Indian campaigns than of the entire World War II air war. Most of the maps are small and lacking in topographical detail. The index is incomplete. I noted that the following individuals mentioned in the text were not included in the index: Generals Hugh Scott, Carl Spaatz, Ira Eaker, Claire Chennault, and Earle Partridge. Controversial subjects are often ignored; for example, the army-navy controversy in the 1920s and 1930s over Pacific strategy. Similarly, the World War II issues of a Central Pacific versus a Southwest Pacific strategy and the oil-versus-transportation air strategy (preceding the invasion of Europe) are not raised.

Hassler does not set out to break new ground in this survey, but the text, together with the sources cited in the endnotes and bibliography, is a useful introduction to American military affairs.

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Taps for a Jim Crow Army: Letters from Black Soldiers in World War II edited by Phillip McGuire. Santa Barbara, California: ABC-Clio, 1983, 278 pages, $22.50.

Over the past ten years, historians have made tremendous gains in their coverage of the black military experience. There have been excellent general studies and specific monographs followed by collections of source documents. In *Taps for a Jim Crow Army*, Phillip McGuire continues this trend by bringing together letters that black soldiers and airmen wrote during World War II to the War Department, the black press, the President, the National Association for the Advancement of Colored People—almost anyone who would listen to their particular situation. What the letters describe is not very complimentary to the military because they detail the racial problems that blacks experienced as they served their nation during time of war. Discrimination was prevalent, and often that discrimination could be repressive, abusive, and humiliating. Professor McGuire places these letters into a well-thought-out structure with a fine introduction and conclusion.

Generally, letters of complaint or protest represent extreme cases and will emphasize the negative; and McGuire's collection certainly does. Yet primary sources are available, and there are ample secondary ones to demonstrate that the problems described did indeed exist. When writing the letters, the soldiers and airmen often started by proclaiming their loyalty to the United States. Then they stated, rather plaintively, that something had happened to them because white individuals or the "institution" was not willing to accept their color as equal: "I was given the old 'run-around' " (p. 9), "treat us like soldiers not animals" (p. 11), "we are being treated like dogs" (p. 84), and "we are practically imprisoned." (p. 118) Along with each comment was a list of specific grievances. One obvious question that arises is how many of the complaints also applied to white soldiers. Understandably, some did, but again there are other sources to prove that often blacks were mistreated simply because of their race. Unfortunately, Professor McGuire makes no attempt to evaluate the accuracy of the accusations, some of which appear to be exaggerated.

But there is another side of service by black soldiers during World War II that is missing from *Taps for a Jim Crow Army*. Mary Frances Berry and John W. Blassingame discuss their sources for *Long Memory: The Black Experience in America* and write that the "sources presented the Afro-American's history in its most concrete, most complex, and most human terms: pain, joy, love and hate." In other words, they consider a full spectrum of human emotions—the positive along with the negative. Professor McGuire presents only the pain and hate but not the joy and love. The segregated military life of World War II was not pleasant, and blacks who did not have problems tended not to write letters of complaint. Yet just as the documentary evidence supports McGuire's areas of concern, other evidence also reveals that there were bases and posts where good human relations did take place, where people did get along, and where leadership was responsive to the needs of the military personnel under them. Obviously, this side of military life does not appear in *Taps for a Jim Crow Army*.

The military has moved far since the World War II days, ably portrayed in Phillip McGuire's *Taps for a Jim Crow Army*, not only in terms of the better utilization of blacks and other minority personnel but also in understanding the total makeup of a human relations climate. Nevertheless, service personnel can read this book with profit, for it gives a clear idea of the pain and suffering caused by the thoughtless actions that strong command action and modern social action programs aim to eliminate.

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Strategic Nuclear Force Requirements and Issues by George J. Seiler. Maxwell AFB, Alabama: Air University Press, 1983, 176 pages, available through GPO.

This ambitious and ambitiously titled work is one of the first volumes sponsored by and carrying the imprint of the new Center for Aerospace Doctrine, Research, and Education (CADRE). In general, it is a very positive start by a clearly bright, perceptive young USAF captain, George J. Seiler. Captain Seiler has done a great deal of research on his subject, and his technical and methodological command of complex and arcane material is impressive.

Seiler divides his study into five "volumes" (which are really chapters). The first deals with the various methodologies by which comparisons of strategic forces are made, including static measures and dynamic comparisons based on various war-fighting and developmental scenarios. The chapter is thorough and exceedingly complex, to the point that only the truly dedicated will complete it with ease.

The second volume discusses the triad and is, in my judgment, the book's strongest chapter. In defending the continuing efficacy of a three-pronged strategic force, Seiler is quite persuasive, particularly when he compares a triadic structure with various monadic (one force element) and dyadic (two force) configurations on both effectiveness and cost bases. He makes a particularly interesting point in arguing for level and constant funding for all three triad legs as the best means to ensure that there is always an invulnerable dyadic force available as a deterrent.

The quality of the volume decreased somewhat in the last three volumes. The third chapter deals with modernizing the ICBM leg of the triad. The chapter is only ten pages long and covers its subject matter in a much more cursory manner than one had come to expect from previous chapters. The need for a hard-target-capable MX is taken as a virtual given, with objections dismissed in one paragraph about the "political scientists" who "write prolifically about the destabilization that would occur if the United States deployed a prompt hard target kill weapon such as the MX." (p. 91) As one who has written on the subject, I think the objections are more substantial and warrant more thorough refutation than is offered. Moreover, consigning survivability as only the fifth most important criterion for judging a new missile strikes me as debatable.

If volume three is too brief, volume four, on the need for the manned bomber, is too long (54 pages) for a book of this length. The analysis goes little beyond standard institutional justifications for the penetrating bomber, and a twenty-page history of postwar Air Force bombers detracts from its analytical focus. The final volume looks at "other strategic issues," including ballistic missile defense, arms control negotiations, and Robert S. McNamara's familiar "how much is enough?" In his fewer than ten total pages, Seiler clearly cannot and does not treat any of these topics in enough detail to shed much light.

As this overview attempts to show, Captain Seiler's study is somewhat uneven. The first half (volumes 1 and 2) is very good, and the defender of the triad will find some very useful material here. The second half, however, would have been improved by cutting down drastically on the manned bomber advocacy and redistributing that effort to the ICBM and other issues.

Dr. Donald M. Snow
University of Alabama, Tuscaloosa

Strategy for Defeat: The Luftwaffe 1933-1945 by Williamson Murray. Maxwell Air Force Base, Alabama: Air University Press, 1983, 365 pages, $9.50.

The air war during the Second World War was just as much a war of attrition as was the trench combat during World War I. German forces in both wars were worn down by constant pressure, their reserves used up, their industrial potential exhausted, and their morale diminished. In both wars they fought harder and longer than their resources warranted. The Luftwaffe did not turn out to be the definitive strategic weapon that the air theorists had expected; rather, it became one more important branch of the total armed forces of Germany, like the submarine fleet or the panzer divisions. These are the major themes of this important and thoughtful book. With many graphs and numerous statistics, Dr. Williamson Murray gives the clearest explanation of why the Luftwaffe was defeated. Forced to fight almost constantly from the spring of 1940 on, the Luftwaffe was never a match for its stronger enemies.

All the familiar reasons for the defeat of the Luftwaffe are cited: the low level of production, slowness in introducing more advanced equipment, the robbing of the Training and Transport Commands, the reduction of flying training, the bombing offensive mentality of the Germans, and the tactical misuse of the Luftwaffe. Yet again and again Murray hammers home his major premise that it was the attrition war that brought the Luftwaffe down. Fighting first on one, then two, and later three and four fronts, the Luftwaffe was never equal to its tasks. Murray attributes much of the blame for the Luftwaffe's failure on the flawed strategic concepts of the German military, political, and economic leaders, especially in the crucial time of 1940-41. Had they mobilized their resources including those of occupied Europe more carefully and had they had a better strategic concept of the type of war they were in, then possibly they could have won. Fortunately, they did not draw the proper conclusions from the events of 1939 and 1940, and largely because of their "overweening pride and arrogance after the early victories," the German leadership doomed the Luftwaffe and Germany to defeat.

There are few surprises and little sensationalism in this solidly crafted book. Murray is too careful a historian for that. He has deftly tapped the best and most recent works on the subject along with some very interesting new archival materials, especially on Ultra and the air war, and has woven them into a tightly organized, highly readable text. This does not mean that professional historians will not take exception to some of his views, but overall *Strategy for Defeat* is an important contribution to our understanding of the Second World War. Professional airmen will be fascinated by the interdependence of strategy, tactics, and technology and how baffling it can be. Another area Murray opens up that should be studied in greater detail is that of noncombat losses. A comparative study of the accident rates of Germany and the Western powers would clarify some of the generalizations that have been made based on training procedures. Murray also has some important observations about how the Luftwaffe kept men fighting against overwhelming odds. Excellent middle-level leadership and unit cohesion seem to be the answer. It is a lesson that may have escaped us in the recent past.

Dr. **Edward Homze**
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From Muskets to Missiles: Politics and Professionalism in the Chinese Army, 1945-1981 by Harlan W. Jencks. Boulder, Colorado: Westview Press, 1982, 322 pages, $25.00.

In spite of their roots in guerrilla and revolutionary protracted warfare, the Chinese armed forces have long sought to be "modern." But becoming modern involves far more than producing weapons and equipment based on advanced technology. For the Chinese People's Liberation Army (PLA), the technological, human, and managerial aspects of modernization resulted in a series of political disputes that have combined to leave the current defense establishment in a condition in which it can make only uneven responses to the demands of modern warfare. The crux of the problem has never been whether the PLA should be technologically modern. Rather, the problems faced by the Chinese armed forces have been intimately related to issues arising over the pace of modernization, the cost of modernization and the burden it places on the civil sector of the economy, and the professional military ethic within which this modernization would occur. Thus questions of ideology became enmeshed in disputes over resource allocation within a desperately poor country. Harlan Jencks has done a superb job of untangling the issues involved and tracing the twists and turns of the wide spectrum of conflicts that reflect the multifaceted problem of military modernization.

Jencks has done more than update our information on the role of the PLA in Chinese politics and its progress toward building a more modernized force structure. He anchors his study on the concept of "professionalism" as it was developed by Samuel P. Huntington and seeks to establish a comparative base for his work through an analysis of Soviet and Chinese responses to the task of modernizing their armed forces and professionalizing their officer corps within a Marxist-Leninist ideological prism. The responses have been different not only because of the particular historical circumstances that surround the origin of the two armed forces but also because the political leaderships of China and the U.S.S.R. had distinctly different views of the role of their armed forces in society and the political system. Different though the Chinese response was, the technological imperative and the demands it makes on leadership, doctrine, strategy, tactics, and the management of a complex force structure created a continuing pressure from within the defense establishment for a professional officer corps: "Not a 'pure' professionalism to be sure, but one closer to Clausewitz than Mao Tse-tung." (p. 30)

Even though Jencks has taken the analysis of the Chinese armed forces a major step forward by casting them in a comparative framework, he has performed yet another valuable service to the reader by devoting a chapter to an examination of "Maoism." For those unfamiliar with the manner in which Mao's extensive writings are used within Chinese policy debates and to condemn defeated adversaries, the polemics of the debates and charges are confusing at best. The chapter presents an analysis of Maoism with particular emphasis on the role it has played in the debates over defense modernization, the role of the armed forces in society, the development of doctrine and strategy, and the way in which Mao's past views have been distorted to serve political ends.

Harlan Jencks has written a book about the Chinese military establishment that deserves to be read by anyone with a serious interest in China or the complex issues involved in the modernization of armed forces. No doubt his own background as a professional soldier was of major importance in providing him with the insights that make this work so useful.

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The Non-Nuclear Defense of Cities: The High Frontier Space-based Defense against ICBM Attack by General Daniel O. Graham. Cambridge, Massachusetts: Abt Associates, 1983, $25.00.

Lieutenant General Daniel Graham, USA (Ret), has never had the reputation of being one to run from controversy. Indeed, he has often been the center of it. Back in the early and mid-1970s, when it was fashionable to view the Soviet Union through the rose-colored glasses of détente, Graham (then Director of the Defense Intelligence Agency) was one of the very brave but few who tried to shake the U.S. policy establishment into a more realistic appraisal of the Soviet Union and its arms program; former USAF Major General George Keegan was another. Later, in an *Air Force* magazine article (August 1977), Graham—by then retired from the Army—decried the eclipse of U.S. strategic thought. He charged that there had been no formulation of basic U.S. national strategy since the Truman years. Since that time, and especially with the McNamara domination of defense policies, military strategists have gradually been replaced by program managers, action officers, systems analysts, and cost-effectiveness accounting techniques which, according to Graham, brought strategic thought to a dead end.

As if to answer his own criticism, General Graham now proposes in this book a change in our national strategy which will rid us of the highly uncertain mutual assured destruction (MAD) strategy and replace it with "Assured Survival." His "bold approach" argues for a "technological end run" around the seemingly unnegotiable Soviet arms buildup by shifting the competition to an arena in which the United States can exceed and dominate—the operational theater of space. Using off-the-shelf technology, Graham claims that the United States can, within five to six years, deploy ground-based and space-based systems that will destroy any confidence the Soviets might have in a first strike against our deterrent forces. Within another ten years, a second-generation space defense system and other measures could effectively challenge a significant percentage of the Soviet ballistic missile threat. Effective civil defense is urged as another critical layer in Graham's strategic defense strategy.

To establish the necessity for this new approach, Graham pleads with the reader not to have any illusions about current or future Soviet militarization of space. He also discusses his "High Frontier" system survivability, treaty ramifications, economic impact on U.S. industry, and alliance considerations. The opportunity is there, says Graham; all we need is the national commitment to seize the extraterrestrial "high ground" and be as "bold and resourceful as our forefathers."

General Graham's vision and enthusiasm apparently had the desired effect on at least one key policymaker. On 23 March 1983, President Reagan announced that he was "directing a comprehensive and intensive effort" to counter the Soviet missile threat by "proceeding boldly" with new technologies that can reduce the Soviet incentive for attack.

Far be it from me to question our Commander in Chief, but General Graham's book is fair game. Despite its appeal and foresight, it simply is not the cogent and well-written clarion call that one expects. True, there are enough new concepts and proposals to keep scientists, strategists, and policymakers busy for decades. Unfortunately, the book reads like it was put together by a committee. How else can one explain the numerous redundancies? Whether intended or not, the curious (and unnecessary) format more resembles that of a military operations plan than a book (complete with "Annexes" for several chapters, parts A, B, and C for another, and appendixes at the end). The book carries a 1983 copyright, yet it does not mention some of the key changes in U.S. space policies that occurred as recently as 1982 (such as the establishment of Space Command). Even the friendly and semi-convinced reader should find the book full of assertions, overstatements, and troubling simplicities. For instance, Graham dismisses the "Swarmjet" point defense system designed to protect our missile silos against incoming ICBMs as merely "dynamic hardening," not an ABM weapon subject to treaty limitations. There is also too little discussion of Soviet reaction to space weapons orbiting over their sovereign territory (which raises the interesting question as to whether territorial sovereignty extends infinitely into space), the fact that his new strategy will not defend against bombers and cruise missiles, and the instability that is bound to occur as the United States embarks to even step one of "High Frontier," which is the "dynamic hardening" of our ICBM silos.

Despite the obvious limitations and occasional twisted logic, General Graham's arguments have accomplished a rare and enviable feat: they have focused national attention on a problem and suggested a means to solve it. The President himself has taken notice and committed his administration to the serious pursuit of a new national strategy based on strategic defense (unfairly labeled as his "Star Wars" plan). In the process, the President has also opened a national debate which, if it can rise above most of the inevitable Democrat versus Republican polemics, promises to be a healthy, introspective analysis of our national (not just military) strategy—its weaknesses, strengths, and future parameters. General Graham's bold new approach does not promise a foolproof defense of the country, but it does propose a strategy that perhaps—just perhaps—can move us away from the depressing and ever-expanding offensive arsenal of MAD and toward a "defense that defends." General Graham has been right too many times in the past for us not to believe that he has something to say and is on the right track once again.

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Air Superiority in World War II and Korea, USAF Warrior Studies, by Richard H. Kohn and Joseph P. Harahan, general editors. Washington: Office of Air Force History, United States Air Force, 1983, 116 pages, $4.75.

This oral history interview with General James Ferguson, General Robert M. Lee, General William Momyer, and Lieutenant General Elwood R. Quesada focuses on air superiority in the context of the development of U.S. air power. An excellent introductory chapter sets the stage and includes the participants' biographical sketches. Discussion commences with the pre-World War II era and provides first-person accounts of the exciting ideas that eventually became doctrine for our modern air force. The first-person descriptions of such events as the 1933 March Field maneuvers and the 1936 Muroc Lake maneuvers and their doctrinal extrapolations to the great air campaigns of World War II are interesting and instructive. And World War II literally comes alive with the participants' personal experiences and their observations of other great leaders. Most striking is their ready admission that necessity and experience sparked an evolution that yielded approved doctrine. They went with what worked, and anything else was superfluous and irrelevant.

Doctrinal battles associated with an independent Air Force after the war produced some lively discussions among the participants, but those talks pale in comparison to their treatment of Korea and Vietnam. Although Vietnam was not on the agenda, its discussion was inevitable. Their analysis of recent conflicts revalidated doctrinal truths, and more World War II examples reinforced the case.

The dialogue among the four participants is as valuable as their solo commentaries. Although interviewing a foursome may have induced some mutual restraint, it certainly broadened the scope and enlivened the discussions. Any difficulty in following the dialogue should be ascribed to readers' deficiencies in detailed historical knowledge rather than to omissions by the editors or the four generals. The Office of Air Force History has produced an interesting and enlightening work that adds flavor and substance to a subject that is often discussed and less frequently understood.

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Brothers: Black Soldiers in the Nam by Stanley Goff and Robert Sanders with Clark Smith. Novato, California: Presidio Press, 1982, 224 pages, $14.95.

This is a highly instructive piece of oral history, in spite of the title and a silly, shrill foreword by Clark Smith, who did the interviewing and, presumably, the editing of the text. We learn, in what purports to be the tape-recorded reminiscences of two black privates, what it was like to have served in Vietnam in the Army, just after the 1968 Tet offensive. Stanley Goff was a genuine war hero, receiving the Distinguished Service Cross; Robert Sanders, in Air Cavalry, got the Air Medal for some twenty-five combat assaults. Those who command black troops or who are interested in the war from the perspective of those far down the line will be particularly interested in what these representative blacks have to say about training, leadership, and rumors.

The foreword rings the charges on white racism and black political consciousness-raising, though Goff and Sanders have little to say about either subject as such. Smith makes misleading or incorrect assertions: white America put blacks in the field to get them killed; for the entire war "at least half" of all infantrymen in Vietnam were black; blacks in infantry units who "walked point" or carried the M-60 machine guns were chosen primarily to increase black casualties. We are told that "American tactics called for use of infantrymen as decoys." No wonder a blurb quotes Ishmael Reed as saying the book "made me so mad I had to go out and take a walk."

Those who stay seated and read what happened to Goff and Sanders will be impressed with how effectively the Army trained its recruits. Goff and Sanders admired black and white officers who looked tough and stayed in superb physical condition. Spit-and-polish played a significant role. The use of black sergeants just back from Vietnam was the right way to instruct black recruits (a far cry from the use of white Southerners to train black recruits during World War II.) Sanders in particular felt a sense of group identity in Vietnam which he had never experienced while growing up and seems not to have experienced since. "We were close," he declares, "without being 'funny'. I mean like gays. We were so close it was unreal." (p. 60)

Goff performed heroically on 25 August 1968, killing because he had been trained that way, not cracking in a moment of extreme danger, and using his M-60 with devastating results. The remainder of his tour was spent playing the bugle at a base far to the rear. Returning to the United States, he was assigned to play football. He is appreciative of how hard white officers worked to make sure he received the Distinguished Service Cross and not some lesser medal. Sanders tells of rumors at the Fort Lewis induction center. "Word was going around," he states, "that blacks were being drafted for genocidal purposes. Just to get rid of us—to eliminate the black male. And we believed it." (p. 11)

Oral history is never, in printed form, just as one speaks. Information about a topic may come up in a variety of places, and needs to be combined; and who wants to read distracting "uhs" or slips-of-the-tongue? But this account is so extensively corrected that often we have no sense of how Goff and Sanders actually speak. (See Susan Allen's "Resisting the Editorial Ego: Editing Oral History" in the 1982 *Oral History Review.*) The text includes editorial interpolations by Smith, though no footnote admits as much. "Of course, a common word then was 'gook'" is but one example. (p. 22) The man who says "I did excellent in music" would not say "we were expendable." It is also too bad that Smith chopped up the stories of two friends with such dissimilar careers. We get a chapter on Goff, then a chapter on Sanders.

In spite of such complaints, I believe the reminiscences of Goff and Sanders to be essentially correct. Their lack of reflection on the meaning of the war, their service experience, and even their blackness reminds us that the war is not to be comprehended through the creative intuition of the novelist or journalist. It should also be seen through the less artistic, less profound, but nevertheless terribly real and true

experiences of such soldiers as Goff and Sanders. Their fuller accounts compare favorably with the 31 oral histories in Al Santoli, *Everything We Had* (1981).

Dr. David Culbert
Louisiana State University, Baton Rouge

The Kamikazes by Edwin P. Hoyt. New York: Arbor House, 1983, 333 pages, $16.50.

This is an interesting, well-written book about one of the most fascinating aspects of World War II: the use of suicide as an accepted military tactic. Self-sacrifice in military history is not uncommon. Military men have frequently faced odds that make their continued resistance seem like suicide. On the other hand, the deliberate use of soldiers who have been trained for suicide missions as a military tactic is not common at all. What would drive a military establishment to use such tactics? Why would a culture allow it to happen? Why would men carry out such missions?

Edwin Hoyt attempts to answer these questions, and the answers are the essence of the book. To understand why the Japanese turned to suicide tactics, the author explains some of the influences of the Japanese culture: the sense of duty to the society, the long tradition of success in war, and the absence of foreign occupation. The greater part of *The Kamikazes*, however, is concerned with pilot attrition. (The Japanese never had any problem with aircraft availability. Even during the latter months of the war, aircraft production was about 2000 per month.) The skilled pilots had all been lost by 1944, and the Japanese drastically reduced the time allocated for pilot training to make up for the losses. By mid-1944, they were caught in a vicious circle: they could produce pilots faster by cutting training time, and the Americans could shoot the pilots down faster because they were not well trained. Confronted with what seemed to be unlimited American resources, the Japanese concluded that the only solution to their problem was the suicide tactic. After all, a pilot did not need a great deal of skill to make a single flight into the deck of an aircraft carrier. How did the kamikaze pilots feel about being a suicide bomb? Many volunteered, and those who did not put aside their reservations and did their job. Hoyt does a good job of portraying the final thoughts and actions of the kamikazes, treating the subject with care and dignity.

Were the results worth the sacrifice? Obviously, they did not affect the outcome of the war. Nor did the suicide missions demoralize the American fleet and bomber crews to the point where they could no longer perform the mission—a tribute to the American crews, who had always been underrated by the Japanese. On the other hand, the losses to kamikaze attacks were heavy. During the battle for the Philippines, the Japanese lost 1198 suicide pilots. The American Navy reported that 16 ships had been sunk and 86 damaged—more than had been sunk or damaged in the whole Pacific up to that point. (pp. 151-52) The cost to Americans was not only in loss of ships and planes, but the suicide pilots undoubtedly encouraged the ground forces to fight even more fanatically. That the militaristic faction in Japan was willing to continue the war even after the dropping of the atomic bomb gives some insight into the reception an invading force would have had. Japan and her combatants were fortunate indeed that the emperor realized the futility of further struggle.

There are some interesting sidelights in the book: how Allied demands for unconditional surrender weakened any possible peace movement; philosophical differences between the Army and Navy concerning kamikaze policy; and popular support for the kamikazes. Overall, I found the book interesting and informative.

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Purdue University, Detachment 220, AFROTC
Indiana

AWARD

The Air University Review Awards Committee has selected "American Strategic Nuclear Modernization and the Soviet Succession Struggle," by Dr. Jonathan R. Adelman, as the outstanding article in the November-December 1983 issue of the *Review*.

the contributors

General Charles A. Gabriel (USMA; M.S., George Washington University) is Chief of Staff of the U.S. Air Force. As chief, he serves as the senior uniformed Air Force officer responsible for the organization, training, and equipage of a combined active duty, Guard, Reserve, and civilian force of nearly one million people serving at approximately 3000 locations in the United States and overseas. As a member of the Joint Chiefs of Staff, he and the other service chiefs function as the principal military advisers to the President, Secretary of Defense, and National Security Council. He is a graduate of the Naval War College and the Industrial College of the Armed Forces. General Gabriel is a command pilot. He assumed his present duties in July 1982.

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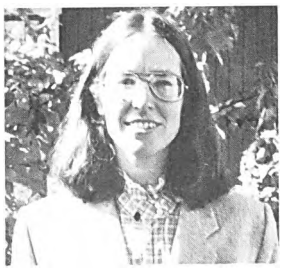

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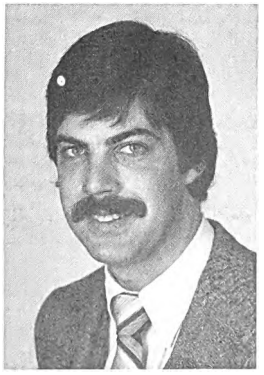

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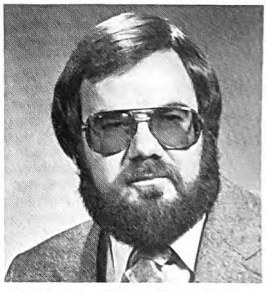

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Attention

The *Air University Review* is the professional journal of the United States Air Force and serves as an open forum for exploratory discussion. Its purpose is to present innovative thinking concerning Air Force doctrine, strategy, tactics, and related national defense matters. The *Review* should not be construed as representing policies of the Department of Defense, the Air Force, or Air University. Rather, the contents reflect the authors' ideas and do not necessarily bear official sanction. Thoughtful and informed contributions are always welcomed.

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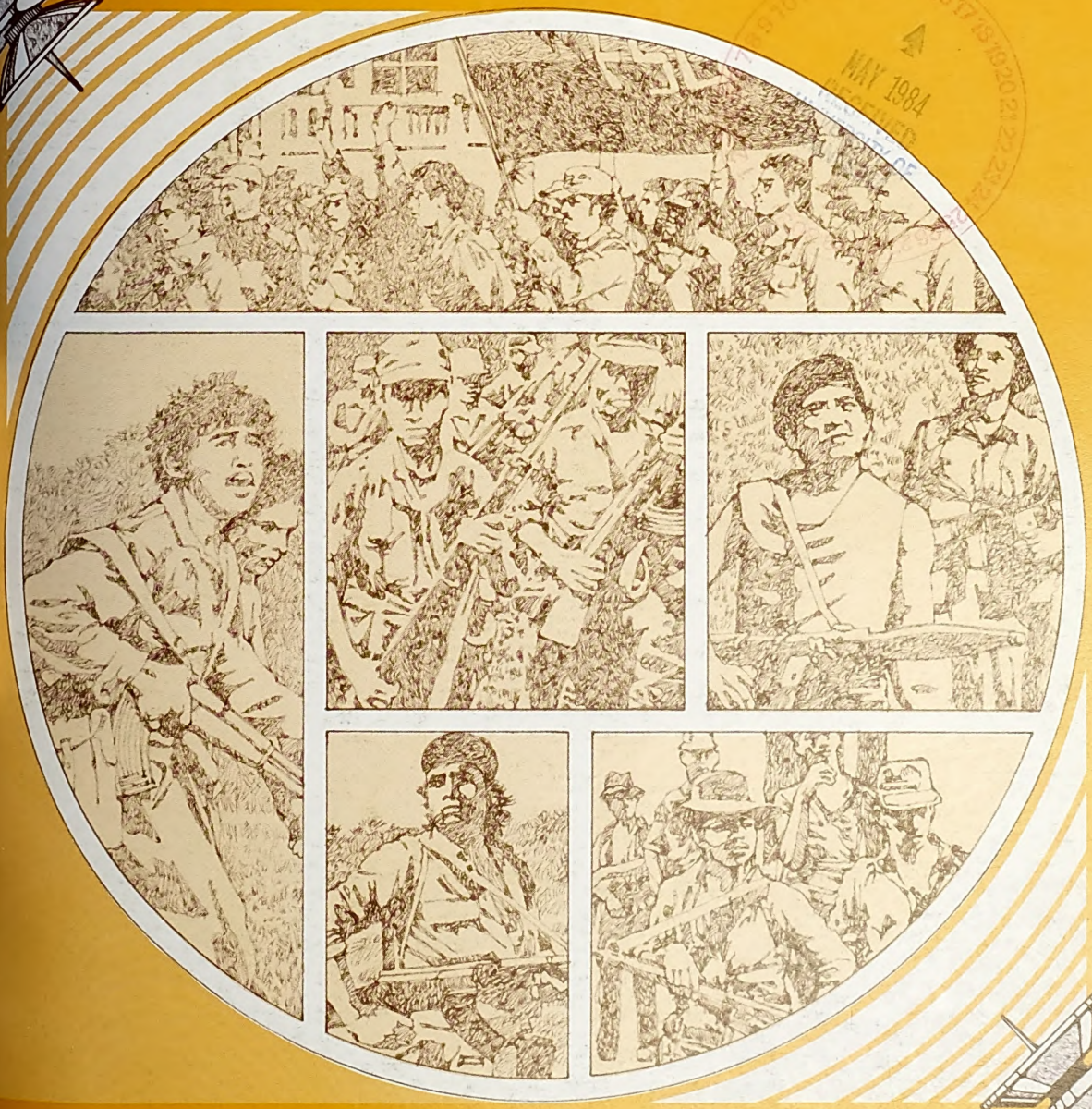

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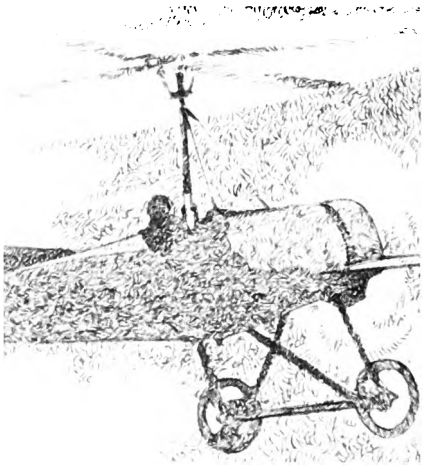

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China's defense policy. Has Chin abandoned people's war concept —*page 56*

Attention

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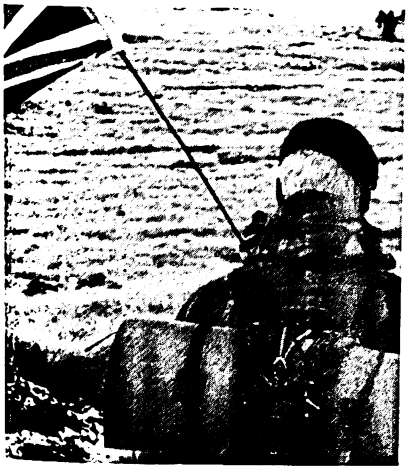

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EDITORIAL

MODERN WARFARE: PARADIGM CRISIS?

The Commission concludes that state-sponsored terrorism is an important part of the spectrum of warfare and that adequate response to this increasing threat requires an active national policy which seeks to deter attack or reduce its effectiveness.

Long Commission Report,
Part Nine, Section III.C

IN *The Structure of Scientific Revolutions,* Thomas S. Kuhn argued that the day-to-day developments of a science are governed largely by its paradigm, an intellectual framework that includes such things as the body of knowledge comprising the science and the rules governing the conduct of research. The paradigm in large measure shapes the scientist's world view and dictates the research questions he will ask, thus determining the direction in which the science will develop. At times in the development of a science, explanations of phenomena provided within the paradigm become esthetically displeasing to the practitioners. All the phenomena can still be explained within the paradigm; but, because the explanations are so complex, they are no longer convincing. At this point a paradigm crisis exists and the science is ready for a revolutionary change that will send it in a new (revolutionary) direction. Today, a similar situation seems to prevail with regard to the paradigm of warfare that is accepted in the Western world.

For some time now, Western states have tended to view war within a Clausewitzian framework in which violence is considered legitimate only when it occurs in the course of the relations between recognized, established states; war is an extension of the relations between states by violent means. Within this paradigm, it has been possible to differentiate clearly between war and peace, between combatants and noncombatants. War existed when two or more states "agreed" to fight by declaring war on one another; otherwise, nations were at peace. Combatants were those who served in the armed forces of a nation and were the only legitimate human targets in war.

As the limits of warfare expanded in the twentieth century, we began to speak of a spectrum of war with guerrilla war on one extreme and nuclear war on the other. Still, all of this could be made to fit within the confines of the Clausewitzian paradigm. Clausewitz had recognized that war at least tended toward absolute violence. Furthermore, he had commented on an example of guerrilla war which he said was "a broadening and intensification of the fermentation process known as war." (Book VI, Chapter 26)

But while these developments still fit within the established framework of war, things were becoming crowded and intellectually uncomfortable. For one thing, the advent of long-range bombing made it increasingly difficult to separate combatants from noncombatants as nations sought to use air power to win wars by destroying resources and undermining a people's support for a war effort.

With the appearance of nuclear weapons and intercontinental missile systems, this development seems to have reached some sort of illogical conclu-

sion where nuclear war would result in mutual annihilation of the adversaries and thus serve no rational end of policy. This was why Bernard Brodie declared in 1946 that armed forces can no longer have a rational reason for existence other than to deter war. Here seemed to be a basic break in the continuity between politics and war that is fundamental to the Clausewitzian view of war.

Nevertheless, in the real world of international relations, conventional wars are still fought in support of national policies. However, in the interest of controlling popular passions and for other reasons, nations have taken to fighting without declaring wars. Increasingly, states engage in political, economic, and technological conflicts that blur into warfare through a host of half-tones that obscure the traditionally sharp focus of war.

At the low end of the warfare spectrum, terrorism (state-sponsored or otherwise) poses an equally perplexing challenge to the Clausewitzian paradigm. Terrorists, however well trained, are not soldiers in the usual sense of the word; they present no military structure for conventional armed forces to attack. The target of terrorism can be anyone, regardless of nationality, political views, and affiliation with the military. Terrorists' goals can vary from securing publicity for their organization and gaining freedom for "political prisoners" to eliminating an effective leader and toppling an established government.

These and other developments seem to have increased the complexity of military phenomena to the point where they no longer fit into the procrustean bed of Western, Clausewitzian thinking. The time would seem ripe for the appearance of a new unifying synthesis of modern military thought, a new paradigm of war, that can accommodate twentieth-century trends in war.

A start in that direction may already be under way if Alexander Atkinson's *Social Order and the General Theory of Strategy* is any indication. This difficult but richly suggestive book argues that the Western approach to war involves an unspoken agreement to respect the basic social order of an enemy state while attacking the enemy's armed forces which are seen as his center of power. More modern forms of warfare, such as Mao's people's war, involve what Atkinson refers to as an armed invasion of the social order that has as its goal a basic reordering of the social structure. Since the social structure is the real base of a nation's power, this is a more fundamental approach to war that cuts the ground from under the Western approach. In Atkinson's view, a force using armed invasion of the social order would defeat an enemy that employs the Western approach to war.

Atkinson's ideas cast a new light on Brodie's 1946 observations concerning the use of armed forces. Perhaps Brodie was right, but for the wrong reasons. In today's state of "peaceful coexistence," armies may merely prevent or limit open warfare, while at the more fundamental level of the social order, nations compete and evolve in a gigantic, Darwinian-like struggle for survival. In such a competition between a wide-open, liberal Western society and a rigid, closed society, blue jeans and rock music might prove more powerful than tanks and airplanes, although tanks and airplanes are no less necessary.

In a science, a faulty paradigm can lead practitioners to overlook or misinterpret key phenomena. Similar oversights can occur in the case of a faulty military paradigm, as this passage from the Long Commission Report suggests: "From a terrorist perspective, the true genius of this attack [on the Marine barracks] is that the objective and means of attack were beyond the imagination of those responsible for Marine security." (Part Nine, Section I.C.)

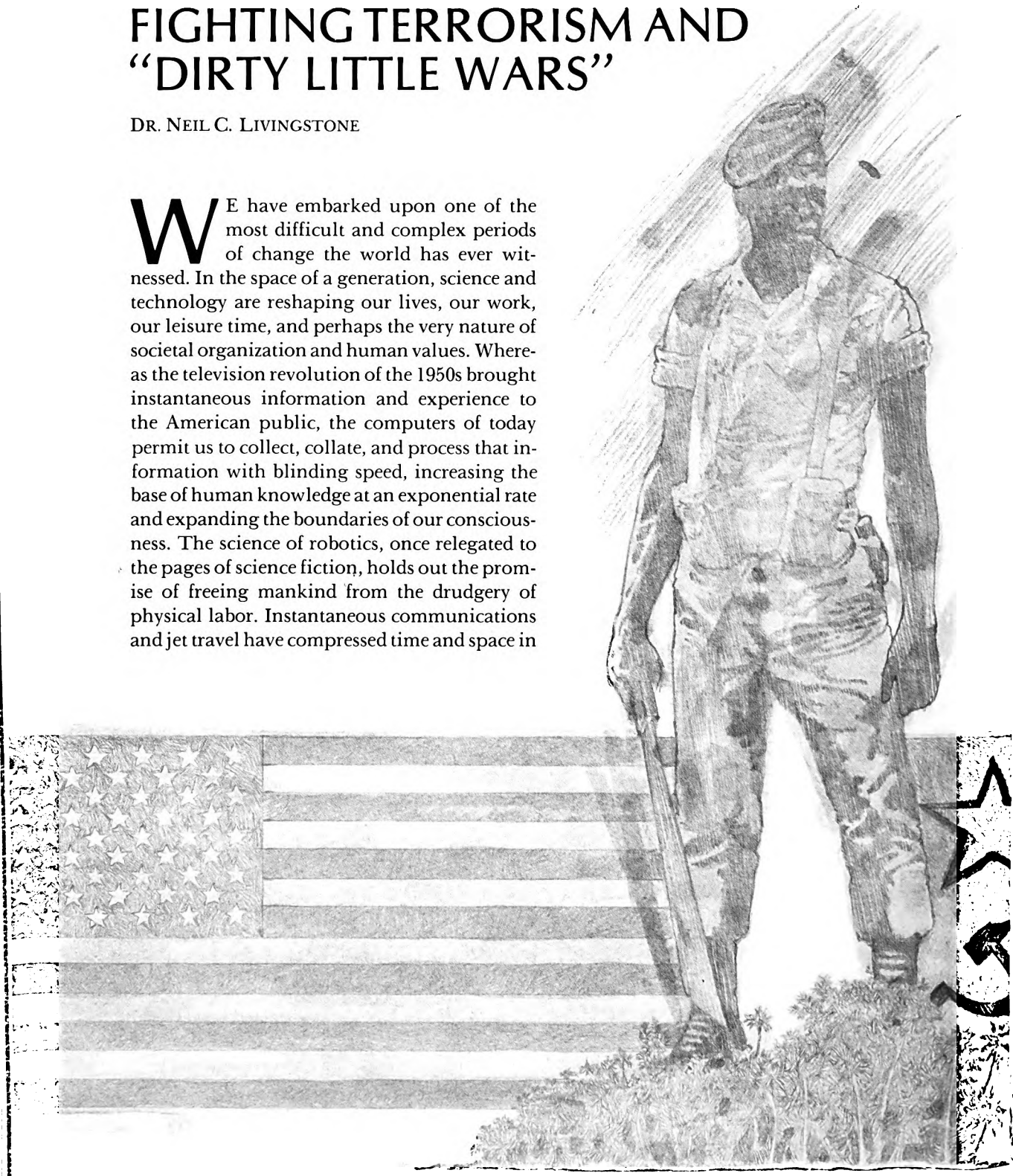
This issue of the *Review* examines some of the changes that are afoot in international conflict. We hope that it will contribute to the rethinking of the Western military paradigm.

D.R.B.

FIGHTING TERRORISM AND "DIRTY LITTLE WARS"

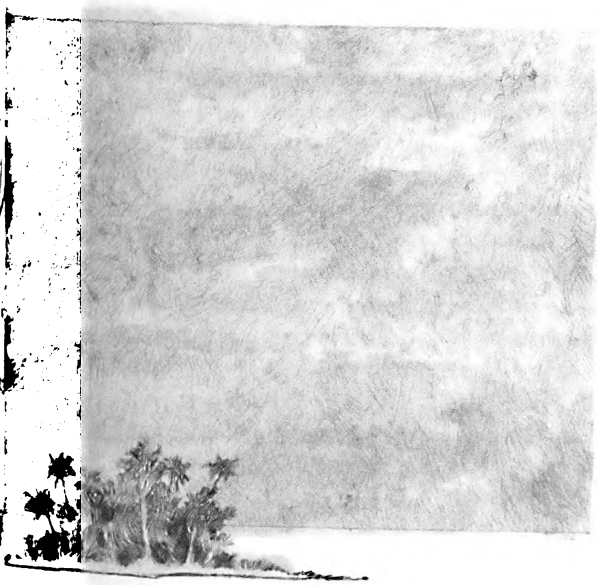
DR. NEIL C. LIVINGSTONE

WE have embarked upon one of the most difficult and complex periods of change the world has ever witnessed. In the space of a generation, science and technology are reshaping our lives, our work, our leisure time, and perhaps the very nature of societal organization and human values. Whereas the television revolution of the 1950s brought instantaneous information and experience to the American public, the computers of today permit us to collect, collate, and process that information with blinding speed, increasing the base of human knowledge at an exponential rate and expanding the boundaries of our consciousness. The science of robotics, once relegated to the pages of science fiction, holds out the promise of freeing mankind from the drudgery of physical labor. Instantaneous communications and jet travel have compressed time and space in



a way unimaginable only a few years ago. Satellites are probing the heavens, and for the first time in human history, man has burst free from the parochialism of this planet.

But while we marvel at the rapidity of this change and revel in the satisfaction of new discoveries, they also carry a price. The satellites spinning overhead look down on a troubled world overflowing with conflict: Lebanon, Afghanistan, El Salvador, Nicaragua, Chad, Iran-Iraq, Namibia, Northern Ireland, Guatemala, Peru, Ethiopia, Kampuchea, and Mozambique impose reality on our new vision of the future. "Political violence is spreading around the globe as seldom before," writes Flora Lewis.[1] Simply put, our ability to produce change has outrun our ability to control it. Change has been accompanied by dislocation and upheaval. Old tensions have been exacerbated and new resentments created. The bleak winds of conflict are blowing across the political landscape, fanned by a prolonged global recession, which has brought progress in much of the developing world to a standstill, and the inexorable pressures of population growth, which have consumed new wealth as rapidly as it has been created. In the opinion of Charles William Maynes, the Third World is being "demodernized." "Investment projects are lying idle, children are not being taught, disease is spreading, beggars are filling the streets from which they have been absent for decades, people are looting food shops, and the middle class is being destroyed by bankruptcy and high interest rates."[2] According to some estimates, excluding China, there are more than one-half billion unemployed or underemployed people in the developing world.



The Third World faces a debt crisis so severe that it could conceivably spawn dozens of revolutions and even topple the financial structure of the Western world. And if unfulfilled expectations and economic mismanagement have turned much of the developing world into a "hothouse of conflict" capable of spilling over and engulfing the industrial West, the West is plagued by its own sources of potential conflict. The changes being wrought by technology and the shift from industrial to information economies in many Western nations are producing disillusionment, alienation, and resentment among those left behind during the transformation. Urban nomads and squatters battle police in Berlin and other European cities; crime is turning whole sectors of some major cities into wastelands; and unemployed college graduates have sought to strike back at the societies they blame for their condition by joining terrorist groups in Germany, Japan, France, Italy, and other Western countries. Separatist movements in the United States (Puerto Rico), France, Yugoslavia, Spain, and the United Kingdom attempt to win converts by blaming economic and other inequities on the tyranny of the majority population and asserting that all will be better if only the minority controls its own destiny.

While the growth of new sources of conflict represents a serious and rising challenge to the West, the Soviet Union, beset by a ponderous and inefficient economy, sees in this discord an opportunity to redress the enormous economic disadvantage it labors under vis-à-vis the West. Indeed, in nearly every respect but its military technology, the Soviet Union is, for all practical

purposes, a developing country. Using terrorism and guerrilla insurgencies increasingly as a form of surrogate or proxy warfare, the Soviet Union and its allies have found a means of undermining the West, wearing it down, nibbling away at its peripheries, denying it the strategic materials and vital straits critical to its commerce. "The USSR," writes Ray S. Cline, "is still trying to see that the regions of the world where the international trading states get their resources continue to shrink as a result of the spread of Soviet control or influence."[3] The West is on the defensive and its response cannot be halfhearted or indecisive without running grave risks. Yet there is a serious and growing gulf between the wars this nation is prepared to fight and those it is most likely to fight during the coming decades (or those that the American public and its politicians are likely to sanction).

The prospective battlefield of the next twenty years is more likely to be an urban wilderness of concrete and buildings, the tarmac of an international airport, or the swamps, jungles, and deserts of the Third World than the valleys and sweeping alluvial plains of Europe. And the threat of nuclear war, while always there, is still remote. The most plausible conflict scenario for the future is that of a continuous succession of hostage crises, peacekeeping actions, rescue missions, and counterinsurgency efforts, or what some have called the "low frontier" of warfare. Other names for it include subnational conflict, low-intensity warfare, and low-level violence. Much of it will have more in common with a "rumble" in an alley than with the clash of two armies on a battlefield. As Richard Clutterbuck has observed, old-style wars between conventional armies like the Iran-Iraq War, the 1967 and 1973 Middle East wars, and the India-Pakistan conflict will still occur, but less frequently. In many respects, the recent Israeli invasion of Lebanon may be a harbinger of things to come. The Israelis fought two enemies in Lebanon—the PLO and the Syrians—and each required a different strategy and a different type of warfare. The result was a war without form or shape, of shifting fronts and tactics, an improvised war that was half counterinsurgency and half conventional.

In the predominantly rural nations of the developing world, governments will be challenged by guerrilla insurgencies, and in the more urbanized industrialized nations, by terrorism. The spectrum of conflict is expanding, and those who do not understand this fact do not understand their time. And just as our expansive technology has created new sources of potential conflict, so too has it made the complex, interdependent, industrialized nations of the West more vulnerable to the emerging new conflict patterns of the modern age.

Ironically, our technology has made conventional warfare, not to mention nuclear war, too costly, too impractical, too destructive. Should a conventional conflict break out in Europe between NATO and the Warsaw Pact nations, there is no assurance that it could be contained; the fear has always been that the side which is losing will ultimately feel compelled to escalate the conflict into a nuclear confrontation. Terrorism and guerrilla warfare, on the other hand, possess none of these disadvantages. They tend to be cheap modes of conflict, easily contained in most circumstances and requiring neither a high degree of sophistication nor extensive training. And should the patron nation decide that a particular conflict no longer serves its purposes, it can—with relative ease in most situations—simply cut its losses and get out.

In years past, terrorism and guerrilla warfare tended to be characteristic of the early stages of any conflict; the ability to engage in guerrilla warfare usually meant the abandonment of most acts of terrorism, just as the ability to field a conventional army generally witnessed the abandonment of guerrilla warfare. However, today terrorism and guerrilla warfare increasingly are becoming effective forms of combat themselves, and conflicts often never graduate to more conventional stages. During the Vietnam conflict, for example, the North Vietnamese, reacting to the growing capability of the ARVN to wage

conventional war, placed new emphasis on guerrilla warfare.[4] Certainly, for the purposes of the Soviet Union and its allies, terrorism and guerrilla warfare represent an effective, low-cost strategy for challenging the West and scoring gains in the Third World.

Terrorism, as we all know, does not involve traditional armies and tactics. The terrorist wears no standard uniform and often is organized without regard to military rank, although the terrorists' organizational structure may be quite rigid. The West Points and Sandhursts of terrorism are the streets of Beirut, the university campuses of Europe, and the training camps in Libya, the Soviet Union, South Yemen, the East bloc countries, and Cuba. The textbooks used by terrorists are Soviet and American field manuals, plus underground "bibles" like Carlos Marighella's "Minimanual of the Urban Guerrilla" and the Red Brigades handbook, which are xeroxed and reproduced in dozens of variations and passed from group to group.

Terrorism differs significantly from other forms of warfare in some notable respects. The most obvious difference is that, whereas traditional warfare is most often institutionalized violence, perpetrated by state upon state, and therefore has a badge of legitimacy attached, terrorism is nonstate violence, committed by nonstate actors making war on the state or upon other nonstate groups, and, as such, is usually regarded as illegitimate violence. Evidence of this distinction can be found in the U.S. legal system. U.S. statutes do not identify "terrorism" as either a crime or an act of war. Rather, acts of terrorism are punished under existing statutes dealing with murder, arson, bombings, extortion, air piracy, and so on. In recent years, Puerto Rican FALN and Black Liberation Army terrorists have proclaimed themselves as "political prisoners" and demanded to be treated as "prisoners of war," with international supervision of their trials and incarceration and special prisons, but to date their demands have fallen on deaf ears.

Secondly, according to Mao Tse-tung, the essence of war is to preserve oneself and annihilate the enemy. Terrorism, by contrast, is above all else a political act designed not necessarily to destroy the enemy but to demoralize him or to force him to overreact and thus create the conditions for a general revolt or revolution. Often the goal of terrorism is not to overthrow a particular state or political system, even if that were possible, but rather to intimidate the enemy, to make a political statement, or to call attention to a particular problem or cause. And unlike conventional warfare, where self-preservation is essential to success, the terrorist may achieve his purpose most effectively through his willingness to give up his own life for the cause, although the number of terrorists actually willing to undertake a suicide mission is still relatively small.

Another characteristic that sets terrorism apart from other forms of warfare is that traditional warfare is far more destructive than terrorism, consistent with the aim of the terrorist not necessarily to destroy but to communicate. Relatively few lives have been lost to terrorism in the twentieth century—only a few thousand during the last decade—whereas conventional warfare has claimed millions of victims during the same time frame. It is this lack of destructiveness and expense that accounts for some of the growth of terrorism. It is easier to mount a terrorist attack on an unsuspecting business or an unguarded aircraft than to engage in conventional warfare. The equipment of terrorism is very inexpensive compared to the hardware and materiel needed to engage in conventional warfare (or even guerrilla warfare). As Brian Jenkins has observed, terrorism is warfare "without territory, waged without armies as we know them. It is warfare that is not territorially limited; sporadic 'battles' may take place worldwide. It is warfare without neutrals, and with few or no civilian innocent bystanders."[5]

Guerrilla warfare, by contrast, generally attracts far less publicity than terrorism, largely because its battles are not waged in the media capitals of the West but in the countrysides of the

chiefly rural nations of the developing world, far from the prying eye of the television camera. And while guerrilla warfare certainly incorporates various elements of terrorism, it also embodies features of conventional warfare: most often its targets have military value, it is generally waged on a larger scale than terrorism, and many of its tactics have much in common with traditional concepts of warfare. Guerrilla warfare perhaps differs most from terrorism in the fact that guerrillas, to be at all successful, must have a reasonable level of support from the people, "the sea in which they swim." Terrorists, on the other hand, need not have any public support whatsoever: they can melt back into the population of a large city without anyone being the wiser.

A New Policy for the 1980s and 1990s

Neither our political nor our military establishments are properly attuned to these new realities of conflict. We have not responded to the changing spectrum of war as rapidly or as thoroughly as the gravity of the threat demands. Instead, the U.S. low-level or unconventional war capability has always been regarded as something like a stepchild within the defense structure, involving more improvisation than science. Our war-making capability is still designed primarily to fight general wars in Europe rather than to engage successfully in counterinsurgency and counterterrorism. As a result of this preoccupation with conventional warfare, the United States has enjoyed few military successes in the postwar period in the area of low-intensity or unconventional warfare. Past failures of U.S. hostage rescue attempts, in contrast to the successes enjoyed by Israel, Great Britain, and West Germany, are symptomatic of this deficiency. As Harvey J. McGeorge has noted:

> In the past four decades the United States has mounted several large-scale attempts to rescue hostages. During these attempts scores of American lives were lost and tens of millions of dollars worth of equipment expended. Yet not a single hostage was returned to friendly hands as a result of these rescue efforts.[6]

McGeorge reviews the failures of intelligence, organization, command decisions, and preparation during the Iran rescue attempt, the Son Tay raid, the *Mayaguez* incident, and the abortive Task Force Baum, which sought to liberate 1500 POWs in German-held territory near the end of the Second World War. All 1500 POWs who were freed, plus 293 members of the 294-man rescue unit, were killed or captured as they tried to reach Allied lines.[7] While information concerning the more recent Grenada rescue operation seems encouraging, it is doubtful that this episode marks the beginning of a new emphasis in U.S. defense policy.

This criticism of the U.S. special operations record is not to suggest that the military is entirely to blame for these failures or for the lack of U.S. success in Vietnam. Quite the contrary. Indeed, the real sources of the problem are probably both the U.S. political establishment, which defines the missions for our armed forces, and the American public, which is inherently fickle in its support and backing of anything less than a so-called popular war.

"After the disasters of the loss of Vietnam and the collapse of the Nixon presidency," writes Ray S. Cline, "the U.S. began to drift almost aimlessly in its strategic thinking."[8] Today we need to rethink our military and intelligence needs from the standpoint of the historic changes that are occurring in the nature and shape of contemporary conflict. The security of the United States and the rest of the Western world requires a restructuring of our war-making capability that will place new emphasis on our ability to fight a succession of limited wars and to project power into the Third World.

But before this shifting of emphasis can occur, there needs to be a change in the world view of U.S. policymakers and the American public, along with their recognition that what is at stake is nothing less than the survival of the

nation and our American way of life. To sustain our nation over time, we must exploit the vulnerabilities of those who would destroy it; and our doing so may require efforts to influence the internal events of other countries. However, without strong policy direction from Washington and requisite public support, based on a clear perception of the costs associated both with involvement and uninvolvement, it will be impossible for the United States to adapt successfully to the changing conflict environment.

Indeed, there is an inevitable political dimension to limited warfare, which shapes both the nature of the conflict and the response. The scale of a nation's response to any challenge is an inherently political decision, and a democracy like the United States ultimately requires the acquiescence, if not the approval, of the people.[9]

Yet the American people are confused by Central America and Lebanon. They are not sure why we are there and what we hope to accomplish by our involvement. Recent polls on American attitudes toward U.S. involvement in Central America found that while 64 percent of those polled felt that the situation in Central America is a threat to the security of the United States,[10] only 24 percent favored the introduction of more advisors and only 21 percent believed those advisors should be permitted to enter combat areas.[11] Such results demonstrate the confusion characterizing U.S. public perceptions where global events are concerned and are indicative of a loss of our national will to act even when our own security is threatened. This phenomenon of ambiguity is perhaps the most damaging legacy of Vietnam.

As Clausewitz observed, warfare is, in its most elemental sense, nothing but a trial of strength.[12] As a rule, conflicts will be won by the side with superior resources. Superior strategy and tactics will delay an inevitable conclusion, but only temporarily. However, the side possessing superior resources must be prepared to apply them from the onset of the conflict until victory has been secured.

Unfortunately, the post-World War II history of low-level conflicts reveals that in nearly every instance there was a prolonged, incremental buildup, followed by a long war of stalemate and attrition. Ultimately the side that was prepared to hold on the longest, that had the most clearly defined sense of purpose, prevailed. As evidence of this national purpose, one need only recall Ho Chi Minh's boast that they would fight ten years, twenty years, thirty years or more, whatever it took, to prevail in Vietnam. Today, by contrast, the American public and U.S. policymakers will not accept wars of attrition; they will tolerate only short wars, and then only if there are no heavy combat losses. Colonel Harry G. Summers, Jr., USA, has written of the "repugnance of the American people toward a war of attrition," noting that "all of America's previous wars were fought in the heat of passion." In his view, "Vietnam was fought in cold blood, and that was intolerable to the American people."[13]

There seems to be a lack of recognition in this country that police actions, peacekeeping missions, and counterinsurgency and counterterrorism operations are all part of the same long, continuous war, a war composed of many small, often nameless battles of varying duration in dozens of different venues against an unchanging enemy and its proxies and surrogates. Today the death of more than 250 Marines in Lebanon—while a tragedy—produces a firestorm of controversy and ultimately the withdrawal of all U.S. peacekeeping forces. Similarly, the introduction of 55 U.S. military advisors in El Salvador provokes a great outcry in the Congress and the media; yet there may be as many as 3000 Eastern bloc military advisors in Nicaragua, a fact that is largely ignored. The Soviet Union pours ten times as much military aid into Nicaragua and Cuba as the United States provides to all Latin America, yet it is our country and not the Soviet Union that is accused repeatedly of "propping up unpopular military regimes" in the region. In contrast, the French sent 500 "crack troops" labeled "advisors" to Chad and then moved them to the front and hardly elicited

a yawn. Within days, the force was greatly expanded and all pretense dropped that the men were advisors. In the political environment of the United States today, such an action would be virtually impossible.

The obvious question that must be asked is whether the United States is capable of fighting and winning limited wars and of engaging successfully in low-level military operations. The answer is clear. The United States will never win a war fought daily in the U.S. media or on the floor of Congress, where members attempt to micromanage conflicts and second-guess administrative policymakers rather than making overall, broad policy and leaving the implementation of that policy to the executive branch. The conflict in Southeast Asia serves as clear indication of the hazards associated with too much publicity, as does the current U.S. involvement in Central America and Lebanon. In some respects, the success of the U.S. intervention in Grenada may be attributable to the fact that the media were excluded until the operation was all but complete.

The "dirty little conflicts" of our time are not pretty, but they are critical to Western security, and if we abrogate our ability to engage in low-level conflict, we lose our capability to check Soviet expansion and maintain a world order compatible with our national interests and security.

Unlike Henry Kissinger, who has maintained that limited war admits of no purely military solutions but instead is part of a test of wills designed ultimately to forge a political outcome,[14] I hold that not only can limited wars and other low-level conflicts be won but that by winning such conflicts over time we can prevail in our strategic competition with the U.S.S.R. Indeed, the loss of one country to communism should serve as an impetus for us to take back another country. The main elements of such a policy are as follows:

- Support any force around the globe that is resisting the Soviet Union, its allies, and ideological fellow-travelers. We should provide training, arms, and materiel to resistance forces in such places as Afghanistan, Vietnam, Kampuchea, and Nicaragua; and we should design psychological operations to buttress that resistance. If such support is right and in our national interest, we should undertake the obligations and commitments openly and whenever feasible, avoiding the stigma attached to covert operations.
- The United States should come to the aid of governments resisting Soviet- or proxy-backed insurgents or terrorists. This support should take the form of economic, police, and military aid, including supplying training to counterinsurgency and counterterrorist forces, the introduction of U.S. military advisors, and—where feasible—the interdiction of arms and supplies to the hostile forces and the destruction of safe havens and external bases.
- In the words of Daniel Arnold, "covert support of coups and countercoups must be justified both pragmatically and morally as a tool of foreign policy."[15] In this connection, the United States should not be afraid to use its power to shape and configure a global order which is not hostile to U.S. security interests.

Within the framework of these policy elements, a number of specific observations and recommendations can be advanced with respect to intelligence, elite units, national policies, and allocation of defense resources for counterinsurgency.

intelligence

Good intelligence provides the first line of defense against terrorism and is perhaps the most critical tool in successful counterinsurgency operations. It was, after all, good intelligence that permitted authorities to apprehend the terrorists in both Rome and Kenya who were preparing to shoot down jetliners with Soviet-made heat-seeking missiles. The terrorist or guerrilla has the advantage of being able to choose the time and the place of his attack from an almost infinite universe of options, together

Insurrections have plagued developing countries since the Second World War. Curbing them and achieving political stability are great challenges for new nations and emerging democracies. Ultimately, guerrillas must be rejected by the people as well as defeated by the military in their respective countries. U.S. advisors are working in Honduras today to train Salvadoran troops for combat against the insurgents in El Salvador. Practice with M-16 rifles (above) and recoilless rifles (below) is an essential part of the training.

with the mode of attack; it is almost impossible for those on the defensive to secure every potential target, to anticipate every weapon and set of tactics, and to be prepared 24 hours a day for an attack that may never come. While static defense is critical to any counterinsurgency operation, those who try to protect every asset and every potential target are likely to spread their forces too thin, consistent with the old adage that "he who is everywhere is nowhere." Good intelligence will go a long way toward eliminating the inherent advantage possessed by terrorists and guerrillas.

Thus, the work going on to rebuild this nation's intelligence establishment after the trauma of Vietnam and congressional inquiries into the conduct of intelligence activities must be encouraged. The paramilitary capability of the Central Intelligence Agency must be restored. Congress must reform its oversight procedures to narrow the consultation requirements imposed on the intelligence establishment.

elite units

Elite military units have always provoked a fair amount of controversy. Some opponents argue that such units tend to be romanticized and are antithetical to democratic traditions and notions of a citizen army. Other grievances include the problem of controlling elite units, in view of the fact that the existence of elite units often circumvents the normal chain of command.[16] Objectors also point out, for example, that the Marine Corps has no elite units (although it could be argued that the Marine Corps is itself an elite unit) because such units have a tendency to siphon off the best men, to the detriment of the Marine Corps in general. Nevertheless, elite units are useful when it comes to fighting terrorism. Such units can undertake extremely hazardous missions that require a high degree of skill, training, and possibly even government disavowal. They also serve as laboratories for new weapons and tactics, a useful function in the constantly changing terrorist environment. But most importantly, they act as counterweights against the complacency that often overtakes many military organizations and produces paralysis when action is most needed. Indeed, the hallmark of successful counterterrorist and counterinsurgency operations is flexibility.

In this connection, more emphasis needs to be placed on developing and honing U.S. counterterrorist forces, such as those first deployed by the Delta team in Iran. The mission, however, of elite multipurpose Delta-type units needs to be narrowed and made more explicit. Today such units are supposed to carry out antiterrorist operations, such as rescuing hostages, and to

Rifles, mortars, and grenade launchers, like the M-79 being demonstrated below, are the standard weapons of U.S.-backed troops in Central America. Small arms generally are preferred as weapons, since heavy artillery and an overabundance of aerial firepower can be both indiscriminate and ineffective.

engage in conventional military operations including intervention in foreign conflicts, the protection of critical assets anywhere in the world, and rapid deployment to repel aggression. The sole function of such units, however, should be to combat terrorism, and to this end they should be trained and equipped far differently than more conventional forces.

The vast majority of U.S. military equipment is still designed for the rigors and requirements of conventional warfare and often must be modified for use in counterterrorist and counterinsurgency operations. "Fifty percent of all the equipment used in Vietnam by the Special Forces," observed one former Green Beret, "was civilian equipment." West Germany's GSG9 *(Grenzschutzgruppe 9)* uses the most advanced antiterrorist equipment in the world, including special communications and tracking equipment, lightweight state-of-the-art body armor, specially prepared Mercedes Benz and Porsche pursuit automobiles, custom-built French helicopters, and advanced weaponry, such as the MP5K submachine gun and the Mauser 66 sniper rifle. Attention to detail extends even to the unit's clothing and shoes, which are designed not to have any zippers, buttons, or other hard surfaces that might reveal a unit member's presence (crawling along the fuselage of a hostage aircraft, for example). The unit's computers contain the interior configurations of almost any aircraft that might be seized by terrorists, as well as blueprints of major buildings and other facilities that might come under attack. The unit trains on full-scale mockups of potential targets, and as many redundancies as possible are built into each operation. When the GSG9 retook a captured Lufthansa jetliner from terrorists at Mogadishu, Somalia, in 1977, *two* simultaneous distractions were used to gain a momentary advantage over the terrorists. Three British thunderflash grenades were set off near the plane, and a bonfire was lit behind a sand dune in the distance. It turned out that the bonfire was the superior tactic, since the thunderflash grenades generated too much smoke.

Fighting terrorism requires units characterized by leanness, mobility, and tactics that emphasize subtlety and surgical precision. Foreign language skills and cultural knowledge are needed so that antiterrorist units can operate undercover on foreign territory and design operations fully consistent with local habits, conditions, and dialects.

U.S. national policies

U.S. indecision in fighting terrorism, to some extent, results from concern that U.S. allies may find positive action offensive. War is the one activity where moderation is no virtue, yet many of our nation's leaders often seem more upset by abuses of human rights on the part of nations combating terrorist outbreaks than by the original terrorist outrages that precipitated the embattled government's reaction. I am not suggesting that the United States should prop up corrupt dictatorships, but I would argue for balance and objectivity in assessing conflict situations. Moreover, when the Congress, in 1975, curtailed U.S. training of foreign police forces, it set in motion a new wave of torture and human rights abuses. Any knowledgeable police or military official knows that torture is not an effective interrogation technique; more sophisticated methods exist today—methods not involving barbarity or defilement of human beings. But if foreign police and military units are denied knowledge of sophisticated techniques, inevitably they will resort to medieval cruelty and thus fuel the vicious cycle of human rights abuses.

The United States must help those confronting terrorist and insurgent assaults with proper training and equipment so as not to undermine popular support for legitimate governments. The 1983 Foreign Assistance Act contains general authority for the President to furnish "assistance to foreign countries in order to enhance the ability of their law enforcement personnel to deter terrorists and terrorist groups from engaging in international terrorist acts such as bombing, kidnapping, assassination,

hostage taking, and hijacking."[17] Provision is made in the program to ensure that the equipment and training are not used in ways detrimental to the advancement of human rights.

In keeping with this more enlightened attitude, it is time to correct such travesties as the refusal in early 1981 of an export license that would have permitted the shipment to Great Britain of twenty-five custom-made silencers for M-16s. In this case, "human rights advocates" at the Department of State demonstrated a profound ignorance of modern combat when they argued that such devices were solely assassination tools and would probably be "misused" by the British in Northern Ireland. As it turned out, when the Falklands crisis erupted, the British were compelled to use a pirated IRA silencer for their weapons, a wholly inferior product to the American-made silencer.

allocation of defense resources

By far the overwhelming share of the U.S. defense budget goes to sustain our nuclear deterrent and conventional war-making forces, despite the fact that low-intensity warfare is likely to dominate the future conflict landscape. A built-in bias exists within the military establishment and in the substructure of defense contractors against any substantial shift of resources away from traditional procurement patterns. Such a shift would disrupt established careers and institutions based on a mastery of traditional warfare strategy, tactics, and logistics. This reluctance flies in the face of recent studies indicating that "brush-fire wars" are depleting America's military strength and that low-intensity conflicts, running the gamut from psychological warfare to countering Soviet-backed insurgencies and engaging in hi-tech antiterrorist activities, "will constitute the greatest challenge to the Army."[18] Since low-intensity wars are likely to remain the chief wars of our time, the United States should allocate much more of its defense resources to developing a better capability in the area of counterinsurgency.

Central America: Observations and Suggestions

In Central America today, according to some reports, we are repeating many of the mistakes of Vietnam. I shall mention only a short litany of the deficiencies of our current policies and offer a few suggestions on how to correct them.

- We have far too few advisors, and they are rotated too often instead of staying put for the "long haul." Many of our advisors lack combat experience, and few speak Spanish well. Instead of captains five years out of West Point, senior NCOs and officers with Vietnam experience are needed.
- Many of the troops that we are supporting lack basic military training and equipment. We are constructing obstacle and confidence courses instead of offering instruction on patrol formations and tactics. Also, more emphasis should be placed on techniques to demoralize and destroy the enemy, such as sniping, raids, ambushes, and sabotage.
- Failure to carry the war to the enemy will result in another Vietnam. Even at the risk of widening the conflict, we must hit the enemy's sources of supply and sanctuaries. In Vietnam, only 60 tons of supplies a day were needed to sustain the guerrilla war in the south; if any significant part of those supplies could have been denied the enemy, his ability to wage war would have been severely undermined. The same is true in Central America.
- Incrementalism is a formula for disaster. Congress and an impatient American public are unlikely to support a long and drawn-out conflict. While it runs many risks, we should seek a "quick kill," escalating the conflict as rapidly as feasible.
- We should not attempt to "reform" the government of El Salvador at the same time that it is waging a war. Doing so runs the risk of depleting valuable resources and undercutting its natural constituency. The time for reform is prior to the outbreak of hostilities or after the situation has been stabilized.

MANY, both in this country and abroad, believe that the United States has lost what T. S. Eliot once called "the motive of action," which in the context of the modern world might be interpreted as the ability to perceive clearly our national interest and the will to take whatever steps are necessary to pursue it. Today, it is vital that the American public and our policymakers be educated about the realities of contemporary conflict and the need to fight little wars successfully in the hope that we can avoid big wars in the future. Only when all of us comprehend what is at stake will we as a nation be able to develop and maintain the clarity of vision and national consensus needed to underwrite a new policy that supports the application of force in low-level conflict situations. In this connection, we need to show the world that we can still win limited wars, and there is no better place to begin than in Central America.

Similarly, terrorists must be made to realize that they cannot strike at the United States and its citizens with impunity. While Soviet embassies and legations have escaped all but incidental violence in recent years, U.S. embassies have been attacked in dozens of countries, the most serious incidents involving the seizure of the U.S. embassy in Tehran, the sacking and burning of our embassies in Libya and Pakistan, and the bombing of the U.S. embassy in Beirut. It is time to adopt policies that ensure swift and sure retribution against those who attack our citizens and property. If it is our destiny as a nation not to be loved, then surely it behooves us to be feared, at least by the purveyors of violence and chaos.

Washington, D.C.

Notes

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11. Gallup Organization poll, reprinted in *National Journal*, 10 September 1983, p. 1862.
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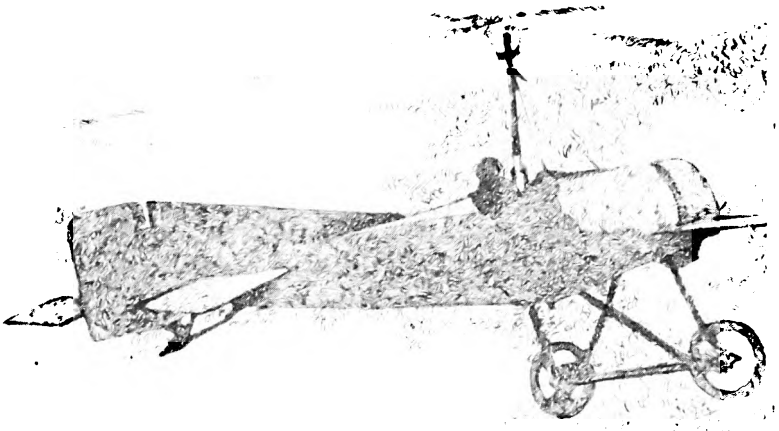
As a nation we don't understand it and as a government we are not prepared to deal with it. . . . I believe that low-intensity conflict is the most important strategic issue facing the U.S. If we don't learn to deal with it we risk being isolated in an increasingly competitive world.[1]



PERSPECTIVES ON AIR POWER AT THE LOW END OF THE CONFLICT SPECTRUM

COLONEL KENNETH J. ALNWICK

PRESS reports of the duel between U.S. Air Commando AC-130 gunships and Cuban-manned antiaircraft guns at Point Salines, Grenada, demonstrate that the USAF Special Operations Force (SOF) has successfully weathered its transition from Tactical Air Command (TAC) to the Military Airlift Command (MAC) without losing its traditional zest for action and adventure. The use of special operations forces in Grenada was a manifestation of the resurgence of the U.S. defense establishment's interest in a class of military operations that many saw as another casualty of the Vietnam War. Spurred, in part, by our anguish over the abortive Iranian rescue operation and a growing awareness of the utility of special oper-

ations forces as exemplified by the British Special Air Service operations in the Falklands, some major reorganizations have taken place in both the U.S. Army and U.S. Air Force to redress years of benign neglect of our nation's special operations capability.

Within the Air Force, the First Special Operations Wing has shed its status as a stepchild of TAC and has become an air division within MAC's 23d Air Force on a coequal and cooperative basis with the Aerospace Rescue and Recovery Service. While this reorganization conveys many tangible and intangible benefits to Air Force special operations forces worldwide, it raises several questions about the future ability of the SOF to execute successfully some of its time-honored missions at the low end of the conflict spectrum.

Press reports from Grenada notwithstanding, a major shift in emphasis has been moving the Air Force SOF community away from traditional SOF missions in counterinsurgency, nation-building, and psychological warfare toward special operations behind enemy lines—more reminiscent of the World War II experience than the experiences of the last two decades. These two approaches to the employment of air power in other-than-conventional operations are the focus of this article, which emphasizes the importance of maintaining the USAF Special Operations Force with a capability to work hand in hand with local forces so that the inherent advantages of air power to counterinsurgent guerrilla tactics can be exploited as fully as possible.

Beginnings

The history of the use of air power against irregulars is as old as the history of military aviation. On 9 March 1916, Francisco "Pancho" Villa raided Columbus, New Mexico, and killed 17 Americans. The U.S. government ordered General John "Black Jack" Pershing to organize a force of 15,000 troops to pursue Villa into Mexico and "take him dead or alive." Six days later, the 1st Aero Squadron, commanded by Captain Benjamin Foulois, arrived in Columbus. The force consisted of 8 Curtiss JN-3s, 11 officers, 85 enlisted men, 10 trucks, and 1 "tech rep." The most important role of the squadron was to help General Pershing keep track of his dispersed forces and deliver messages. Thus, the first combat missions ever flown by U.S. military aviators were communications and visual reconnaissance missions for the Army.

The aircraft were ill-equipped for the rigors of combat in hostile terrain. Propellers cracked and flew apart in the dry heat of the desert. The airmen had to set up their own machine shops and build new props and test new designs—with the help of the tech rep. Nevertheless, despite the limitations of its equipment, the 1st Aero Squadron proved the utility of aircraft in support of combat operations. Through their experiments with aerial photography, mounted machine guns, and bombing, the Army gained its first glimpse of the vast potential of this new weapon.

Given that the war in Europe had been under way for two years, the Mexican expedition revealed, to all who cared to notice, the deplorable state of American military aviation. Nevertheless, some of the traditional features of unconventional warfare were evident in the fledgling airmen, who demonstrated flexibility and willingness to experiment. Logging more than 700 sorties in their "modified" aircraft, they even scored the first recorded American kill from the air against a guerrilla leader. Although General Pershing never caught Pancho Villa, the unique attributes of aircraft (elevation, range, speed) made visual reconnaissance and communication the most significant contributions to the punitive expedition, and human ingenuity was essential to what limited success the campaign did achieve.

British Air Control

While the bulk of aviation activities in World War I supported the "conventional" aspects of the war, one little-known aspect of the war was

the use of aircraft to support Colonel T. E. Lawrence in his Palestine campaign. Lawrence is generally viewed as riding across the desert wastes on a camel; but during the latter stages of his warfare against the Turks, he exploited the mobility provided by both armored cars and aircraft. He used aircraft to maintain contact with his far-flung groups, provide visual reconnaissance, haul men and supplies, and attack Turkish communications. Basically, aircraft provided Lawrence with mobility to match the vastness of the desert. This unconventional use of aircraft helped set the stage for Britain's most innovative use of air power—a concept called "Air Control," which emerged shortly after World War I. Some authorities claim that this concept preserved for the Royal Air Force (RAF) its right to an independent existence.

In the spring of 1920, an uprising in Iraq caught fire and began to spread. The British attempted to control the rebellion and protect friendly tribes but found that their efforts cost them more than 38 million pounds annually and accomplished little in the process. Sixty thousand British troops used age-old techniques of garrisons and fortified strong points complemented by flying columns to administer discipline, exact tribute, and then retreat to barbed-wire enclaves. Critics viewed these activities as "butcher and bolt" tactics.

The Royal Air Force proposed to replace ground power with air power. Essentially, Sir Hugh Trenchard, with Winston Churchill's backing in the colonial office, was advocating gunboat diplomacy from the air. Both men felt that colonial forces could react more swiftly, attain superior firepower and mobility, and coerce far more humanely and cheaply by operating from the air. Their basic operational concept was "to interrupt the normal life of the dissidents to such an extent that continuance of hostilities becomes intolerable." The evolving doctrine of air control contained several distinct steps or phases:

- The first step was to develop a clear statement of what was expected of a target tribe or village.
- Next, the terms would be conveyed to the target population through intermediaries, political agents, or leaflet drops.
- If the tribe remained recalcitrant, heavy pressure would be applied through airborne attack—usually after a few days' warning, but not always.
- The pressure would continue until the harassed tribe recognized the reasonableness of British demands and the benign nature of British colonial administration.

Supported by effective intelligence and innate good sense, the British made great strides with air control. The cost-conscious British government, recognizing air control as an effective and relatively inexpensive technique, extended the idea to cover the northwest frontier of India, Trans-Jordan, the Aden Protectorate, and Palestine. It continued to use these techniques in Aden until the early 1960s. Critics were correct in claiming that use of air control techniques was the practice of colonialism on the cheap and that nothing could really be *controlled* from the air, but the techniques did furnish the necessary sanction of force behind civil authorities. Again, the essential characteristics of air power (elevation, speed, range flexibility, and destructive power) provided a strategic foil against the nomadic warrior's tactics.

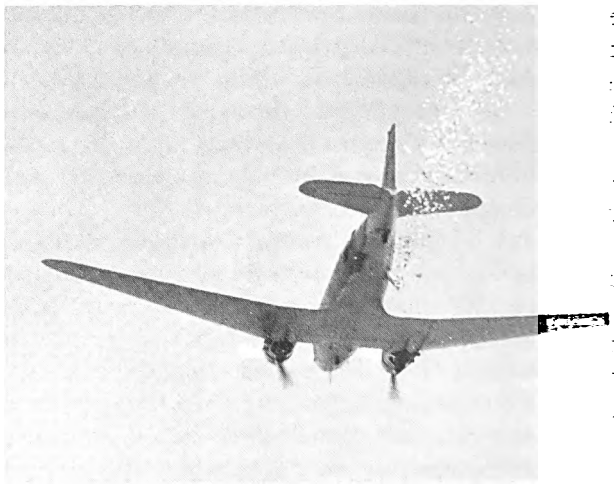
Marines in Nicaragua

While the British were achieving modest successes against the tribesmen of the Arabian Peninsula, U.S. Marines were confronting a far more difficult task in the jungles of Nicaragua. Between 1927 and 1933, General Augusto Cezar Sandino and his followers fought and eluded the Marines who had intervened to resolve political strife in the country. The airplane, armored car, and machine gun had mastered the desert and the plains; but the new guerrillas avoided the open, operated in small groups always

under cover, and massed for attack only when the odds were clearly in their favor.

The airplane quickly proved its value in the early U.S. counterinsurgency effort. In 1927, Sandino attacked a Marine garrison in Ocotal and was defeated decisively when five Marine de Havillands launched a timely aerial assault that thoroughly demoralized the inexperienced Sandinistas. This early defeat at the hands of Marine aviators and ground forces—the original air-ground team—convinced Sandino that his only hope lay in the now-classic techniques of the rural insurgent—hit, run, and hide.

For the next five years, Marines, such as Captain Lewis "Chesty" Puller, played a dangerous game of cat and mouse in the hills and mountains of northern Nicaragua as they sought to bring about a decisive engagement with the Sandinistas. In this effort, aircraft provided vital communications between far-flung remote outposts. Marine aviators also flew air cap for foot and mule patrols and attacked Sandinista bases, but they soon learned the limitations of conventional ordnance in thick jungles and the elu-



Often our perception of air power in a support role is limited to "putting bombs and fire on targets," but there are many dimensions to air power, particularly in an unconventional war. Dropping propaganda leaflets (above) is a vital part of psychological warfare, which was one aspect of special operations during the Vietnam War. . . . AC-47 Dragonships (below) provided flarelight and firepower to besieged special forces camps in the early years of the U.S. involvement in Vietnam. These fighting versions of the venerable Douglas transport could deliver a tremendous amount of firepower in a few short bursts of their Gatling guns.

siveness of small, lightly armed guerrilla formations. Thus, Marine fliers never again achieved the spectacular successes they had scored in the early days of the fighting. Nevertheless, air power did help the Marines offset the worst effects of too few men attempting to control too much territory.

As U.S. involvement in Nicaragua dragged on, sentiment at home forced the Marines to conclude the police action, and Washington's primary concern became how to find a way to engineer a graceful withdrawal. Eventually, all Marine units withdrew to the cities as the Nicaraguan National Guard, officered by Americans and supported by Marine air, took the offensive. On 16 February 1934, the United States arranged a truce between Anastasio Somoza of the National Guard and Sandino. Four days later, Sandino was betrayed by Somoza and shot. Lacking Sandino's leadership and exhausted by years of fighting, the insurgent movement withered to a point where Somoza's National Guard forces were able to contain any remaining resistance, thus ending the need for active U.S. Marine involvement in Nicaraguan affairs.

Yet the legacy of this early episode in air power history is still with us. Many of the principles of air-ground cooperation hammered out by trial and error in Nicaragua are ingrained in Marine Corps doctrine. Furthermore, the patterns of conflict discernible in the Nicaraguan experience may still be found in the guerrilla wars of the post-World War II period.

Special Operations in World War II

The name *special operations* comes to us from one of the first organizations established to operate behind enemy lines in World War II. This was the British government's Special Operations Executive. The primary missions of this "department of dirty tricks" were to drop highly trained secret agents and their equipment into

Special operations played an important role in the Second World War. At dusk, B-24s loaded with supplies or carrying agents would take off for nighttime missions over the Balkans. Flights lasted up to ten hours and often involved low-level flying through the mountains of Albania and Yugoslavia.

enemy-held territory and to resupply resistance groups and paramilitary forces in France, Italy, and the Balkans. The U.S. Army Air Forces joined the operation in March 1944, using B-24s and B-17s with special modifications, such as camouflage paint and covered stacks. Aircrews were specially trained in night operations; low-level, long-range navigation; and precision air drops of men and materiel. Their ten-hour missions were usually flown on moonless nights, frequently in bad weather.

On the Eastern Front, the Soviets relied heavily on aircraft to resupply partisan bands and to retain political and military control of these essentially autonomous operations. Of course, weather and mountains were the worst enemies of these operations. For example, of seventeen aircraft lost in one area of operation, only one was lost to enemy action. Thus, special operations in the European Theater were primarily specialized airlift functions.

On the other side of the globe in the China-Burma-India Theater, two units engaged in special operations are of particular note: General Claire Chennault's Flying Tigers and General John Alison's Number One Air Commando Group. Chennault's unit is noteworthy because his crews, in some respects, performed like flying guerrillas. The Flying Tigers, originally civilian volunteers, operated from remote, roughly prepared airstrips. They tied up large Japanese air assets and, at times, attained 10-to-1 kill ratios. The Flying Tigers were teachers and fighters who accomplished seemingly impossible feats. On the other hand, General Alison's Number One Air Commando Group provided support for ground troops, specifically, Wingate's Chindit troops who operated behind Japanese lines in Burma. Alison's force consisted of 300 aircraft of various types, including gliders and experimental helicopters; the support element for this force consisted of 600 airmen. This ratio of maintenance men to aircraft is unheard of in most modern air forces; the difference was due to the careful selection of personnel from among highly talented volunteers. Furthermore, in Alison's units, there was great flexibility where aircrew training and checkouts were concerned. Pilots flew every type of aircraft: fighters, bombers, transports, liaison planes, gliders, and helicopters.

The specific mission of Number One Air Commando Group was to establish a landing zone or airhead deep in Japanese-held territory, build and operate an airfield, transport General Wingate's troops into the area, supply the operation, and provide the required close air support. There was nothing special about the aircraft used to support Wingate's operation, but General Henry "Hap" Arnold's parting instructions to these early air commandos ("to hell with administration and paperwork; go out and fight") gave them a license to steal. Throwing the rule book aside, they improvised tactics and modified aircraft on the spot, relying on their hand-picked, highly trained, and motivated personnel to overcome difficulties. The group gave Wingate the necessary mobility and provided support at the times and places he specified. The cooperative efforts between Alison's air units and Wingate's ground forces constituted combined operations in every sense of the term. Lessons learned from Alison's experience include: the importance of good delivery techniques, the need to know both the capabilities and the limitations of air power, and the need for dedicated units that can react more quickly than units controlled by remote higher headquarters.

Thus, the two classic roles of air power in unconventional operations were revealed. Before World War II, with the notable exception of Lawrence in Palestine, the preponderant role of aircraft in unconventional warfare operations was to support counterguerrilla operations. Gathering intelligence and providing mobility, presence, and firepower were primary functions (although the threat of firepower was often more potent than its actual application). During World War II, a new role for air power emerged—supporting the operations of partisans and small conventional units behind enemy lines. In this context, airlift, communications,

and medical evacuation provided by air assets were paramount. Delivery of firepower played only a minor role.

After World War II, the pendulum swung back again to the counterguerrilla mission for air power. Its concomitant emphasis on nonlethal aspects continued and would not change until the beginning of full-scale U.S. air operations in Vietnam (1966). The Philippine struggle against the Huks and the French ordeal in Algeria illustrate air power used with good effect to counter guerrilla tactics. The British in Malaya and other contested areas used many of these same tactics effectively also.

The Campaign against the Huks (1946-54)

During World War II, the Huks, a Communist organization, operated as the "People's Anti-Japanese Army." Following the war, the Huks attempted to overthrow the newly formed Philippine government. At that time, the combination of rural dissatisfactions, government inefficiency and corruption, and skillful Huk propaganda that drew on old anti-establishment themes had brought many areas of the Philippines to a state of near anarchy.

In 1950, Ramon Magsaysay was appointed Secretary of National Defense. With the help of U.S. advisors, such as Lieutenant Colonel Edward Lansdale, he removed many ineffective officials and reorganized both the military and the constabulary. This approach helped him win popular support, and the armed forces and police began building a system for collecting intelligence on which to base operational and political decisions. Liaison aircraft of the Philippine Air Force (PAF) commenced day-to-day visual reconnaissance flights over areas where the Huks were known to operate.

A system of informers was developed to work in conjunction with the reconnaissance flights. To keep the Huks from discovering the informers and intercepting the informers' information, special signals were developed. For example, the positions of haystacks, farm animals, plows, and other objects flagged the size and location of Huk units to PAF liaison aircraft flying overhead. Also, defectors were carried aloft to help locate Huk camps. Once a camp was pinpointed, leaflets and crude loudspeaker systems were used to wage psychological warfare against the camp's inhabitants. At other times, solid information on camp locations was used by government forces to mount concentrated air and ground operations against the camps. The net effect of these varied uses of air power was to confine the Huks to small-unit operations and deny them the use of fixed bases.

To support its operations against the Huks, the Philippine Air Force used a squadron of C-47s, a mixed squadron of liaison aircraft, and some P-51s and AT-6s. Most of the targets were such that the aircraft either made their strikes with 100-pound bombs or strafed with .50-caliber machine guns. Air attack and bombing were very carefully controlled. Attacks with heavy bombs were limited to large base camps located in the mountains, and these attacks were made only after commanders were sure that no government supporters lived in the area.

The air operations and tactics of the Philippine Air Force were not in themselves decisive factors in the Huk campaign, but they were vital elements of Magsaysay's integrated use of all the elements of national power to defeat the Huk insurgency.

The Algerian Rebellion

As the Huk campaign wound down in the Philippines, the French were facing their own unique problems against rebels in Algeria. Several features of the French counterinsurgency effort distinguish it from other special operations. For example, although extensive fence systems or "barrages" were quite effective in sealing off Algeria's borders, they were difficult to maintain and patrol. Air power was a central element of French strategy to handle the problem: aircraft supported ground patrols, pro-

T-28s—trainers with souped-up engines and weapon points for bombs, rockets, and machine guns—have proved their worth in counterinsurgency operations from Vietnam and Laos to Latin America. Thai, Philippine, and several South American air forces still fly these rugged planes. . . . T-6 Texans were used to train fliers for the Army Air Forces before and during World War II. AT-6s (below) served in the Korean War and in the air forces of Laos, South Vietnam, and Thailand in the late 1950s and early 1960s. A few are still flying in South America and Africa.

vided supplies to outposts, and flew strike missions against insurgents when they threatened sectors of the fences.

For internal defense, the French used a system called "quadrallage." They divided Algeria into areas of operation and then subdivided the areas into small sectors. Air units assigned to special operations maintained almost constant surveillance of the sectors and played a vital role in other intelligence-gathering schemes. Centralized control of air assets ensured that they would be employed in sectors where they were most needed.

A favorite French tactic was "netting." This involved locating an enemy force by aerial reconnoitering, identifying all access routes to the enemy's location, and selecting the best landing zone (LZ) near the enemy's headquarters. Having taken care of these preliminaries, the French launched a coordinated air-mobile attack, placing troops in the LZ immediately after preparatory fire. The air-mobile troops were deployed to confuse, disrupt, and demoralize the enemy headquarters and command structure while, simultaneously, more powerful ground forces closed in from all sides. In this

way, the rebels were trapped like fish in a net. The keys to success in these operations were excellent intelligence and the ability to react quickly and effectively when the situation warranted—both of which relied heavily on air support.

Two pertinent conclusions can be drawn from the Algerian experience: Coordinated small-unit actions supported by air were the most effective operations in this theater; and the most valuable assets that air power contributed to these operations were aircraft mobility and flexibility. But French political and military goals were not in harmony. Thus, despite their military success, the French found their efforts ultimately to be in vain.

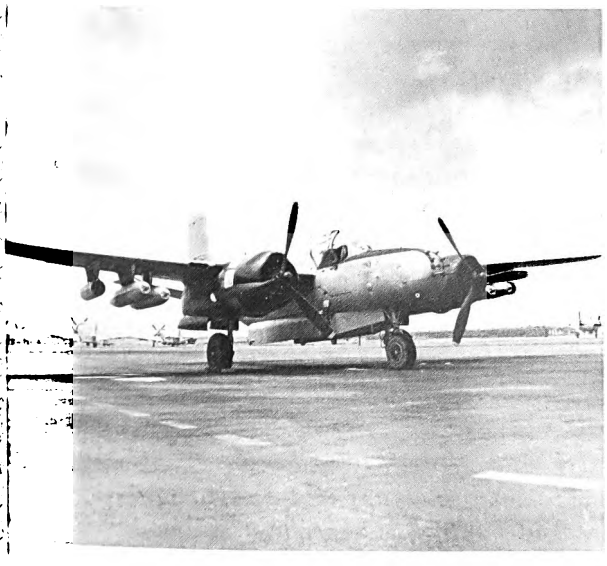
This, then, was the body of knowledge and experience available when the U.S. Air Force began developing its own counterinsurgency capability in the early 1960s. In retrospect, we can see that it included these major tenets:

- Special operations were joint operations that required close and continuous liaison with the ground force.
- The most vital function was tactical support, including airlift and reconnaissance. Air strikes offered only a small payoff for the effort expended, but, at times, they could be absolutely essential.
- The intelligence function was the most difficult to perform well, but it was vital.
- Aircraft could do well in the psychological operations role, although success was difficult to measure.

USAF Special Operations Force: Origins and Evolution

Shortly after President Kennedy took office, he confronted a challenge from peripheral or "brush fire" wars that could not be met adequately by the Eisenhower strategy of massive

Douglas B-26s served in World War II, the Korean War, and the French Indochina War before being recalled to duty in Vietnam. From 1962 through the early 1970s, B-26s served in counterinsurgency missions and were used to blast trucks moving along the Ho Chi Minh Trail during Commando Hunt.



A-37s, despite their high rate of fuel consumption and relatively small weapons load, have superseded T-28s as the primary counterinsurgency aircraft. These planes served with the Vietnamese Air Force before the fall of Vietnam. Thailand and several Central and South American air forces are using this plane in current counterguerrilla operations.

retaliation. Speaking to the graduating class of West Point in 1962, he said:

> This is another type of war, new in its intensity, ancient in its origin.... It requires... a whole new kind of strategy, a wholly different kind of force, and therefore a new and wholly different kind of military training.[2]

It was in the context of Kennedy's quest for a counterguerrilla warfare capability that contemporary USAF special operations came into existence. The first air commando units were formed in April 1961. These forces were deployed to Vietnam by November of the same year under the code name "Jungle Jim." Their specific mission included airstrikes, airlift, reconnaissance, and training of indigenous forces in unconventional warfare and counterinsurgency operations.

The aircraft assigned to the units were not the most advanced or sophisticated in the inventory, but they did have characteristics needed for special air operations. The old reliable C-47 was pressed into service in the airlift/troop delivery role, while T-28s and modified B-26s handled strike and reconnaissance missions. These latter two aircraft were selected because they were simple systems that could be maintained in an austere environment, they had the ruggedness and capabilities to operate from unimproved airstrips, and they were already in the inventories of many countries likely to experience guerrilla warfare and within the technological reach of other developing air forces.

From its activation strength of one composite squadron under the Jungle Jim concept, the force grew rapidly to meet the demands of Southeast Asian and other contingencies. Its designation changed as it evolved, becoming eventually the USAF Special Operations Force. At its peak, the force consisted of more than 500 aircraft of some 50 different types and configurations, together with more than 10,000 people. Major force components included the Combined Air Warfare Center (headquartered at Eglin Air Force Base, Florida) and three subordinate units: the 1st Special Operations Wing (at Hurlburt Field), the 4410th Special Operations Training Group, and the Special Operations School.

This structure enabled the Special Operations Force to provide more than 100 specially configured mobile assistance teams to 28 different countries. Mobile training teams supported military assistance advisory groups and missions by providing expertise and instruction in air-ground operations and combat training. The SOF provided training to foreign aircrews in the continental United States and overseas, making a major contribution to the effectiveness of Third World air forces.

Mobile assistance teams were deployed to conduct civic-action programs also. These teams often played a major role in a nation's internal development because only the military possessed the organization, manpower, technical skills, and resources needed to accomplish various development projects. The teams helped developing nations by providing transport/utility aircraft to carry medical teams and supplies to remote areas, deliver supplies and equipment for disaster relief, and spray areas to rid them of disease-bearing pests. These projects were designed to improve the living conditions of the people, gain popular support for the government, and reduce the appeal of insurgents.

In November 1961, the first TDY element of the air commandos arrived in Bien Hoa with four B-26s, four C-47s, and eight T-28s—thus beginning a monthly TDY rotation of support personnel and crews that continued until 1964, when the units in South Vietnam were placed under Pacific Air Forces and given PCS status. Each month, until the changeover in 1964, a C-135 would land at Hurlburt Field, Florida, discharge 179-day veterans, and pick up a fresh contingent. In these early years, the air commandos were relatively carefree, naïve "soldiers of fortune" who were looking for a piece of the action. They were advisors, but their clients were often Vietnamese aviation cadets ready to die with the Americans if luck ran out. And it ran out more often than most crew members

cared to think about. During some of the rotations, as many as one-third of the crews were lost. The following excerpt from one airman's diary reflects some of the frustrations felt by these Air Force crews during that period:

> The other day we lost another B-26 and reports are that the wing fell off during the pull up off the target. We expected all aircraft to be grounded but 2ADVON says "Keep flying" . . . We wouldn't think of giving India or Pakistan equipment in this poor shape. . . . Skimping on the facilities is bad enough and stupid regulations are bad too . . . but the loss of life is inexcusable when it is the result of improper planning.[3]

Operation Waterpump

In 1964, the air commandos from Hurlburt Field turned their attention to Laos and Thailand when TDY rotations to Vietnam were no longer required. Commando forces operating in these areas followed procedures much more closely related to the original concept (espoused by President Kennedy) than did their SOF-designated counterparts in South Vietnam, whose work was becoming more conventional. From a corner of a rice warehouse in Vientiane, Laos, a few American airmen operated behind the scenes to keep Laotian and Thai T-28s flying and to provide a link between the U.S. embassy and the combat forces of the Seventh Air Force. At Wattay Airport in Vientiane, for example, U.S. crews turned as many as five sorties per day per aircraft. Combat weathermen established a string of remote weather-reporting posts, supporting air operations over the north while controlling local air strikes on the side. Other commandos resumed their advisory role, helping Laotians master the use of the T-28 to conduct air strikes and mark targets for jet fighter-bombers.

As the war in Laos seesawed, air power was used extensively to prevent disintegration of Lao/Meo forces. Meo soldiers supported by airdrops and tactical air strikes held key hilltops against Pathet Lao forces.

Although our nation's efforts could save neither Laos nor South Vietnam from defeat, one should not conclude that nothing the Air Force tried to accomplish in Southeast Asia was effective. Today, the Air Force must come to grips with a legacy of that experience—the Vietnamese syndrome—and recognize the positive lessons learned as we now assess the role of air power in the "small wars" of the future. The recent trend in special operations activities, as illustrated by the Entebbe rescue, Desert One, the Falklands, and Grenada, is more toward single-event types of operations than toward the classic protracted campaigns of the past. This trend tends to confuse the distinctions among military operations at the low end of the conflict spectrum, the portion of the spectrum that is theoretically the responsibility of our special operations forces. Additionally, more recent special operations show an increasing reliance on sophisticated technology. These and other trends are summarized in Table I.

Table I. Special Operations

Classic	Contemporary
•Closely tied to political objectives	•Closely tied to political objectives
•Integrates many elements of national power	•Tailored force
•Protracted guerrilla and counterguerrilla warfare	•Short duration
•Limited reliance on specialized equipment	•Takes advantage of sophisticated technology
•Limited connections between guerrilla forces in different countries	•Worldwide connections among insurgent movements

HOW are these basic tendencies in special operations reflected in USAF doctrine? Official USAF doctrine on special operations has been nearly static since the late 1960s. It states that special operations involves three interrelated missions: unconventional warfare, foreign internal defense (counterinsurgency by another name), and psychological operations.

The USAF Special Operations Force has had almost no experience in the latter two aspects of its stated mission in recent times and has concentrated almost exclusively on unconventional warfare.

AFM 1-1 (1979) defines unconventional operations as activities "conducted in enemy held or politically sensitive territory"—activities which include, but are not limited to, "evasion and escape, guerrilla warfare, sabotage, direct action missions, and other covert or clandestine operations."[4] However, in the 1984 version of AFM 1-1 (to be published soon), the term *direct action* has been dropped. The draft now states that: "Special operations forces may conduct and/or support unconventional warfare, counterterrorist operations, collective security, psychological operations, certain rescue operations, and other mission areas such as interdiction or offensive counterair operations."[5]

Despite this somewhat broader charter, in practice, there has been a clear shift in Air Force thinking away from classic special operations of the past and toward a special operations force with a much more narrow focus. Thus, either by accident or design, a worldwide force of only some 60 aircraft means that the U.S. Air Force no longer possesses a strong institutional capability to conduct effective counterinsurgency or psychological warfare campaigns.

But in places like the remote reaches of the Arabian Peninsula, beleaguered Latin America, or the arid deserts and jungles of Africa, active guerrilla movements offer numerous opportunities for classic special operations under modern conditions. In deciding how the USAF might respond to these events, if called upon to do so, it is essential that we understand the traditional patterns of guerrilla activities, as well as the new conditions that prevail today. The USAF has a rich experiential base on which to draw in charting its future course of action, a base that extends back to 1916. While surface-to-air missiles (SAMs), helicopters, and modern communications and electronics have added new dimensions to the problems and solutions, the need for traditional commando skills and attitudes that have proved valuable over the years has not diminished. In many ways, the next shooting war involving the U.S. Air Force will probably bear a close resemblance to the guerrilla wars of the past. If the USAF is to live up to the old commando adage "Any Time, Any Place," we must study carefully the history of special operations and use the knowledge so gained to guide us in the application of the new technology available today.

Washington, D.C.

Notes

1. Lieutenant General [now General] Wallace H. Nutting, USA, "Nutting: Stand Fast," *Newsweek*, 6 June 1983, p. 24.
2. John F. Kennedy, *Public Papers of the President, John F. Kennedy, 1962* (Washington: U.S. Government Printing Office, 1963), pp. 453-54.
3. An airman's personal diary, which I have been shown.
4. Air Force Manual 1-1, *Functions and Basic Doctrine of the United States Air Force* (Washington, 1979), pp. 2-19, 2-20.
5. Draft of Air Force Manual 1-1, *Basic Aerospace Doctrine of United States Air Force* (Washington, 1984), p. 3-5.

CIVILIANS IN CONTEMPORARY WARS

*a problem in ethics, law, and fact**

DR. GEOFFREY BEST

THE concept of "the civilian" as someone essentially other than the combatant, invented by the European founders of the international law of war in the course of the seventeenth and eighteenth centuries, has ever since then held a fixed lodging in all thought and writing about war, especially in what is thought and written about the ethics and the international law of war. But times change, and the meanings of words change with them. We go on using the same words, but they may not mean what they once did. They can even be made to mean whatever designing parties want them to mean. Consider *peace,* for instance, a word from the same family as *civilians.* What peace means in Washington or London now is not at all what it means in Moscow; yet London's and Washington's meaning has more in common with Moscow's than either has with what peace meant in Hitler's Germany and George Orwell's Oceania, where, it may be recalled, one of the three slogans of The Party was: "War Is Peace."

*This article is the author's revision of the annual War Studies Lecture at King's College, University of London, which he presented in March 1983.

Our concept of the civilian cannot be said to have gone as far across the spectrum as that, but it has certainly moved a long way from where it began. Limited warfare allowed the civilian a good deal of immunity in the eighteenth and nineteenth centuries, and it can still do so. The South Atlantic war of 1982 offers a striking example: only three civilians lost their lives in the Falklands. The civilian does not normally escape so lightly. Indeed, it is a notorious fact about twentieth-century war that civilians suffer very badly in them. The contemporary civilian goes under the same name as the person for whose partial benefit the men who forged our international law of war proclaimed that war—if it was to be a political instrument which ethical-minded men could handle without shame—must control its violence and set itself limits. It was he, the civilian, and all he stood for, that chiefly gave men heart to grapple with the paradox of preserving standards of common humanity in circumstances of war. However, the application of that principle to those we still call civilians has become problematical, and that paradox twice as paradoxical. The purpose of this article is to display the extent of those problems and consider what can be done—and, indeed, what is being done—to resolve them.

The civilian became the living reminder to our Western heritage on its bellicose side that war was *not* the main purpose for which men were born and brought together; he was not so from the start. The heroes, warriors, and righteous rulers who figure so prominently in our collective early years did not normally know any principle of respect for what we would call a civilian, anymore than they could have understood a scale of values placing peace above war. But the men of war did not have it all their own way. They learned early to coexist with the men of peace, to exchange roles with them, and to pay homage to the idea of peace, recognizing that peace, not war, was the professed ideal of their society, their culture, and their church. Christian charity joined Roman jurisprudence to proclaim that the maintenance of peace was a higher achievement, all human things considered, than the waging of war and that the latter was to be done only in pursuit of the former. In this long process of moderating wars, the civilian emerged as the embodiment of the values of peace, and the field of civilianness became understood by the juridical expositors, the Publicists of the eighteenth and nineteenth centuries, to cover not only those whose nature was noncombatant and those whose function was noncombatant but also those who were de facto noncombatant at any particular wartime moment even though their normal nature and function were otherwise.

While the interests of the civilian were being thus served by this pleasing movement that optimistic contemporaries liked to describe as the civilizing and even humanizing of war, other things were happening that would pull in the opposite direction; and the civilian himself, oddly enough, was helping with the pulling. Another dimension was thus added to the paradox noted earlier. The civilian could be perceived as adding to the difficulties of upholding the protections patiently erected on his behalf; how serious was he about peace and protection? To preserve some values of common humanity in warfare was difficult enough, but to preserve it without the wholehearted support of the class of persons on whose particular behalf the endeavor was launched has proved very difficult indeed and still proves so.

The difficulty can be elucidated under three categories. The first is simply that of industrial growth. The making of war, like the making of everything else, was to be revolutionized by industrial growth. What it did to the civilian in relation to war was to make him more integrally involved in war and more essential to it than had ever seemed possible before. As the technical requirements of war multiplied and the proportion of a national economy necessary for the waging of industrially backed war increased, the civilians who met those requirements and sustained that economy were also bound to become involved in what our century has come to call

"the national war effort." Neither principle nor practice but simply scale was new here. Aside from attempts by Germany and the United Kingdom to starve each other out, the First World War saw unprecedentedly earnest endeavors by one belligerent to bring the other's industrial economy to collapse. The Second World War saw, besides renewed readiness to use the weapon of starvation, a more nearly successful endeavor to wreck the enemy's industrial economy, not by blockade from the sea but by bombing from the air. The civilian, needless to say, suffered much from both experiences. But concern and compassion for civilian sufferings were now to some extent lessened by the drawing of parallels between fighting front and home front, front line and production line. Some jurists between the wars accordingly invented a new legal person, the quasicombatant, away from whom some proportion of legal protection was thought fit to be taken. Defining that proportion, however, proved difficult, and the blurring of the clear old distinction seemed to most jurists and war moralists self-destructive.[1] That such an awkward hybrid should have been proposed at all was the significant thing. The civilian, by no will of his own, had got into a position where his inviolability in wartime was with some show of reason questionable.

The second category of new civilian violability could more plausibly be laid at the civilian's door, inasmuch as it was part and parcel of democratic politics. The replacement of more or less unrepresentative old regimes by apparently more representative new ones was accompanied on the military sides by direct involvement of the people at large in national war efforts under the banner of "The Nation in Arms." The particular significance of this for our civilian was not that he was now more likely to be conscripted for military service (though he was); rather, it was that he was affirmed to have as much of a moral commitment to war as the military, that the will to fight was attributed to the whole political nation, and that at least some part of the exhilaration proper to a happy warrior was made available to the people at large. To proclaim "The Nation in Arms" was in effect to assert as a political reality that general civilian involvement which was in due course to become an economic reality as well. These two streams of civilian involvement, of course, merged easily enough once the social and economic circumstances were right, and it is worth observing that the political, the avowedly democratic, stream did not run through liberal parliamentary channels alone. "The Nation in Arms" was equally attractive to those who preferred a more forcible word—to national leaderships we have learned to label as plebiscitary dictatorships and totalitarian democracies. "Total war" became the description most often given to the kind of war now envisaged, and there was really not much practical difference between the degrees of civilian participation in it claimed by liberal democrats and by totalitarian ones. On both sides, national spirit or will power was presented as the dynamo of belligerent capability and the breaking of it became a primary military objective. Thus was the civilian willy-nilly hauled into the front line with this embarrassing suspicion now hanging over him, that in many respects he seemed to have gone there voluntarily.

The third heading under which erosion of the inviolability of the civilian is to be found is that of civil and revolutionary war. This compounds the ethical problems already present in all questions of war and peace because obedience to governments has for centuries been an ethical norm in European political philosophy. Political philosophy took governments no less seriously on the international side of their existence. International law recognized governments and no other persons (that was precisely the term used: "legal persons") because nothing else was imaginable in their absence but international anarchy. The international law of war was made for them and for the fighting men organized beneath their banners. Its purpose was to regulate their conflicts with one another, to turning them into ethically and legally moderated wars that self-respecting, decent men could engage in

without remorse. No international jurist before the twentieth century dreamed of extending that regime of moderation into the realm of civil war, because to do so was felt to be a contradiction in terms. Law was something that civilized states existed to enforce within their own frontiers and to observe in their own dealings with one another, but not something that subjects in armed revolt against their normal lawgiver could claim the benefit of. Two exceptions were admitted to this general rule. Belligerents in civil wars might agree among themselves to observe the rules of international wars, and what began as a rebellion and continued as a civil war could become recognized by everyone else as, for all practical and legal purposes, an international war. But such exceptions were not felt, before the turn of this century, to pose any threat to the all-important rule, that the law of war was international law, that government was government, rebels were traitors, and civilians had to be extra careful if they did not wish to have their status misunderstood.

But what was their status? And who were they anyway? This brings us to the problem of fact which was, and always has been, so awkward in respect of revolutionary/counterinsurgency war: it offers the civilian none of the relatively easy means of identifying himself that he could hope for in straight international war. Active insurgents have often resembled the noninsurgent civil population from which they arise and in whose name they insurge. Whether insurgents are concerned about the consequences of this for civilians or not, the consequences usually turn out to be disagreeable. The civilian or the would-be civilian finds himself preyed on, suspected, and victimized by both sides, pushed and pulled between them until he is driven to take one side or the other; after which, he takes the consequences. Modern revolutionary warfare has proved very difficult to keep out of. International law took it for granted that civilians espoused a side to the dispute—how could they not, when their governments were belligerent?—but difficulties were not thereby placed in the path of sparing them. The case of civil and revolutionary war was and is quite otherwise. Most civilians in such wars do not enter the war with their allegiance determined; they have to decide which side to be on—or have the decision made for them. Driven by the political logic of their situations to claim that they have the bulk of the people behind them, both sides are driven by military logic to make sure that they really do. Dispassionate observers and historians of such wars are often driven to wonder to what extent their followers are willing or forced. The fact is that in revolutionary war the civilian, as I have noted, can hardly be said to exist, and most international lawyers of the nineteenth or early twentieth centuries would not have been willing to waste time looking for him. But most of them now are willing to do that.

BY the end of the Second World War, humankind had supped full of horrors, and its spokesmen were demanding that nothing of the sort should happen again. The governments of the victorious coalition were ready enough to undertake such unprecedented acts of legislation and judgment as should meet the demand. A common and dominant element throughout was redress of wrongs perceived to have been done to civilians. Military personnel had suffered badly enough during the war but more from neglect or perversion of existing international law than from the lack of it. For the wretched civilian, there simply was very little in existence to which he could appeal in wartime, and none at all out of it. To protect the civilian in peacetime, a new international regime of human rights was promulgated, to which optimists hoped individual states and regional organizations would in due course commit themselves. To protect the civilian better in time of war, certain relevant elements of preexistent law were clarified and confirmed in the so-called Nuremberg Principles, while the Geneva branch of that law, already quite extensive in the Conventions of 1929, sprouted a new Convention expressly

designed for the protection of the civilian alone.

The international law of war as affirmed and developed during the five years immediately following the Second World War is, strictly speaking, the international law of war under which we live still; and scrutiny of the giant problems that the civilian nevertheless still faces could now begin, were it not necessary to make one significant proviso. This body of law is likely soon to be developed again by certain Additional Protocols formulated in 1977 by a diplomatic conference in Geneva and presently awaiting legislative attention in the United Kingdom and the United States.[2] These Protocols by no means replace or supersede the 1949 Conventions; they are additional to those Conventions. They clarify and amplify items contained therein, and they add things that are not. But they do contain and share a feature that dramatically distinguishes them from the earlier phases of the law of war. They mention "war" as little as possible, referring instead to "armed conflict." In the Protocols, indeed, the word *war* occurs only as an inseparable part of the technical term *prisoners of war*. This process of substitution of "armed conflict" for war was begun and carried far already in 1949 because it was then felt desirable, by the great majority of states represented at the Convention-making conference, to make the protections operational whenever a war was going on in all but name. The British government of the later 1940s did not like this change and sought to thwart it, believing that it introduced uncertainties where previously all had been clear. But the United Kingdom, arguing thus, found itself the odd man out at Geneva. The continental European countries had burned into their collective consciousness all too clear a memory of how the Axis powers so recently in military occupation of their lands had strictly and narrowly construed their legal obligations with a view to evading any that could not be said to arise from international war and nothing else; and the United States and the Soviet Union, for quite separate reasons, sided with them. The old law of war thus became our contemporary law of armed conflict, and the civilian especially was expected to benefit.

Has the civilian in fact benefited? Let us examine the facts of his most difficult situations in contemporary warfare: first, when he finds himself caught up in fighting on land. Everything seems to have been done that can be done to maximize the civilian's chances of survival while battle in the old classic sense is going on in his vicinity—battle between so-called conventional armed forces. The law of war has never been able to offer much besides commiseration to civilians who happened to be in the wrong place at the wrong time. Civilian immunity from attack has as its ideal corollary civilian immunity from the necessary effects and accompaniments of attack, which always include accidents and errors. Ideally this requires civilian separateness from the battlefield. The idea is not as simple-minded as it may sound. Every commander of a besieged place who has ever tried to negotiate safe passage for his civilians through enemy lines has sought to implement this idea. So has every country that has taken the precaution of evacuating parts of the civilian population from close proximity to military targets inviting bombardment. If civilians cannot be protected in one place, and if that place cannot be convincingly demilitarized, then they should be moved to another place where they can be protected.

The logic of this argument has always appealed particularly to the body internationally accepted as having a special role respecting the law of armed conflicts, that unique nongovernmental organization, the International Committee of the Red Cross. Entrusted with the working and upkeep of the Geneva Conventions, it has sought through the past half-century to incorporate in Geneva law provision for the establishment, preferably well in advance of hostilities, of civilian safety zones and has striven during hostilities to set them up ad hoc.[3] Provisions for such zones under one name or another are contained in the Conventions of

1949 and the Protocols of 1977, and it is possible that in certain circumstances more might be done with them than so far has been done.[4] Otherwise, the law offers the civilian in the midst or wake of battle only improved definitions of the rules whose observance should help him, and palliatives for his plight in case they do not. The civilian stands defined as never before, and his immunity from attack (so long, of course, as he remains perceptibly noncombatant) is reaffirmed.[5] Attackers—whether would-be or might-be—are for the first time in international instruments of this supreme status provided with terse reminders of the precautions they must take and the sense of proportion they must keep in order to minimize risk to civilians when legitimate military attacks are being made—precautions and proportions which, being no more than what decent and law-minded commanders bear in mind anyway, are naturally assimilable into military training and are, in fact, already systematically worked into that of British and American armed forces.[6]

After the battle is over and one side victorious, it is time to consider the aftermath as it takes shape for the civilians of the side so far defeated. Military occupation is its likeliest name. Civilians suffered terribly from the military occupation of their countries during the Second World War, and even worse things have happened to them in some of the wars that have taken place since then. The Conventions and the Protocols are therefore replete with provisions for the protection of the civilian once his own government is no longer able to provide that protection and for the security of his means of survival, the maintenance of essential services, and the protection of the medical, civil defense, and emergency-relief personnel who should be there to look after him. If his lot is to share with persons caught at the outbreak of hostilities as aliens in enemy territory the more confined condition of internment, then a full regime for the decent conduct of internment camps is prescribed, exactly analogous to that already achieved for camps of prisoners of war. My studies to date of the history of the civilian convention have revealed no dissent from the view which certainly prevailed at Geneva in 1949, that if something like it had already been enacted before the 1939-45 war began, much of the wartime suffering experienced by civilians would have been avoided.

In this scenario so far, the civilian we have been imagining has been entirely passive under military occupation. He has presented the occupier no difficulties, no problems; and the occupier, we assume, has for his part been entirely benevolent, even anxiously law-abiding. Let us now change the scene to what corresponds more closely to facts on the ground and consider the case of an occupied country by no means passive under the yoke and an occupier consequently less benevolent than he might have been. The problem that remains to be considered can be divided into two branches: First, can the civilian put up any sort of resistance at all without forfeiting his protected status? And second, how much is his actual situation likely to be jeopardized by the violent resistance of others on his behalf?

The first question is a good deal more comfortable to answer than the second, although the status of civilian resisters did not acquire any sort of clarity until after the Second World War, and, indeed, it still has something of the Cheshire cat about it. The fact is that until the First World War and its revelations of how much civilians could suffer under unregulated military occupation, the international law of war was frozen into an assumption of civilians' duty of passive acquiescence. It was on the side of the occupier to the extent of branding departures from that duty by such memorable and tremendous terms as *war treason* and *war rebellion*. Reflection on the grim experience of 1914-18 worked on the iceberg between the wars but had thawed no part of it before the grimmer experiences of 1939-45 immolated a much larger number of civilian war victims. Both case law and conventional law in the later 1940s did much to vindicate such civilian resistance as had then

been made to the occupier. Some of it had claimed to be lawful according to the Hague regulations. Courageous officials of certain occupied countries, for instance, had dared to challenge the legality of certain of the occupier's laws and orders. The Norwegian teachers' organization and similar well-prepared bodies actually achieved some success in persuading the occupier to modify his demands into greater conformity to what international law allowed. This was admittedly an extreme and unrepresentative case, there being no country in Nazi-occupied Europe where the Nazis were more ready to go softly-softly with a restive population. Something of the same sort happened in the Israeli-occupied West Bank in 1967, which again—at *that* date, anyway—may be discounted by the skeptic as peculiar. No doubt civil resistance against occupiers is a ticklish business, and civilians who "push their luck" against any but the mildest of occupiers are asking for trouble.

But the trouble they can encounter at the hands of a power that cares anything at all about its international legal obligations is by now quite well defined. The means that may be used to punish resisting civilians are no more unlimited than the means that may be used to injure enemy combatants. We may look forward to clarifying our perceptions of them with the aid of a text soon to appear in book form from the hand of Adam Roberts, Reader in International Relations at Oxford, a scholar who is making this field of the international law on military occupations and resistance all his own. Civil resistance, he plainly shows, can no longer be considered as it once was, an offense against international law, nor dare a law-regarding occupier any longer dismiss it as if it were. Civil resisters by disobedience and noncooperation necessarily invite punishment, but what the occupier may lawfully do is determined quite precisely by the protections given to the civilian by the Fourth Geneva Convention (and by Article 75 of the First Additional Protocol). The death penalty is not to be inflicted on civilians except for violent offenses, spying, or serious and death-causing sabotage. Civilians, individually or collectively, may not be the subject of reprisals or be taken as hostage. If arrested, they must not be maltreated in any of the ways (torture, corporal punishment, mutilation, etc.) listed in those treaties. They must not be punished except after fair trial. None of this is to deny the military occupier's belligerent right to ensure his security or decent means of maintaining it. Roberts's summary of this difficult and dilemma-fraught subject does it admirable justice:

> For better or worse, the rules of international law relating to occupations are not just rules for military occupation, but also rules for alleviating the effects of such friction and conflict as almost inevitably occurs between occupation forces on the one hand and participants in resistance, including civil resistance, on the other.

The words *friction* or *conflict* clearly suggest some difference on the scale of intensity, but conflict on its own seems hardly enough to characterize what may be found at the other pole of the genuine civilians' experience of military occupation: the kind of armed conflict that develops when an occupying or would-be occupying army meets resistance from guerrilla fighters. The terrible facts about this kind of warfare have become sufficiently familiar to our generation to need no further comment. What is surely by no means so well known is the extent to which international law has quite recently been developed with a view to making such facts less so.

The old law of war was, for mixed reasons, slow to recognize the guerrilla. The guerrilla tended to make himself indistinguishable from the civilian, and the respectable soldier ran into difficulties when he attempted to distinguish between the two. There was also the unmistakable tendency of guerrilla warfare to partake of the character of banditry, rebellion, and general intranational mayhem. What soldiers could do to one another was nothing compared to what civilians could do to one another, and self-respecting military men could be forgiven for noting the contrast with some complacency.

More self-serving was the moral superiority implicitly claimed by governments and their armies, as if their own uses of force for the alleged good of the people placed in their charge were above criticism. Nasty truths about the actual performance of most governments and armies were well enough known in most parts of the world before their moral bluff was called by the Second World War's display of the atrocious propensities of certain supposedly exemplary armed forces. No one in even the most "advanced" countries of the world could henceforth allege that guerrillas and rebels had a monopoly of atrocity; neither has anything that has happened in the world since then made that allegation more plausible. Contemporary development of international law, therefore, has included various levels of recognition of the legitimacy of causes for which guerrilla fighting may be undertaken and has taken the guerrilla himself into its ample bosom.

But into that bosom the civilian has also been taken. How can the two proceed together? May those giant changes that have been made in the law since 1945 be expected to moderate the normal rages of guerrilla warfare—especially when it is also civil and revolutionary?

The rules of conduct and combat laid down in the Protocol for the guerrilla who seeks to maintain the status of a lawful combatant (and thus to benefit from the protections of the Geneva Conventions) allow him to behave and look more like a civilian than ever before.[7] The great majority of governments participating in the diplomatic conference that produced the Protocol agreed that the well-meaning guerrilla fighting in a good cause did not stand a fair chance unless the law was thus extended toward him. At the same time, the distinction between civilian and combatant was carefully preserved. Nothing has been put into the Protocol that could jeopardize the civilian's protected status. On the contrary, the classic rules are stoutly restated. The civilian must not be made the object of attack by either side.[8] The terrorizing of civilians is particularly condemned, no matter who does it.[9] Civilian presence must not be used to cover military purposes.[10] It is declared to be perfidious (the law of war's ultimate sin) for a combatant to "feign civilian, non-combatant status."[11] And yet guerrillas are expressly required to distinguish themselves from the civilian population only when "engaged in an attack or in a military operation preparatory to an attack."[12] This is to put the law of guerrilla warfare onto a knife-edge of delicacy. Given the legitimacy that guerrilla operations undoubtedly have, the law has had to give them fair recognition. But the civilian's margin of safety in such circumstances has shrunk a good deal. More than usual goodwill and unusual degrees of political prudence seem required on both sides if the civilian's last state is not to be worse than his first.

Exactly how nations will incorporate these changes in the international law of armed conflicts into their own programs of military and civic instruction remains to be seen. Subscription to the Geneva Conventions and the Protocols includes various undertakings to make them widely known.[13] To what extent governments have so far taken those undertakings seriously is a matter into which we need not inquire now. But it is clearly a matter of plain self-interest for prospective civilians to understand well in advance what their legal status will be in any international armed conflict that may engulf them and what protections the law offers them if they observe that protection. Such clarity of understanding is all the more important in an age of national wars and people's wars. Countries that have always allowed for some amount of guerrilla fighting in their defense plans will approach these problems with clearer minds than those to whose military cultures guerrilla operations seem a malodorous exotic. For example, the proportion of civilians as we have been conceiving of them will be relatively reduced in Yugoslavia and Romania where highly visible preparations are made for massive popular resistance; all such resisters are constitutionally proclaimed members of the official

armed forces and thus, presumably, privileged combatants according to the Geneva Conventions. That is one method, short and easy, to solve the problem of the civilian. But for other countries where the civilian may not wish such rhetoric to be taken so literally, his safer way appears to be perfect knowledge of and punctilious observance of the law. He may patriotically preach "victory or death," but he would be ill-advised, in the presence of the foreign enemy, to practice it.

Such are the hopes and fears that may be expressed about the survivability of the civilian in international war on land. Hopes rest on the supposition that he is willing to be and physically can be distinguished from the armed forces. Fears enter in the event that he cannot. The borderlands of fact and law, so far only intermittently obscured by patches of mist, now become subject to thick and lasting fog. Separability of civilian from combatant can prove physically almost impossible. It approaches being so wherever total national defense preparations fail to provide for the protection of such civilians as must be quite beyond combatant participation: those nursing mothers and young children, cripples and greybeards who regularly form the irreducible residue of, so to speak, arch-civilians whenever the civilian category comes under critical scrutiny. Separability becomes wholly impossible when pressure of circumstances produces as military-ridden a national community as, for instance, the Palestinians turned out to be in some of those parts of Lebanon which Israel's armed forces invaded in 1982, or when government's response to widespread popular insurgence is to compel the militarization in one way or another of all the subjects it means to hold in its grasp. Exceptional circumstances can create exceptional communities within which the word *civilian*, though, of course, it continues to be used, must mean something very different from whatever it can mean among peoples less unhappily situated.

To mention Lebanon is to enter an area strewn with legal as well as material mines and booby traps. Within its last ten dreadful years every species of armed conflict from whose unregulated conduct the wretched civilian can suffer has been identifiable in Lebanon, the international species being only one of them. Everything said so far has been about the civilian in international armed conflict, to which the First Protocol of 1977 and all but one article of the 1949 Geneva Conventions apply. The noninternational species are much more lightly provided for by the much shorter Second Protocol and by an article common to all four Conventions, Article 3. Those provisions claim for the person taking no active part in hostilities and, for civilians generally, elementary humanitarian protections. They also (through Article 3) invite the parties to the conflict to conduct it by Geneva rules even though they are not legally bound to do so. Their success in moderating internal conflicts has been limited partly by the fact that parties to civil and revolutionary war generally find it more difficult to recognize the civilian than international parties do, often because they refuse on principle to believe that there is any such person. It needs a resolutely humane revolutionary or counterrevolutionary to feel obliged to jeopardize the success of his cause in order not to hurt civilians perceived as being on the enemy side. More familiar is the sort of revolutionary or counterinsurgent who has no perception at all (except for propaganda purposes) of the civilian in such a struggle. Prudence may incline him to hold his violent hand, but principle will not. If that enemy civilian holds any place at all in his side's power structure, the contemporary conductor of revolutionary or counterinsurgency conflict is likely to regard him simply as an enemy and to do him violence accordingly. Only where civil/revolutionary war is an incident of an otherwise unmistakable international war can the whole weight of international law be brought to bear.

When that clear and dominant international character is not present, the law has no louder voice than common Article 3 gives it and the ever-resourceful International Committee of the

Red Cross can amplify it. Revolutionary and counterinsurgency parties therefore find themselves in a vicious bind, whether they like it or not; and the civilian suffers most from it. Each belligerent party is likely to find it difficult to translate the idea of the civilian into acceptably recognizable terms, and if one of them is nevertheless so decent as to try to do so while the other does not, he may complain that the other is using a double standard. This makes a peculiar difficulty, perhaps not wholly foreseen by the humanitarians who pressed so hard for the law's extension into international wars. Revolutionaries and the regimes they are fighting are not accustomed to accept what belligerents under the classic law of war have long learned to accept, that the classic rules and principles have a chance to work only when detached from the rights and wrongs of the struggle, whatever they may be. A writer who has recently paid meticulous attention to this problem, Professor William V. O'Brien of Georgetown University, admits in his important recent book *The Conduct of Just and Limited War* (1981) that he finds the double standard hard to stomach. He complains of it as "a kind of revolutionary 'wild card' that runs throughout the intersections of the international system."[14] But why does he write as if only revolutionaries played it? Don't counterrevolutionaries play it, too?

Not so insuperable but more enormous is the other great field of civilian risk: risk from the air. In this respect international legislation has recently caught up on a lot of lost time. Air power developed so quickly after 1907 that the law had great difficulty in keeping up with it. It therefore remained in the relatively undeveloped form of general principles, while the laws of land and sea war progressed from the same basic principles into specific prohibitions and restraints.[15] World War II opened with some such rules in draft form only;[16] it ended with such neglect of prohibitions and restraints by the victorious powers that further work on them was delayed by a generation. Nothing of any importance in the legislation of the later 1940s bears on how aerial bombardment may be conducted; however, a great deal of the 1977 Protocol does. It has, of course, no retrospective effect, as some "Nuremberg law" had to have, but it does confirm what much juridical opinion had always maintained: that indiscriminate and terror bombing are unlawful and that civilian deaths and damage, so far as they are unavoidable as corollaries to attacks on military targets, can be justified only by the rule of proportionality and after the taking of such precautions as will minimize civilian risk.[17] Military targets are realistically defined;[18] proportionality and precautions are simply spelled out. Nothing here inhibits the use of bombing to achieve real military advantage. Much, however, reminds us how many civilians have died in the wars of our century because of bombings done for no real or proportionate military advantage.

The plain purpose of this definition in this Protocol must be to protect civilians by reminding combatants that the only enemies they need attack are each other and, by logical extension, each other's means of fighting back. To eliminate enemy combatants and deprive them of the means of eliminating you is to gain military advantage in its most definite and pure form. But military advantage is capable of more political construction. Is it not gaining a definite military advantage, for example, to hasten a militarily defeated enemy's progress to the negotiating table—even, supposing him to be given to duplicity and prevarication, to keep him there and concentrate his mind to the point of signing on the dotted line? Many readers will recognize the historical instances I have in mind: the 1945 bombings of Japan and the 1972 Linebacker bombings of North Vietnam. Neither of them did significant damage to material war-making capacity, which in both cases had already been brought as low as aerial and maritime superiority could batter and blockade it. Instead, these bombings had purposes that can certainly be called political but which were military too, if an earlier instead of a later end to slaughter and conclusion of a cease-fire may be so understood.

It seems difficult to deny that, although the termination of a war may have a definite political purpose, it can also be called a definite military advantage.

This point has been insistently argued with reference to the 1972 bombings by W. Hays Parks, Chief, International Law Branch, International Affairs Division, in the Office of the Judge Advocate General of the Army, Washington, D.C.[19] Those bombings were not like the bombings of the Japanese cities in 1945, which were either indiscriminate or "area" in character. Rather, they were carefully planned and meticulously carried out as circumstances permitted. The United States by this stage of its Vietnam agony had long gotten over its early cavalier approach to the law of war. The Air Force was used in a strictly law-abiding manner. There was nothing indiscriminate or "area" about these raids. If death and destruction occurred beyond and besides the military targets actually aimed at, that is bound to happen in war. The targets were bona fide military ones, and they were attacked with singular intensity. Over twelve successive days, the B-52s reminded the North Vietnamese government of what Washington thought it was forgetting: that although the United States wished to withdraw from the conflict, it nevertheless had enormous firepower at its disposal and was willing to use it. North Vietnam, it is argued, got the message. A legitimate politico-military purpose was achieved in the most lawful possible way, even as it might be under the First Protocol of 1977. The targets aimed at were not all of the first importance—how could they be, when most military targets of the first importance had been bombed to bits already?—but "in the circumstances ruling at the time" (i.e., North Vietnam's dragging its negotiating feet) "their destruction. . . offered a definite military advantage."[20]

The matter can, however, be looked at differently. George Quester, for instance, has suggested that it was not so much the military destruction that reconcentrated the minds of Hanoi as the awesome display of military might that produced it,[21] and by implication the questions follow: What if there should be not even the most trifling of military objectives left to bomb, and still the enemy government refused to come to terms? Is there any point down this strictly law-regarding road at which the civilian himself could become, for political reasons, a military objective?

THIS article has sought to sketch the law's provisions for the protection of the civilian in time of war. They are copious and detailed and go as far, one might think, as law can go. Perhaps they go even further. In some of the more extreme situations in which the civilian may find himself, the law on the conduct of war may become unable to help him or may even, strictly construed, become an additional instrument of his torment. It is therefore wise to recall in conclusion that these parts of international law are only half of the whole. Besides the law regarding the conduct of war, the classic *jus in bello,* there is also the *jus ad bellum,* the law about going to war in the first place or continuing in it once it has, perhaps, gone wrong. Ethics marches through both halves of the law of war and has as much to say about the one as the other. What it keeps saying, to my ear anyway, is: Discriminate. Cling to the principle of discrimination. It is precious and crucial. Its latest legal form, the 1977 Protocol, has had to recognize that a bit of it has gone.[22] One can understand why. The circumstances of twentieth-century warfare have driven the law formally to concede that discrimination may have to be relative and proportionate. But from an ethical point of view, that concession must be regarded as reluctant and mistrustful. The means of achieving even apparently good ends can be so beastly as to spoil the end itself. The principles of discrimination between the real civilian and the real combatant remain crucial to a morally acceptable law of war. If war became morally bearable only because it could at least be discriminating, does it remain morally bearable past the point where it cannot be? And with an

eye particularly to the civilian, whom the law knows by only the simplest test, should ethics complement it by inviting distinction between civilians who may with some truth be said to have brought war upon themselves and civilians upon whom war comes more like a hurricane from afar?

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Notes

1. This episode, which merits further inquiry, is covered by William O'Brien in *The Conduct of Just and Limited War* (New York, 1981), pp. 46-49.

2. They are given with appropriate commentary in Adam Roberts and Richard Guelff, *Documents on the Laws of War* (Oxford, 1982), items 26 and 27, pp. 387-461; also in Dietrich Schindler and Jiri Toman, *The Laws of Armed Conflicts*, Second Edition (Alphen and Rockville, Maryland, 1981), items 48 and 49, pp. 551-629.

3. Sydney D. Bailey, "Nonmilitary Areas in U.N. Practice" in 74 *American Journal of International Law*, 1980, pp. 499-529, offers a convenient summary.

4. First Geneva Convention of 1949, Article 23; Fourth Convention, Articles 14 and 15; First Additional Protocol of 1977, Articles 59 and 60.

5. First Additional Protocol, Articles 50 and 51.

6. The fourth chapter of the First Additional Protocol is devoted to "Precautions in Attack" (Article 57) and "Precautions against the Effects of Attacks" (Article 58).

7. Third Convention, Article 4. The extensions in the First Protocol, not so obvious, but nonetheless momentous, will be apparent to any careful reader of Article 1 (4) and Articles 43 and 44.

8. Article 51 (2), "The civilian population as such, as well as individual civilians, shall not be the object of attack." Also Article 57 (5).

9. Article 51 (2), "Acts or threats of violence the primary purpose of which is to spread terror among the civilian population are prohibited."

10. Article 51 (7) and by obvious implication, Article 58.

11. Article 37 (1) (c).

12. Article 44 (3).

13. The Four Conventions, respectively Article 47, 48, 127, and 144; First Protocol, Article 83.

14. O'Brien, p. 336.

15. The reference in particular is to the Hague Land Warfare Regulations, annexed to the Fourth Hague Convention of 1907, and to the similarly well-developed body of customary rules for naval warfare, which nearly acquired conventional status in 1909. A historical sketch of these matters is given in Geoffrey Best, *Humanity in Warfare* (London and New York, 1980), chapter 3.

16. The Hague Draft Rules of Aerial Warfare, 1923 (in Roberts and Guelff, item 13; Schindler and Toman, item 19).

17. Indiscriminate attacks of every kind are prohibited in Article 51 (4,5). For the prohibition of terror attacks, see note 9; and for precautions and proportionality, Article 57, read together with Article 51 (5).

18. The definition of military objectives in Article 52 (2) demands quotation in full: "Insofar as objects are concerned, military objectives are limited to those objects which by their nature, location, purpose or use make an effective contribution to military action and whose total or partial destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage."

19. W. Hays Parks, "Linebacker and the Law of War," in *Air University Review* (January-February 1983), pp. 2-30. See also, for the same argument in long-term perspective, Parks's article "Conventional Aerial Bombardment and the Law of War," United States Naval Institute *Proceedings*, May 1982, pp. 98-117.

20. Expressions from the definition are reproduced in full in note 18.

21. George H. Quester, "The Impact of Strategic Air Warfare," *Armed Forces and Society*, Winter 1978, pp. 179-206 at 190-91, 197-98.

22. Simply in its formalization of a rule of proportionality to permit "incidental loss of human life, injury to civilians, damage to civilian objects, or a combination thereof" which is not "excessive in relation to the concrete and direct military advantage anticipated." Article 2 (2) generally.

Any notion that "war in the nuclear age has become a political absurdity" is a nonsense of all reason which cannot pass inspection. The reality of the matter is that armed conflict may be drifting towards a rather new or *revisionist* form in which the Clausewitzian conception of war as "a real political instrument, a continuation of political commerce, a carrying out of the same by other means" is completely reformulated into a new life, the basis of which is an upheaval in the theory of strategy. The struggle for power, that is, the pursuit by real violence of an order in relationships through which power is always remitted, being endemic in international and social relations, if stalled on some avenues of expression (the nuclear and conventional paths), unerringly finds others.

Alexander Atkinson, *Social Order and the General Theory of Strategy*, p. 74

AIRBORNE RAIDS

a potent weapon in countering transnational terrorism

COLONEL JOSHUA SHANI, ISRAELI AIR FORCE

I believe, with absolute faith, in our ability to carry out any military task entrusted to us. I believe in Israel and in the general sense of responsibility that must accompany every man who fights for the future of his homeland.

Lieutenant Colonel Jonathan Netaniahu
Quoted in Ben-Porat, *Entebbe Rescue*

THE spirit embodied in these words of Lieutenant Colonel Jonathan Netaniahu is a fundamental prerequisite for successfully performing an airborne raid. Colonel Netaniahu can speak with authority, having led the special force into the Old Terminal at Entebbe to free hostages held by Palestinian terrorists on 3 July 1976.

A *raid* is an operation, usually small scale, involving swift penetration of hostile territory to secure information, confuse the enemy, or destroy his installations. It ends with a planned withdrawal upon completion of the assigned mission.[1] In the context of this article, I would add "to save hostages and prisoners of war."

Most antiterrorist raids are against small terrorist groups or even, on occasion, against state-sponsored terrorism. International terrorism has affected many countries in recent decades. Perhaps a better term for this social cancer is *transnational terrorism,* since *international* has a false ring of legitimacy. Regardless of semantics, transnational terrorism could not survive without sponsors. The Soviet Union is by far the largest sponsor, but Cuba, Libya, South Yemen, and certain other countries have contributed their share as well.

Diplomatic efforts to solve this world problem continue, and every transnational terrorist incident begins with an attempt to resolve the situation by diplomacy without resorting to force. But national hypocrisy on this topic is so pervasive that it is almost impossible to counter terrorism quietly. The first to scream are the Communist bloc countries which, in many cases, prompt other nonaligned and, more significantly, more moderate countries to join the chorus. I personally subscribe to an attitude expressed in a letter of advice to Washington in the 1963 Congo crisis:

> If we are going to be damned anyway, because we dare to rescue a group of people threatened with death and mutilation, we should have done this firmly, openly, with dignity and, if you wish, defiantly.[2]

People holding innocent hostages to achieve some end, whether it be monetary or political, deserve payment in their own coin but at higher interest.

As an aviator, I have chosen six well-known airborne raids to analyze, compare, critique, and evaluate. I shall briefly recount some details of each, establishing a common frame of reference for the reader.

The first raid to be considered is Dragon Rouge (1963), an operation involving a combined force of American C-130s and Belgian paratroopers. They freed a group of hostages held by Simba rebels in Stanleyville, the Congo. The paratroopers were transported by C-130s from Belgium to Ascension Island, in the South Atlantic, with refueling stops in Spain and later at Kamina, 550 miles from Stanleyville. From there to the drop zone near Stanleyville, the C-130s had an escort of B-26s of the Congolese Air Force. After the drop, the Belgians took the airfield, landing their jeeps and supplies. The Belgian paratroopers stormed the city and freed the hostages. Casualties included 3 soldiers dead and 7 wounded, as well as 27 dead among the hostages, but 2000 hostages were saved (later, hundreds more were executed in vengeance).

The next of the raids, chronologically, was the Son Tay prison camp raid in Vietnam on 21 November 1970. After several months of preparation, a very well-trained force flew from Thailand with HH-53 and HH-3 helicopters to rescue prisoners of war from the Son Tay prison near Hanoi. After air refueling and with a large-scale diversionary action staged by the U.S. Navy, the force landed to find the prison empty. Although the force met 200 enemy soldiers by mistake because of a helicopter's landing in the wrong compound, total casualties for the entire operation were one minor wound among the force members and a broken ankle suffered by a crew member during the planned crash-landing into Son Tay.

In the *Mayaguez* incident on 12 May 1975, the Cambodians captured an American merchant ship on the high seas, taking the crew to the mainland and leaving the ship at Tang Island,

35 miles from the mainland. Intensive U.S. Air Force activity did not prevent the Cambodians from taking the crew ashore, but the Air Force sank three gunboats and frightened them so that they freed the crew. Meanwhile, a strong U.S. Navy force of two destroyers and an aircraft carrier approached the area, and 1100 Marines advanced to Thailand. After four days, and while the Cambodians took the crew back to their ship, a strong attack was launched on targets on the mainland and on the island, with bombing by the Air Force, assisted by Navy planes and the landing of Marines by Air Force helicopters. Another group of Marines secured the *Mayaguez*. Casualties on the island were 18 killed and 50 wounded; the 39 civilian crew members survived.

In contrast, during the Entebbe raid on 3 July 1976, four Israeli C-130s flew to Entebbe to rescue 105 hostages held in the Old Terminal of the airport. One C-130 landed there, and after a few minutes the hostages were freed and the terrorists dead. The other three C-130s landed after a few minutes to secure the area and support the evacuation. The flight to Entebbe was nonstop from Israel, and on the return flight, there was a landing in Nairobi, Kenya. Casualties included 3 dead civilians and 5 wounded, 1 dead officer, and 4 wounded soldiers.

Another incident occurred in October 1977 when the West Germans pursued a hijacked Lufthansa airliner with two Boeing 707s carrying GSG9 commandos and a diplomat. On 17 October, the Lufthansa airliner landed at Mogadishu, Somalia, and after a few hours of preparation, a group of 28 GSG9 commandos stormed the hijacked craft. In the brief exchange, 3 terrorists (Arabs and a German) were killed and 1 wounded; 1 commando, 1 stewardess, and 4 passengers were slightly wounded.

On 24 April 1980, a force was launched to save American hostages being held in the U.S. embassy in Tehran, Iran. The first part of the mission was a flight of C-130 tankers from a site, probably in Egypt, to a rendezvous point with 8 RH-53s at a site designated Desert One in Iran. The C-130s were to refuel the helicopters on the ground for the continuation of the mission. Because of bad weather and technical problems, 5 helicopters were left at Desert One, and the mission was aborted. During the evacuation, there was a collision between an airborne RH-53 and a C-130 on the ground. In the ensuing fire, 8 crew members lost their lives. It was decided to leave the helicopters and evacuate the rest of the force in the remaining 4 C-130s.

(My sources for the backgrounds of these airborne rescue operations are limited, for the most part, to published accounts of the raids in the media. I do not have access to the classified documents that go into great depth about the raids. Still, from my own personal experience in such operations, I believe that I can shed enough light on certain points about these raids concerning planning, command and control, preparations, political attempts, and the execution itself to support some conclusions and recommendations. Because I shall discuss these aspects as they are illustrated by the various raids, I shall not necessarily adhere to the same chronological order used earlier. Certain raids are classic in their handling of certain concepts and deserve to be highlighted. In other cases, the raid is not particularly relevant to the concept, so it may be downplayed.)

The importance of airborne raids in support of hostage rescues from transnational terrorists cannot be underestimated. Transnational terrorists are choosing hostage holding as their mode of action with increasing frequency. Because airborne raids have had relatively great success in freeing hostages with minimal loss of life to the rescuers or to the hostages themselves, governments facing such situations in the future can gain some clear advantages if they understand and refine this option for action. Their ability to respond effectively may well depend on their familiarity with the composite lessons learned, for such raids may become increasingly difficult to execute successfully as the terrorist learning curve also goes up.

Let us now turn our attention to the first steps

in a rescue attempt. In a typical hostage situation where terrorists are holding a nation's citizens for whatever reason, the government almost always tries to play its diplomatic card.

Political Attempts

Political initiatives are usually put into effect before or during the military planning stage. Sometimes these initiatives are just to gain time for planning and assessing the situation, but usually they are an effort to resolve the situation without resorting to force. Unfortunately, the brief history of special risk operations shows that political attempts have not been particularly effective in crisis resolution. Their major value has been to buy valuable time, which in some cases has made the difference between rescue and disaster. In the *Mayaguez* incident, the U.S. President instructed Secretary of State Henry Kissinger to seek diplomatic assistance from China in an effort to persuade the Cambodians to release the crew and the ship. However, at the same time, he said:

> Again, I wanted to be hopeful, but I also knew we had to make contingency plans in case the diplomatic initiatives were unsuccessful. At that meeting I told the Defense Department to start the movement of ships, to undertake the aerial surveillance, and to find out whether the crew was on the ship.[3]

Parallel to that, so it would be "perfectly clear" to the Cambodians, White House Press Secretary Ron Nessen made a brief statement:

> We have been informed that a Cambodian naval vessel had seized an American merchant ship on the high seas. . . . The President . . . considers the seizure an act of piracy. He has instructed the State Department to demand the immediate release of the ship. Failure to do so would have the most serious consequences.[4]

Thus diplomatic effort, military preparation, and a direct threat to the other side were all taking place at about the same time. In other instances, it has not always been so. During the Entebbe operation, there were many diplomatic efforts, mainly through the French government, as well as direct calls to General Idi Amin by representatives of the Israeli government. The military option was not openly mentioned to anyone, and no threats were directed against Idi Amin. The North Vietnamese treated the American prisoners of war (POWs) in a terribly inhumane way in order to influence American public opinion against the war and frighten the American pilots who flew the missions over hostile territory. In a very real way, the POWs were treated as hostages. The U.S. administration tried all kinds of diplomatic efforts to improve the conditions of the POWs, but nothing changed. The North Vietnamese recognized the POWs as a card in their hand to be played for all it was worth.

During the hijacking of the Lufthansa jet on 13 October 1977, a military option was developed to counter a diplomatic failure. After the German government received the demands from the terrorists, its spokesman, Klaus Bolling, said that the ultimatum was being taken very seriously.[5] However, the Germans did not waste any time. They sent their chief troubleshooter, State Secretary Hans Jurgen Wischnewski, to negotiate with the terrorists, but 31 additional troops from GSG9 accompanied him, along with another Boeing 707 and a GSG9 special force sent to Cyprus to intercept the route of the hijacked Lufthansa. Was it a diplomatic effort? No. First, there was no one with whom to talk (except to negotiate with the terrorists to buy time), and, second, leaders in the Schmidt government were so thoroughly angered by the Schleyer case (the West German industrialist who was kidnapped and subsequently murdered) that they were ready for immediate military action.

In the Iranian rescue attempt, the political consideration was the main issue for some time.

> Washington, November 9: President Carter today asked Americans to suppress their outrage, anger, and frustration about the events in Iran and to support Washington's efforts through quiet diplomacy to win the release of the Americans held hostage in Tehran.[6]

At the same time, military planning was being conducted in Washington. The diplomatic efforts continued, including high pressure and political and economic sanctions, together with the military preparations. However, for the most part, the Carter administration seemed to think it could resolve the crisis without resorting to force.

In the rescue of the hostages in the Congo (Operation Dragon Rouge), all political attempts involving Belgium, the United States, the Congo, Kenya, and others failed, and hundreds of hostages continued to be held in Stanleyville. The problem there was that the United States was greatly concerned about world opinion:

> If we went in late, while both Dragon Rouge and Van de Waele were by "coincidence" assaulting Stanleyville at the same time, our hopes for understanding and acceptance might be hard to fulfill.[7]

Most of these special operations are conducted without the permission of the country involved. Sometimes they are contrary to that country's expressed wishes. Should these facts be a political consideration? Some operations may be condemned later in the U.N. Security Council or General Assembly. Is this to be a consideration? I believe transnational terrorism must be fought with force—sharp and immediate. Political attempts are acceptable for a limited time, but a government must never surrender to blackmail. Use of the diplomatic option to gain time is perfectly all right, but the responsibility of a country to save her own people is over and above the importance of world opinion or a U.N. resolution that is passed by hypocritic, narrow interests. So, from my perspective as a military aviator, strategists should begin to plan for a special rescue operation the moment a crisis situation arises, realizing that diplomatic efforts will probably not produce the desired release of hostages. In any event, even if the planning for the exercise of a military is not put into play, it serves a valuable purpose and trains the forces involved to be better prepared for times when they are actually called into action. It also makes those involved in negotiations on both sides aware that the aggrieved nation is not without recourse.

Planning

The military planning stage began at the onset of all the crises in question. In the *Mayaguez* incident, time was a critical factor. The main concern was that the Cambodians would take the crew to the mainland, making the rescue operation that much more difficult. For those in authority to make an educated decision, it was necessary that more than one plan be available. According to then-Chief of Staff General David C. Jones, five plans were prepared. The plan to use the twin-pronged Marine assault coupled with the bombing of selected targets—the plan that President Gerald Ford selected—was, in reality, option four.[8] I believe that this number of options is excessive. The military echelon should eliminate a few options and let the President decide from two or three. In this incident, the plan decided on was a maximalist plan. Using 2 destroyers, 1 aircraft carrier, 2 Marine units with 12 helicopters, and numerous Air Force fighters and bombers, as well as reconnaissance aircraft, President Ford felt "a strong personal desire not to err on the side of using too little force."[9] This type of decision is acceptable as long as time is not lost in gathering adequate forces. Later on in the execution phase, it becomes increasingly difficult to control and coordinate such a force to prevent it from overreacting, as happened in this case.

On the other hand, the Germans did not have sufficient planning time. The planning, in effect, was carried out simultaneously with the execution, which is possible only if a special force is ready for such a mission at all times. I am reasonably sure in the *Mayaguez* incident that if a special force such as this had flown from the United States (and there was time for this), the outcome would have been better.

In situations such as hostage rescue attempts, planning is usually based on assumptions or

speculations, especially during the first hours or days of the crisis. In the Entebbe operation, the first plan was rehearsed but then canceled for many reasons, allowing only a little less than two days to conceive and rehearse the final plan. There was no way to make a detailed plan, so many points uncovered were left to the discretion of the command post and the military commanders upon execution of the operation.

During the Congo rescue mission, time was running out also, but the most complicated aspect was to make a quick plan involving American air crew members and Belgian paratroopers and coordinate it with France and Spain. In the plan, there was a stage of deception, and "the move to Ascension was to be described as a 'joint US-Belgian long-range airborne training exercise'."[10] Who would have bought it? Hundreds of hostages are being held in the Congo and by sheer chance 12 C-130s are landing paratroopers on an island not far from the Congo coast. It is better not to mention something unwise and attract unwanted attention, as happened in this operation. The plan to drop the paratroopers near the Stanleyville airport to capture the airfield so as to let the rest of the C-130s land was too time-consuming and complicated. In such operations involving hostages, time is of the essence. Instead of waiting for the C-130s with the jeeps to land, it was determined that jeeps would be airdropped with the troops so that the vanguard of the assault force would be able to continue immediately to the city while the rest of the force organized and followed the assault team.

In the Iranian rescue mission attempt, there was possibly too much time. As stated in the Holloway Report:

> Planning was adequate except for the number of backup helicopters and provisions for weather contingencies. A larger helicopter force and better provisions for weather penetration would have increased the probability of mission success.[11]

I disagree. A failure of two of eight helicopters as a planning assumption is reasonable, and the planners' counting on better serviceability with the Marine helicopters is logical. I find the plan (up to Desert One) very good, but the fact that the planners chose (or were instructed) to let the Army, Air Force, Navy, and Marines participate in one special operation only complicated the later preparation and the command and control. An equal share of credit to all the services is not an essential element of a rescue plan—success is. Presenting the plan to the pilots only after arriving at the forward operating location (probably in Egypt) was also a flaw. One of the pilots noted in his ACSC student report: "We were all anxious to see the real plan. It turned out to be quite a surprise."[12] Despite the need for operational security (OPSEC), this failure to acquaint the pilots with the particulars of the plan beforehand was a flaw in the operation.

The planners of the Son Tay raid also had adequate planning time. They could afford to make as nearly perfect a plan as possible, and it was excellent except for the intelligence failure. However, I find the massive deception operation by the Navy after two years of no Navy strikes quite implausible, particularly since they were dropping flares instead of bombs. However, since there were many Navy fliers being held, I suppose service pride would demand that the Navy also participate. I think that the deception effort was unnecessary and possibly had the potential to alert the North Vietnamese. Overall, too many personnel were involved in the operation, and too many questions were asked later. Getting into the details of the medical evacuation of the prisoners was also unnecessary and violated the principles of OPSEC. Brigadier General Donald D. Blackburn (the father of the operation), after taking part in this section of the planning, was worried about alerting the North Vietnamese and what "could be done to prevent that system from 'going hot.' "[13] I also find that too much equipment was planned for a mission such as this when the weight of the helicopters was so critical (air refueling and the planned crashlanding into Son Tay). To quote a participant:

> It was quite an arsenal for 56 men, 111 weapons in

> all . . . 11 axes, 12 pairs of wirecutters . . . 150 cans of water, 100 cans of survival food . . . and so on.[14]

Going to such great detail is obvious when there is sufficient time, but doing so may hurt the security around the operation and may create a situation where there is a problem dealing with unnecessary details. It is fair to say that this was not the issue in the Son Tay raid. In this rescue attempt, the real problem lay in the nature of the intelligence.

Intelligence

Israel collects intelligence data relating to her Arab neighbors, since she is still engaged in a hostile relationship with most of these countries. But no information was available concerning African Uganda. How can one plan without having basic knowledge of the situation? The Israeli Chief of Staff, Lieutenant General Mordechai Gur, said:

> A second point was that intelligence data was not sufficiently complete, and for an operation like this with all its possibilities, it is very important that intelligence should be as precise as possible.[15]

So, handicapped by a lack of critical intelligence data, the intelligence community started to work. Information about the airport at Entebbe was not a problem. In open publications, one can get the runways, taxiways, towers, terminals, obstacles, and all other needed information. Some information about the Ugandan forces could be gleaned from the passengers who had passed through that airport. Good information about the terrorists, their weapons, and locations was available from non-Israelis who had been released a few days before the raid. In a short time, as complete a picture as possible had been fleshed out.

In contrast, intelligence played almost no part in the Mogadishu rescue operation. The only consideration was that the Germans were determined to follow the hijacked plane until it landed in Mogadishu, Somalia, using civilian controls and commercial pilots. This particular operation was almost reflexive in nature, reacting to the development of events and responding appropriately.

Conversely, intelligence played a vital part from the very beginning of the *Mayaguez* incident.

> Within a few minutes Jim Larkins and his Ready Alert Bird were airborne. By 1430 Zulu, or 10:30 p.m. at Cubi Point Naval Air Station, Jim Messegee had received his first report on the *Mayaguez*. It was too dark for Larkins and his crew to eyeball the ship. But they could see the captured merchant vessel on their radar screens as a big target flanked by two little targets.[16]

From that time, the area of action was covered nonstop by reconnaissance and surveillance planes, which gave the decisionmakers a very good picture. Coverage was so good that the pilot of the P-3 reported Caucasian faces on a fishing boat, a fact that supplied a crucial bit of information about the location of the *Mayaguez*'s crew.

For the planners of Dragon Rouge, the rescue mission in the Congo, accurate and current information was not available on the situation in Stanleyville.

> They were planning in the dark without information of antiaircraft defenses, rebel strength, and location in the city, or even of the location of the 800 or so hostages they were supposed to find and evacuate.[17]

As was the case in the Entebbe raid, reconnaissance was not possible because an airplane flying over the target would risk triggering carnage among the hostages. The only intelligence available for the rescuers' use were some photographs taken far out on the outskirts of the city. Even without the intelligence, the execution phase was well executed.

In the Son Tay raid, poor intelligence proved to be the pivotal issue. The obvious material about the routing and the threat were done very carefully and over a considerable period of time, but the main question remained whether the POWs were still in Son Tay.

> Did some senior members of the intelligence community know in July or early August that the

> prisoners at Son Tay had been moved? Were they moved because of a flood caused by American rainmaking operations? . . . In August of 1970, the Son Tay planners knew only of "decreased activity" at the prison compound.[18]

High-altitude air photos were made when weather permitted, but low-level photography was not performed near the time of the operation for security reasons. Last-minute problems with the SR-71 and bad weather the last days before the raid put the decisionmakers on a 50-50 chance basis. But as things turned out, Son Tay had been empty for some months. I cannot believe the U.S. intelligence community, with all its sophisticated equipment and well-trained personnel, could not find out that simple fact. It was a sad ending to an otherwise beautiful operation.

I must assume that the decision to let the rescue mission go into Tehran involved very delicate, complicated, and courageous activity on the part of intelligence personnel. But little was known about the situation in Iran at the beginning of the hostage crisis.

> There was no immediate hope of getting better information on the whereabouts of the hostages. The seizure of the embassy had left the CIA without a single agent in Iran.[19]

I do not know whether this statement is accurate, but I suspect that it is not far from the truth.

I suppose that to prepare such a complicated operation took a lot of effort and talent from numerous highly skilled personnel. I cannot comment more than that, due to a lack of inside information, but there is one question that has bothered me since I learned of it. Why was Desert One chosen, so near a major road? Were there not other places to land the aircraft in this huge desert? I know from experience that trained crew members can land C-130s on all kinds of runways, dust included, after the necessary crew preparation. I suppose these questions and others like them will eventually be answered in someone's memoirs, but possibly not for quite some time.

Preparations

The Holloway Report said:

> Preparation for the mission was adequate except for the lack of a comprehensive, full-scale training exercise. Operational readiness of the force would have benefited from a full-dress rehearsal.[20]

I find this information quite surprising. A rendezvous of eight helicopters and five C-130s in a remote desert field, at night, in enemy territory is an extremely complicated thing to do. Every crew member must necessarily know perfectly what is going on—when and where. The only way to do this is by means of comprehensive rehearsals. If there were to be an accident, by all means let it be in the desert of Nevada and not in Iran. I learned from one of the participants the unbelievable fact that "none of us had ever landed on sand before."[21]

Landing on sand creates many problems, and the last place on earth one wants to face them for the first time is on an actual operation deep in enemy territory. Although, as I learned from the ACSC student report, the participants did finally manage to accomplish some training on a dirt strip, it was, in reality, a matter of too little, too late. Crews that are candidates for these types of missions should have years of training and experience if the mission is to have any reasonable chance of success.

Another disturbing fact is that the choppers did not practice refueling on the ground with the C-130s. An unusual, extremely difficult, and complicated maneuver like this being done for the first time on the mission itself? In the words of the student report, "I couldn't believe they were having so much trouble with the refueling maneuver since I assumed they had practiced it before."[22] So, if I were responsible for preparing a report on the Iranian rescue mission, I would phrase my report differently. I would begin, "Preparation for the mission was *not* adequate because of. . . ."

In preparing for the Son Tay operation, the Army and Air Force carefully selected personnel

to participate in the raid. Brigadier General Leroy J. Manor and Colonel Arthur D. Simons, the Air Force and Army commanders of the raid, selected a training site at Eglin Air Force Base, Florida. They chose Eglin's Auxiliary Field Number 3.

> History was repeating itself: the Doolittle Raiders had trained nearby 28 years earlier . . . a mockup of the Son Tay compound [was] built so that the assault could be rehearsed under terrain conditions as close to those in North Vietnam as could be found in the United States.[23]

Since time was not a critical factor, such a plan was the best idea to ensure the best training and preparation for the mission. To avoid possible security leaks, the mockup was built so that it could be dismantled during daylight hours. And since the training took place mainly at night, it was that much more realistic. Updating the details about the Son Tay compound was possible by the photo data provided by the SR-71 flights as well as those of photo drones. However, as none of the Strategic Air Command (SAC) personnel were cleared for this operation, I fully agree with the officer from the SAC Reconnaissance Center who said, "a more intimate knowledge of the requirements would [have aided] considerably in obtaining the desired coverage."[24]

The flying part of the preparation was very intensive and dealt extensively with all kinds of required maneuvers. Again, as time was not a factor, there was nothing wrong with giving so much attention to such a wide-scale training and preparation program. But if the situation had been time-critical and the crew members had had only days, not months, to train, luxuries like basic training in night flying, refueling practice, and close-formation work would not have been available. These skills should be in the blood and marrow of crew members designated for such missions of a special nature.

The Mogadishu rescue mission was certainly an example of launching a mission without preparation at all. This kind of operation can succeed only if there is a special force available that is not only specifically trained but maintained in readiness through continuous training. It must be stated here that the Mogadishu operation, although brilliantly executed, was relatively simpler than these other raids.

In the case of the *Mayaguez* incident, there simply was not time for the Navy, Marines, and Air Force personnel involved to prepare. They had to react in a real-time situation with what was available at hand. Parallel to reconnaissance flights of P-3 aircraft from the Philippines, "the Third Marine Division on Okinawa was alerted [with] 1,100 Marines . . . flown to Utapao Air Base in Thailand."[25] Also, Navy destroyers and an aircraft carrier were rushed to the scene. Even so powerful a nation as the United States cannot be prepared to respond globally to all terrorist situations instantaneously, but I pose the question of whether it would not have been better to have used a specially trained force to assault the island and the ship rather than relying on an incidental unit that happened to be in the proximate vicinity to do the job. There was clearly time to fly such a force from a centrally located U.S. base. In my opinion, having a number of units like this is a part of readiness and preparation. Such units could respond as a fire department extinguishing the small blazes that erupt but would leave the job of overall national defense to the regular forces.

In Dragon Rouge in the Congo, the Americans and Belgians had not rehearsed jointly before undertaking the actual operation. More than that, ". . . the Belgians and the Americans involved had never before participated in a joint airborne exercise, nor had the Belgian paratroopers ever jumped from C-130 aircraft."[26] Thus, there was more involved here than simply never having rehearsed before. Both applicable training and basic understanding between the joint forces were lacking. Even the languages were not the same, so communication was naturally difficult. I would venture to say that it took a great deal of intestinal fortitude (or irresponsibility?) to approve the execution of a mission

under such distinctly adverse operational conditions.

In Israel, under the threat of the hijackers' ultimatum, very intensive preparations for the Entebbe raid were carried out. According to the Israeli Chief of Staff:

> I flew with the squadron commander and the pathfinder navigator and posed them certain problems to see how they would be solved. After two hours of flight, I decided that the air aspect was strongly enough covered.[27]

A full rehearsal was held the night before the operation, including all Air Force and Army participants, with all the aircraft and vehicles and even a stylized mockup of the Entebbe terminal, pieced together in a few hours' time. In practice, everything went off without a hitch. Further training was unnecessary, since all those involved had a thorough grasp of the basics and knew the business at hand. All that remained now was the execution.

Execution and Command, Control, and Communications

Command, control, and communications (C^3) in the Mogadishu operation was basically an improvisation. From the beginning, the Germans tried to maintain contact with the hijacked Lufthansa airliner by asking control centers and individual pilots to provide information. The two Boeings that followed—the one with Wischnewski, the State Secretary, escorted by a group of troops from GSG9, and the other 707 with a second group of the same unit—were in constant communication with Frankfurt; the orders they were receiving were directly from the Chancellor. As it was difficult to continue giving orders in light of rapidly moving events, an urgent message came from Schmidt, "The Minister (Wischnewski) has a free hand in all . . . negotiations with the countries."[28] Certainly, this decision not to waste valuable time in lengthy communications played an important role in the success of the mission. Later in the operation, the 707 with the GSG9 group was ordered to land in Djibouti, which was a mistake because of operational security as well as the possibility of the aircraft's developing technical trouble. As it turned out, they did not land because of probing questions originating from Djibouti. Then they were ordered to land after dark at Mogadishu and to execute the operation. Under these adverse circumstances, C^3 was the best that was possible. After their disastrous rescue attempt of the Israeli hostages at the 1972 Olympic games in Munich, the Germans had established the *Grenzschutzgruppe Neun*/GSG9, which was later commanded by Colonel Ulrich Wegener. This group performed to perfection in Mogadishu.

In reviewing the U.S. rescue mission attempted in Iran the Holloway group found:

> Command and control was excellent at upper echelons but became more tenuous and fragile at intermediate levels. Command relationships below the Commander, JTF, were not clearly emphasized in some cases and were susceptible to misunderstanding under pressure.[29]

It is true that the highly sophisticated means of communication allowed the President to command the operation from Washington. But was it necessary? Is it to the benefit of the success of an operation like this to have such a long, complicated chain of command? The President had to make the decision to execute, and this is reasonable in his role as Commander in Chief. However, I would contend that the responsible military officer on the scene of the operation should make operational decisions. Only if, in the onsite commander's opinion, the situation warrants a decision of a political nature should the marvels of high-tech communication be used to secure an answer. A decision to abort a mission because of technical problems is clearly a decision of a professional military commander. The fact that Army, Air Force, and Marine personnel were in the same spot at Desert One contributed to the "misunderstanding under pressure."

As for the performance itself, the C-130's part of the mission was faultless, the Marines' RH-

53Ds were not good enough for an operation like this, and the terrible accident was the result of failure to rehearse under such conditions and sheer bad luck. Accidents can and do happen. As for the part of the mission that was never executed, I do not have the necessary details to present an informed opinion. It must, of necessity, have been an exceptionally difficult operation requiring maximum courage; and had it succeeded, it would have become the operation of the century.

In operation Thunderball to Entebbe, command and control was from military headquarters directly to the lead pilot in the first stage. Upon landing and within a half hour later, command and control was directed to the forces executing the rescue from an Israeli Air Force 707 that flew in the vicinity at the critical time with the deputy commander of the armed forces and the commander of the Air Force. During the remaining time on the ground, command was passed to Brigadier General Dan Shomron, on site at Entebbe. The ability to talk home was there, and it was used mainly as an information channel. Operational decisions were made, as they should be whenever possible, at the scene of the action.

A participant in the Iran rescue mission writes:

> The scenario for the Entebbe raid was ridiculously simple when compared to ours. Their target was a lightly defended, remote airfield. Ours was a heavily defended target in the middle of Tehran. The Israelis, by their own admission, were willing to lose hostages during their rescue. We were not. To compare the two missions was totally out of line and showed a definite lack of insight into military operation.[30]

I accept without reservation that getting into Tehran was more complicated than getting into Entebbe, but the part of the operation up to Desert One was not. I believe that the planners of the Tehran rescue mission, like the Israeli planners, assessed that they would suffer casualties in their operation. And as to the simplicity of the Entebbe operation, there was a serious effort made to keep things simple because simple plans can have fewer things to go wrong—i.e., they have a higher chance of success. In philosophy there is the test of any hypothesis, called Occam's razor, which maintains that in choosing between two similar hypotheses, the simpler is preferred. Prime Minister Yitzhak Rabin said after the Entebbe raid:

> This perfect operation was the fruit of imagination, initiative, boldness, and many years of training. It was performed by young men, both conscripts and regular army, who traveled a long way in a very short time after a minimum of preparation.[31]

As in the case of the Entebbe operation, actual military activity to free the *Mayaguez* and her crew members began immediately. Not only were reconnaissance and surveillance flights made, but USAF aircraft flew strike missions as described by one of the crew members of the *Mayaguez:* "F-4 Phantoms . . . swooped down to strafe and rocket in front and back of the *Mayaguez.*[32] Later on, under direct orders from the White House, F-4s, A-7s, and F-111s sank Cambodian gunboats and tried to prevent a fishing boat carrying the captured crew from getting ashore to the mainland. "We told the aircraft," said the President, "that they should use whatever legitimate means they could to head off either the ships to the mainland or vice versa."[33]

That was an especially effective order, because without being able to control the happenings from nearby, the best means is to convey intent to the onsite commander and to allow him to improvise the means of execution. As matters turned out, this course of action was extremely effective and helped the Cambodians understand the magnitude of their act and the fact that the Americans were not bluffing.

But subsequent activity seemed to many observers an overreaction, considering the nature of the situation. Attacks on selected targets on the mainland were perceived as punishment of the Cambodians (which they deserved) rather than a necessity for the rescue operation. Certain aspects of the military execution are interesting. I am not clear as to the need to consider the use of

B-52s other than that they had previously been used to considerable effect elsewhere in Southeast Asia. The use of a C-130 to drop the 15,000-pound bomb to clear a helicopter landing zone is interesting. However, I feel that the heavy casualties sustained by the Marines and their helicopters were unjustified in an operation such as this where the preponderance of force was clearly on the side of the United States.

After the debacle in Southeast Asia, the United States needed an operation like the *Mayaguez*.

> . . . the success of the action provided more than a soothing balm to the American psyche and a lift for US allies. Most important, the incident in the Gulf of Siam was a clear statement, in this uncertain time, of the firm intention of the President of the US.[34]

Although I think that militarily the execution could have been performed more efficiently, I admire the brazen self-confidence of the U.S. administration and the bravery of the U.S. Marines in carrying out the rescue. The captain of the *Mayaguez* said later: "I cried. People were killed trying to save me."[35]

While no one was killed in the Son Tay raid, men at least risked their lives to save the unfortunate prisoners of war from their North Vietnamese captors. Brigadier General Leroy J. Manor commanded the operation from his command post near Da Nang. Possibly, this site was a bit far from the scene of the action, but it was the best available under the circumstances and was better than having the operation conducted from Washington. Unfortunately for the success of the operation, the sophisticated technology so important in a remote command like this failed to meet the needs of the situation. Consequently, "Manor [was] able to pick up only a hazy picture of what had happened at Son Tay."[36]

Actually, the real command of the operation was in the hands of the participants, namely Colonel Arthur D. "Bull" Simons. The Pentagon command center followed the actions with a few minutes' delay. Good C^3 requires all three components (command, control, and communications) to be effective. But in the case of Son Tay, communications failed at a crucial moment and "the commander of the raid [was left] without his eyes and ears."[37]

However, the operation itself went smoothly. Refueling at low altitude and at night is a difficult operation, particularly when there is turbulence. In this operation, it went off without a problem. The landing itself inside the prison was possibly a bit too hard, but nothing adverse happened; the mistake Simon's pilot made of landing 400 meters off target was recovered quickly and efficiently. Bull Simons said later:

> What are you telling me, Don, that we got a black eye? *I'm* not mad at anybody. I thought the thing was *great*. Okay, so we didn't get them. Christ, the thing was worth doing *without* getting them.[38]

There was doubt as to whether the POWs were there. This doubt may have been justified but too many people wanted to go anyway. Don Blackburn admitted later, "I didn't *want* to know. I wanted to *go*."[39] And go they did, outstandingly, save for the nonpresence of the POWs.

The command problem in the Congo was equally complicated. Just who was to be in command, an American officer or a Belgian?

> In the joint planning [phase] . . . [it was] agreed that the United States would have operational responsibility for the joint command right up to the assault on the drop zone, when the Belgian commander would take over.[40]

This was an admirable agreement. The question within the U.S. command structure of moving from one command to another (from USEUCOM to STRICOM) was solved by the expedient of turning command over to the Belgians on reaching Congo soil.

The use of a specially configured C-130 as a "Talking Bird" for communications was a very important component in an operation in that part of the world. This is particularly true since Washington disapproved a request to use the Collins radio of the onsite U.S. Army liaison officer, Lieutenant Colonel Donald V. Rattan,

to coordinate the military activity in the area and to report to Leopoldville. "This was a strange answer since Rattan was already with the column, and a classic example of a political override of sound military common sense."[41] I must agree, very strange indeed.

Performance during the execution phase was very good. The C-130s dropped the paratroopers who secured the airfield, allowing the other commandos to land with the vehicles. One C-130 with four armored jeeps was an hour late. As it turned out, the Belgian commander's decision to wait for the jeeps was a sad mistake. In an operation involving hostages, time and surprise are terribly important. The delay, in this case, cost some of the hostages their lives. In retrospect, the Belgian commander should have moved quickly without the four jeeps. Other than this mistake, Dragon Rouge was a very well-executed operation without extensive preparation and with simple C³.

TERRORISM can be stopped if the international community is willing to take up the fight. To do so will require firm stands by the heads of state because of predictable international repercussions in some quarters. For example, the Soviets considered "any move into the Congo . . . as serious interference in the internal affairs of another state."[42] Such an attitude is not conducive to saving the lives of hostages as in the Congo situation, where women and children became victims of massacre, rape, and carnage. Was there any other way to save them? I do not claim to have the answer, but what does matter is that most of them were, in fact, saved.

Hence, governments must have the will to use counterforce when fighting transnational terrorism. They must also understand that it is necessary to take this step as early as possible in such a complicated situation because waiting often provokes the inevitable with innocent people suffering needlessly. Specially trained antiterrorist units should be ready at all times to react instantly to transnational terrorist activity. There is no time for basic training. It may be impossible to be prepared for all potential contingencies, but there are certain basic rules and procedures to follow in a hostage situation and military skills that can be sharpened. By keeping the force at a high state of readiness, much time can and will be saved, as well as many lives of both hostages and rescuers. Although planning cannot account for all future scenarios, trained planners should be constantly updated on new developments and available at any hour of the day or night. In addition, those who are to participate should be a part of the planning process. Basic knowledge about equipment needed for airborne operations should be available immediately. There is no need to think and plan some things; for example, a flyaway kit for a C-130 that is going to land in the desert could be prepositioned for immediate use. This kind of information should be ready in the form of checklists for special operations. Since one plan is not enough, there must always be an alternative. However, five plans are too many. It becomes confusing for the political decision-makers to decide from many possible alternatives. Also, it is advisable for crews to practice on the actual equipment they will use in the crisis.

Deceptions and diversionary tactics are important, even essential in some instances. But they must be scrutinized with great care. An overly elaborate ruse can cause the other party to become suspicious and can become a two-edged sword. Also, whenever possible, it is better if the participants know one another personally and have an idea of one another's capabilities. In operations requiring precision, success or failure may depend on knowing what the other members of the operation are able to do.

Still another factor is important to mission success. There is no place in a hostage rescue for service proportionality; it must not matter who is doing what or how much. The hostages, with their lives on the line, do not care whether the Air Force may be doing more than the Marines. Nor can a rescue operation be measured by a balanced budget. Whatever cost must be paid

should be paid up front. In such a situation, another spare can never be considered too many. As a general rule, terrorists are more frightened and less experienced than the troops confronting them, and this extra measure of fear and inexperience must be taken into consideration. While it may be to the advantage of the rescuers, it may drive terrorists to irrational acts, needlessly endangering the hostages. Allied to this is the nature of operational security, which is a necessary part of any mission, but the mission is paramount. Thus, OPSEC must not drive the mission.

As examination of the various operations has amply demonstrated, C^3 is an essential part of any operation. Ideally, it should be kept as simple as possible. It is not necessary for everyone to know everything every minute of an operation. That the commander on the scene of action should have authority goes without saying, yet this is too often ignored, with political considerations taking priority over military necessity. The commander on the scene has the picture because he knows the objectives, and he was specially chosen for the job. He can be depended on to do it. And, in this regard, there should be a margin of tolerance for changes and improvisations by the field commander. There is no way to cover all the possibilities in planning; and even if there is time, excess information may cause confusion under the pressures of the situation.

Debriefing after the operation should be as sharp as a razor. There can be no overly polite smoothing-over of what took place. Everything must be examined in a cold light with a severely critical eye. Mistakes should be emphasized and analyzed carefully. Violations must be condemned and punished. There is no room for compromise in special airborne raids. Failure to assess an operation realistically is setting the stage for future disaster.

In special airborne raids, medals and decorations are necessary but should be awarded only for truly exceptional performance—not across the board to everyone who took part. Otherwise, the awards and decorations become valueless and lose their meaning.

Israel's late Prime Minister Yitzhah Rabin said after the Entebbe raid:

> The Entebbe hijacking was not the first terror action nor, sorrowfully, will it be the last. Events since Entebbe have confirmed that. Yet we are steadfast in our determination not to allow terror to harm us. We shall strike at them, in any place and at every opportunity.[43]

THE nations of the Free World have the capability to counter transnational terrorism; indeed, they have the right to counter it. Have they the will to counter it? Time will tell. One thing is sure: airborne raids against transnational terrorism are effective tools, as has been shown time and again.

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Notes

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36. Schemmer, p. 211.
37. Ibid., p. 212.
38. Ibid., p. 266.
39. Ibid.
40. Wagoner, p. 133.
41. Ibid., p. 162.
42. Ibid., p. 164.
43. Ben-Porat, Introduction.

Change of Managing Editors

Jack H. Mooney recently retired from his position as Managing Editor after twenty-two years with the *Review*. During these years he played an important role in shaping the tone and format of our journal. At his retirement ceremony, he was awarded the Meritorious Civilian Service Award by Lieutenant General Charles G. Cleveland, the Air University Commander. Jack and his wife Jen now reside in Fort Walton Beach, Florida.

The new Managing Editor is Ms. Janice M. Beck, who comes to the *Review* from the faculty of the Air War College, where she prepared course textbooks for the Associate Programs. Ms. Beck holds an M.A. in English from the University of Wisconsin at Madison (1971) and is an Air War College (Seminar) graduate. While we are saddened by Mr. Mooney's departure, we are happy to welcome Ms. Beck aboard.

THE INFERNO OF PEOPLE'S WAR

a historical evaluation of Chinese concepts of national defense

MAJOR THOMAS G. WALLER, JR., USA

MAO ZEDONG'S people's war has been a much-studied but ill-understood concept. Political scientists, journalists, and military analysts have easily revealed its strengths and readily identified its weaknesses. But few have adequately explained its military fundamentals or its surprising persistence at the center of Chinese military thought. Looking at it from a historical perspective, we see that it has evolved from a strategy of revolution, to a doctrine of national defense, and finally to a sophisticated system of nuclear and conventional deterrence. Military men in China have clashed over a wide range of issues, but they have shown a remarkable unity in their loyalty to the military principles of people's war.

Since the Korean War, commentators in the People's Republic of China repeatedly have

stressed the need to build a national defense structure based on the concept of "people's war under modern conditions." What they advocate with this expression seems clear to Western observers—keep the terminology of the outdated people's war strategy, but construct a defense force that can realistically confront a technologically and organizationally modern foe, such as the Soviet Union or the United States. The typical theme of Western analyses is that China is in mortal danger until she modernizes her military, which she cannot do before achieving full economic modernization. In the interim, China must live with operational concepts that are fundamentally unsound.[1] Obviously born of necessity, people's war remains in Western eyes the no-choice alternative that will one day be discarded in favor of a more modern, realistic approach to national defense.

A troubling dilemma for the growing battery of analysts from academic, government, and press circles, however, is that despite the logic of modernization, there is little real evidence that the Chinese intend to abandon people's war as the basis of their national defense policies. Dr. Paul H. B. Godwin calls people's war under modern conditions a "transitional defense strategy."[2] A recent CIA study speaks of "limited progress" and the conditions needed for "success" of the defense modernization program.[3] Such conclusions imply that major revisions of China's policies are around the corner. A clear understanding of the nature of such revisions, however, is lacking.

I shall not attempt here to assess the long-term goals of Chinese national defense policy. Neither shall I evaluate the current strategic capabilities of China's armed forces. Without a broader understanding of the concept of people's war, such analyses seem problematic. Instead, I shall review people's war from a historical perspective and suggest that—regardless of political trends—Chinese strategic thought has shown remarkable consistency. To do this, one must first untangle the military essentials in people's war doctrine from changes that have other, perhaps confusing, applications. Once these essentials have been identified, the overall direction of Chinese defense modernization will be more apparent.

Pre-1949

The rather recent phrase "people's war under modern conditions" suggests consistency with past policies and concepts. Therefore, we must begin by examining the early formulation of the doctrine. That people's war was a successful basis for revolution in the forties (and was exported as such in the fifties and sixties) tends to inhibit our understanding of the military fundamentals that make it effective as a basis for national defense. To understand people's war's national defense aspects, one must separate basic doctrine from other "Maoist" concepts and restrict its scope to the principles of organization and application of military force. It may be useful also to note that the fundamental tenets of people's war have fueled many political debates in China during the past fifty years, in part because People's Liberation Army (PLA) generals and strategists often have been political actors, as well as military thinkers. Thus, while their particular policies and methods may have been attacked by critics with differing political philosophies, the military principles behind their policies caused little disagreement.

Mao Zedong, of course, espoused the essentials of the doctrine in a series of military writings produced after years of experience in a life-or-death struggle against the Kuomintang.[4] Since the birth of the PLA in 1927, Communist forces had been technologically inferior to their foes; and the first tenet of people's war recognized the relative permanence of that inferiority. Mao preached the superiority of "men over weapons," which, in a military sense, meant that any lack of firepower or technology would be compensated for in superior morale and motivation. In the Chingkang Mountains in the early 1930s, Mao first addressed the soldiers' material needs, mostly food and regular pay. By promot-

ing land redistribution, he gained the loyalty and service of the local populace. He also called for democratic relations between officers and men (or in military terms, leadership by example). Finally, he used political indoctrination to instill a sense of purpose and to provide battlefield motivation.[5]

By relying on superior morale, Mao hoped to minimize his army's technological inferiority. By relying on a superiority of numbers, the second tenet of people's war, he sought to minimize technological deficiencies further and capitalize on an obvious Chinese strength. Superiority of numbers could come either locally or theaterwide by enlisting not just regular soldiers in a campaign but also the mass of citizenry. In people's war, civilians become replacements for medics, intelligence and security personnel, supply and engineer laborers, or guerrilla fighters. Such a war environment requires a total war commitment of a supporting populace. In Mao's words, the army must "create a vast sea in which to drown the enemy."[6] In this way, the Red Army was able to outnumber the Kuomintang (KMT) army on a local level, enabling not only its survival but ultimately its triumph.

Finally, people's war embraces the principle of defense-offense. The order of this compound principle is important. Mao taught that the object of war is "to preserve oneself and destroy the enemy." Even though technologically inferior, the mobilized masses would achieve ultimate victory through a three-stage conflict. First, in the strategic defensive stage, the enemy is "lured in deep," overextended, and isolated. Then, in the strategic stalemate phase, the Chinese strength of morale and numbers is brought to bear in a guerrilla war of attrition. Finally, through a strategic offensive, enemy strength is reduced to parity and then inferiority, after which a transition to regular warfare occurs to bring about the enemy's defeat.[7] It should be noted that guerrilla warfare is but one aspect of the broader concept of people's war.

In any military contest, technological inferiority demands an "unconventional," highly flexible approach. The fluid battle lines, lack of an absolutely centralized command, and small-unit, hit-and-run tactics were answers to particular Chinese weaknesses. But even in the early days of the Communists' struggle against the KMT, Mao cautioned against excessive "guerrillaism":

> As the Red Army reaches a higher stage, we must gradually and consciously eliminate [guerrilla features] so as to make the Red Army more centralized, more unified, more disciplined and more thorough in its work—in short, more regular in character. . . . We are now on the eve of a new stage with respect to the Red Army's technical equipment and organization. We must be prepared to go over to the new stage.[8]

Thus, contrary to many Western conceptions, guerrilla war and people's war have never been synonymous.[9] Moreover, the "regular" organization of military forces and periodic improvement of its equipment do not preclude reliance on the principles of people's war.

During the Sino-Japanese War, the difference in strategies of the Chinese Communist Party (CCP) and the Kuomintang set the stage for the ultimate triumph of the Communists in the civil war that followed Japan's defeat. The KMT armies fought a "conventional" retreat against the invading Japanese, abandoning the lost territory. The CCP forces, however, absorbed the Japanese advance and gained the loyalty of the peasants of northern China by offering the only visible resistance, as well as social and political reform. At war's end, the fate of a numerically and technologically superior regular army of the Kuomintang became a textbook example of the efficacy of people's war.

Attempting to reoccupy the north, the KMT army fought an elusive foe that exploited the strategic defensive. By taking major cities of the North China plain and Manchuria, the Nationalists ignored a countryside that had been won over to the Communists. The KMT advance reached its high point in March 1947 when Nationalist troops seized an empty Yenan. The loss of 100,000 of these troops in a subsequent Communist encirclement marked the begin-

ning of the strategic stalemate phase. One by one, the Manchurian cities were surrounded by Lin Biao's 4th Field Army and their KMT garrisons captured. A combined regular and guerrilla campaign along the Peking-Hankow railroad further decimated overall KMT strength. By the summer of 1948, the PLA was ready to assume the strategic offensive against a crumbling Nationalist army.

The ultimate victory was won not by preponderant firepower or superior technology, but by a superior strategy artistically applied. The military victory gave political power to the Communists in late 1949, but it also gave them responsibility for national defense. The outbreak of war in Korea, in June 1950, left little time for a reconsideration of the relevance of people's war to the new mission of the PLA.

1950-59

Chinese units went into Korea with a tactical doctrine that they had used in a different kind of war just a year earlier. Alexander L. George suggests that people's war was a failure in this new context, due to a breakdown of Chinese morale under the punishment of superior U.N. firepower.[10] William W. Whitson suggests "disheartening lessons about the efficacy of guerrilla warfare, Mao's Thought, and 'people's war.' "[11] In reality, certain aspects of the doctrine became part of the Chinese military effort, but the Korean War was, from the perspectives of both China and the United Nations, a limited war with limited objectives. The total war environment of people's war never existed; that is, the Chinese People's Volunteers (CPV) could neither become one with the Korean masses nor attain the type of numerical superiority called for in a people's war. Neither did Chinese troops conduct a defensive-offensive campaign. Instead of luring U.N. forces in deep, CPV forces infiltrated as a regular army between the U.N. Eighth Army and the X Corps, and then went immediately on the offensive with the aim of driving U.N. forces out of Korea. The significant point is the Chinese did not pursue a people's war strategy in Korea, and broad conclusions about its viability as a doctrine of national defense that are based on the Korean outcome are not really valid.

Any army maintains a modicum of flexibility in its strategy simply by having the ability to orchestrate resources in different ways depending on the situation. This flexibility is limited, however, by the training requirements of operational doctrine. Small-unit tactics, for example, demand intensive drill, which imparts a degree of inflexibility that forces strategy to conform in the field. Chinese units went into Korea with a tactical doctrine that they had used in a different kind of war just a year earlier. They allowed this doctrine to drive their strategy onto a track built to Western specifications. Their failure was not that they employed a strategy of people's war, but, rather, that they did not.

What then was the impact of the Korean War on Chinese strategic thinking? If the Chinese indeed judged people's war a failure, China should have moved away from "guerrillaism" toward a more conventional, modern approach to warfare. In 1955, China adopted the "Regulations on the Services of Officers of the Chinese People's Liberation Army," which classified officers by field of specialty and rank into the army, navy, and air forces.[12] That same year, China adopted universal military conscription. One need only glance at the pictures of the great Chinese "Marshals" in their bemedaled Soviet-style uniforms to be convinced that a new day of professionalism had dawned in the PLA. Strategists certainly should have been busy modernizing their thinking along with the uniforms and regulations. Yet three years later, Mao Zedong, at a Chengdu work conference, assessed the progress of defense building:

> In the period following the liberation of the whole country, dogmatism made its appearance in both cultural and educational work. A certain amount of dogmatism was imported in basic military work, but basic principles were upheld, and you could not say that our military work was dogmatic.[13]

Mao reported here that although certain dogmatic, i.e., Soviet, influences had penetrated military organization, the basic principles of China's military thinking had remained unchanged.

The issue of professionalism highlighted discussions of the late 1950s. In the famous Red vs. Expert debates and the ensuing Peng Dehuai affair, political conflicts obscured the fundamental strategic positions of the two sides.[14] Most Western analysts suggest that those favoring Maoist guerrillaism and unconventional warfare were in dispute with proponents of Peng Dehuai's Western-style professionalism.[15] Such views result from misconceptions of the military principles behind people's war, as well as from Western presuppositions of military professionalism found in such works as Samuel P. Huntington's *The Soldier and the State.* We in the West tend to apply our definitions and concepts without qualification to the Chinese scene. For example, the "efficient management of violence" called for in Western professionalism assumes the availability (or at least, the prospect) of adequate hardware. However, China has never possessed the indigenous capability to produce the required hardware to build a "professional" force; and to buy such equipment not only would be too expensive for the Chinese economy, due to the size of the Chinese forces required, but also would violate the Communist tradition of self-reliance. Additionally, Western military professionalism draws on Western (including Russian) military traditions of civil-military relations that preclude practices, such as the involvement of military men in politics, that may be fully legitimate even to the Chinese "expert."

Such an expert was Marshal Peng Dehuai, a dogmatist according to Mao and an example of the new military professional to foreign observers. A look at Peng's views on the basic tenets of people's war, however, will reveal a consistency in strategic thinking that endured the impact of the Korean War and massive doses of Soviet equipment and advice.

Peng Dehuai was criticized throughout the 1960s as one who believed that "weapons decide everything." We have no way of knowing whether this criticism was accurate or whether the attacks were politically motivated rhetoric. However, we do know Peng's views on the importance of morale in overcoming technological inferiority. Key indicators of support for the people's war approach to morale include support for party involvement in political indoctrination of troops and "democratic" relations between officers and men. A high grade on each of these indicators would mean sacrificing "professionalism" for high morale. An analysis of Peng Dehuai's speeches throughout the 1955-58 period reveals that he fully supported the men-over-weapons tenet of people's war. Typical is his 1957 Army Day speech, fully one-third of which was devoted to "the several systems essential to building up the army." He listed these as "the system of Party leadership of the army," "the system of political work in the army," and "the democratic system of the army."[16]

It is generally known that Peng's concern with the deterioration of morale in the army inspired his criticism of the Great Leap Forward at the Lushan Plenum in 1959. The gravity of his blunt, perhaps even foolhardy, political challenge to Mao reinforces our evidence that Peng believed morale to be crucial to Chinese national defense.

The second tenet of people's war, reliance on superiority of numbers, goes beyond the mere use of reserves, for which all armies have plans. People's war calls for an exploitation of the strength of the civilian populace by assigning a crucial role to nonregular forces. In China's case, the people's militia has served alongside regular forces as a vital part of national defense. Such a construction, however, makes the defense force "unprofessional" or, as Mao put it, "guerrilla in character." Observers therefore have focused on Peng's opposition to the militia as a sign of his professional orientation.[17] Overlooked is what he advocated as an alternative to the massive expansion of local militias.

In promulgating the Draft Service Law of 1955, Peng explained that the use of universal conscription would enable the army to continuously demobilize trained servicemen and build up a large reserve system.[18] In a speech to the 8th National Party Congress in September 1956, he reiterated the need for a large and capable reserve:

> In respect of manpower, we must have, besides the standing army, prepared a great number of officers and men as reserves. We have changed the volunteer service system into the compulsory military service system and have already begun to register and train officers and men for preparatory service.[19]

A year later in an Army Day speech, Peng referred to the experience and training of reserves:

> To solve the contradiction of maintaining a small force in peace while having a larger force in time of war, we have improved our military service work and are ready to put into effect the system of militiamen combined with reserve service. . . . Taking into account China's characteristically large population our country can always maintain a militia force of tens of millions.[20]

While Peng Dehuai referred to the militia as a "heap of gooseflesh" when it was untrained and ill-organized, he advocated maintaining a large force of trained reserves as militia to be relied on in time of war. It is significant that he expressed these views over a four-year period, 1955-58, a period that was considered the height of Chinese military "professionalism" and expectation of continued Soviet assistance.

Peng saw morale of soldiers as crucial to China's national defense, and he advocated a reliance on her large population to achieve overwhelming numerical superiority. Both of these aspects he viewed from a people's war perspective of "oneness with the people," that is, cooperation of regular and nonregular forces with a supporting local population. This theme was clear in the aforementioned speech to the 8th NPC:

> The People's Liberation Army of China gained victories because of the support of the broad masses and because of the close unity between the army and the people whose interests are completely identical with those of the army.[21]

He went on to list specific ways in which the PLA depended on the people: for manpower, for self-defense corps and replacements, and for supply and service by "turning every family into a factory, a depot, or a hospital."[22]

These views show that Peng promoted policies in conflict with Western conceptions of professionalism concerning army organization. In spite of his desire to modernize weaponry, he recognized China's technological inferiority. He also recognized the priority of overall economic modernization. Although he sought to bridge the technological gap as far as possible, he knew that to breach it China would have to rely on the fundamentals of the military principles of people's war.

Assessing Peng's views on the principle of defense-offense is more difficult, since we must deal with evolving dimensions of China's defense structure of the 1950s and 1960s. Naval, air, and nuclear forces seem by their very nature to professionalize people's war. These dimensions gave the Chinese offensive capabilities that offered the prospect for strategies not employed in earlier struggles. Yet China's newer dimensions of military capability remained technologically inferior to those of most potential adversaries. In addition, the PLA's mission had broadened equally as much as its capability. No longer was it concerned simply with winning a revolution, but now with preserving and defending it. In this new period of defense building, the old goal of maximizing strengths and minimizing weaknesses called for these new dimensions to be integrated into defense doctrine in order to preserve the validity of people's war's conventional concepts.

For the moment, it is sufficient for us to know that Peng Dehuai reacted quickly and vociferously against any suggestion that China was building a force with strategically offensive designs. He regarded such "imperialist" suggestions as "slanderous" and as a "cover for their own aggressive pretentions." In the speeches

that we have mentioned, he reiterated many times that ". . . we have never thought of and will never think of encroaching on other nations."[23]

In sum, Peng's desire for modern weapons, regularization of forces, and military, rather than political, training are not in themselves antithetical to the principles of people's war as the basis of national defense. Such views were used against him by his political adversaries, but in terms of military essentials of strategy, the disputes were superficial. It seems then that the impact of the Korean War on Chinese military thinking of the decade 1950-59 was less profound than is commonly assumed. The major legacy of that conflict was not an awareness that China needed a "professional" defense force, but rather a recognition that people's war had limitations, that the PLA's mission had changed, and that people's war needed to be adapted to the "modern conditions" of a changing strategic environment.

1959-71

The period that followed Peng's removal as Minister of Defense is commonly thought to have been a time of reassertion of the Red over the Expert, meaning the unconventional over the professional model of national defense organization. Observers assume that this change included a similar reversion in strategic thought. In forming such a view, however, analysts have let the character and career of Peng's successor, Lin Biao, and the rhetoric of the Cultural Revolution of the 1960s obscure the progression of strategic thought under a new leadership. The period was marked by a concentrated effort to put "politics in command" in the PLA, by a deterioration in relations with the Soviet Union, and by China's entry into the nuclear club. These developments constituted a departure from the immediate past in some respects, but on strategic thinking their impact was less profound than many contend. Although he waved the red flag of revolution and exalted the thought of Mao Zedong, Lin Biao also was a political actor with ambitions in the political realm. In terms of national defense policy and its underlying principles, he reaffirmed the basic tenets that had guided the thinking of his predecessors.

The new chief of the largely peasant PLA found himself beset with problems of morale emanating from the chaos caused by the failure of the Great Leap Forward. One of his first campaigns was to put "politics in command." He began by sending large numbers of political workers into field units to do "extensive political and ideological work."[24] Since this program was not a rectification of the officer corps but was clearly directed at the individual soldier, it should be interpreted as an effort to raise troop morale.[25] At a staff conference in September 1960, Lin declared:

> Political work in the army is the Communist Party's mass work in the army. It is similar to the work of mobilizing the masses in all the various localities; we are mobilizing the armed, uniformed masses. There is strength when the masses are mobilized and when there is integration of ideas and people.[26]

Indeed, Lin viewed this "political work," these efforts to rebuild morale, as the key to success in all other areas of military work: rear services, military training, and educational, cultural, and headquarters work. He institutionalized this idea throughout the PLA in the "Four Good Movement": superiority of men over weapons, practical experience, the interrelationship of political work and other aspects of work, and book learning.[27]

Peng Dehuai had drawn fire from critics for promoting military training at the expense of political indoctrination. Yet when we examine Lin's views on training priorities, we see that he too demonstrated "professional" tendencies. On 30 December 1960, Military Affairs Committee member Xiao Hua transmitted "Chief Lin's" instructions on work priorities for 1960 to committee members. In military training, he recommended that eight to nine months of the year and seven to eight hours a day be spent on

exclusively military training. From his comments on a report by Deputy Chief of the General Staff Zhang Zungxun about the poor state of training, Lin revealed his overall conception of training and the "key link" of politics:

> We must stress the principle that politics comes first, and politics is the commander. But, in terms of time consumed, political education should not take the first place, and still less time should be occupied by cultural activities and physical labor, as the first place should be given to military training.[28]

Thus Lin's "politics is the commander" policy was less a return to revolutionary fundamentals than a reaffirmation that morale was crucial to China's national defense.

Ostensibly, Lin's purpose was to restore the combat power of the PLA through concepts that held men superior to weapons. In the process, however, he did not deny the importance of the acquisition of modern weaponry. In fact, Lin acknowledged (perhaps more clearly than anyone else) the dynamic flexibility expected in "people's war under modern conditions":

> In army construction on the one hand we should carry out material construction by continually improving the technical equipment of our army to strengthen its fighting power, and on the other hand carry out spiritual construction. Once a spiritual thing is turned into a conscious act of the great masses, it will become a great material force.[29]

Politics aside, then, we see a continuity between Peng and Lin on the importance and role of morale and the necessity for extensive military training and continuous weapons improvement. (Often, yet erroneously, the latter two of these continuities have been viewed as indicators of opposition to the principles of people's war.)

Peng and Lin were also closer than most believe in their views on the utility of nonregular forces. Although Lin emphasized the institution of the militia, a popular people's war linchpin, the "Everyone a Soldier" movement was begun by Peng and was well under way when Lin assumed command. We do know that Lin, like Peng, assigned a vital role to China's masses:

> In addition to having a standing army which is politically firm and equipped with modern technical equipment, our national defense might include a militia force of several hundred million people. With such an army, it will be possible—if imperialism dares to launch an attack on our country—to sound the call of "Everyone a Soldier" and activate all the people to fight in coordination with the standing army, drawing the enemy into the inferno of all-people's war.[30]

Discussing "The Logic of Chinese Military Strategy," Jonathan Pollack asserts that people's war "has always remained an improbable sort of conflict," since it is "a form of warfare that no rational adversary would possibly want to encourage."[31] While it is logical that China's potential adversaries would avoid such an inferno and perhaps resort to other lethal strategies, the same logic confirms the value of a national *defense* strategy based on people's war. Many nations having greater economic strength, more advanced technology, and smaller and far more defendable terrain do not enjoy the security from conventional attack that China enjoys. With scarce resources and immense requirements, China has formulated perhaps the only strategy that could so effectively deny an enemy the option of a large-scale conventional assault on Chinese territory. Paradoxically, "modernization" of China's armed forces by moving away from the doctrine of people's war could be extremely dangerous, since it would undermine the basis of a strong conventional deterrence.[32] Neither Peng Dehuai nor Lin Biao sought to change these principles during their respective tenures in office. Lin faced far more profound strategic challenges, however.

The withdrawal of Soviet aid and technicians in 1960 changed the entire strategic picture in Asia. Without a nuclear umbrella, China faced a United States still angry over the Quemoy-Matsu incidents of 1958. As the 1960s wore on, the dimensions of the threat increased with a steady buildup of Soviet forces to the north and

of U.S. forces in Vietnam. In 1965, Lin made his famous speech, "Long Live the Victory of People's War," the meaning of which has been the subject of much debate. The general consensus in recent literature is that it was a statement to countries engaged in revolution, particularly Vietnam, that they would have the moral, but not material, support of China. What should not be discounted, however, is a more literal interpretation that it was a definitive statement directed toward both the United States and the Soviet Union to declare the potential of, and China's adherence to, a people's war approach to national defense. China had organized her defenses to such a degree that to conquer her by land attack would be an impossible task. Before reviewing the historical experience of the "great victory of people's war in China," Lin points out that:

> In every conceivable way U.S. imperialism and its lackeys are trying to extinguish the revolutionary flames of people's war. The Khrushchev revisionists, fearing people's war like the plague, are heaping abuse on it. The two are colluding to prevent and sabotage people's war.[33]

The "sabotage" of people's war was a real threat in the nuclear era. Although secure from major conventional attack, China was extremely vulnerable to a large-scale nuclear strike. So acute was the crisis that the effectiveness of the entire people's war foundation of defense was questionable.

It became the unfolding challenge for Chinese strategists to formulate defense policies that would restore the viability of a concept that denies technology the crucial role. The nature of the challenge is reflected in the New China News Agency announcement of China's thermonuclear test in 1967:

> The successful hydrogen bomb (test) . . . marks the entry of the development of China's national defense science into an entirely new stage. It has dealt another telling blow at the nuclear monopoly and nuclear blackmail of the two nuclear overlords—the United States and the Soviet Union.[34]

China's frantic drive to achieve at least a regional nuclear capability and the subsequent building of her nuclear force can thus be seen as an attempt, through nuclear deterrence, to deny an enemy the nuclear strategic option—an option that would undermine the viability of China's defensive application of people's war.

The year 1965 saw drastic changes in China's military organization and leadership. The impact of these changes upon strategic thought remains obscure. On 22 May, the system of ranks which had been in effect for a decade was abolished. Associated with the Red vs. Expert debate, this event is seen as a herald of the Cultural Revolution. Many regard its opening event as the purge of PLA Chief of Staff Lo Ruiching. These events have been interpreted as a rejection of "professionalist" ideas left over from the Peng Dehuai era. Few observers, however, have paid adequate attention to the changing strategic picture in Asia and the impact that growing Chinese hostility toward the Soviet Union was having in China's domestic politics.

After the system of ranks was adopted in 1955, numerous campaigns against its harmful effects revealed its inapplicability to the Chinese scene. These effects became fully apparent after the withdrawal of Soviet advisors. The system's Soviet model failed to regard the unique relationships between Chinese officers and soldiers and the difference in roles of Chinese and Soviet political commissars. Through its association with a nation that had "betrayed" the revolution and the Chinese people, the rank system no doubt also became profoundly awkward and embarrassing. The official explanation for the system's abolition appeared in a *Jiefangjun Bao* editorial of 24 May:

> This system came into effect from 1955 onwards, after victory throughout the country. Ten years of practice has proved that it is not in conformity with our army's glorious tradition, with the close relations between officers and men, between higher and lower levels, and between the army and the people.[35]

The article further pointed out that the ". . . lower levels submit to the higher levels and the

fighters respect the cadres; this is done consciously by every soldier for the needs of the revolution and does not depend on the operation of ranks or grades."[36] The "needs of the revolution" in this regard concerned two of the fundamental principles of people's war—the superiority of men over weapons through high morale, and dependence on superiority of numbers through close relations between the army and the people. The change of regulations mirrored a rejection of Soviet methods that permeated all areas of Chinese development. It was not a return to "Redness" that was significant, but rather a return to independence in PLA organization. Similarly, a return to a system of ranks today, an event that Western professionals await eagerly as a sign of China's coming of age, would not indicate "professionalism" as we define it. Neither would it indicate a change in basic Chinese strategic thought. As we have seen, the accouterments of professionalism did not change Chinese defense concepts in the 1950s under Peng Dehuai.

Similarly, the purge of Lo Ruiching in the 1960s has been viewed as a rejection of military professionalism. Lo had been associated with the pursuit of advanced weaponry from the Soviet Union in the face of the growing U.S. threat in Vietnam. In the Cultural Revolution his "weapons decide everything" attitude was widely criticized. Reportedly, he favored an all-out thrust in nuclear weapons development. He even challenged the authority of political commissars. Like Peng, however, none of Lo's recommendations advocated the scrapping of the people's war approach to national defense. His objection to political commissars was in regard to their abuse, not their use. He saw the commissar's role as did Mao, not as a political watchdog, but as a political leader, i.e., a morale builder. Disputes over the place of nuclear weapons in Chinese strategy were common, but even the chairman himself, according to the official press in 1967, had issued a "great historic call" in 1958 to develop atom and hydrogen bombs within ten years.[37] Accordingly, the explosion of China's nuclear bomb was announced with fanfare as a great accomplishment of Mao Zedong Thought. Lo's greatest mistake seems to have been political rather than strategic, centering around his persistent Soviet sympathies. Thus his fall should not be attributed to his objection to people's war as the basis for national defense.

There were, of course, many military issues involved in the Cultural Revolution. For the most part, however, these were internal political issues related only marginally to national defense concepts. It should not surprise us that people's war, closely associated with Mao Zedong, was exalted during the great campaign; but this exaltation was usually within a political, rather than a strategic, context. Because it is outside the scope of this article to explore the political ramifications of the doctrine, I shall mention merely that political turbulence characterized the Chinese military from 1965 to 1968. The next era of strategic development began with the dramatic escalation of the Soviet threat in 1969 and the fall of Lin Biao in 1971.

1969 to Present

Party leaders at the Third Plenary Session of the Seventh Central Committee of the CCP in 1950 laid down a fundamental principle of strategic policy of the People's Republic of China: In order to modernize the military, China must first modernize her economy. The policy was buffeted by the Korean War and the massive influence of Soviet aid and advice in the early 1950s, but it was reaffirmed in Mao's famous 1956 speech, "On the Ten Major Relationships":

> In the period of the first Five-Year Plan, military and administrative expenditures accounted for 30 percent of the total expenditures of the state budget. This proportion is much too high. In the period of the second Five-Year Plan, we must reduce it to around 20 percent, so that more funds can be released for building more factories and turning out more machines. . . . We must strengthen our national defense, and for that purpose we must first of all strengthen our work in economic construction.[38]

After Mao's death, this principle was reaffirmed again with the widespread republication of the original speech on 1 January 1977. To our knowledge, this relationship between economic development and military modernization has never been challenged by any of the major military leaders of China. It forms the backdrop for all discussions of military modernization, the theme of defense building in the period following the fall of Lin Biao.

Nevertheless, events in the 1970s demonstrated that Chinese strategists have continued their efforts to maintain the viability of people's war as the basis for national defense. This continuity in Chinese thought has been missed by many Western analysts. William Whitson describes the 1970s as "The Revolution Betrayed," citing the ascendancy of "professional" military men to Party and government positions.[39] Ellis Joffe states that after almost 20 years of wavering, "The PLA has returned to professionalism."[40] Jonathan Pollack sees in the 1970s "The Decline of People's War."[41]

In Western eyes it is logical to explain the unfolding of military thought in the terms of professionalism. China's recent emphasis on weapons procurement, modernization of defense industries, and nuclear forces seem to support this view of Chinese defense trends. It is also logical to question, as Pollack does, the rationality of a particular form of warfare. Few would argue that any major nuclear conflict is rational, yet today nuclear weapons retain a very real and vital role in the defense structures of the Soviet Union and the United States. Similarly, although the Chinese had developed the deterrent aspect of people's war to the point of confidence that it accomplished its intended purpose, it would be absurd to suggest that they would relax in that confidence and assume that a major war with the Soviet Union will never be fought. The Soviets began to deploy large forces along the Sino-Soviet border during the Cultural Revolution. By 1969 they had 21 divisions in place, 2 of which were in Mongolia. The Soviets continued their force buildup at the rate of about 5 divisions per year until, at the end of 1974, they had 45 divisions deployed, 8 of them tank divisions. That was 14 divisions more than they had deployed in central Europe. In addition, one-fourth of the Soviet Air Force was deployed in the Far East—a force that included their latest, most sophisticated aircraft.[42]

The major events that shaped Chinese strategic thinking in the 1970s were this increased Soviet threat and the gradual warming of relations with the United States and the West. While the fall of Lin Biao and the death of Zhou Enlai and Chairman Mao had drastic effects on the military and its political role in the People's Republic, the effects of these internal events on strategic policy have been minimal. Even the change in threat perception has not had significant effect, for the Chinese had developed their strategy under a dual threat in the 1960s and had produced a credible regional nuclear deterrent by the 1970s—a nuclear capability that has steadily increased in range since then. As People's Republic now approaches its fourth decade, the Chinese have ranked modernization of national defense fourth among the four modernizations announced in their development program in 1975.[43] Alone, these events mean little, but combined with continued endorsement of "people's war under modern conditions," they indicate that the Chinese are satisfied that their defense strategy not only is sufficient for the moment but will suffice at least until the overall modernization of the economy is accomplished.[44] Their target for that achievement is the year 2000. However, the Chinese probably anticipate a long-term process of economic development. Thus, people's war is likely to form the heart of Chinese national defense policies for the foreseeable future.

Perhaps the most telling statement on China's continuing approach to defense strategy comes from an article published in 1979 by the National Defense Scientific and Technological Commission, the group that forms probably the strongest Chinese constituency for modernization of defense weaponry:

> In waging war, we have relied and will continue to rely on people's war. However, we must realize that any future war against aggression will be a people's war under modern conditions.[45]

The entire article attacks the "Gang of Four" notion that "when the satellite went up, the Red Flag came down." Its major assertion is that modern weapons are fully consistent with Mao's teachings and do not bear on the question of loyalty to the doctrine of people's war.

Political debate since Mao's death in 1976 has fallen clearly into distinguishable lines. The actors identify themselves with their positions on certain issues. People's war, as the concept behind national defense, has not been such an identifier. Debate on military strategy has been conspicuous by the absence of substance. While multiple approaches to modernization of agriculture, industry, science, and technology have surfaced, only minor variations have occurred in one basic military line—people's war under modern conditions. That China shops in foreign arms markets is loudly proclaimed and analyzed in Western circles. That she is *reluctant* to buy is not. What observers have not analyzed are the strategic implications of the types of weapons China currently fields, and in what new types she has shown interest. Space precludes such an analysis here. It is clear, however, that the routine organization, equipment, and deployment of Chinese defense forces have not changed radically in thirty years. Currently, China shows interest in antitank missiles more than tanks. She has considered more antiaircraft missile systems than airplanes. In short, China remains interested in defensive weapons that are cheap enough to deploy in large numbers. No support for a "modernization" of Chinese strategic thought seems apparent in these preferences.

If we look at what various Chinese leaders *say* about national defense policy, even after a skeptical analysis of the "Pekingese," we should find it difficult to deny a continuity in defense thinking. Mao's immediate successor, Hua Guofeng, not surprisingly echoed Lin Biao at a May 1978 NPC work conference:

> Politics is the commander, the soul in everything. . . . Only by closely combining men with high proletarian awareness and modern weapons and equipment will it be possible for us to demonstrate truly great fighting power.[46]

The old Marshal, Ye Jianying, stated the mission of the PLA on the 30th anniversary of the founding of the People's Republic:

> Together with the people's militia, [the PLA] should take an active part in and defend the four modernizations program and be vigilant at all times to guard the frontiers of our motherland.[47]

There is no hint that a movement toward "professionalism" will turn the Chinese away from the principles that they have reiterated over the decades.

Our spectrum of opinion would not be complete without the view of Deng Xiaoping, current chairman of the Military Affairs Committee and acknowledged regent of the PRC since the Third Plenum of the 11th Central Committee (December 1978). In an interview, the Italian journalist Oriana Fallaci asked Deng how the Chinese could possibly think to compete with the tremendous efficiency of the Soviet war machine. Deng's answer:

> (He laughs). Listen, China is poor and our military equipment is very backward, but we have our traditions. For a long time we summed up the experience for defeating enemies with advanced weapons, and this in spite of our poor equipment. Our territory is vast, our people have learned to have the endurance to carry on a long war, to defeat strength with weakness. Anyone who wants to invade China must consider this fact. . . .[48]

Ms. Fallaci pressed for clarification by stating that a Soviet war with China would mean world war, which would mean nuclear war and the end of everything. Deng's response provides a revealing picture of the Chinese attitude toward total war under "modern conditions":

> I agree on the first part. If the Soviet Union invades us, it will not just be a local war. But I don't agree with the rest. Precisely because both sides have so many nuclear weapons, the possibility exists that the third world war will be a conventional war and not a nuclear war.[49]

Believing, then, that the next war will be conventional and knowing that they remain technologically inferior, the Chinese remain loyal to the military principles that have served them well.

UTILIZING the principles of men over weapons, superiority of numbers, and defensive-offensive, the Chinese Communists overwhelmed the more powerful Guomindang armies in the 1930s and 1940s. In the 1950s they made the strategic transition to make people's war the basis of national defense under the protection of the nuclear umbrella of the Soviet Union. Losing the luxury of Soviet protection at the end of the decade, China had to rely on the deterrent value of people's war while she developed her own nuclear capability in the 1960s. While validating the effectiveness of people's war as a conventional deterrent, China conducted successful warhead and delivery system tests, which gave her a credible regional nuclear capability. Strategists believed that a regional deterrent would suffice while China continued to enhance her strategic force capabilities. Having achieved a nuclear deterrence, the Chinese have assumed that any major conflict would be on the conventional scale. It is at this juncture that people's war under modern conditions became and remains a fully developed strategy of deterrence.

Obviously, this is a strategy of total war and does not apply to limited local conflicts, such as the Korean War, the Sino-Indian Conflict of 1962, or the Sino-Vietnam Conflict of 1979. China took her tactical doctrine and other aspects of people's war into these clashes, but the principles of people's war were not tested in them. Neither would a limited Soviet incursion be an occasion for people's war. To improve her capability to deal with limited conflicts of this nature, China must find supplementary strategies. Thus, even China's building of a rapid deployment force or several fully modernized divisions would not indicate the abandonment of people's war as her central concept of national defense.

A broader perspective on people's war indicates that many of our assumptions about Chinese military policies are ill-founded. Arms, for example, may never prove to be that elusive commodity that will open up the "China market." We should, however, understand the logic of China's shopping lists and the timing of her purchase orders. Similarly, military professionalism may not be the issue we in the West have built it up to be. People's war has been a strategic concept that has seen wide variations in its general lines of development. It remains at the center of China's national defense policy under the modern conditions of the present, and it will continue to be the focal concept of a national defense strategy of deterrence at least until China's industrial economy stands coequal with those of her potential adversaries. Although a strategy that acknowledges material weakness, it is not without teeth. Should her deterrent system fail, China's enemy might find to their professional surprise that the armed forces of China can, indeed, be both Red and Expert.

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Notes

1. Various critical weaknesses of the strategy are explored by Alexander George in *The Chinese Communist Army in Action* (New York, 1967); Harvey Nelson in *The Chinese Military System* (Boulder, Colorado, 1981); Ellis Joffe and Gerald Segal in "The Chinese Army and Professionalism," *Problems of Communism*, November-December 1978, p. 6; and Paul Godwin in *Doctrine, Strategy and Ethic: The Modernization of the Chinese People's Liberation Army* (Air University Research Division, 1978). The underlying assumption in these and many other scholarly analyses, media reports, and government studies is that people's war as a strategic concept has been in the process of decline since liberation and stands little realistic chance against the more modern concepts and technologies of China's potential adversaries. Perhaps most typical are the conclusions of Jonathan Pollack in "China as a Military Power," *Military Power and Policy in Asian States* (Boulder, Colorado, 1980) and "The Logic of Chinese Military Strategy," *Bulletin of Atomic*

Scientists, January 1979.

2. Dr. Paul H. B. Godwin, "Chinese Defense Modernization," *Air University Review*, November-December 1981, p. 17.

3. *New York Times*, 26 August 1982, p. All.

4. In particular, see "Problems of Strategy in China's Revolutionary War," "Problems of Strategy in Guerrilla War," "On Protracted War," and "Problems of War and Strategy," all in Mao Tse-tung, *Selected Military Works* (Peking, 1967).

5. Mao Tse-tung, "The Struggle in the Chingkang Mountains," *Selected Works* (hereafter referred to as *SW*), Vol. I (Peking, 1967), pp. 81-83.

6. Ibid., Vol. II, p. 154.

7. Ibid., pp. 137-40.

8. Mao Tse-tung, *Selected Military Works*, pp. 139-40.

9. As but a few examples, Alexander George's *The Chinese Communist Army in Action* (New York, 1967), William Whitson's *The Chinese High Command* (New York, 1973), and Gerald Corr's *The Chinese Red Army* (New York, 1974) demonstrate a guerrilla-war-equals-people's-war perspective.

10. Alexander George, *The Chinese Communist Army in Action* (New York, 1967), pp. VIII-IX.

11. William Whitson, *The Chinese High Command* (New York, 1973), p. 462.

12. *Current Background* (*CB*), Hong Kong, No. 312, pp. 1-11.

13. Stuart Schram, editor, *Chairman Mao Talks to the People* (New York, 1974), quote from a 10 March 1958 conference at Chengdu, p. 48.

14. The Chinese after 1949 faced the problem of when to consolidate the gains of the revolution and limit mass revolutionary movement. Those who proposed continuing revolution, mass movements, and an emphasis on ideology were the "Reds." Those who looked toward ordered development and improved technology were the "Experts." The ensuing "debates" were, in fact, intense *political* conflicts among personalities. As such, they obscure many continuities in basic principles.

15. See, for example, Ellis Joffe's *Party and Army: Professionalism and Political Control in the Chinese Officer Corps, 1949-1964* (Cambridge, 1965), and Harlan W. Jenck's *From Muskets to Missiles: Politics and Professionalism in the Chinese Army, 1945-81* (Boulder, 1982).

16. *CB*, No. 1584, pp. 9-10.

17. John Gittings, "China's Militia," *China Quarterly* (*CQ*), April-June 1964, p. 107.

18. "Reports on the Draft Service Law," 16 July 1955, *Survey of the China Mainland Press* (*SCMP*), Hong Kong, No. 1090. Peng viewed conscription as a way to reduce standing army manpower levels through the buildup of reserves, thereby maintaining the capability to mobilize for a People's War while at the same time saving money that could be spent on developing an industrial economy. This summarizes the precarious position of the Chinese in the late 1950s. Although they realized the need for modern weapons, they would be unable to rely on them until the economy was sufficiently industrialized and productive to enable them to arm their forces in a manner in keeping with independence and self-reliance. We can therefore understand their lack of emphasis on weapons in the "New Training Program . . . " of 1958.

19. *CB*, No. 422, p. 7.

20. Ibid., No. 1584, pp. 9-10.

21. Ibid., No. 422, p. 4.

22. Ibid.

23. Ibid., p. 6.

24. *SCMP*, No. 2358, 14 October 1960, p. 1.

25. Ibid. This report states that from May to September 1960, "120,000 army functionaries went to work in the companies at the grassroots levels."

26. Ibid., p. 2.

27. Ibid.

28. "It Is Necessary to Understand Fully the Important Changes in the Training of our Armed Forces," *Selected Works of Lin Piao*, China Problems Research Center (Hong Kong, 1970), p. 290.

29. *SCMP*, No. 2270, p. 4.

30. "Hold High the Red Banner of Mao Tse-tung's Military Thought and Advance in Big Strides," *Hung Ch'i*, No. 19, *Selected Works of Lin Piao*, p. 204.

31. Jonathan Pollack, "The Logic of Chinese Military Strategy," *Bulletin of Atomic Scientists*, January 1979, pp. 24-25.

32. Ibid. Pollack has noted an "absence of undue anxiety on the part of defense policy makers." To him it is a "confidence which mystifies external observers." In the light of today's deterrent strategies, Chinese confidence is not at all without justification.

33. "Long Live the Victory of People's War," *Selected Works of Lin Piao*, pp. 315-16.

34. *SCMP*, No. 3964, p. 2.

35. Ibid., No. 3466, p. 2.

36. Ibid.

37. *SCMP*, No. 3965, p. 13.

38. Mao, *SW*, Vol. V, pp. 288-89.

39. Whitson, p. 535.

40. Joffe and Segal, p. 1.

41. Pollack, pp. 24-25.

42. Data from *The Military Balance* (London, 1969-74).

43. Jurgen Domes, "The Gang of Four and Hua Kuo-feng," *China Quarterly*, No. 71, September 1977.

44. See PRC Press quotes, *Foreign Broadcast Information Service—China* (*FBIS-CHI*), 74-149, p. E-5, the comments of Yeh Chien-ying at the Army Day Defense Ministry Reception, *FBIS-CHI*, 75-149, or, more significantly, Su Yu's article "Great Victory for Chairman Mao's Guideline on War," *Survey of People's Republic of China Press*, No. 6406, 19 August 1977, and Xu Xiangqian's article from *Hung Ch'i*, "Strive to Achieve Modernization in National Defense," particularly pp. L15-L16, *FBIS-CHI*, 79-203.

45. *FBIS-CHI*, 79-15, p. E-4.

46. *FBIS-CHI*, 30 May 1978, p. E-2.

47. *Beijing Review*, No. 40, 5 October 1979, p. 31.

48. *Washington Post*, 1 September 1980, p. A-10.

49. Ibid.

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IRA C. EAKER
FIRST-PRIZE ESSAY

IN THE CYCLOPS'S CAVE: ON HOMER, HEROES, AND THE NUCLEAR YOKE

CAPTAIN MARK S. BRALEY

Sing in me, Muse, and through me
tell the story of that man skilled
in all ways of contending, the
wanderer, harried for years on
end. . . .[1]

THE American military hero, "skilled in all ways of contending"—where has he gone? Like Odysseus of old, he seems lost on his own odyssey, borne away on waves of public mistrust cast up by the weapons of mass destruction. And like Odysseus, today's military hero will find his way back to Ithaca only by using his wits and retaining his faith in the gods.

Two recent occurrences turned my thoughts to the question of the vanishing American military hero. First was my re-reading of Homer's epic poems, *The Iliad* and *The Odyssey*. When we hear the names Hector, Achilles, and Odysseus, we identify them as men who were heroes. Their names evoke images of bloody battles and feats of physical skill and endurance. Their qualities of leadership, fortitude, and charisma serve to set them apart as giants on the battlefield. And though these mighty ancient warriors are mythological characters, the artistry of the blind poet was such that we see them as human, with human emotions and frustrations. Their human qualities, beyond their superhuman skills, are why they merit our study and serve as a fair yardstick by which to measure our own successes and failings in the art of heroism.

The second event that sparked my search for our lost heroes was my recent viewing of a film chronicling the destruction at Nagasaki and Hiroshima and discussing the effects of a thermonuclear blast. Scenes in the film depicted people with all the terrible afflictions we have come to associate with nuclear war.

The occasion for the film was my last chemical warfare refresher training, a short course designed to instruct us on the wearing of the chemical warfare ensemble, the different types of chemical agents, their effects, and how to counteract those effects. Man has created quite a smorgasbord of chemical weapons with which to incapacitate his fellow man, from mild lacrimators to blood and nerve agents. It is not

enough that one may assail his enemy with projectiles lobbed from a comfortable distance. Now one can give his opponent claustrophobia in the open plain by contaminating the air he breathes or choke him insidiously by means of a substance that creeps through his skin and grabs that space in the blood cell reserved for oxygen. Breaking down the central nervous system has also become an effective alternative. After listening to the recitation on the capabilities of Soviet chemical weapons, practicing donning my mask, and stabbing my thigh several times with a dummy antidote injector, I was in a very reflective mood.

At this point, some people may be wondering "who is this guy?" I am a United States Air Force officer thoroughly committed to supporting and defending the Constitution of the United States. I fully understand and support our U.S. policy of deterrence, the "uncomfortable paradox" as Secretary of Defense Caspar Weinberger has referred to it.[2] In becoming an Air Force officer I worked myself through the paradox, reconciling myself to the requirements of an effective deterrent posture. Having done this sets me apart from what I believe to be a majority of Americans who have not worked out in detail what the concept of deterrence requires of us.

In this article, I shall present an image of how the American public might view the military man in the context of the era of nuclear deterrence. I hope that it will provide serving military professionals with an insight into public perceptions. I believe that the better we understand how our people might perceive the military profession under modern, nuclear conditions, the better we can ensure continuing public support for policies that are essential for the security of our nation. In general, I think that the existence and nature of nuclear weapons make it difficult for today's Americans to look to the military profession as a source of heroes. This situation might be changed if certain new forms of technology fulfill their promise.

Heroes in the Nuclear Age

Before I go any further, I'd better lay down my definition of a hero. I've culled bits and pieces of my hero from the various definitions in *Webster's New World Dictionary*, so let me quote all five definitions:

> 1. *Myth & Legend:* a man of great strength and courage, favored by the gods and in part descended from them, often regarded as a half-god and worshipped after his death. 2. Any man admired for his courage, nobility, or exploits, especially in war. 3. Any man admired for his qualities or achievements and regarded as an ideal or model. 4. The central male character in a novel, play, poem, etc., with whom the reader or audience is supposed to sympathize; protagonist. 5. The central figure in any important event or period, honored for outstanding qualities.[3]

In characterizing my model hero let me start with Webster's fifth definition. The hero we lack today is the person of truly heroic proportions whom history, one hundred years from now, will look back upon and say: "There was a hero." I'm talking about a prominent figure, someone in the public eye. In that way, I'm eliminating all the "Real People" heroes. The guy next door who saves a child by running into a burning house or the soldier who covers a live grenade with his own body to save a friend has certainly acted heroically, but in the long run, who's going to remember Bob Smith from 403 Jackson Street or Lieutenant Joe Jones from Company C?

From definitions three and four my hero becomes a man (or woman) whom others admire and wish to emulate—the ideal. At the same time, we sympathize with that person, or rather, we empathize with him. We can project our personality into his and understand him because, like us, he is human.

Definition two: courage, nobility, exploits. The person has done something. For the military hero, that necessarily means wartime acts of greatness. The key word here, though, is *nobility*. Nobility implies integrity, honesty, and a moral and ethical purity.

Finally, the first definition, though seemingly unsuited to my purposes, rounds out the qualities envisioned in my hero. This hero is "a man of great strength"—a physical hero who loves the *feel* of the fight. And this hero, half-god, like the gods of the Greeks, is able to stand back and look at the skirmish from a distance. He is aware of the true order of things and where man's petty squabbles fit in.

With this view of heroes in mind, let us now consider two scenes. The first is an excerpt from *The Iliad*. The Akhaian forces are hemmed in against the shore, valiantly trying to stave off the Trojans led by Hector, who are making a powerful surge to reach and burn the Akhaian ships. Akhilleus, angered at the Akhaian commander, Agamémnon, has withdrawn from the battle, but now sends his close companion, Patróklos, wearing Akhilleus' armor to try to turn the tide.

> And Patróklos cried above them all:
> O Myrmidons, brothers-in-arms of Pêleus' son,
> Akhilleus,
> fight like men, dear friends, remember courage,
> let us win honor for the son of Pêleus!
> He is the greatest captain on the beach,
> his officers and soldiers are the bravest!
> Let King Agamémnon learn his folly
> in holding cheap the best of the Akhaians!
> Shouting so, he stirred their hearts. They fell
> as one man on the Trojans, and the ships
> around them echoed the onrush and the cries.
> On seeing Menoitios' powerful son, and with
> him
> Automédôn, aflash with brazen gear,
> the Trojan ranks broke, and they caught their
> breath,
> imagining that Akhilleus the swift fighter
> had put aside his wrath for friendship's sake.
> Now each man kept an eye out for retreat
> from sudden death.[4]

Certainly, this is a scene in which any American can recognize the heroes.

Compare that scene with this admittedly unlikely scenario: Soviet officials have seen their hard-earned superiority in nuclear forces seriously threatened as the NATO alliance prepares for the deployment of advanced medium-range ballistic missiles in Western Europe. In addition, U.S. plans for deploying the MX missile in hardened Titan missile silos have been completed. The Soviets, confident of their ability to win a nuclear conflict and convinced that no time will be better, launch a preemptive nuclear strike against the United States. In response, the President orders the launching of U.S. missiles. Now there is nothing for each man to do but "keep an eye out for retreat from sudden death." But there is no retreat.

Again, this scenario is unlikely and oversimplified, but specific scenarios are beside the point. More to the point is the fact that many Americans can envision a possible nuclear war, but they probably cannot see the possibility of an American hero emerging from such a war. They cannot envision a U.S. military leader going home after it's over (provided he still has a home) and being greeted by his smiling wife with a kiss and the words, "My hero!" On the other hand, wouldn't it seem perfectly natural for Patróklos to return home to a wife proud of her man who has fought so hard for a just cause? I'm assuming, of course, that any war fought by the United States will be a just one. Would it be possible to lionize an American military leader as a hero after a nuclear exchange between the two superpowers? I think not.

From many quarters today, one hears expressions of public concern. From the no-nukes movement to the letter from the bishops of the U.S. Roman Catholic Church calling for a halt to the testing, production, and deployment of nuclear arms, more and more Americans are questioning their nation's nuclear arms stance. The fact that the issue came up for debate in Congress, even though the result was a pale shadow of the original resolution, shows that the nuclear question is a genuine concern for the U.S. public.

The belief prevalent among dissenters (whose numbers seem to be growing) is that nuclear weapons are excessively destructive. In the

minds of these dissenters, the extensive collateral destruction and death that would be associated with general nuclear war conflict with the West's basic Judeo-Christian ethic, which states "thou shalt not kill" and tells us to turn the other cheek.[5]

Casting off the Nuclear Yoke

Given this turbulence in public perceptions, the circumstances just do not seem right for a military hero to step forth and claim lasting recognition. But, just as Odysseus probably said to his companions as they huddled together in the Cyclops's cave, we can now declare: "There is a way out." As I noted at the beginning, we must use our wits and rely on our gods. The stone in front of our cave is the atomic bomb. However, we must not be so naïve as to think that we can simply dismantle our nuclear weaponry and then go marching into the arena of world conflict to snatch the victor's spoils. Unless the Soviets can be convinced to follow suit, that avenue would be not only foolhardy but probably suicidal. If we refer again to our Homeric model, unilateral disarmament would be equivalent to Odysseus' killing the Cyclops, Polyphemos, before the giant moved the stone, leaving Odysseus and his men trapped within the cave. Similarly, just as Odysseus used Polyphemos to gain freedom for himself and his men, we must maintain our nuclear deterrent and let it work for us by earning valuable research time.

As one looks back through history, the normal pattern in weapons development is readily discernible. A weapon is created by one side and copied by the other. Then follows a stage of refinement until one side, seeking to gain the advantage, develops a new weapon that renders the old weapon obsolete. The process repeats itself down through the ages. Finally, mankind has arrived at the present stop-off—the nuclear era.

Many Americans see nuclear weapons as the end of the line. They believe we have created the ultimate destructive force that negates all other weapons. We have reached the stage of final refinement. What a despairing attitude! How un-American is that defeatist attitude which says we have reached our limit! To a people who have placed a man on the moon; to a people who can hurl men and women into space as easily as David let fly his deadly stone, and then greet those space fliers exiting their craft as though they'd been on a crosstown bus trip; to a people who can build an artificial heart or defeat a cancerous growth; to a people who celebrate the words of John Paul Jones, "I have not yet begun to fight!"; to all who take pride in our country's achievements—how it must grate to hear their compatriots say: "I give up."

One person has not given up. Yet if many of today's press editorials are to be believed, he is the most unlikely of sources for a solution. President Reagan has toed the hard line on almost every nuclear weapons issue. He has pushed for higher defense spending since his first day in office. In pursuit of strategic force modernization and effective arms negotiations, he has backed the MX, the cruise missile, missile deployment in Western Europe, and the B-1B bomber; in short, he has pushed for everything that will make our country stronger and deter Soviet expansionism. He has offered realistic arms reduction proposals to the Soviets in an effort to curtail further arms buildups. The Soviets have not responded in a positive fashion. Because of this, Reagan is the name on all the signs carried by protesters marching across the United States and Western Europe. Yet he is right. Despite the public's fear of nuclear war, we must be strong or we shall see our allies fall prey to the Soviets while our own security is severely threatened. In light of this, it is ironic that this man who is so unpopular with protesters and who has led our nation in the modernization of her deterrence forces should be the first to put his shoulder to the stone; he has taken the initial steps to lead us out of the cave.

On 23 March 1983, President Reagan de-

livered a speech calling for intensified research into the development of missile defense technology. We now stand at the brink of phase three for weapons development, when a new weapon system explodes upon the scene to send an older weapon to the museum. In this case, *explodes* is the wrong term, since the next generation of weapons will serve to defuse an already explosive situation. An expanded research and development program should speed up this replacement process—a process that will be accompanied by a concomitant shift of public perceptions.

We can now look to the possibility of being able to neutralize a nuclear attack through the use of weapons employing laser and particle-beam technology. This idea is doubly thrilling. The extreme satisfaction one gets from overcoming a problem through human ingenuity is coupled with the relief and joy anticipated with the lifting of the nuclear yoke. Seemingly the trend of modern warfare will be reversed. "After all," says Michael Walzer, "it might be said, the purpose of soldiers is to escape reciprocity, to inflict more damage on the enemy than he can inflict on them."[6] In this case, we will be using our wits to "escape reciprocity" by preventing damage to ourselves. Rather than a reversal of military thought, new defensive technology will reaffirm the traditional U.S. military stance. Our weapons will be truly defensive rather than retaliatory. War will cease to present a possibility of leading to an unthinkable and unwinnable nuclear exchange but will return once more to the chess-like profession of move and countermove. When that day comes, it will be as though the umpire had shouted, "Play ball!" after watching the clouds break that threatened to rain out the game, and those of our "fans" in the American public who had left the stands will be able to return.

What does all this mean in regard to today's and tomorrow's American military hero? For one thing, it means that our military leaders must seize this opportunity to try to shed the nuclear yoke in favor of the new generation of defensive weapons. This is a great chance to get the public, whom we serve, to understand that we all abhor the possibility of nuclear war, and thus to begin a shift in public perceptions that will again lead Americans to look to the military for heroes.

Some may be tempted to say that the new technology will signal the beginning of the end to war. All true soldiers hope and pray for that result, but it is not likely. As William James once wrote, ". . . war-taxes are the only ones men never hesitate to pay, as the budgets of all nations show us."[7] Far more likely, war in the era of these new defensive weapons would be a more tempting alternative without the threat of the ultimate calamity. For this reason, the American military man, if he aspires to the title of hero, must also, as I stated metaphorically, rely on his faith in his gods. By that I mean that he must be guided by his belief in things superhuman, whether the Christian God or simply a value system that says there is such a thing as an ultimate good. The risk of uncontrolled destructiveness, so great with nuclear weapons because of their potential for spilling over upon the innocents of war, will be reduced or eliminated with a return to more limited forms of warfare. The military hero will again be free to display his nobility—to choose the right path without the risk of Armageddon, to fight for the just cause, and, when the situation warrants it, to show compassion.

The removal of the nuclear risk will roll away the stone from the mouth of the cave at least temporarily and allow Odysseus his triumphant return to Ithaca. Our hero will be able to climb from his hole lined with buttons and return to the battlefield and the physical "feel" of the fight. His courageous deeds and noble leadership will again be apparent.

The way has been opened, and we must take it. Short of worldwide nuclear disarmament, the horrors of Hiroshima and Nagasaki demand it. For us in the service of our country it represents a return to the traditions that link us to the heroes of Homer.

In that vase,
Akhilleus, hero, lie your pale bones mixed
with mild Patróklos' bones, who died before
you, and nearby lie the bones of Antilokhos,
the one you cared for most of all companions
after Patróklos.

We of the Old Army,
we who were spearmen, heaped a tomb for these
upon a foreland over Hellê's waters,
to be a mark against the sky for voyagers
in this generation and those to come. . . .
You perished, but your name will never die.
It lives to keep all men in mind of honor
forever. . . .[8]

Travis AFB, California

Notes

1. Homer, *The Odyssey*, translated by Robert Fitzgerald (Garden City, New York: Doubleday and Company, 1961), p. 11.
2. Address, delivered at Fordham University, New York City, 28 April 1983.
3. David B. Guralnik, Editor in Chief, *Webster's New World Dictionary of the American Language* (Cleveland and New York: William Collins & World Publishing Company, 1974), p. 657.
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5. For a recent discussion of the Judeo-Christian influence on American views of nuclear deterrence and nuclear war, see: Donald L. Davidson, "Religions Strategists: The Churches and Nuclear Weapons," *Parameters*, December 1983, pp. 19-29.
6. Michael Walzer, "Moral Judgement in Time of War," in *War and Morality*, edited by Richard A. Wasserstrom (Belmont, California: Wadsworth Publishing Company, 1970), p. 56.
7. William James, "The Moral Equivalent of War," in *War and Morality*, p. 5.
8. Homer, *Odyssey*, pp. 411-12.

IRA C. EAKER ESSAY COMPETITION

Air University is pleased to announce the fourth annual Ira C. Eaker Essay Competition. Its purpose is twofold:

—First, to honor the achievement of Lieutenant General Ira C. Eaker and his colleagues, aviation pioneers whose courage and innovative spirit laid the foundation for American greatness in aerospace.

—Second, to memorialize the indomitable martial spirit of these men, a spirit that nourishes the perception of military service as a calling.

Topic areas for the essay competition are professionalism, leadership, integrity, ethics, strategy, tactics, doctrine, esprit de corps, or any combination thereof.

ENTRY RULES

—Essays must be *original* and *specifically* written for the contest. Only one entry per person may be submitted.

—Entries must be a minimum of 2000 words and a maximum of 4000 words.

—Essays must be typewritten, double-spaced, and on standard-size paper.

—The competition is open to all active (duty) members of the regular Air Force, Air Force Reserve, Air National Guard, Air Force Academy and AFROTC cadets, and Civil Air Patrol.

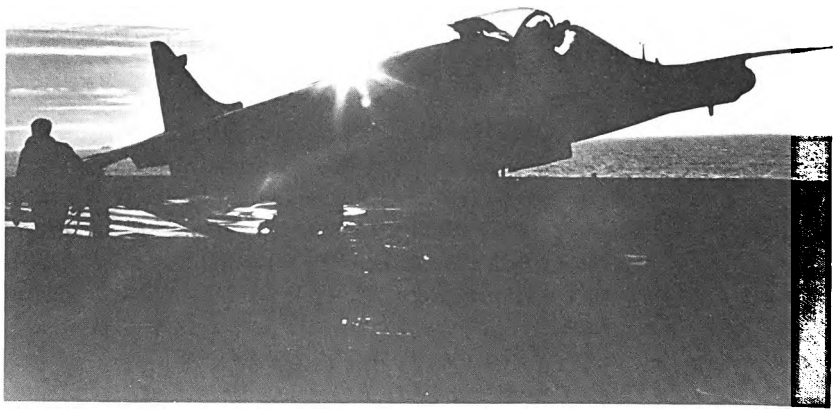
—A separate cover-sheet should include the essay title, author's name, rank, duty/home address and duty/home phone number. The author's name must not appear on the essay itself. The title should be at the head of the first page.

—Send entries to the Editor, *Air University Review*, Building 1211, Maxwell AFB, Alabama 36112. All essays must be received or postmarked by 1 June 1984.

—First-publication rights on all essays belong to *Air University Review*.

First, second, and third-prize medallions will be awarded as well as $2000, $1000, and $500 United States Savings Bonds. Distinguished Honorable Mention and Honorable Mention certificates will also be awarded. Winning essays will be published in the *Review*.

The Ira C. Eaker Essay Competition is funded by a permanent grant from the Arthur G. B. Metcalf Foundation through the United States Strategic Institute, Washington, D.C.



CONFLICT IN THE SOUTH ATLANTIC

the impact of air power

DR. ROBERT W. DUFFNER

AS THE second anniversary of the Argentine invasion of the Falklands/Malvinas approaches, generals on both sides of the Atlantic are still trying to sort out the lessons learned from the conflict. Disappointed Argentines no doubt search for answers to explain why their numerically superior Air Force failed to stop the British. High on the British assessment list is a reevaluation of the role and effectiveness of Harrier jets and the integration of air assets as part of an overall balanced force structure. No matter how these issues are settled finally, one point stands out: air power will continue to have a decisive impact on the outcome of limited wars of the future.

When the battle lines were drawn, the British mustered 28 Sea Harriers and 14 Royal Air Force GR3 ground-attack variants of the Harrier (left and above right) to face more than 150 Argentine combat aircraft. Neither side gained air superiority over the battle area, but the British held their own against their numerically superior opposition.

WHEN conflict broke out in April 1982, most military experts expressed a high degree of confidence in the British army and navy. Once the British task force arrived in the South Atlantic, the navy quickly demonstrated its combat effectiveness. On 2 May, its nuclear-powered submarine HMS *Conqueror* launched two Mk8 torpedoes, sending the Argentine cruiser *General Belgrano* to the bottom. A total of 360 men died. From this point

on, the Argentine Navy remained close to the Argentine mainland and for all practical purposes did not participate in the conflict.[1]

Few will dispute that the combined British ground forces, the army's crack parachute troops and the navy's Royal Marines, were more than a match for the Argentine units made up primarily of 18- and 19-year-old conscripts. The well-trained and highly disciplined British foot soldiers simply were better fighters. In every major ground operation, in spite of being outnumbered by as much as three to one, the British defeated their adversary and inflicted heavy casualties while suffering relatively few casualties of their own.

Although the British maintained the edge in terms of naval and ground resources, the lines cannot be drawn as clearly for the air war over the islands. From the onset of hostilities, both British political and military leaders were worried about the ability of Royal Air Force and Navy air power to support the task force adequately in the face of Argentine numerical superiority which, at times, was as high as five to one. The British had good reason to worry, as the Argentine Air Force turned out to be a formidable opponent. Neither side established complete air superiority. Right up until the final push on Port Stanley, Argentine fighters penetrated British airspace consistently, causing substantial damage to the fleet; five ships were sunk and at least twenty others hit. British losses numbered 255 for the entire war, but almost 80 percent of these came at the hands of Argentine air strikes on the naval task force. The majority of the 746 Argentine casualties resulted from ground actions supported by artillery and naval gun fire.[2]

The Argentines held a distinct advantage in the number of combat aircraft available for immediate use in the conflict. These included approximately 44 French-built supersonic Mirage III and Mirage V fighters, 68 American-built Skyhawk A4P fighter-bombers, 8-10 British-built Canberra bombers, and 5 French-built Super Etendard naval attack aircraft and about 60 pesky Argentine Pucará light ground-attack aircraft. Flying against this numerically superior force were 14 Royal Air Force (RAF) Harrier GR3s and 28 Navy Sea Harriers operating off two light aircraft carriers, HMS *Hermes* (25,000 tons) and HMS *Invincible* (20,000 tons). A third vessel, the container ship *Atlantic Conveyor*, provided an alternate landing site for Harriers; but for the most part, its primary mission was to store aircraft, equipment, and supplies.[3]

What the British lacked in sheer numbers, they made up for with quality aircraft. Both RAF and Sea Harriers carried the improved version of the American-made air-to-air Sidewinder missile, the AIM-9L. The advantage of the 190-pound AIM-9L was that the attacking Harrier aircraft did not need to approach its target from behind to allow the missile to home in on the hot exhaust of the enemy plane. Instead, the AIM-9L could be launched "straight on" toward the oncoming aircraft. The missile proved to be a deadly weapon, destroying, according to British claims, five Skyhawks and nineteen Mirages.[4] It is not known how many, if any, of those were downed with head-on shots.

Harrier jump-jets performed well beyond the performance expectations of most military experts. The remarkable record of the aircraft is attributed not only to relatively sophisticated gadgetry, such as warning receivers and electronic countermeasures to confuse Argentine anti-aircraft weapons, but also to the skilled British pilots, the geographic limitations imposed by the location of the conflict area, and the older Argentine planes.[5]

Harriers were designed for vertical/short take-off and landing (V/STOL), which allowed them to land and take off like helicopters. By rotating the jet engine nozzles downward, enough thrust was generated to lift the aircraft straight up. This built-in "jump" feature offered certain tactical advantages, mainly that the Harriers did not require long runways. During combat missions, when air traffic conditions became too congested on the *Hermes* and *Invincible*, Harriers low on fuel landed at helipads on destroyers.[6]

There was one glaring exception to the impres-

sion that the Argentine Air Force lacked a lethal punch for air operations. A few Super Etendards, carrying French-built Exocet AM39 missiles (range, 45 miles), caused devastating damage to two British ships. On 4 May an Exocet, skimming a few feet over the water at 600 mph, found its mark and, although its warhead did not explode, caused fires that sank the destroyer *Sheffield,* which had been serving as an early warning station.[7]

Three weeks later, a second Exocet slammed into the side of the *Atlantic Conveyor*, sinking the vessel, along with its extremely valuable cargo of repair parts, Chinook helicopters, tentage, and more. The Super Etendard's inertial navigation system and the curvature of the earth permitted the plane to remain undetected by British radar. Once the plane entered British radar coverage, the pilot identified the target quickly with his radar, programmed the flight of the Exocet, launched, and departed the area immediately, not waiting to observe whether the missile struck its target. Hence, the Exocet was advertised as the "fire and forget" missile.[8]

However, according to most reported accounts, the Argentines had only five of the air-launched Exocets available. Because of the embargo imposed on Argentina by the European Common Market, the French had refused to fill orders for additional missiles.[9]

In spite of its spectacular successes against British ships, Argentina lost the air-to-air war decisively. Argentine fighter aircraft failed to shoot down a single Harrier. British Harrier losses totaled nine—four to accidents and five by surface-based air defenses—surface-to-air missiles (SAMs) and antiaircraft artillery (AAA). The 400 miles from Argentina to the islands partially explained why the score was so lopsided. To make the 800-mile round trip from the Rio Gallegos Air Base on the coast severely strained the maximum operating range of the Argentine aircraft. Consequently, Argentine pilots had all they could do to reach the conflict area undetected and deliver their ordnance, "getting in and getting out" as quickly as possible. They could not afford to stay around to recon targets or offer much opposition to the Harriers sent up to intercept them, for in doing so, they realized, they would run dangerously low on fuel and might have to ditch in the Atlantic on the return home.[10]

Because Argentine aerial-refueling capabilities were limited (two KC-130s, plus "buddy refueling" for Skyhawk and Super Etendard aircraft), the potential effect of the Argentine Air Force was reduced significantly. In contrast, the British Harriers operating off carriers did not face the fuel shortage problem and had the luxury of time on their side—factors that allowed them to perform recon and escort missions in addition to air-to-air combat.[11]

The importance of aerial refueling is perhaps one of the salient teaching points of the war. If Argentine fighters had been supported by a sizable air-refueling capability, they could have rendezvoused with air tankers near the islands. A massive, tanker-supported effort might have been able to tip the scales of the tactical air war more in their favor. On the other hand, the British were very dependent on the vital support role that aerial tankers played in logistical operations, reconnaissance/early-warning flights, and strategic bombing runs.

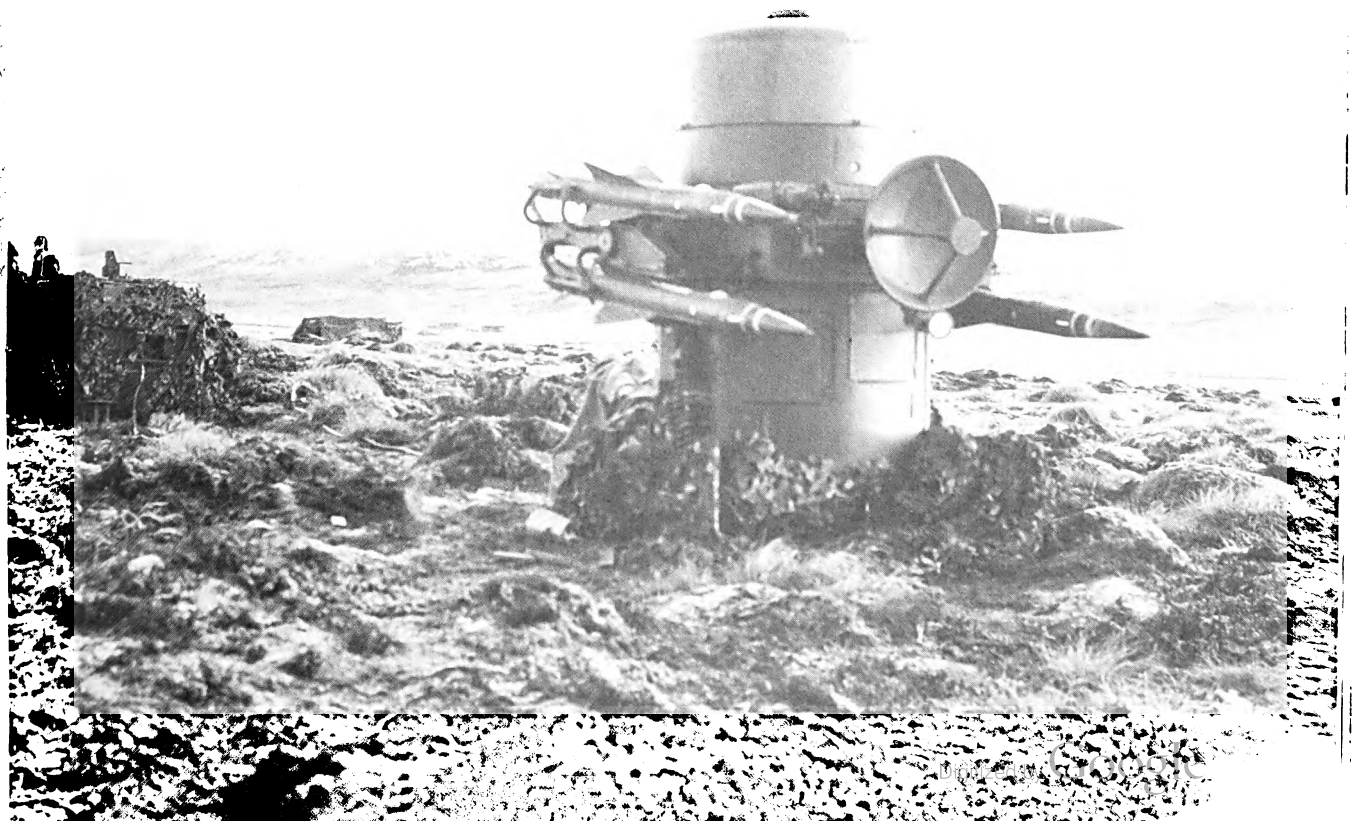
To sustain their task force, the British refueled tactical aircraft and transport planes (ferrying men and supplies) while in flight from England to the logistical base at Ascension Island, midway between the war zone and the home front. A few RAF Harriers flew directly from Ascension to the flight deck of the *Hermes,* refueled along the way by Victor K-2 tankers. Tankers also refueled Nimrod maritime reconnaissance aircraft on more than a hundred occasions. These latter flights lasted approximately fifteen hours each; however, they did not pick up enough intelligence to have any substantial impact on combat operations.[12]

Air tankers contributed also to three long-range bombing runs made on the Port Stanley airfield to destroy the runway, any planes parked there, and associated storage facilities. Two

other raids were directed at a radar site that was providing information on British air activity to the Argentine defenders. Although these attacks set a record for the longest combat missions in the history of air warfare (8000 miles—round trip from Ascension to the disputed islands), they failed to disable any of the Argentine facilities. The first flight on 1 May, for example, dropped twenty-one 1000-pound bombs, but only one of the bombs landed on the runway. This lone crater did not prevent the Pucará fighter and Hercules cargo planes from using the runway. Yet even though the Vulcans caused only minor material damage, dropping 1000-pound bombs in the early morning hours under the cover of darkness probably did have the psychological effect of lowering the morale of Argentine soldiers on the ground.[13]

Selection of the 4100-foot paved airstrip at Port Stanley as a target demonstrated the British concern for this prime piece of real estate. Once they arrived in the war zone, Harrier jets from time to time had attacked the airfield by dropping 1000-pound bombs but were unsuccessful. Antiaircraft (35-mm and 20-mm guns), plus Tigercat and Roland surface-to-air missiles positioned near the airport, posed too great a risk for the Harriers to mount an intensive campaign. Besides, as the war progressed, it became clear that British fighters could drive off most Argentine transport planes trying to land at Port Stanley, at least those attempting to fly in during daylight hours. In essence, the British had established a partially effective aerial blockade of Port Stanley, which was the logistical lifeline for ground troops on the islands.[14] More important, they almost completely halted aerial resupply from Port Stanley to troops in other isolated

The South Atlantic War yielded few new lessons in warfighting but confirmed many concepts learned during combat in the Middle East and elsewhere. Foremost among the lessons revealed is that high-tech weaponry, like the Rapier SAM system (below), gives an edge to the defense that can be overcome only through innovative and imaginative employment of reasonably sophisticated offensive weaponry.



garrisons throughout the island, depriving them of even limited stocks that would have been available.

The Argentines had at least four weeks to build up supply stock levels before the British task force reached the islands. From May through the first week of June, some transports (landing at night) reached Port Stanley to bring in more supplies. If the war had lasted more than a few months, with the interruption of aerial resupply, it is doubtful that the Argentines could have held out for any length of time.

The Argentines made a serious misjudgment by not using the month of April to work on extending the Port Stanley runway. If they had accomplished this vital task, a more effective defense of Port Stanley could have been achieved. A longer runway could have accepted the much-needed Skyhawks and Mirages, allowing them to perform both counterair and close air support missions. Operating from a land base on the islands, Skyhawks and Mirages would not have been so severely restricted by the limitations of fuel and distance. By significantly increasing the time that they could spend in the air and with at least a three-to-one advantage in fighter aircraft, the Argentine pilots might have been able to overwhelm the small British air force by numbers alone. Also, with the critical element of staying power working in their favor, they could have engaged in more recon missions to collect more accurate intelligence on the kind and location of targets. Even more important, Argentine fighters flying out of Port Stanley would have had a better opportunity to locate and successfully attack the British fleet. This achievement might have altered the outcome of the conflict.

The "what if" questions of warfare abound in almost any conflict, but in this particular case the importance of maintaining a secure tactical air and logistical base is illustrated clearly. The British supply lines extended across a distance twenty times greater than that of the Argentines. Yet the British were able to support and protect their air resources much better than the nearby Argentines. British air power, including surface-based air defense, in the end proved superior.

This is not to say that the British did not pay a price. Argentine air power posed a substantial threat, as demonstrated by the major combat engagements of the war.

AFTER their initial surrender of Port Stanley on 2 April, the British came back to win their first military victory at South Georgia, a small island in the Atlantic, 800 miles east of the Falklands/Malvinas. The advanced elements of the British task force reached the Falklands/Malvinas in mid-April and were directed to recapture South Georgia held by a small contingent of Argentines. Driving the enemy off this island would serve three purposes. First, a British success early in the war would show the politicians at home that Margaret Thatcher's government was indeed pursuing the right course in dealing with outside aggression. Second, the fall of South Georgia would be a major step forward for the British military. Not only would it boost morale, but it would allow the field commanders to gauge the fighting ability of the Argentine soldiers. Finally, the fight would offer a unique "rehearsal" for the main assault on the Falklands/Malvinas.

Retaking South Georgia was risky business. The main task force was still en route, so the landing force had to go in without the benefit of close air support. However, air power did prevail to some degree with Wessex 3 helicopters from the destroyer *Antrim*, Lynx helicopters from the frigate *Brilliant*, and Wasp helicopters from the *Endurance*. On 25 April, a Wessex 3 spotted the Argentine submarine *Santa Fe* and damaged it by dropping depth charges. The Lynx and Wasp helicopters followed up by firing their SS-12 antiship missiles, causing the submarine to limp into King Edward Harbor, where its crew members eventually were taken prisoner. Although the 4.5-inch naval guns of the *Antrim* and *Plymouth* contributed additional firepower to turn the tide of battle, the British developed an appreciation for the air

power contribution made by the navy helicopters.[15]

Air power was to have a much greater impact on the British landing at San Carlos, which began on 21 May. British soldiers secured the beaches unopposed on the ground, but the escort ships in Falkland Sound that supported the operation faced wave after wave of Argentine planes from two directions. The small Pucarás took off from Port Stanley and flew low to the ground, approaching the Royal Navy from the east. The first Pucarás bombed and badly damaged the frigate *Argonaut,* one of five ships that formed a forward defense line to detect aircraft coming from the Argentine mainland.[16]

The courageous Argentine pilots demonstrated their aerial skills by flying a low-altitude, terrain-hugging profile over West Falkland Island to use the rolling hills as a shield against British radar detection. Just before reaching San Carlos, they "popped up" and then executed dive-bomb maneuvers on the British ships. The first group of Mirages dropped 1000-pound bombs and succeeded in hitting the *Ardent,* ripping holes in her deck and setting off a number of uncontrollable fires. Twenty-three of the crew died and more than thirty were injured before the *Ardent* sank.[17]

On the second day at San Carlos, two 500-pound bombs landed on the *Antelope* but failed to explode. One bomb blew up as a British bomb expert tried to disarm it. The explosion tore a huge hole in the ship's side, sending a spectacular tower of smoke, fire, and debris skyward. The *Antelope* sank the next day.[18]

The problem of bombs that hit their targets but failed to detonate plagued the Argentines throughout the war. Some accounts estimate that nearly 80 percent of the bombs dropped on target malfunctioned because of poor wiring and delivery techniques. Releasing the bombs at very low altitudes (less than 40 feet) did not give the bombs sufficient time to arm themselves prior to impact.

On 24 May, bombs hit and damaged the landing ships HMS *Sir Galahad* and *Sir Lancelot,* which were bringing supplies to San Carlos. On 25 May, the same day an Exocet sank the *Atlantic Conveyor,* Argentine pilots made repeated passes and finally sank the destroyer *Coventry.* From 21 May to 25 May, the British paid an even higher price for establishing a beachhead at San Carlos: four of their ships sank, while at least ten others were hit and damaged by bombs.[19]

Although they suffered severe naval losses during the San Carlos encounter, the British inflicted a more damaging blow to the Argentine Air Force. Mirage and Skyhawk pilots flew against incredible odds in terms of distance, radar detection, surface-to-air missiles, and Harrier jets.[20] Approximately 109 Argentine aircraft were lost during the entire war. SAMs accounted for shooting down about 38 percent of them; the Harriers' kill ratio was 28 percent. The remaining third of the planes that the Argentines lost were shot down by small-arms fire or were captured/destroyed on the ground. Rapier proved to be the most effective land-based SAM, even though it had to be fired optically because the fleet's radar/electronics interfered with its radar. Foot soldiers carried the shoulder-fired Blowpipe, designed to hit both high-speed fighter aircraft flying low-level air strikes and helicopters operating in a standoff mode. The supersonic Blowpipe missile achieved its greatest success against Pucarás. More than half the SAM kills were attributed to Rapier and Blowpipe. The balance of SAM kills came from the ship-mounted Seawolf, Sea Dart, and Sea Cat missiles.[21]

Britain suffered its worst casualties from Argentine air power on 8 June, when British troops were caught in a poorly planned and badly executed operation to land soldiers at Fitzroy. Two landing ships, *Sir Tristram* and *Sir Galahad,* anchored in Fitzroy inlet (four miles from Bluff Cove) without protection from naval escort ships, offered an inviting target to the Argentine Air Force. Mirages and Skyhawks capitalized on the opportunity by dropping bombs on both ships, which were loaded with troops ready to disembark at Fitzroy. Without

naval- or land-based SAMs available to provide protective firepower, the *Tristram* and *Galahad* were extremely vulnerable. As a result, more than fifty lives were lost—the highest single-day casualty figure of the war for the British.[22]

Once the British absorbed their losses at Fitzroy, their move to retake Port Stanley progressed by using air strikes to soften up the Argentine strongholds for the final assault. These strikes, in combination with almost three days' continual artillery bombardment of Port Stanley and the surrounding area, led ultimately to the Argentine surrender to British ground troops on 14 June.

AIR power played a very significant role for both sides in the conflict over the Falklands/Malvinas. But one lesson which should not be ignored is that air power alone could not win the war. This assessment is not a departure from past doctrine but simply a reaffirmation of a time-honored principle of war: the combined actions of mutually supportive air, ground, and naval forces decide the difference between victory and defeat.

The absence of an adequate Argentine naval force and the inferior training of the bulk of Argentine ground troops resulted in Argentina's placing a disproportionate share of combat responsibility and expectations on the Argentine Air Force. This circumstance, coupled with the Argentines' failure to extend the vitally important Port Stanley airstrip and their very limited aerial-refueling capability, directly contributed to Argentina's defeat.

British combat operations in the conflict were successful not only because of the Argentines' fundamental military weaknesses but also because of the superb leadership and highly coordinated planning efforts carried out by the Royal Navy, Army, and Air Force at all levels of command. The navy provided a safe operating base for aircraft and furnished the needed fire support for ground actions. Royal Navy and Royal Air Force Harriers, operating side by side and flying off the same carrier decks, worked closely with one another to deliver maximum firepower on the enemy. A derivative of the Royal Air Force Harrier, the Royal Navy Sea Harrier was originally designed for fleet air defense. It demonstrated its flexibility, however, by performing air defense, ship attack, and—until the Royal Air Force contingent arrived—reconnaissance and ground attack. The air force made other important contributions by executing long-range bombing runs, conducting Nimrod reconnaissance missions, and performing aerial-refueling operations to sustain the 8000-mile logistical lifeline.

BRITISH Air Power made its greatest contribution as part of an integrated combat effort. Assessing the degree to which each service contributed to the final outcome of the war is not yet possible, in part because official military assessments on both sides have not been completed. However, one point is clear: The generals and admirals who one day may face the prospect of fighting a limited war in a remote region of the world must recognize and stress the importance of a balanced force concept. Implementation of this policy requires a potent air arm. As demonstrated in the South Atlantic conflict, air power, one essential element of an effective combined force, played a key role in determining both victory and defeat.

Kirtland Air Force Base,
New Mexico

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Albert F. Simpson Historical Research Center (AFSHRC) Redesignated

On 1 December 1983, the AFSHRC was redesignated the United States Air Force Historical Research Center (USAFHRC). This change was made to emphasize the center's focus on and commitment to the U.S. Air Force. The name of the physical facility, located at Maxwell Air Force Base, Alabama, will remain unchanged, honoring the memory of the first Air Force historian, Dr. Albert F. Simpson.

A *Review* Staff Photo Essay

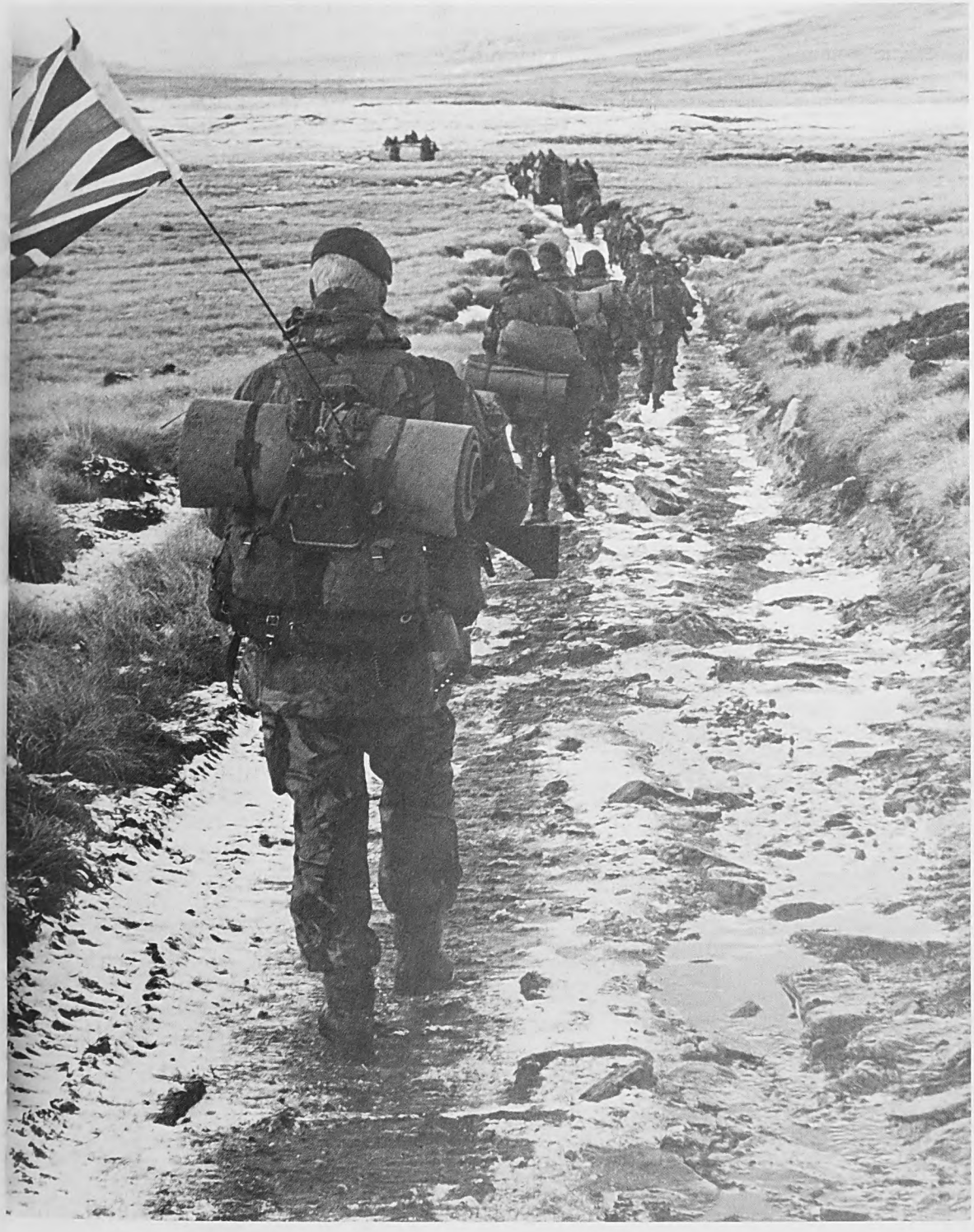
Heroism, Technology, and Strategy: The Brew of War

WAR is the result when the normal order and diplomacy among nations fail. Once the shooting begins, war fighting and the final outcome depend on a myriad of variables: national will and resolve, leadership, strategy, training, technology, heroism, time, even the weather—all become elements that work to determine victory or defeat. War is one of the grandest and most terrible of human endeavors, and modern warfare is tremendously complex. Today's military professional must be committed to learning as much as possible about the use of military force. To do otherwise is to countenance insularism and incompetence, which may result in tragedy.

In April 1982, Argentina, frustrated by years of negotiations over the status of the Falkland/Malvinas and South Georgia islands, sent her military forces to resolve the impasse. The resulting conflict surprised just about everyone, including the antagonists. Neither side was prepared for the scope and intensity of the conflict.

That is nothing new. Wars have a way of surprising their participants. All too often, what begins as a simple attempt to redress a perceived grievance ends up a tragedy that may involve many nations in a *danse macabre*. Sometimes such sequences alter the course of history. The assassination of the Archduke Franz Ferdinand by a Bosnian nationalist in June 1914, a relatively limited act of political violence, sparked a conflagration that led to the deaths of millions, the fall of monarchs, the rise of dictators, and, eventually, another cataclysmic war. Fortunately, the war in the South Atlantic directly involved the Argentines and the British only, though the potential for expansion was present.

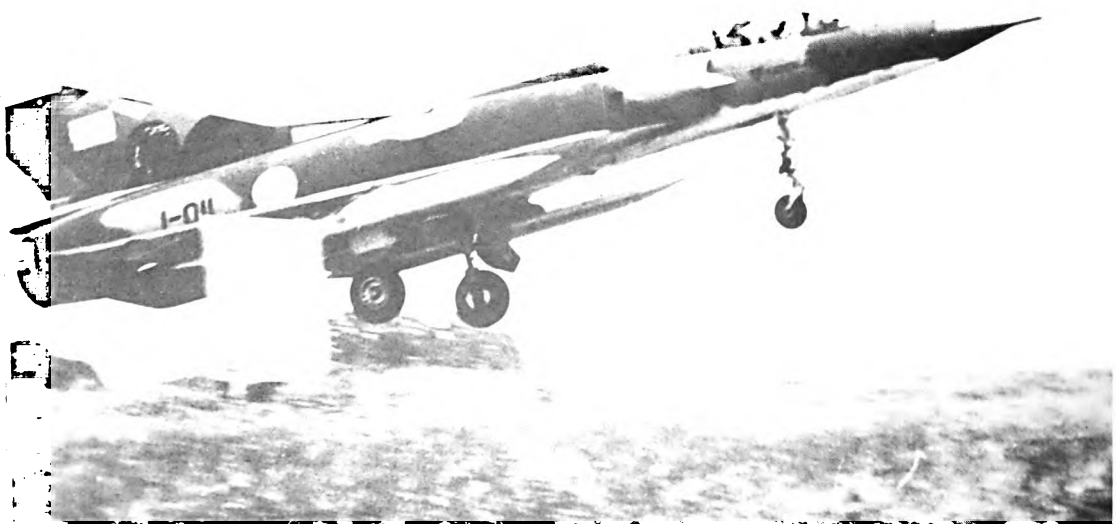
Men, weapons, and the competence with which they are employed are all part of the brew of war. Yet in this age of sophisticated weaponry, it is easy to forget the human dimension. The quality of the individuals bearing arms is vital to the success or failure of any martial enterprise. Both Argentine and British airmen, sailors, and soldiers fought skillfully and bravely. The heroism of the Argentine aircrews and the bravery of the British who stood by their posts to defend the fleet from air attacks have been widely noted.



In this era of complex modern weapon systems, a nation's military could become a technocratic bureaucracy that can develop intricate and sophisticated military machines but has only limited knowledge of what is involved in using the equipment in battle. Air forces, in particular, need to be acutely aware of the temptation to substitute "switchology" for sound tactics. In the end, the British retook the islands because their troops and sailors outfought the Argentines. The British used their weaponry more effectively than the Argentines, who had weapons of comparable or better quality

In the larger context, strategists determine the employment of military men and machines. For the Argentine Air Force (FAA), the strategy was one of attrition: destroy the British fleet or sink as many ships as possible, in hopes that London would call off the war and offer a satisfying deal on the disposition of the South Atlantic islands. At the tactical level, this strategy required aircrews to fly into a very sophisticated air defense system employed by well-trained men. The British protected their fleet with a defense in depth: three basic layers of weaponry formed a gauntlet to be run by Argentine pilots. At the outer edge of the gauntlet, the British deployed their BAe-Harriers armed with all-aspect AIM-9L Sidewinder missiles. The Harriers, unable to keep up with the faster Mirages or even the older A-4 Skyhawks, fired at the Argentines as they flashed by en route to the fleet. If the Argentine airmen got past the Harriers, they faced surface-to-air

Neither Britain nor Argentina could gain complete air superiority over the Falkland/Malvinas islands and the surrounding waters. The Argentine Air Force penetrated the British defenses to sink a number of ships. The British were never able to close the runway at Port Stanley, in part because of the effectiveness of Argentine antiaircraft fire. . . . The French-built Mirage IIIEAs flown by the Argentine Air Force (below) are among the world's best air-superiority fighters, but their potential superiority over Britain's slower Harriers (right) proved irrelevant. Because of the distance from the continent to the combat zone (about 400 miles), the Mirages were unable to expend fuel in dogfights. With their AIM-9L missiles, Harriers were able to take their toll of Mirages and Skyhawks.

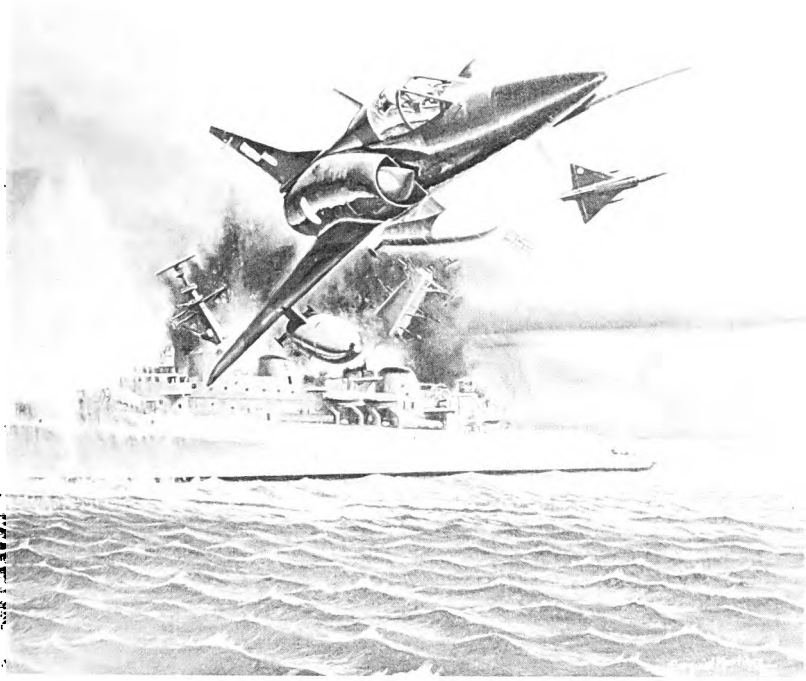


missiles from the ships. Finally, British antiaircraft guns and Royal Marines and British Army troops firing Blowpipe hand-held SAMs waited at the end of the gauntlet. Argentine heroism could not overcome the disadvantage of a situation that had aircrews playing to the British strengths in technology and training. While brave Argentine pilots won the respect of their enemies, they also provided additional evidence that in this age of high-tech weaponry the defense has an advantage unless an innovative and imaginative offense can be devised.

Warriors, weapons, and strategy are among the basic elements of war that military professionals must master. Many important lessons about these elements can only come from a career-long study of war and its history. Through intense study in time of peace, military professionals prepare themselves for war.

Editor's note: We appreciate the help of Comodoró José C. D'Odorico, Argentine Air Force (retired), and Wing Commander Phillip Wilkinson, Royal Air Force, in obtaining photographs for this essay.

The heroic exploits of war are frequently romanticized, as in the case of an artist's impression of an attack on a British ship (right). . . . In reality, modern war involves a mixture of hard work and boredom, punctuated by a few moments of terror. These British sailors (right, below) are loading bombs on a carrier deck in freezing weather. . . . Their Argentine airmen counterparts (below) prepare an A-4 Skyhawk for its next mission.

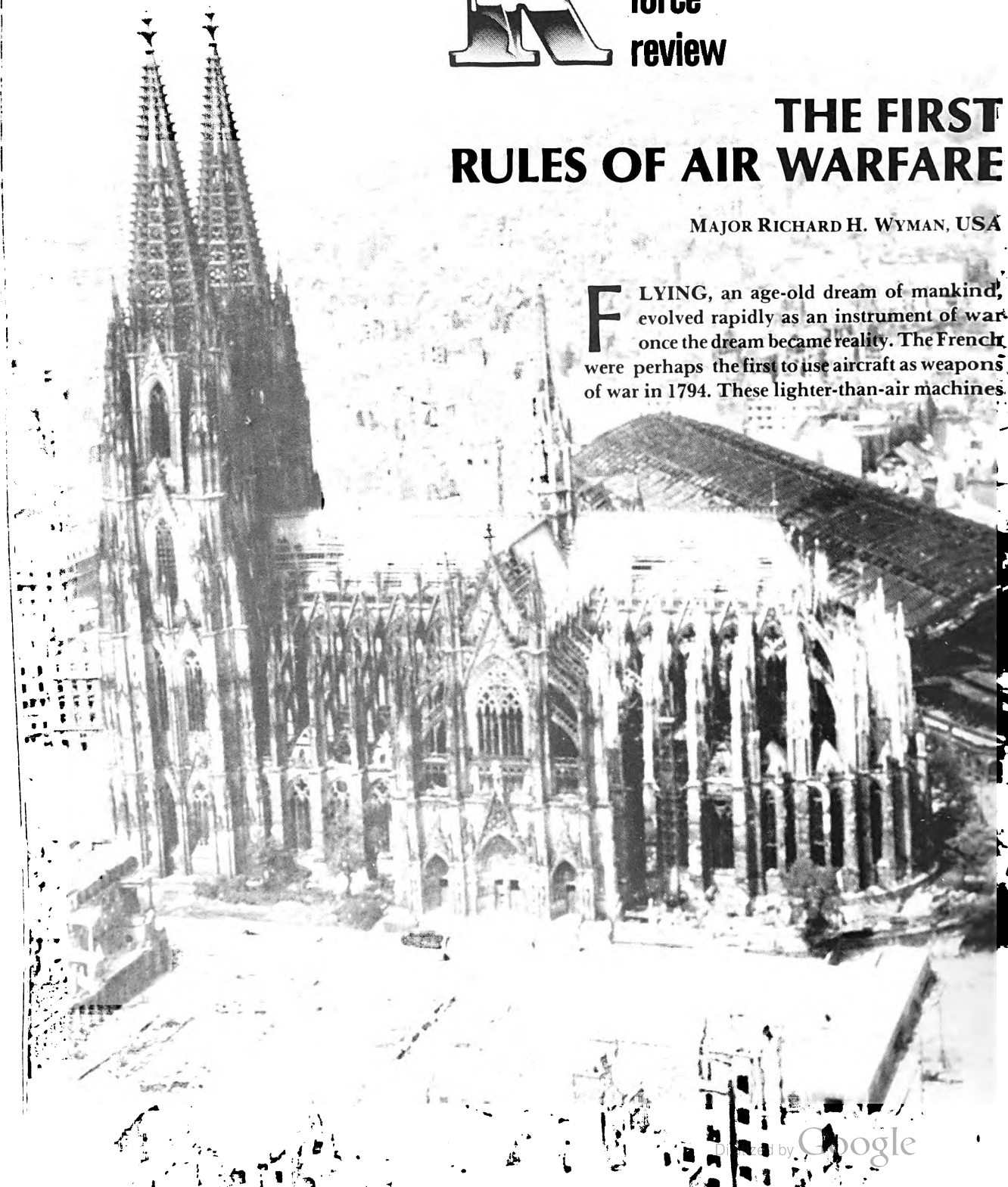


air force review

THE FIRST RULES OF AIR WARFARE

MAJOR RICHARD H. WYMAN, USA

FLYING, an age-old dream of mankind, evolved rapidly as an instrument of war once the dream became reality. The French were perhaps the first to use aircraft as weapons of war in 1794. These lighter-than-air machines



enhanced observation, but, without a means of locomotion independent of wind speed and direction, they proved of little tactical value.[1] Yet, development of the first heavier-than-air craft at the beginning of this century signaled the tremendous wartime potential of the airplane. The battlefield suddenly became three-dimensional.

Early combat usually took the form of personal encounters between belligerents who customarily observed mutually accepted rules. But the industrial revolution introduced increasingly complex weapon systems and an impersonal element to war: the enemy became a faceless "they" who had to be destroyed.[2]

Belligerents recognized that the threat of reprisal could prevent unnecessary suffering. For example, in September 1915, the French notified the inhabitants of Sofia, Bulgaria:

> Our aircraft observe the rule of bombarding *only military establishments and those serving the national defence.* The German Zeppelins and aeroplanes, however, drop bombs on Salonika and Bukharest, assassinating old men, women, and children. . . . Such acts, such crimes, call for vengeance. . . . If such crimes are renewed, they will be followed by the same punishment.[3]

As an alternative to increased brutality, nations sought to epitomize the practical value of humanity and restraint. Peace followed war, but uncontrolled devastation of an enemy during war sustained hatred to the point that it obstructed normal relations. Furthermore, warfare without limits was contrary to the moral values of most civilized countries. But, most important, brutality bred brutality. For example, the German terror bombing against England that led to the 1917 Gotha raids over London may have contributed to indiscriminate allied bombing of Rhineland towns—or vice versa. However, warfare conducted at recognized levels of moderation and humaneness would encourage similar enemy behavior and ensure at least minimum protection for noncombatants. Potentially, international agreements could provide the necessary framework.

Hague Peace Conferences

The Hague Peace Conference of 1899 was the first significant attempt to regulate aerial bombardment. The conference unanimously adopted a declaration to prohibit "for a period of five years . . . the discharge of projectiles or explosives from balloons or by other new methods of a similar nature."[4] Later, the Hague Conference of 1907 renewed this declaration only after considerable debate. Why the change? Aviation apparently had little military value in 1899, but, with the advent of powered flight in 1903, its potential began to be recognized. By 1907, technology had developed so rapidly that countries with strong aviation programs were unwilling to restrict their deployment options. But weaker countries were quite willing to accept prohibitions, since they possessed virtually no offensive air capability.[5] Thus, conflict of interests among powerful and weak nations complicated these early attempts at regulation.

Further efforts to regulate aerial warfare came with recognition of its potential for destruction. The Conference of 1907 thus modified certain articles prepared at the Conference of 1899 and concluded that the remaining articles were so general that they, too, could be applied to both land and air warfare. This conclusion seemed logical since bombardment from the air was not unlike artillery bombardment.[6]

As a result, articles contained in Convention IV of the 1907 Hague Conference were considered binding on all nations, since they were "merely declaratory of existing laws and customs of war . . . [and were] of course binding independently of the status of the conventions of which they were a part." Thus, the articles, in effect, were customary law, but, according to provisions of the conference, they were binding only in conflicts involving signatory belligerents.[7] This apparent inconsistency proved unfortunate during World War I. On the one hand, France and Germany could claim that the articles did not apply, since neither nation had ratified the convention. On the other hand, either

belligerent could logically accuse the other of violations, since the articles conformed to customary international standards. This double standard undermined the effectiveness of the rules.[8]

Problems Posed by Air Power

The use of air power during World War I introduced a number of unexpected problems. In early conflicts, fighting was more or less limited to well-defined areas, and it progressed at a slow rate. Noncombatants were generally aware of the areas where battles were likely and could, therefore, leave the scene. To some extent, their deliberate decision to remain absolved the belligerents of responsibility for injuries.[9] But the speed and mobility of the airplane allowed sudden bombardment of cities, towns, and villages far from the normal lines of fighting, and noncombatants were unexpectedly caught in the midst of fighting. Another result was the destruction of historical monuments, private homes, hospitals, etc., that might not have occurred in land warfare. This destruction often resulted from imprecise target location as well as bomb delivery error.[10]

Worst of all was the tactic of deliberately bombing cities to terrorize civilian populations. The rationale was that the psychological effect of these attacks would bring demands for peace. Interestingly enough, the tactic generally strengthened the enemy's resolve and prolonged hostilities in World War I. But what was the alternative? Total abolition of air warfare was unlikely, since no country wished to renounce its development and possible use of such a versatile and potent weapon system. Stricter regulation of air warfare was another solution, although the laws of war have not always been effective. Finally, many jurists recommended that air warfare should be treated as an extension of land or naval warfare and thus regulated by existing land and naval warfare laws. This approach required strengthening the rules governing land and naval warfare, but it also implied other more serious problems.[11]

Army aircraft in support of land forces should logically be regulated by rules of land war, and naval aircraft in antisubmarine or antishipping operations should be covered by rules of naval war. But what about naval aircraft in support of ground operations or the reverse? Would a pilot be required to switch rules as he passed over the shoreline? The range and mobility of aircraft to operate over both land and sea during a single mission further complicated the problem. Consequently, most military experts and world jurists concluded that existing regulations could not satisfactorily control air warfare. Just as the air over land and sea forms a single medium, a single set of rules independent of land and sea boundaries must control aircraft.[12]

Although jurists disagreed on precise ways to limit air warfare, they generally agreed that existing prohibitions against aerial bombardment of cities were inadequate. The fundamental question centered on what constituted a defended city, since Article 25 in Convention IV of the 1907 Hague Conference prohibited aerial bombardment of undefended population centers. Was a city defended if military forces were deployed in or around it even when there was no real antiaircraft capability? How could a pilot determine whether a city was defended? Even the absence of antiaircraft emplacements was insufficient, since the city might be defended by interceptor aircraft. But there was a logical paradox. A manufacturing center for some critical war material deep in the enemy's rear would be immune to destruction if it was not defended, but a city of no military value with thousands of people and one antiaircraft gun could be bombed to the ground.[13]

Therefore, Article 25 failed its most basic test because it was illogical. Not only could an enemy use it to protect his most vital assets, he could also use it to justify inhumanity. It was unworkable, since the criteria for defining a defended city were too vague. Moreover, if rules "are to commend themselves to observance by

fighting men, they must be based as much on considerations of military expediency as upon considerations of humanity."[14]

The Commission of Jurists (1922-1923)

At the end of World War I, a need existed for international arms limitation. The bitter experiences of the war, such as the terror bombing of population centers, showed clearly that massive suffering could result from poorly regulated bombardment, and a far greater potential for destruction appeared likely in the future. This desire for arms limitation led to the Washington Conference on the Limitations of Armaments in 1921 to consider limits on naval war vessels and other matters.[15] The conference recognized that any attempt to limit the size or number of nations' military aircraft would be difficult, since commercial assets might be quickly converted to wartime use. Consequently, comprehensive rules that conformed to accepted military practice and were consistent with established principles of warfare would provide the most effective control.

Because of the technical nature of aviation, the Washington Conference recommended a separate session concerned exclusively with these new methods of war.[16] It thus established the Commission of Jurists to consider:

> (1) whether existing rules of international law adequately covered "new methods of attack or defense . . . [developed] since the Hague Conference of 1907," . . .; and if they did not, (2) "what changes in the existing rules" ought . . . to be adopted. . . .[17]

The commission decided in the planning phase to restrict consideration to aircraft and radio, since the Washington Conference had already issued declarations concerning submarines and chemical warfare.

Delegations from six countries—Great Britain, France, Italy, Japan, the Netherlands, and the United States—met at The Hague during the period from 11 December 1922 to 19 February 1923. Each delegation included one or two jurists and various technical advisers. This diversity proved fortunate because the jurists were generally idealistic with little or no combat experience, but the technical advisers were military men of considerable experience in the use of aviation and radio in warfare. Thus, ideas ranged from the most idealistic and impractical to the most pragmatic.[18]

This philosophical balance was fortunate for another reason. Following World War I, the general public of the various countries was probably more interested than the military in establishing controls on the use of aviation and radio. Many people had had first hand experience in the tragedies of war, and aviation and radio played especially prominent roles in these experiences. Consequently, the balance between civilian and military interests established credibility with the civilian population.[19]

The commission formed two committees: one to draft rules for the regulation of aviation and another to do likewise for radio. Both committees included one voting member from each delegation and various national experts to provide technical advice. Several of the jurists participated in the committee sessions. Although this tended to impede the work of the committees, since the jurists required considerable time to consult with their technical advisers, it did ensure the balance and credibility mentioned earlier.[20]

The commission also established a number of guidelines early in its deliberations. It agreed that no new code should contradict, at least in principle, existing rules for land and naval warfare; that is, it sought to draft a body of rules that conformed to actual practices but agreed with

the spirit of existing regulations and was consistent with the basic principles of war. However, as desirable as it was to limit suffering and destruction, the commission recognized that rules should not restrict the legitimate rights of belligerents to defeat enemy forces—a basic principle of land and sea war. Otherwise, they would lose credibility, and belligerents would refuse to apply them in wartime.[21]

The Hague Rules of Air Warfare

The final report of the Commission of Jurists consisted of two parts: Part I provided rules for the use of radio in warfare (12 articles), and Part II contained a highly organized, comprehensive code for control of aviation in warfare (62 articles). Interestingly, the report included no provision to preclude application of the articles to belligerents who did not accept the convention. The commission noted that similar provisions in the Hague Conventions of 1899 and 1907 unnecessarily weakened their applicability and expressed hope that, in any conflict involving parties that were not signatories to these rules of air warfare,

> the contracting parties, instead of treating their agreement as having immediately ceased to be binding, . . . would offer it to a non-contracting belligerent as a modus vivendi; and if the offer were declined, they would still be at liberty to consider the . . . [actions] of the non-contracting belligerent [and to continue to obey] a treaty which had not automatically ceased to operate. . . . [22]

Perhaps the most urgent issue confronting the commission was the regulation of aerial bombardment. From the beginning of the conference, the delegates agreed that regulation was necessary. Certainly, indiscriminate bombing practiced at times during World War I caused unnecessary suffering and destruction and violated existing rules of war. But what should be done? Any attempt to prohibit bombing was unreasonable and even impractical. The committee on aviation was unable to resolve the problem, and the issue was debated and finally settled before a full session of the commission.[23]

Two of the five articles adopted by the commission regulating bombardment read as follows:

> *Article 22:* Aerial bombardment for the purpose of terrorizing civilian population, of destroying or damaging private property not of military character, or of injuring non-combatants is prohibited.
>
> *Article 24:* (1) Aerial bombardment is legitimate only when directed at a military objective. . . . (2) Such bombardment is legitimate only when directed exclusively at the following objectives: military forces; military works; military establishments or depots; factories constituting important and well-known centers engaged in the manufacture of arms, ammunition or distinctively military supplies; lines of communication or transportation used for military purposes. (3) The bombardment of cities . . . not in the immediate neighborhood of the operations of land forces is prohibited. In cases where the objectives specified in paragraph 2 are so situated, that they cannot be bombarded without the indiscriminate bombardment of the civilian population, the aircraft must abstain from bombardment. (4) In the immediate neighborhood of the operations of land forces, the bombardment of cities . . . is legitimate provided that there exists a reasonable presumption that the military concentration is sufficiently important to justify such bombardment, having regard to the danger thus caused to the civilian population. (5) A belligerent State is liable to pay compensation for injuries . . . caused by the violation . . . of the provisions of this article.[24]

The commission agreed that "a belligerent ought not to direct his attacks against the civil population who take no part directly or indirectly in the operations of the war, or against private property or institutions of a charitable, educational or religious character. . . ."[25] This principle suggested three guidelines: the distinction between combatant and noncombatant was critical; indiscriminate bombing and bombing to terrorize were unacceptable; and only targets of military value should be attacked.[26]

The rationale for Article 22 is obvious, but Article 24 is more complex in the sense that it makes a significant distinction between bombing in the immediate neighborhood of operations (tactical) as opposed to more distant bombing (strategic). Part (3) of the article severely limits strategic bombing when it prohibits

bombing that poses substantial danger to noncombatants.[27] In Part (4), however, tactical bombing that may cause heavy civilian casualties is permissible if the military objective is sufficiently important.

Aviators were also given major discretionary power in deciding such questions as these: Will substantial danger to noncombatants result? Is the target outside the neighborhood of operations? Does the value of a target outweigh the danger to noncombatants? Furthermore, the article seeks to balance protection of noncombatants against military realities. Presumably, noncombatants near the front lines could evacuate prior to tactical bombardment and thus required less protection than noncombatants in more distant cities that might be bombed with little or no warning.

Significantly, the new rules did not mention the criterion of defended versus undefended to determine target legitimacy. Instead, they introduced the criterion of military objective in stating that bombardment is essentially legal only if it is directed at military objectives. Moreover, the risks of injury to noncombatants must be weighed against the military importance of the objective. This new criterion is more reasonable, since "it is in accord both with current practice and with sound strategical and tactical common sense. A belligerent will not wish to risk his planes and pilots . . . [except on those targets] of military importance."[28]

Other articles provide for the protection of historical buildings and monuments, places of worship, and hospitals; prohibit attack on crew members parachuting from a disabled aircraft; give rules for aircraft markings; and discuss use of tracer and explosive ammunition as well as rescue of aircraft at sea. Also included are such topics as espionage, escape and evasion from disabled aircraft, protection of civilian aircraft, neutral airspace, and perfidy. Even a casual comparison of the rules for air warfare with current practices reveals striking similarities. (See Air Force Pamphlet 110-31.) But the Hague rules were never ratified by the signatories. Why?

Evaluation of the Hague Rules

The Hague rules received general approval by most of the world's jurists, who recognized them as a legally consistent, comprehensive code for the regulation of air warfare.[29] Popular opinion was also favorable, but the rules were subject to extensive criticism.

Although the concept of military objective to test for target legitimacy was widely praised, many critics considered it too narrow. According to Article 24, military objectives are activities or objects designed primarily to support the military effort. To cope with the complexities of modern warfare, the military effort requires support from a country's total industrial base. But the commission excluded such objects as blast furnaces, boot factories, electric works, and grain silos, as well as oil wells, refineries, and depots. These objectives have a significant impact on a belligerent's ability to wage war even though they are also vitally important in a nonmilitary sense. Critics cautioned that belligerents would ignore this definition of the military objective, since it was not comprehensive. Consequently, violations by one side would lead to reprisals by the other, and warfare would degenerate into a barbaric struggle with little respect for humanity.[30]

The U.S. military also expressed concern. It was risky to establish rules, since the airplane was advancing rapidly and no one could be sure of its future capabilities. The argument was that no country should be expected to deprive itself of a future technological leap that might shorten a war or mean the difference between victory and

defeat. In fact, such regulations would suppress the natural, technological evolution of warfare. Some sources even felt that rules of aerial warfare were unnecessary because the combatants themselves experience the horrors of war. Consequently, there is a natural self-interest in preventing unnecessary suffering. The fear of retaliation will effectively control future use and "there is no need for jumping hastily at conclusions and saying that the next war will be an aerial war and a horrible war."[31]

Perhaps the most significant criticism concerned a lack of precision in the language of certain articles, but some sources considered this looseness a strength, since too much detail would complicate compliance. As noted earlier, almost everything is directly or indirectly related to the modern war effort, and, thus, virtually anything can be considered a legitimate military objective. Bombing would ostensibly almost always be justified. But an increase in barbarism will inevitably lead to increased human suffering. Consequently, rules could actually make matters worse.[32]

In any event, the signatories did not ratify the final report of the Commission of Jurists. In fact, "the valuable work of the Commission appears to have been all but forgotten. Even the learned societies . . . apparently ceased to concern themselves with the problem. Public opinion . . . appears to have become in large measure indifferent."[33]

The United States enthusiastically supported formation of the Commission of Jurists, but it refused to ratify the report. Why? Even though the delegations to the commission reached unanimous agreement on the proposed code, the agreement was substantial but not total. There were compromises, and some articles were clearly not in the best interests of all participants.[34] Secretary of the Navy Edwin Denby indicated in a 1923 memorandum that the proposed codes were acceptable to the Navy Department but that one of the powers represented at the commission did not consider regulation necessary and might be "willing to permit the work . . . to be forgotten."[35]

Secretary Denby's remark reflects U.S. suspicions that other powers less than enthusiastically supported the commission's findings. Only the United States and Japan expressed willingness to accept the rules of the commission without change. The Dutch maintained that the rights of neutrals were not adequately protected. The French felt that other existing international agreements adequately regulated air warfare. But most serious was the British refusal even to consider these rules pending further international discussion.[36]

Some U.S. military aviators were also skeptical of regulation. Since technology had developed rapidly, no nation wished to restrict its future options, especially if other powers used the regulation to gain an advantage. Thus, despite widespread praise for the proposed rules in the press, in official statements, and in public support for the rules, many government and military leaders had serious doubts. (See footnotes 22 and 27.)

Timing was another factor. The General Report of the Commission of Jurists was submitted to the Secretary of State on 26 February 1923. But since the final session of the Sixty-seventh Congress ended only six days later, the Senate did not consider the report. Before it could be considered by the Sixty-eighth Congress on 3 December 1923, the death of President Warren G. Harding and his replacement by Calvin Coolidge brought about an unexpected change in administrations. President Harding had expressed pride in the "helpful part we [the United States] assumed in international relationships"[37] and had supported the Washington Conference. President Coolidge advocated a

"policy of drift with regard to Europe"[38] and may not have given priority to the air rules. Whether this reflected a change in positions of the two administrations is not clear, but the turmoil and disruption brought by the sudden change in administrations may have led to reduced emphasis on the rules.

OTHER factors relate to the spirit of the times: the war to end all wars had come to a victorious end, and problems in Europe had become "their" problems. The country was returning to its traditional isolationism, based in part on wide ocean barriers that precluded air attacks against American cities.[39] Some experts even claimed that the new economic interdependence stemming from increased industrialization would reduce the likelihood of serious conflict even without regulation.

Although the public feared indiscriminate bombing, it was in love with the airplane and excited by its glamour. Fear of bombing was quickly overshadowed by concern for chemical warfare. The nation's thoughts turned to the death rain of chemicals that could possibly exterminate entire urban populations in a few hours. As a further diversion, a successful attempt by the League of Nations to abolish *all* aerial bombardment would effectively eliminate the need for rules.[40]

No definite reason has been found for the U.S. failure to ratify the rules. Certainly, the difficulty in obtaining Dutch, French, and British concurrence in the rules was a factor. But the rules conformed to the U.S. government's position and, in general, were favorably received by the public. Perhaps the real reason lies hidden in a combination of factors and events of the time. One of the most important considerations was the country's rapid return to an isolationist philosophy with its general abandonment of an international role. A contributing factor was the skepticism of the U.S. military, which was highly respected and exerted considerable influence at that time. This lack of support for regulation by *those who knew best* was probably very significant.[41]

The importance of those early rules can be appreciated somewhat in terms of their effect during World War II. Although the rules were not ratified, both sides publicly acclaimed their adherence and accused their opponents of violations. Indiscriminate bombing did occur, but, as mentioned earlier, fear of retaliation was a restraining force. Most nations now apply rules based on this early prototype; even a casual review of the Law of Armed Conflict and its application to the U.S. Air Force underscores the similarity. Essentially, these first rules and their minor modifications form the basis for all current regulation of air warfare. What caused the long delay? Perhaps the words of Admiral William L. Rodgers, a U.S. technical adviser on the Commission of Jurists, offer a partial explanation:

> The group of rules of international law based on humanitarian practice are already well tried out and likely to endure. Another group of rules deals with new instruments and agencies of warfare. Such rules, if introduced too hastily into codes of war before experience of war has tried the new agencies, will probably be denied observance in the next war, until the new agencies have been used and have shown their value.[42]

Air Command and Staff College

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6. Ibid., pp. 84-85.
7. Ibid., pp. 86, 92; James B. Scott, editor, *Conventions and Decla-*

rations of 1899 and 1907 (New York: Oxford University Press, 1915), p. 103.

8. Paul W. Williams, "Legitimate Targets in Aerial Bombardment," *The American Journal of International Law* 23 (1929):573-74.

9. James W. Garner, "International Regulation of Air Warfare," *Air Law Review* 3 (April 1932):122-23.

10. Ibid., p. 112; Captain Elbridge Colby, "Aerial Law and War Targets," *Journal of International Law* 19 (1925):709-11. Naval and artillery bombardment shared similar accuracy problems, although critics tended to ignore that fact. For further discussion, see M. W. Royse, *Aerial Bombardment and the International Regulation of Warfare* (New York: Harold Vinal, 1928), pp. 168-73.

11. Garner, pp. 112-13, 115.

12. Spaight, *Air Power*, 1924, pp. 32-35; Garner, p. 115.

13. Colby, pp. 704-05.

14. Williams, p. 571.

15. Howard S. Leroy, "Limitation of Air Warfare," *Air Law Review* 12 (1941):24-25.

16. Quindry, pp. 485-86.

17. Moore, p. 185.

18. Rear Admiral William L. Rodgers, "The Laws of War Concerning Aviation and Radio," *The American Journal of International Law* 17 (1923):630-31, 633.

19. Ibid., pp. 630-31.

20. Ibid., pp. 631-32; Moore, p. 191.

21. Rodgers, pp. 632-35; Moore, p. 190.

22. Moore, p. 208. Many European politicians and military professionals may not have shared the view that the articles did not apply to warfare involving nonsignatory combatants. In fact, many feared that this provision might be tantamount to unilateral disarmament by the signatories. However, the commission clearly recognized this danger, but it only wished to preclude an automatic disregard of the rules provided that both sides observed them in practice.

23. Ibid., pp. 194-96.

24. Ibid., pp. 211-43.

25. Garner, p. 111.

26. Then, as now, there existed advocates for targeting civilian population centers for the express purpose of breaking the enemy 's will to resist. This was seen as a deterrent to future warfare. The commission recognized but did not intend to preclude psychological terror experienced by civilians living near legitimate military targets, which were suddenly and unexpectedly bombed by aircraft.

27. This part of Article 24 was perhaps the most controversial provision of the entire code and resulted only after lengthy and heated deliberations. The difficulty was that it attemped to impose severe restrictions on the distinct advantage of aerial bombardment—the rapid and unexpected destruction of objectives deep in the enemy's rear. The lesser restrictions on targets in the combat zone merely allowed engagement by aircraft of targets that could perhaps be more economically and effectively engaged by artillery or other means. (See Part 4.) Thus, Part 3 may have unintentionally violated the principle of economy of force by preventing the most efficient use of a weapon system. Moreover, strict interpretation of collateral damage to noncombatants as evidence of indiscriminate damage might, for all practical purposes, eliminate aerial bombardment. As a result, bombardment by aircraft was more restricted than bombardment by other means. Royse, pp. 227-29 and 232-34.

28. Colby, p. 709. Note the reference to economy of force, a basic principle of war.

29. Leroy, p. 30. Unfortunately, acceptance of the rules by jurists is not sufficient since warring nations must voluntarily abide by them.

30. Quindry, pp. 489, 508-09.

31. Colby, pp. 712-13; Rodgers, p. 633.

32. Williams, p. 576; Colby, p. 715.

33. James W. Garner, "International Regulation of Air Warfare," *Air Law Review* 3 (July 1932):317.

34. Rodgers, p. 639.

35. U.S. Government Printing Office, *Papers Relating to the Foreign Relations of the United States* I (1922):88.

36. U.S. Government Printing Office, *Papers Relating to the Foreign Relations of the United States* I (1925):93-107.

37. U.S. Government Printing Office, *Papers Relating to the Foreign Relations of the United States* I (1923):XVIII.

38. Oswald G. Villard, editor, "The President and the Progressives," *The Nation* CXVII, 19 December 1923, p. 703.

39. Manley O. Hudson, "Aviation and International Law," *The American Journal of International Law* 24 (1930):237.

40. Garner, p. 321; Charles Warren, "Belligerent Aircraft, Neutral Trade, and Unpreparedness," *The American Journal of International Law* 29 (1935):204.

41. Colby, pp. 713-15.

42. Rodgers, p. 639.

In guerrilla warfare, select the tactic of seeming to come from the east and attacking from the west; avoid the solid, attack the hollow; attack; withdraw; deliver a lightning blow, seek a lightning decision. When guerrillas engage a stronger enemy, they withdraw when he advances; harass him when he stops; strike him when he is weary; pursue him when he withdraws. In guerrilla strategy, the enemy's rear, flanks, and other vulnerable spots are his vital points, and there he must be harassed, attacked, dispersed, exhausted and annihilated.

Mao Tse-tung, *On Guerrilla Warfare*, translated by Samuel Griffith, p. 46

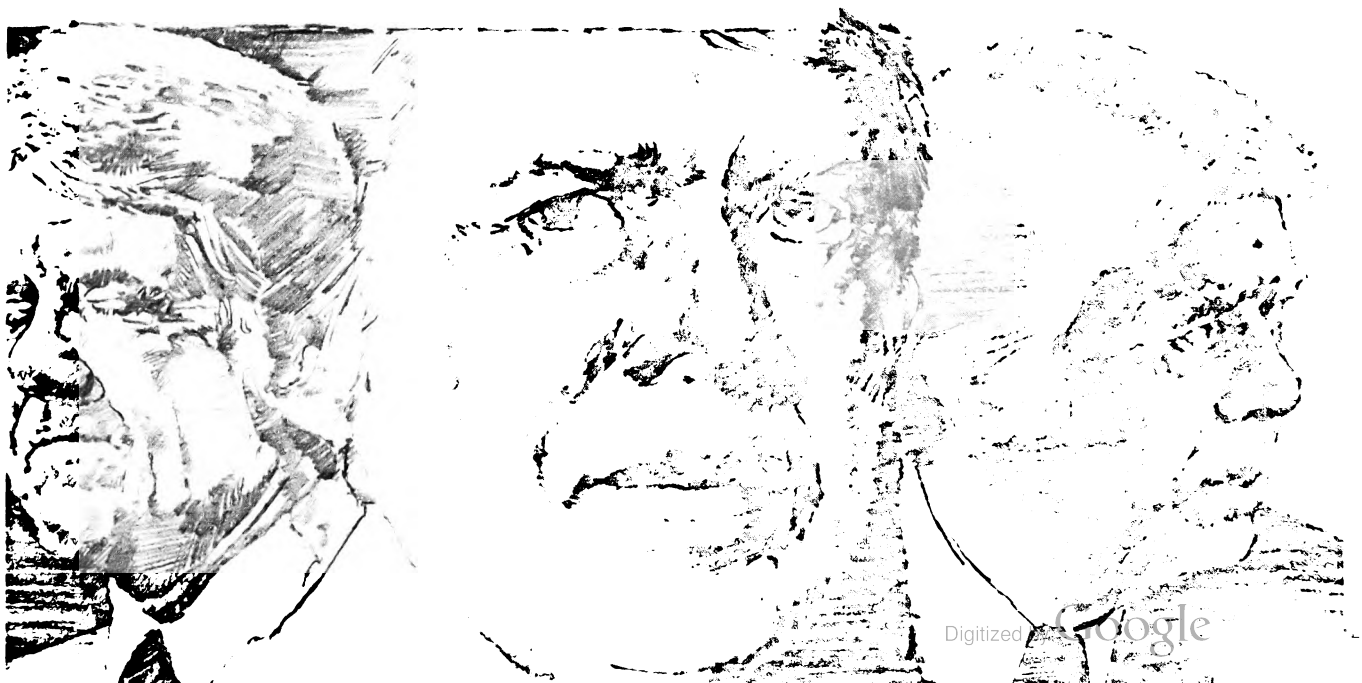
books, images, and ideas

THE CARTER ADMINISTRATION: THREE ACCOUNTS

DR. JOHN ALLEN WILLIAMS

THE press, the instant historians, and the voters have all been unkind to the Carter administration. Perhaps the record of that period will look better after a period of reflection than it does now—such is usually the case as young scholars in search of tenure rush to publish their dissertations—but the revisionism will not begin here. Despite several notable accomplishments, the Carter administration was fundamentally flawed by the lack of a larger vision and the political skills to carry it out.

It should not have been so; they were good people, most of them. Jimmy Carter is a fine and decent man, who brought the best personal instincts to his office and combined them with a keen intelligence and an incredible attention to detail. Many of his appointees, considered individually, were outstanding, even if the chemistry among them was not always the best. He entered office with a reservoir of good will from an American people anxious to put Vietnam and Watergate behind them and ready for a leader who would "never lie to them" and would demand of them, "Why not the best?" Yet less than four years later, Carter would be repudiated at the polls by those same Americans, who voted overwhelmingly to entrust their futures to Ronald Reagan. By an incredible combination of bad administration and bad luck, Jimmy Carter's support evaporated, and



we still must look back to Dwight D. Eisenhower to find a President who served two full terms. What happened? Some of the answers may be found in the three books reviewed here, but not all.

FROM an analytical perspective, the best of the three books by far is *Thinking about National Security* by Harold Brown—one of the few senior Carter administration officials who should emerge from his duties with his reputation enhanced.† (Warren Christopher and Walter Mondale are two others.) Let us note at the outset that Dr. Brown's prose does not sing, yet it is clear and straightforward, and he does not dodge the tough questions. It was Brown who nudged Carter toward a more coherent strategy of steady increases in military procurement, which had been seriously underfunded since the Vietnam War. One suspects, in fact, that Brown would have been happier working for Ronald Reagan.

Brown's recommendations for increasing U.S. military capability are sensible and overdue. They derive additional credibility from his understanding of the basic sources of U.S. strength:

> . . . the very security of the United States must be derived from the fundamental principles, values, and aspirations of the nation. Security must depend on the nation's internal political and economic strength; the will of the people and their ability to persevere in a given course; the quality of U.S. education and technology; the state of national leadership; and the degree of confidence the public has in that leadership. . . . Internal cohesion is needed to build both a strong national security program and an effective economic program.

However much they may be needed, military enhancements will not guarantee national security if domestic political will and trust are lacking. Brown understands this far better than do many others who share his sense of urgency about military increases.

After four years of publicity, Brown's specific policy recommendations are well known. The book contains no surprises, but it lets him make a more organized case for his policies. Being out of office, he can be more candid about the need for increased expenditures, but he does not use the opportunity to settle any personal scores he may have. Indeed, his analysis would be much more entertaining, and perhaps even more informative, if he had chosen to reveal more of himself (and in this area, the difference between Brown's book and the others to be discussed here could not be more pronounced). He now believes that ". . . the U.S. stake in Vietnam appears in retrospect to have been much too small to justify the cost of U.S. involvement." Beyond a couple of additional sentences, that's it. How did this revelation come upon him? What does it teach this most astute individual about national security decisionmaking processes and the people who run them? How does he feel about his own role in that undertaking? It would be interesting to know.

Still, *Thinking about National Security* is a practical and sensible overview of U.S. national security issues, from geographical considerations to questions about technology, nuclear strategy, arms reductions, and national security organization. Only in the last area does much new emerge: the former Secretary of Defense favors a greatly restructured military at the top, with a Joint General Staff reporting to a Chief of Military Staff, and with the service chiefs stripped of their joint responsibilities. Repeatedly, Brown reminds the reader of the limited utility of military strength by itself and of the importance of integrating economic, political, and military strategies and arms control. This well-

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†**Harold Brown, *Thinking about National Security: Defense and Foreign Policy in a Dangerous World* (Boulder, Colorado: Westview Press, 1983, $16.95 cloth, $11.95 paper), 280 pages.**

written book would be an excellent text for courses in national security policy, as well as a fine primer for the intelligent citizen who wishes to know the rationale behind U.S. military policy.

If Harold Brown's book is the least personal, then Hamilton Jordan's *Crisis* is an example of the other extreme.† However, somewhat to my surprise, the character that unfolds in its pages is enormously more sympathetic than the one depicted in the popular press. Jordan is seen as a person of considerable intelligence and honesty, and if he was sometimes out of his depth, he possesses the insight to be aware of it and the candor to report it. *Crisis* is "a good read"—a detailed and highly personal account of the last year of the Carter Presidency by an official who figured more prominently in the events of that period than was recognized at the time. Beginning and ending with Inauguration Day 1981, the text is organized chronologically as a daily record of events accompanied by the author's own impressions of them. Occasional flashbacks are inserted where appropriate to maintain continuity or to illuminate some point.

It is perhaps too easy to be put off by Jordan's "gee-whiz" style or to underestimate a man who—let's be honest—often came across as a boorish provincial. Doing so would be a serious mistake, for Jordan is a perceptive observer of the events occurring around him and is sensitive to his own generally undeserved image. He was a primary factor in Jimmy Carter's meteoric rise to the Presidency, and he has many worthwhile observations about democratic politics. Chief among his concerns are the effects of the McGovern Commission reforms, which served to fragment the Democratic Party and increase the power of organized special interests. Jordan also describes the cynicism (as opposed to healthy skepticism) of the press, members of which cannot imagine that political leaders may be motivated sometimes by honorable, or even noble, intentions. Jordan notes too the tremendous success that liberal Democrats have had in electing Republican presidents by withholding their full support for the Democratic ticket in 1968 and 1980 and in supporting the 1972 kamikaze run of George McGovern. Surprisingly, Jordan did not foresee the dramatic effect of television coverage marking the first anniversary of the American embassy takeover in Iran. This coverage, broadcast on election eve, was disastrous for Carter's reelection effort.

With the notable exception of Edward Kennedy, Jordan does not skewer anyone in his book. But his "warts and all" approach does not display anyone in a consistently favorable light either. This is apparent even in his treatment of Jimmy Carter. Jordan notes: "Increasingly, the President approached his speeches like an engineer; he regarded them as vehicles for making logical arguments. If the speech contained enough facts to support a contention or a policy, then it was 'successful.' " The result was a tendency to include laundry lists of references dear to the hearts of the interest groups that comprise the Democratic coalition. Jordan tells us that the President's media adviser, Gerald Rafshoon, once noted that Carter's speeches should have ended with a commercial:

> President Carter's speech was brought to you by the supporters of the Equal Rights Amendment, the American labor movement (with the exception of the Teamsters), the consumer movement, the friends of Israel, and some white Southerners.

Jordan also correctly observes that too much public attention was focused on the hostages by the administration, although the media ensured that this issue would be prominent until it was resolved. The administration decision not to do

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†**Hamilton Jordan, *Crisis: The Last Year of the Carter Presidency* (New York: G. P. Putnam's Sons, 1982, $16.95), 419 pages.**

any unnecessary traveling until the crisis was over, a policy originally urged by Jordan, also served to trap the administration and draw increased attention to the situation until the policy was reversed finally, for political reasons, after the failure of the rescue attempt.

Crisis is the most enjoyable of these three Carter administration accounts, although it serves as a vivid reminder of a very frustrating year. One could also quarrel with his characterization of Vietnam as "the nation's first military defeat" rather than as a sad political defeat. (Furthermore, in 1814 the British, not the Vietcong, burned the city of Washington.) But it is worth the book price just to read Jordan's discussion with Colonel Beckwith about the hostage rescue attempt. "Chargin' Charlie's" comments about their training, and especially about their plans once inside the embassy, make the courage and determination of the military men on this mission indeed real.

READING Jimmy Carter's *Keeping Faith* may bring back the powerful emotions that many Americans felt during his Presidency, particularly in the final year: frustration, anger, helplessness, and eventually outrage over events seemingly out of control.† The good intentions, the impotence, the hand-wringing, the weeping—all are included in Carter's book. Especially the weeping, which occurs every fifty pages or so and begins on page seventeen with his diary entry describing the walk to the White House on Inauguration Day: "People along the parade route, when they saw that we were walking, began to cheer and to weep, and it was an emotional experience for us as well."

But too much can be made of these atmospherics, even though they contributed mightily to the frustrations of the last Carter year. It is not really fair to criticize a book for accurately recalling the emotions of the period it describes. Jimmy Carter's honesty in exposing personal feelings that others might choose to suppress makes him too inviting a target, and the resultant cheap shots would not be very enlightening.

Personally, and predictably, Carter appears in these pages as a kind and charitable man of deep, religiously based moral convictions that are a source of immense personal strength. Politically, Carter appears as a President who was able to gain office but had neither a clear overview of what he hoped to accomplish nor the political skills to succeed. Often the reader is alternately struck with admiration for Carter the man and appalled by the failure of Carter the political leader to conceptualize and to promote his vision. Some examples of this may suffice: Carter is a man of admirable personal loyalty, yet because of this, he was unable to distance himself from those around him (such as friend Bert and brother Billy) who would cause him great political damage. He could be decisive, yet for reasons still inadequately explained, he chose to let the ailing Shah of Iran into the country, precipitating the hostage crisis that paralyzed his administration for more than a year and helped cause his defeat in the 1980 election. That he understood the symbolism of the President is shown by his leaving the armored limousine during his inaugural parade, yet he did not understand the need on other occasions to preserve the grandeur of the U.S. Presidency by, for example, refraining from appearing in a cardigan sweater during a Presidential television address. Perhaps more than any previous President, Carter integrated the Vice President into his administration's activities, yet he failed to heed the Vice President's counsel on occasions when he should have, as in the case of the politically disastrous July 1979 Camp David self-criticism sessions and the subsequent "malaise" speech that only made the

†**Jimmy Carter, *Keeping Faith: Memories of a President* (New York: Bantam Books, 1982, $22.50), 506 pages.**

President look foolish. He believed deeply in human rights but was unable to apply the concept effectively or consistently. It is as if Carter's personal strengths—loyalty, attention to detail, compassion, the common touch—became liabilities when *writ large.*

Richard Neustadt has noted that presidential power is the power to persuade. Although Carter frequently could not persuade Congress, foreign leaders, or ultimately the electorate of the wisdom of his policies, he could be formidable indeed one-on-one. The phenomenal attention to detail that sometimes may have prevented him from having a broader view was indispensable in the Camp David negotiations between President Anwar Sadat of Egypt and Prime Minister Menachem Begin of Israel. Although the Camp David process has floundered on the rocks of Arab extremism and Israeli ambitions for perpetual control of "Judea and Samaria," the agreement itself was a signal accomplishment—the high point of the Carter presidency. It is hard to imagine anyone else (except possibly Henry Kissinger) being successful, and Carter deserves great credit for this triumph. His detailed description of the negotiations is the best part of the book.

Less satisfying is the overall impression of the Carter years. Like the Carter administration itself, the whole of the former President's thought seems less than the sum of its parts. In viewing situations individually, Carter grasps the issues and appears to understand them in all their complexity. But surveying them collectively, he seems to have no overarching philosophical or political perspective holding everything together other than situation-specific pragmatism. Similarly, neither his administration nor the American people seemed to sense a coherent framework or a strong sense of direction during the Carter era. This apparent vacuity manifested itself in many ways, from the philosophical and personal incompatibility of the hawkish Brzezinski and the owlish Vance to the confused United Nations vote on censuring Israel.

However, the fact that the Carter administration was repudiated at the polls and in the eyes of journalists does not mean that it was a failure, even if a vindication (as in the cases of the Truman and Eisenhower administrations) is unlikely soon. There were notable accomplishments besides the Camp David agreement, including a necessary and favorable treaty with Panama and an FY 1981-85 defense plan that was in many ways more sensible and coherent than his successor's, although it was underfunded. It is hard to argue that the Carter of 1979-80 was soft on defense. True, he did cancel the B-1 bomber, but he accelerated development of cruise missiles and a follow-on stealth bomber. Also, his MX program called for two times the number of missiles that are now planned, and they were to be deployed in such a way that they could conceivably survive a first strike.

ON BALANCE, these books, *Thinking about National Security, Crisis,* and *Keeping Faith,* describe a Carter administration that did not live up to the potential of the many people who served it, including the President himself. The country needed leadership; what it got was engineering.

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TOWARD A REFORMED NATIONAL GUARD

DR. CURTIS COOK

VISTA 1999 attempts to chart the future for the Army National Guard and the Air National Guard.† It is a counterpart to such studies as *Air Force 2000* and *Seapower 2000,* which attempt to give focus to long-range planning. *VISTA 1999* evidently was commissioned on 22 December 1980, with preparation coming in the following year. The study attributes authorship to a task force consisting entirely of active and retired members of the Guard. Its quality is uneven and neither as polished nor as comprehensive as *Air Force 2000,* but it does have two central themes that pervade it, give it coherence, and make it worth reading.

The first of these themes is that the Guard has a far larger share of the mission than its share of the budget, and dependence on the Guard is likely to increase. One claim is that the Air Guard "performs between 30 and 35% of the Air Force mission for about 3.5 percent of the Air Force budget." (p.4)

The second major theme is that the Army and Air Guard are uniquely suited to join in the preparation for "combined force" warfare. While the Air Guard would have some additional missions in augmenting the regular force, according to the study, its principal effort should be collaboration with the Army Guard in a combined force. Here, combined force goes beyond the current concept of joint operations and approaches an organic relationship between air and ground forces. *VISTA* calls for "a single-hat chain of command at the adjutant general level." (p. 47)

The organizational pattern of the study is straightforward. First comes an estimate of the future international and domestic environments. This is followed by an assessment, based on estimates of the Guard's present and future mission and posture. Separate but closely related chapters then focus on the Army and Air Guard specifically.

international and domestic environment

The discussion of the international environment is sensible though uninspired. The authors put forward as U.S. interests such items as national security and the management of East-West relations. Self-determination among nations should be supported with U.S. allocated funds, they indicate, but not human rights abroad. Sound bilateral relations with allied nations, as well as solutions to economic and energy problems, are also cited as U.S. interests. The international environment in which these interests are pursued will be increasingly hostile and difficult. Complex problems will abound. The military strategy necessary to meet the challenge of this international environment continues to be deterrence of undesirable acts by relying on the Triad force posture and maintaining a diversity of military capabilities.

The domestic section of this chapter takes up two main points: "national military strategy" and "manning the force." The information presented on the latter point is interesting because demographic trends present some implications for the Guard that differ from their implications for the active force. Since the Guard is organized by state, state-oriented demographic projections can guide decisions to

†**Francis R. Gerard and Task Force, *VISTA 1999: A Long-Range Look at the Future of the Army and Air National Guard,* March 1982, 77 pages.**

change Guard unit missions. States with growing populations and greater success in manning their Guard units should be assigned expanded missions and be given priority where modernization of equipment is concerned. Observation of the distribution and characteristics of the work force also leads to the proposition that Guard units engaged in high-technology activity (such as repair of sophisticated equipment) might be formed and located in high-technology manufacturing and research areas of the country. Included in the work force would be people who had left the active military for more attractive salaries, as well as people without prior service who might wish to serve in a context that would not require them to leave their civilian jobs and current homes. And with the declining number of what are now defined as military-aged people, the Guard might sustain its manpower requirements by letting its age distribution shift toward the older end of the spectrum. This flexibility to recognize demographic variables is an advantage the Guard enjoys over active forces.

Unfortunately, the quality of the domestic section of this chapter is undermined by its lurid prose. For example, we read: "Iran has been plunged into bloody chaos and turned overnight from a bastion of Western strength to a cauldron of virulent antiwesternism, its oil treasures lying provocatively exposed to lustful Russian eyes." (p. 16)

A more difficult problem with this section is the sources it uses in developing its picture of American society. While some scholarly works were consulted, the authors depended too much on popular, journalistic information. As a result, the discussion of American society is neither analytical nor objective.

Several arguments in this section correspond to those advanced by the military reform movement. For example, the study complains that, in the absence of a clearly articulated and carefully followed strategy, "substrategic reflexes govern," such as the "technical ambitions of engineers." (p. 17) The illustration cited is the placing of a gas turbine engine in the M-1 tank. Also in this section of *VISTA 1999* is a call for maneuver warfare to be our tactic instead of attrition warfare.

Except for the data on demographics and work force, the domestic arena chapter added little to the study. The subsequent chapters, which speak directly to the Army and Air Guard, are the heart of the study. I want to turn to them, concentrating on the Air Guard.

Army and Air National Guard Mission and Posture

The Air National Guard chapter begins with a call for "a major policy initiative to shape a long-term Army and Air National Guard program around the concept of Combined Forces employed in maneuver warfare." (pp. 46-47) It then argues at length for the maneuver warfare concept, especially in the context of the European theater.*

With regard to the NATO environment, the study explains that Soviet forces depend on a highly centralized command structure that leaves lower-level commanders little latitude for self-initiated action. Thus, presenting these commanders with unanticipated situations would be highly advantageous because of inevitable Soviet delays in reacting that would result while the high command makes decisions and then relays orders for local commanders to carry out.**

Closely integrated air and ground units can execute maneuvers that continually pose new and hopefully unanticipated situations to the enemy. Provided it has the right weapons and sufficient practice, the Guard can do this. For the Army Guard, that would mean relatively light armament with specific, previously deter-

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*For critiques of the tactics advocated in *VISTA 1999*, see Fred Frostic, "*VISTA 1999* v. A Plan to Win," *Armed Forces Journal International*, June 1982, pp. 17-19; and Trevor N. Dupuy, "The Pied Pipers of 'Maneuver-Style' Warfare," *Armed Forces Journal International*, November 1981, pp. 73-78.

**I take this to be consistent with the thinking behind John Boyd's Observation-Orientation-Decision-Action loop.

mined regional responsibilities for which the training and equipment can be optimized. For the Air Guard, this means improved close air support (CAS), which, in turn, means that the Guard must have a good CAS fighter, a competent forward air control system, and good close-in tactical reconnaissance. Specifically, recommendations call for the Air Guard to have:

- The four-barrel GAU-8 cannon in pod mount for installation on any Guard tactical fighter aircraft.
- The Canadian Rocket Vehicle 7 for ranges longer than that of the 30-mm cannon to give a defense suppression capability.
- A close-support fighter, cheaper and with certain improvements over the A-10 (smaller, more maneuverable, better acceleration, for example). The Guard would require 750 of these.
- An air superiority fighter. Proposed is the winner of a fly-off between F-16A and F-5G, Type 1. This requirement is for 670 new aircraft.
- Forward air controllers (FACs) with specialized FAC aircraft. The FACs would be integrated directly into the fighter units.

Improvements in two other Guard missions, aerial refueling and airlift, are also discussed. Additionally, strategic airlift is proposed as a new Guard mission. The authors of the study believe that used DC-8/B-707 could be procured cheaply for larger loads and used DC-9/B-727-200 for lighter loads. The latter are particularly important because they also would give the Air Guard the self-contained capability in peacetime to transport Army Guard units to training sites for combined operations practice.

military reform

The Air Guard chapter reflects thinking that is particularly similar to the thinking and prescriptions of the military reform movement, although I do not know whether the reformers or the Guard should get credit for originating the ideas. The ideas of the reformers, to the extent that they are reflected in the operation of the Military Reform Caucus on Capitol Hill, are solicitous of Reserve and Guard forces. The caucus was given twenty-eight specific reform-oriented amendments which its members might have offered to Fiscal Year 1983 defense legislation. Four of these amendments are aimed at the Air Force. Of the four, two are presented in *VISTA 1999* (a close-support fighter for the Guard and an F-16/F-5G fly-off with procurement of the winner for the Guard), and the other two are consistent with *VISTA 1999* proposals (voiding the MSIP package for F-16, on the grounds that it reduces needed performance; and canceling the C-5B buy in favor of fast sealift and off-the-shelf or used commercial air frames). The reformers' insistence on maneuver warfare doctrine comes through strongly in *VISTA 1999* also, as does their criticism of the purchase of high-technology weapons. There is a similar but somewhat weaker correspondence between the Army Guard preferences in *VISTA 1999* and the work of the Reform Caucus.

The corresponding Fiscal Year 1984 caucus proposals, attributed this time directly to Senator Gary Hart, number more than thirty and include ten or so applicable to the Air Force. There is somewhat less linkage evident between the *VISTA 1999* and Hart's FY84 proposals for the Air Force than was the case in the previous year. While the assumptions underlying the FY83 and FY84 reform proposals may be similar, the FY84 version seems to be more specifically addressed to procurement matters than to doctrine, training, and use of Reserve/National Guard forces. It does, however, conclude with a call for $1 billion to be added to the defense budget for improving Guard units along the lines of *VISTA 1999*.

WHILE the quality of *VISTA 1999* is uneven, it is at least an important document that should be read by military leaders and defense analysts. Its importance derives from these points:

- Its vision of an integrated Army-Air Guard force is surprising and is at odds with the preference for an independent and balanced air force that one seems to encounter in the active force. Also, in calling attention to the distinct political situation of the Guard, the study tells why the Guard is uniquely positioned for assignment to "combined force" missions.
- The correspondence of the study's ideas with those of the military reform movement. The reformers have a number of supporters in the Guard, or vice versa.
- Demographic and work force changes over the next fifteen years, which may well bring significant changes in the distribution of responsibilities between active and Reserve/Guard forces.

ADDITIONALLY, the opportunity to learn about Guard posture and practices makes this study valuable reading. Despite the study's highly impressionistic views of American society, *VISTA 1999* contains a kernel of military analysis that is of consequence.

Colorado College

AIR UNIVERSITY REVIEW AWARDS PROGRAM

W. Hays Parks has been selected by the Air University Review Awards Committee to receive the annual award for writing the outstanding article to appear in the *Review* during fiscal year 1983. His article, "Linebacker and the Law of War," was previously designated as the outstanding article in the January-February 1983 issue. The other bimonthly winners for 1982-83 were Dr. Joseph D. Douglass, Jr., "What Happens if Deterrence Fails?" November-December 1982; Major Lonnie O. Ratley III, "A Lesson of History: The Luftwaffe and Barbarossa," March-April 1983; Captain Forrest E. Waller, Jr., "Paradox and False Economy," May-June 1983; Lieutenant Colonel David J. Dean, "Air Power in Small Wars," July-August 1983; and Major General I. B. Holley, Jr., USAFR (Ret), "Of Saber Charges, Escort Fighters, and Spacecraft," September-October 1983.

POTPOURRI

The United States Air Force in Southeast Asia: Tactical Airlift by Ray L. Bowers. Washington: Government Printing Office, 1983, 899 pages, $14.00.

Although the official history of the United States Air Force in Southeast Asia has been received with something less than unrestrained enthusiasm by knowledgeable segments of the scholarly community, this latest volume merits high praise. Colonel Ray Bowers knows his sources, he writes clearly and with candor, and he obviously loves his subject. As a result, *Tactical Airlift* ranks as the finest historical study yet produced in the Southeast Asia series.

Bowers begins with an account of the Counterinsurgency Years, 1946-64. Exploiting oral history material, he traces the evolution of tactical airlift in Vietnam from the informality of Farmgate's C-47 operation to the more systematic uses of C-123s in Mule Train and the emergence of the Southeast Asia Airlift System (SEAAS). As individualism gave way to organization in an expanding war, Air Force commanders sought a flexible and efficient airlift system that could sustain growing logistical requirements while remaining responsive to tactical demands. By the end of 1964, the nucleus for an aerial port system was in place, communication facilities and navigational aids had been improved, and a centralized system of scheduling and control had been implemented. Carrying over 6000 tons of cargo a month, SEAAS transports were making a major contribution to the war effort, especially in support of remote Special Forces camps. However, as the author notes, "airlift could neither force the enemy to fight in unfavorable circumstances nor compel the loyalty of the South Vietnamese people to their government." (pp. 146-47)

Part II, Years of Offensive, 1965-68, features the central role of C-130s in General Westmoreland's ill-fated "war of attrition." A changing command structure had SEAAS give way in 1966 to Common Service Airlift System, while airlift participation in major ground combat operations increased significantly.

The C-130 quickly came to dominate tactical airlift in Vietnam. The numbers tell the story: a C-123B carried a payload of 11,000 pounds at a cruising speed of 140 knots and required a takeoff run of 4670 feet to clear a 50-foot obstacle; a C-130B lifted more than three times the payload (36,270 pounds), cruised twice as fast (293 knots), and needed less runway for takeoff (4330 feet). Flying around the clock, using primitive forward airstrips with poorly prepared surfaces that often were closer to 2000 than to 4000 feet long, and frequently operating at the limits of safety, the C-130 force dominated the airlift effort by 1966.

The rapid influx of U.S. combat units and increased level of hostilities placed a severe strain on the airlift infrastructure. Scheduling went awry, ground equipment broke down, aircrews suffered from inadequate housing and messing, and accident rates soared. Above all, Air Force commanders failed to give necessary priority to expansion of aerial port facilities—the key to high-volume operations. Formation in October 1966 of the 834th Air Division under Brigadier General William G. Moore, Jr., marked a turning point in airlift operations.

"I love TAC, I love those C-130s, and I love that [tactical airlift] mission," Moore once said. Energetic, demanding, competent, and enthusiastic, he implemented more efficient scheduling procedures (including a new emergency request system), emphasized improved tactical methods (especially the use of tactical airlift liaison officers with ground units), pressed for better equipment and facilities, and stressed safety. Conditions improved, tonnage carried went up, and accident rates came down. Nevertheless, Bowers notes, "The flying game in Vietnam remained a tough and challenging business, and the possibility of disaster seldom far from sight." (p. 251)

While paying adequate attention to managerial and organizational matters, Bowers emphasized combat and logistical operations. Separate chapters cover the major battles of the period: Junction City, Khe Sanh, and Tet. Indeed, tactical airlift's finest hour came at Khe Sanh. The besieged garrison required 235 tons per day to sustain combat (the defenders of Dien Bien Phu needed 200 tons). Flying in bad weather and subject to intense antiaircraft fire, airlift pilots found missions to Khe Sanh "the supreme test of airmanship." They met the challenge. Employing a variety of innovative delivery techniques, transport pilots brought in more than 12,000 tons between late January and early April 1968. "Airlift," Bowers concludes, "made possible the allied victory at Khe Sanh. . . . " (p. 295)

After reviewing the role of airlift in irregular warfare and in Laos, the author in the final section of *Tactical Airlift* discusses the Years of Withdrawal, 1969-75. This period featured comparative stability for the airlift system in Vietnam, as C-130/C-123 monthly tonnage declined from 68,300 in January 1969 to less than 10,000 in January 1972. Efficiency continued to improve (although attempts to apply computers to airlift management failed), blind and high-altitude airdrop capability made significant gains, and doctrinal conflicts with the Army subsided. Airlift transports participated in combat operations in Cambodia and Laos, and they helped to blunt the Communist offensive of Easter 1972. Airlift support of the Vietnamese defenders of An Loc, Bowers writes, turned out to be "the most trying time of the war for Air Force C-130 crews." (p. 539) While the courage and ingenuity of airlift personnel saved An Loc, the situation in South Vietnam continued to deteriorate. As events soon demonstrated, the Saigon regime could not survive without U.S. assistance.

Bowers reaches positive conclusions about airlift efforts in Southeast Asia. "Mistakes and bureaucratic inanities were not absent," he observes, "but the working of the airlift system in Vietnam proved the human strengths of the professional United States Air Force." (p. 659) Although many airmen felt frustrated that so much struggle and sacrifice had come to naught, the airlift system emerged "healthy and vigorous" from the bittersweet experience of Vietnam.

Tactical Airlift is a model study—authoritative and nicely constructed—and a pleasure to read. Colonel Bowers has crafted a fitting memorial for his fellow airlifters who shared the joys and sorrows of participating in America's most perplexing war.

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The U.S. Government Response to Terrorism: In Search of an Effective Strategy by Dr. William Regis Farrell. Boulder, Colorado: Westview Press, 1982, 142 pages, $20.00.

This excellent book is probably the best account available on how the U.S. government has institutionally responded to the growing problem of terrorism. As the reader readily discovers, doing something about terrorism is far more difficult than understanding or explaining it. Dr. William Farrell seeks to determine to what extent the lack of a U.S. antiterrorist strategy is due to the structure and functions of existing U.S. governmental agencies. He begins by discussing the challenge policymakers face in simply defining the nature and scope of terrorism. Perceptions of what terrorism is or is not are manifold. Of particular interest to readers is a chapter that examines the legal, political, and sociological concerns of military involvement in terrorist incidents.

Despite its intractable nature, governments must deal with terrorism. However, responding actively to terrorism can induce a host of concerns, external and internal, to government bureaucracies (particularly in democratic societies). In the U.S. government, meeting the terrorist threat can involve over 30 government agencies, raising jurisdictional disputes over who is authorized to do what. This problem is exacerbated by the fact that terrorism is *not* a primary responsibility of any agency. Consequently, antiterrorist measures do not compete well for talent and resources within the government or the individual agencies. U.S. antiterrorist effort within the bureaucracy is maintained for the most part because some officials recognize terrorism as a worldwide threat and because the United States is involved episodically in terrorist incidents.

Dr. Farrell has done an outstanding job of tracking down and documenting the interdepartmental process by which U.S. policy is formulated and implemented. He identifies the major organizational players and delineates their antiterrorist responsibilities. He also shows that there are major obstacles inherent in the structure of the policymaking process and the established functions of the participating agencies which make the future emergence of such a strategy unlikely. This prognosis appears confirmed by the present administration, which has publicly given the problem of terrorism high priority but has not made any substantive changes to the existing interdepartmental structure.

The U.S. Government Response to Terrorism is for the serious reader. There are no dramatic descriptions of terrorist exploits or international intrigue. Instead, the author has painstakingly researched the "process" and noted its capabilities and limitations. While the book tends to focus on the U.S. bureaucratic structure, many of the challenges and difficulties apply to bureacracies in general. For those in government who are a part of this interdepartmental structure, this work is a must.

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The CIA: Reality vs. Myth by Dr. Ray S. Cline. Washington: Acropolis Books, 1982, 351 pages, $12.50 cloth, $8.95 paper.

Dr. Ray S. Cline traces the origins, developments, and achievements of the OSS and provides a detailed history of the CIA from its beginnings to the Casey era. His coverage of the CIA has an enormous amount of data woven carefully into clear patterns.

Cline believes that the CIA should focus on research and analysis rather than paramilitary operations. Under the heading of research and analysis, Cline includes several elements. First, Cline believes that the CIA should coordinate the collection of information from all sources. Agents in the field should be given detailed requirements so that they can obtain relevant information. Second, the author emphasizes that the CIA should integrate and analyze this intelligence with respect to the intentions and capabilities of other nations. Cline has given a methodology for the analysis of capabilities in *World Power Trends and U.S. Foreign Policy for the 1980s* (1980). Third, the CIA should relay the resulting reports to relevant policymakers, especially to the National Security Council. Otherwise, foreign policy decisions will be made on the basis of only scattered pieces of intelligence and guesswork. Cline states that such information transfers yielded results that helped the United States obtain a favorable outcome in the Cuban missile crisis.

Cline recommends that the CIA resume its preparation and dissemination of national estimates. These are essentially projections designed to reduce the uncertainty for policymakers. They would cover such questions as: What is the Chinese leadership likely to be doing in a few years? What is the possibility of a Sino-Soviet reconciliation?

Using examples from the past, the author discounts the paramilitary side of covert operations. He cites the Bay of Pigs fiasco, in contrast to the analytic and research success of the CIA during the Cuban missile crisis. He indicates that the CIA was *unable* to overthrow President Allende in Chile. When the coup did occur in 1973, it was not under the sponsorship of the CIA, even though the Agency has been blamed in the American press for this "exploit." Another paramilitary failure occurred in 1958, when the CIA failed to overthrow President Sukarno of Indonesia. The paramilitary successes of the CIA in Iran in 1953 and Guatemala in 1954 have been overstated, Cline believes, since little effective opposition was encountered. The CIA operation in Laos with the Meo tribesmen Cline dismisses without adequate discussion of its possible value.

The author finds the origins of CIA involvement in paramilitary operations to be in the OSS. "Wild Bill" Donovan, Cline indicates, was not especially interested in analytic studies but stressed paramilitary operations, which were highly praised by some commanders in the European theater. Cline states that the military and political condi-

tions of the 1960s and 1970s were less "congenial" to such functions. He finds paramilitary operations to be inherently weak. Once a CIA connection is revealed, the U.S. government is faced with the choice of abandoning the operation or changing it to an overt military intervention. Nevertheless, we must ask whether the Bay of Pigs disaster was due to strategic conditions of that period, to the nature of paramilitary operations, or to poor planning by the CIA leadership.

Cline cites the crippling effects of past congressional monitoring of covert CIA functions. The Hughes-Ryan Amendment (1974) required the briefing of seven congressional committees on covert action. When so many congressmen and staff were involved, nearly every covert operation was leaked immediately. The amendment was modified in 1981. Briefly, Cline mentions the unfavorable effects of the Freedom of Information Act also. The author could have expanded on this topic, since through this act foreign embassies can obtain a substantial amount of sensitive information.

The CIA: Reality vs. Myth is a scholarly presentation. Cline asks every possible question of his data and produces generally reasonable, balanced conclusions. I can recommend this book highly for anyone involved in the military or foreign policy sectors of the United States.

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U.S. Army Special Warfare: Its Origins by Alfred H. Paddock, Jr. Washington: National Defense University Press, 1982, 221 pages, $6.00.

Colonel Paddock's book traces the origins of the Army's psychological and special warfare capabilities from 1941 until the 1952 establishment of the special warfare center—today the John F. Kennedy Center for Military Assistance—and the 10th Special Forces Group. The author, who has extensive experience with the Special Forces in Vietnam and in psychological operations, describes the birth of U.S. special warfare forces in the Office of Strategic Services during World War II and their troubled development in the postwar period, concluding with the Korean War. The Korean conflict, coupled with Western military deficiencies in Europe, provided the impetus for the formal establishment of special warfare capabilities.

The author indicates that throughout this period the Army was not quite sure what to do about either psychological warfare or special operations, but the former was more readily accepted because it seemed to fit into the Army's own image of its role. Though the potential of unconventional warfare was acknowledged with the establishment of the Special Forces in 1952, those units were designed for insurgency operations only and were aimed specifically at Eastern Europe. It was only later, as the war in Southeast Asia increasingly absorbed U.S. attention, that the Army began to develop a counterinsurgency capability.

The most stimulating sections of the book are Paddock's reflections on the obstacles encountered by the advocates of special warfare. He argues that the key problem was that a conventional army was trying to cope with an unconventional idea. In an era of severe manpower and money constraints, the Army was reluctant to allocate scarce resources to a capability it considered of doubtful use; and it remained suspicious of elite, specialized forces. To these problems were added bureaucratic jealousies between the Army, the Air Force, and the CIA over who should control special operations; the political sensitivities of developing, in a peacetime environment, the "dirty tricks" of special operations; and the belief among military officers that unconventional warfare had limited potential in a nuclear age. Colonel Paddock concludes that the Special Forces emerged only through the vigorous efforts of a few Army officers, coupled with strong prodding of the "conventional" soldiers by senior civilian officials in the government. The same combination would lead to the heyday of the Special Forces during the Kennedy administration.

Written in a spare, straightforward style and with extensive notes and bibliography, *U.S. Army Special Warfare* is an excellent study of bureaucratic resistance to new ideas and of the maneuverings involved in creating new organizations. Obviously, it will be particularly important reading for those interested in either the post-World War II Army or the development of modern U.S. unconventional warfare capabilities.

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Vietnam Tracks: Armor in Battle 1945-1975 by Simon Dunstan. Novato, California: Presidio Press, 1983, 191 pages, $40.00.

Vietnam Tracks is a detailed account of the modification and development of various armored fighting vehicles (AFVs) employed during the Vietnam War, with particular emphasis on U.S. tanks (the M48A3 Patton and M551 Sheridan) and armored personnel carriers (the M113 armored calvary assault vehicle). In the foreword, retired Major General George S. Patton asserts that the book represents an important contribution toward understanding armor's "capabilities and limitations in a counterguerrilla environment which those who practice the profession of arms may well come to experience again." However, *Vietnam Tracks* is primarily a "hardware" book that centers more on the armored vehicles themselves than on how they functioned in support of a strategy of counterinsurgency.

As with most works of the "hardware" genre, *Vietnam Tracks* offers a flood of photographs (indeed, over half the book consists of pictures of AFVs and related captions). Oddly for a publication of this type, none of the photos are in color, nor are there any schematics of the AFVs. But author Simon Dunstan does provide tables of organization and equipment, as well as some order of battle data for many of the allied armor formations that fought in the war.

Dunstan is at his best when he describes the tactical problems encountered by U.S. and, to a lesser extent, ARVN, Australian, and French AFVs. Nearly every AFV that fought in large numbers during the war is chronicled by the author. Descriptions of the initial deployments, track characteris-

tics, maintenance and mobility problems, and the modifications (many ad hoc) brought about through combat experience are some of the book's strong points. Of particular note are the individual treatments given the M48A3 Patton tank, the ill-fated M551 Sheridan tank, and the M113 armored cavalry assault vehicle. Perhaps realizing that the technical aspects of AFVs might prove to be somewhat tedious for the reader, Dunstan also has woven a number of "war stories" into his discourse. These accounts provide the reader with a good feel for what tactical armored combat was like in Vietnam, particularly for U.S. forces.

While *Vietnam Tracks* succeeds as a "hardware" catalogue of AFVs during the war, the book fails to fulfill General Patton's claim that it provides an evaluation of the role of armor in counterinsurgency strategy. Indeed, when the author does address this larger (and far more interesting) question, his analysis is not only brief but subject to challenge. Basically, Dunstan uses the participation of armor in the war as justification for its efficacy in counterinsurgency operations. The fact that the Army used AFVs in search and destroy operations or as a means of adding mobility and shock action to allied units appears to have satisfied Dunstan that armor war is effective against guerrillas. The waters are muddied even further when the author asserts, incorrectly, that there was a "deep-seated" Army prejudice against the use of tanks in Vietnam. He then follows this contention with the only piece of evidence offered in support of armor's effectiveness, a 1967 evaluation accomplished by the Army itself. What *Vietnam Tracks* does demonstrate is the ability of armor to operate in some of the more hostile terrain of Vietnam, not armor's suitability for counterinsurgency operations.

Ironically, the more conventional military operations of 1972 and 1975, situations where armor ought to have been most valuable, are almost ignored by the author. Less than four pages are given to an analysis of these two offensives.

For those individuals with a deep and abiding interest in the development of armored fighting vehicles and their use in a tactical environment, *Vietnam Tracks* will be of some interest. Those seeking the "lessons of Vietnam" as they relate to armor's role in a strategy of counterinsurgency will have to find their answers elsewhere.

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Soviet Policy in East Asia edited by Donald S. Zagoria. New Haven, Connecticut, and London: Yale University Press, 1982, 360 pages, $25.00.

With its military buildup in East Asia now to the point that the Soviet Union can actively challenge U.S. preeminence in the West Pacific, this volume could not have come at a more opportune time. Sponsored by the Council on Foreign Relations, Donald S. Zagoria brought together twelve eminently well-qualified scholars with varied backgrounds to evaluate Soviet policies in East Asia and their implications for the United States. The result is a well-balanced compendium of eleven studies covering both broad areas of Soviet policies and perceptions and narrower issues focusing on particular problems or countries. Zagoria introduces the analyses with a careful evaluation of the strategic significance of Asia to the Soviet Union and the United States, while Richard Solomon concludes the volume with a discerning dissection of the policy options open to the United States in the closing years of this decade. The nine analyses in between provide the substantive core of the work.

In examining their various policy areas, the contributors present a montage of critical factors affecting Soviet objectives in the East Asian region. John J. Stephan provides a superb analysis of Soviet perceptions of Asia, integrating Russian and Communist views through an analysis of the geographical, historical, and ideological factors that influence the Soviets' current complex view of the region. The succeeding chapters present analyses of specific policy areas. Seweryn Bialer discusses the implications of the Sino-Soviet dispute from Moscow's perspective, Robert Scalapino analyzes Soviet political influence in Asia, and Fuji Kamiya discusses the dispute with Japan over the northern territories by placing it in the perspective of 130 years of conflict. Zagoria and Sheldon Simon review the complications Moscow encounters in Southeast Asia because of its support for Vietnam. Ralph Clough takes a careful look at Soviet policies toward the two Koreas, and Robert Campbell discusses and analyzes the problems involved in the development of Siberia. Paul Langer evaluates the strengths and weaknesses of the Soviets' military deployment in Asia.

These chapters demonstrate that Moscow faces a series of weaknesses as it develops its policies for the 1980s. Its growing conventional military strength, for example, remains limited by internal logistical problems that leave the Soviet Union incapable of conducting sustained warfare much beyond its own borders. Its continuing support of Hanoi's expansionist policies reduces its influence with the nations of ASEAN, raising fears that Soviet use of the military facilities at Da Nang and Camranh Bay will lead to coercive policies directed at the nations of Southeast Asia.

Lest these and other areas of Soviet weakness be seen as easy targets for U.S. manipulation, Solomon's concluding chapter balances Soviet strengths and weaknesses with U.S. problems in the region. The challenge of Soviet military power is compounded by the legacy of eroded U.S. credibility that stems from U.S. actions in the 1970s. Overcoming this legacy complicates U.S. policy options in determining future patterns of U.S. security relations in Asia. Building coalitions to offset growing Soviet strengths depends to a great extent on Asian confidence in Washington's long-term willingness to maintain a strong military presence. The issues Solomon raises are critical and, when evaluated in the context of the earlier chapters in this compendium, provide an excellent basis for assessing future U.S.-Soviet relations both in Asia and in the wider global environment. Thus, this volume is a valuable contribution to the library of any professional soldier.

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The Australian-American Security Relationship: A Regional and International Perspective by Henry S. Albinski. St. Lucia, Queensland, Australia: University of Queensland Press, 1982, 257 pages, $48.50.

Professor Henry Albinski's analysis appeared as a new phase in Australia-U.S. relations seemed to be beginning: Prime Minister Robert Hawke was expressing his wish to strengthen the ANZUS (Australian-New Zealand-United States) alliance. At the Washington Press Club on 15 July 1982, he also said, "We will pursue an independent and self-respecting foreign policy, based on cool and objective assessment—hardheaded, if you like—of Australia's genuine international obligations." Albinski's book examines U.S.-Australian security relationships and provides historic background of the Fraser-Carter years.

For a developed country, Australia has an unusual military history; traditionally, her forces have fought overseas alongside powerful allies—the United Kingdom or the United States. During World War II, the Japanese bombed Darwin but realized that they did not have the capability to invade Australia. While Canberra is very conscious of its vast, underpopulated, mineral-rich territory, the lack of an identifiable threat "in the foreseeable future" has hitherto had an inhibiting effect on Australian strategic planning.

The Australian-American Security Relationship is a careful study depicting the differences and congruities in economic, domestic political, diplomatic, and defense matters that affect security relations between Australia and the United States. If an average of 72 footnotes a chapter seems excessive to the general reader, the interested student is furnished careful references for further reading.

Albinski's analysis follows a logical plan, proceeding from a sketch of the conceptual framework to a broad-brush picture of the whole area, an overview of Southeast Asia and the ASEAN community, and a more minute examination of Australian and U.S. relationships with individual nations. The military relevance of the Indian Ocean to Australia and the allies' geostrategic interests and objectives in the Indian Ocean littoral and hinterland are surveyed next; and examination of the often overlooked South Pacific region brings the third ANZUS partner, New Zealand, into the picture. The concluding chapter, on Australian-U.S. relations, deals with three areas that the author believes may have the potential to erode the security connection: alleged U.S. interference in Australian affairs, purported U.S. disregard for Australian sensibilities, and "bilateral strains arising from basically nonsecurity issue differences."

Professor Albinski pursues his theme with enthusiasm in his own inimitable style. I strongly recommend *The Australian-American Security Relationship* as a valuable source of information for those with an interest in the strategic affairs of the Southern Hemisphere.

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International Politics in Southern Africa edited by Gwendolen M. Carter and Patrick O'Meara. Bloomington: Indiana University Press, 1982, 270 pages, $32.50 cloth, $8.95 paper.

This volume of nine concisely written essays focuses on the diplomatic and military strategies of extraregional powers in southern Africa. Other topics addressed include the role of donor agencies, the status of South Africa in the region's political economy, and international moral protest against apartheid.

Of particular interest to the military reader is the chapter on "U.S. Policy toward Southern Africa" by Robert M. Price. The United States, we are told, desires incremental change in the Republic of South Africa's governmental structure in order to ensure both continued U.S. access to industrially essential raw materials and minerals and the maintenance of open sea lines of communication from Persian Gulf oil fields to the Atlantic Ocean. Price suggests, however, that the radical destabilization of South Africa is inevitable, yet the political ascendancy of revolutionary elements need not threaten U.S. economic or geostrategic interests. The West is the only significant market for South Africa's mineral exports and has little to fear. No successor regime in South Africa, regardless of its antipathy toward the West, could afford to reduce such exports greatly: its need to augment hard-currency reserves and to prevent unemployment problems in the mining industry would prohibit that.

The inevitability of the present South African government's collapse forms a central theme of *International Politics in Southern Africa.* However, the contributors fail to offer a detailed account of how this impending political transformation is likely to occur (although Price does make passing reference to a transition period marked by reduced mineral production). Clearly, Pretoria has not shown signs of reacting in supine fashion to armed rebellion. Indeed, should its existence be threatened, the white minority regime probably will lash out at its enemies in an extremely destructive manner with attendant large-scale loss of life. Further, in such an environment, the output of extractive industries may well be reduced dramatically or halted altogether. Given this scenario, current U.S. efforts to achieve peaceful, evolutionary change in South Africa while securing vital strategic and economic interests appear most prudent.

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The Bishops and the Bomb: Waging Peace in a Nuclear Age by Jim Castelli. Garden City, New York: Doubleday, 1983, 283 pages, $7.95.

Journalist Jim Castelli provides the text of the 339-paragraph pastoral letter titled "The Challenge of Peace: God's Promise and Our Response," preceded by a 184-page account of the two-year process by which the U.S. Catholic bishops composed it.

The Reverend Theodore M. Hesburgh, in his foreword, writes that "Nuclear force is one of the few things on earth that's evil per se," adding that this pastoral letter is "the finest document ever to emerge from the U.S. Catholic hierarchy." This opinion among the bishops was not unanimous, for one bishop termed it a "pastoral and theological

minefield." There was controversy during its preparation, and more controversy can be expected.

Extensively argued, the letter proceeds from the belief that the world has entered a "new moment," demanding fresh reappraisal to save the "human family" from self-destruction. The bishops want to provide the inspiration for "perfection on a theology of peace" and carry out their obligation as bishops of the universal Church to "interpret the moral and religious wisdom of the Catholic tradition by applying it to the problems of war and peace today."

While claiming to speak as pastors and teachers, not as politicians and technicians, the bishops do not shirk policy advocacy. Because it is morally unacceptable to "intend" to kill the innocent as part of a strategy, not all forms of war fighting and deterrence are morally acceptable. Thus, targeting doctrine is a proper matter for concern, as is the relationship of nuclear deterrence to war-fighting strategies. Because proportionality is essential to just war doctrine, the use of nuclear weapons to counter a conventional attack is "morally unjustifiable." The bishops urge NATO to adopt a no-first-use policy. They repeat their support for conscientious objection in general, as well as for selective conscientious objection to participation in a particular war, and further "insist" on legislative protection for both categories.

Other policies come in for comment. Any attempt to support regimes that violate human rights is "morally reprehensible." The harm inflicted on the poor of the world by the arms race is more than "can be endured." Abortion in the United States (some 15 million since 1973) is tied to defense policy rhetorically:

> We must ask how long a nation willing to extend a constitutional guarantee to the "right" to kill defenseless human beings by abortion is likely to refrain from adopting strategic warfare policies designed to kill millions of defenseless human beings, if adopting them should come to seem "expedient"?

The pastoral letter seems likely to become part of what Irving Kristol has called, in a somewhat different context, the "massive miseducation about the moral dimension of US foreign policy." But the ideas in the pastoral letter are not going to go away. Many books on many subjects are published every year. You had better read this one.

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Future Fire: Weapons for the Apocalypse by Ann Marie Cunningham and Mariana Fitzpatrick. New York: Warner Books, 1983, 274 pages, $8.95 (paperback only).

Future Fire belongs to that new genre of research and writing on military affairs which, for lack of a better phrase, can be termed "fast-food analysis." The meat of the subject is there all right, but somehow it got lost among the fillers, extenders, and secret sauces. The reader's hunger is satisfied, but he receives little or no real nourishment.

The book purports to be a "primer of modern weapons technology" in response to "the policy of the government—in particular the departments of defense and energy—to keep *us* in the dark." In reality, it provides the reader with chapter after chapter of facts, figures, photos (almost one every other page), and commentary concerning the U.S. arms buildup without the benefit of supporting data. With no footnotes or bibliography, only occasional attribution of quotations, and no credits under the photos, the book reflects a distinct lack of sound research.

It is further flawed by numerous errors of fact, indicating that research for the book, although broad, was not deep. For example, Ann Cunningham and Mariana Fitzpatrick justify the increased military spending by the Soviet Union ". . . in good part for the purpose of defending the Chinese border." The authors also state that the Hawk missile had a 96-percent kill rate in "Southeast Asia," as well as elsewhere; but they claim that when the United States sent "smart missiles" to Vietnam, "most of them were flops."

Perhaps the most disturbing part of *Future Fire*, however, concerns the Soviet Union's capability to conduct chemical warfare. The authors state that the Soviet Army has "50,000-100,000 troops that specialize in detecting and decontaminating poison gas. The United States has about 6,000 comparable units." In addition, the authors contend that the United States is superior to the Soviet Union in chemical defense. Not only are the U.S. figures greatly overestimated, but a serious defense issue, chemical defense, is brushed aside in favor of a diatribe against binary weapons. The authors of *Future Fire* cannot see the obvious forest for their own ideological trees.

Each chapter reads like a separate magazine article, complete with provocative titles, such as "The Road to Megaweapons: The History of U.S. Nuclear Strategy," "Shuttles and Killer Satellites: Warfare Moves into Space," and "The Spiraling Cost of Megaweapon Defense." When the authors have exhausted such topics, there are no conclusions; the book simply ends without any great ideological summing up.

I cannot recommend the work to even the casual observer of the international arms race. Quoting from this book is the scholastic equivalent of dueling with wet powder.

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Combat Motivation: The Behavior of Soldiers in Battle by Anthony Kellett. Hingham, Massachusetts: Kluwer Boston, 1982, 336 pages, index; $22.00 student edition, $38.00.

Why do soldiers fight? Here, at last, is a usable professional volume concerned with the combat soldier and the human variables that affect his performance on the battlefield—a book that emphasizes both the underlying human motivations and the environmental factors influencing combat behavior.

For almost as long as men have fought in wars, they have debated and written about the relative strengths of armed forces by using numerical comparisons of manpower, weapons, and units. However, a numerical comparison tells at best only part of the story. Other factors, which are non-quantifiable, are important also—factors such as leadership, fear, confusion, courage, and cowardice. These factors, which Clausewitz has called "frictions," separate a real war from a paper exercise. One defense consultant remarked that

intangibles are more important than material factors by 200 to 300 percent.

Just because intangibles are nonquantifiable does not mean that we cannot understand and use them. Anthony Kellett's *Combat Motivation: The Behavior of Soldiers in Combat* does a superb job of describing them and contributing to our better understanding of the human dimension in war. Originally written for the Canadian Department of National Defence, his study is based on historical descriptions of the human dimension of Canadian, British, American, and Israeli experiences since 1940. Although the examples describe ground combat experiences primarily, the lessons learned have equal applicability to ground, air, and naval forces.

Kellett's method for describing the human dimension in war is to examine human experiences in combat and from those experiences determine the factors bearing on combat performance. Among the factors identified as affecting combat motivation are group loyalty, unit esprit, manpower allocation policies, training, discipline, leadership, ideology, preconceptions of combat, combat stress, and combat behavior. Thus, combat motivation is a process that begins in the garrison and continues through combat. Kellett rightly points out that each factor is not necessarily important to every person or group all the time; rather, these are broad factors that affect human behavior from time to time under various conditions. It is important, therefore, to understand the conditions under which various factors become operative so that remedies may be employed to redirect negative motivating factors into more positive ones.

What is most interesting in the book is the repeated demonstration of the fact that the factors which operate in wartime have their roots in peacetime. Example after example shows that whatever motivational qualities a person or unit has in peacetime carry over to wartime and have an important influence on combat performance. This finding has important implications on the training and motivation of soldiers in peacetime. Similarly, every person who leads or is led should be aware of policies, procedures, personalities, etc., that develop or impede positive motivation and should know what steps to take to foster or enhance proper motivation.

Kellett's book should be considered among the best sources explaining how human beings behave under combat conditions. Francis Bacon wrote "Some books are to be tasted, others to be swallowed, and some few to be chewed and digested." *Combat Motivation* is one of the "few."

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Definitions and Measurements of Détente: East and West Perspectives edited by Daniel Frei. Cambridge, Massachusetts: Oelgeschlager, Gunn, and Hain, 1981, 216 pages, $25.00.

Tradition tells us that the more exacting theologians spent a great deal of time and effort debating the number of angels who could simultaneously dance on the head of a pin. They apparently debated this topic without ever bothering with two fundamental questions: whether any angels ever desired to dance there in the first place and whether the answer itself had any relevance to policy decisions of their era. The intellectual heirs of these theologians, calling themselves social scientists, convened in Zurich, Switzerland, in 1979 to debate how to measure and define détente between East and West in Europe. Profiting from the ridicule heaped on their forebears, they invested a tremendous amount of effort in definitions and motivational rationale. They explicitly stated that measurement of détente would be difficult because the measurement process might be distorted for political ends. That appears to be one of the few valid conclusions they reached. Having observed détente survive such diverse administrations as Nixon's and Carter's in a reasonably recognizable and consistent form, they were no more prepared for Reagan/Haig than they were for Poland or Afghanistan.

Daniel Frei's slim volume is a revised and expanded version of the proceedings of these social scientists at Zurich. Written after the conference, *Definitions and Measurements of Détente* reflects their thoughts after examining one another's positions. It can provide today's Air Force officer with an intellectual exercise in understanding the terminology and thought processes of these academics. Because every NATO government at one time or another employs academic social scientists as defense and/or foreign policy advisers, the military professional should understand something of their thought processes. Unfortunately, this particular volume is not very stimulating, reaches few firm conclusions, has been overtaken by events, and is narrowly written for the specialist in social science pseudostatistics.

Lieutenant Colonel H. Lawrence Elman, USAFR
Smithtown, New York

Jane's Avionics 1982-83 edited by Michael Wilson. London: Jane's, 1982, 330 pages, $110.

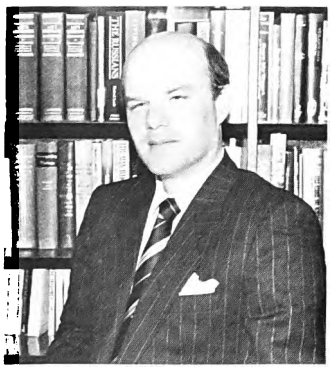
The renowned series of annual Jane's yearbooks is joined this year by a new addition on avionics. The editors term *avionics* as "operational systems or equipment designed specifically for piloted fixed-wing aircraft and helicopters, airships, balloons, drones and remote-piloted vehicles (RPVs)." Editor Michael Wilson begins the volume with an excellent foreword bringing the reader up-to-date on the current status of avionics development. Believing that readers may not appreciate fully the development of aircraft avionic systems over the years, the editor also provides a succinct summary of the evolution of these systems since the beginning of flight and, particularly, since World War II.

The bulk of *Jane's Avionics 1982-83* covers the multitude of avionic systems in typical Jane's fashion. Radar, navigation systems, antisubmarine and electronic warfare equipment, communications, data processing systems, flight instruments, and flight data recorders are some of the areas included. Flight simulators are covered also, in part because of their ever-increasing use and sophistication.

The price and the highly technical nature of this new publication will narrow its readership, but *Jane's Avionics* editions should be a valuable ready reference for anyone interested or working in avionic areas today and during the years to come.

Captain Don Rightmyer, USAF
Mountain Home AFB, Idaho

the contributors



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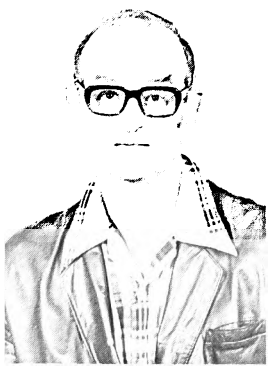

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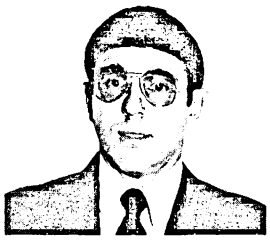

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AWARD

The Air University Review Awards Committee has selected "Soviet Design Policy and Its Implications for U.S. Combat Aircraft Procurement," by Rebecca V. Strode, as the outstanding article in the January-February 1984 issue of the *Review.*

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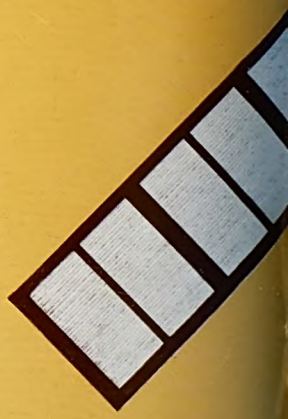

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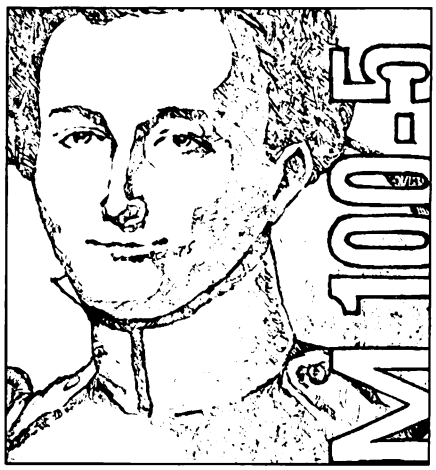
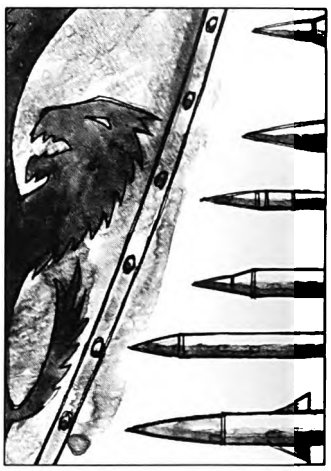


How the Army got its AirLand Battle concept—*page 4*

Who should control air assets in the AirLand Battle?—*page 16*



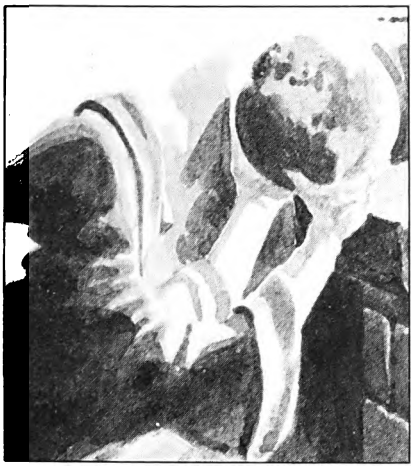
Clausewitz, Jomini, Douhet, and Brodie—How are they linked to our current nuclear posture? Should we move now to ballistic missile defense?—*page 54*

Attention

The *Air University Review* is the professional journal of the United States Air Force and serves as an open forum for exploratory discussion. Its purpose is to present innovative thinking concerning Air Force doctrine, strategy, tactics, and related national defense matters. The *Review* should not be construed as representing policies of the Department of Defense, the Air Force, or Air University. Rather, the contents reflect the authors' ideas and do not necessarily bear official sanction. Thoughtful and informed contributions are always welcomed.

AIR UNIVERSITY
review

May-June 1984 Vol. XXXV, No. 4



Differing views and provocative questions on the nuclear issues of the 1980s—**page 81**

Address manuscripts to Editor, *Air University Review*, Bldg. 1211, Maxwell AFB, AL 36112. *Review* telephone listings are AUTOVON 875-2773 and commercial 205-293-2773. Manuscripts should be submitted in duplicate. Military authors should enclose a short biographical sketch, including present and previous assignments, academic and professional military education; nonmilitary writers should indicate comparable information.

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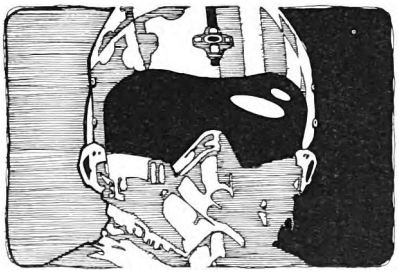
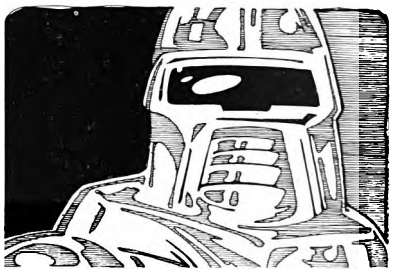


EDITORIAL

THE NEXT WAR



In my opinion it is in any case very difficult if not impossible, to picture now what form a modern war in Europe would take. We have at present a period of over thirty years of peace behind us and I believe that in our outlook we have become very unwarlike in many ways.

Colonel-General Helmuth Graf von Moltke to Kaiser Wilhelm II, circa 1905

AS THE younger von Moltke's words illustrate, preparing for the next war is a perennial challenge for the military profession. Traditionally, the best way to ensure military preparedness has been to see that one's forces are commanded by officers with combat experience, for such experience, according to Clausewitz, is the lubricant that best overcomes the friction of war (*On War,* Book I, Chapter 8). But experienced commanders are not always available to a nation. With the Vietnam conflict more than a decade behind us, combat-experienced officers are today a minority in the officer corps. This circumstance forces us back to what Clausewitz considered the next best preparation for war, the use of maneuvers—"a feeble substitute for the real thing: but even they can give an army an advantage over others whose training is confined to routine, mechanical drill." Maneuvers are important in peacetime, for only they can give commanders a "feel" for handling masses of troops and units in the field. Maneuvers offer the best possibility of surfacing the many manifestations of friction that cannot be anticipated by even the most imaginative planner.

However, today's high costs and other limitations force us to restrict the number of peacetime maneuvers and resort to other methods of preparing for war, methods not available in Clausewitz's time. Within the discipline of operations research, for example, we use analytical techniques to evaluate the effectiveness of new weapons and tactics. To prepare our armed forces for the next war, we construct and use computerized war games, which allow us to practice tactical and strategic decision making even though these games cannot recreate the panic and stress of war. And undergirding all of these preparations is the old standby: the thorough, systematic study of military history (from the first recorded battle at Meggido to the most recent engagements of the Iran-Iraq War), which aims to make us wise forever rather than clever for the next time, as Michael Howard reminds us.

What emerges from this ferment of physical and intellectual activity is a concept of the next war and an idea of how to fight it. These mental images are codified, in a sense, in operational doctrine, which will guide military operations in at least the opening engagements of a future war.

One thing that tends to be missing from the Air Force portion of this ferment is an active, excited debate of the issues involved in getting ready for the next war. What do I mean by active and excited? Look back through the *Marine Corps Gazette* and review the arguments over maneuver warfare. Pick up a few past issues of *Military Review* and look at some of the articles on AirLand Battle.

Military Review's articles on AirLand Battle are part of the "spirited doctrinal debate" that played an important role in the process the Army used in developing its new doctrine. This process is described in our lead article, where John Romjue discusses how command experience, expectations of battlefield conditions, and military history were folded into the Army's AirLand Battle doctrine.

While the process used by the Army to develop this doctrine is impressive, the process and its product have not, at least not yet, met with wholehearted approval in the Air Force. Major James Machos of TAC addresses this situation in the second article. Machos contends that the Army developed its new doctrine without adequate coordination with the Air Force. Moreover, he holds that the AirLand Battle concept invites greater control of air assets by ground commanders—an Army position in clear conflict with basic Air Force doctrine that calls for centralized control of air assets, a principle growing out of combat experience in the North African cam-

paign of World War II (the last campaign, incidentally, in which the U.S. Army faced combat without assured air superiority).

AirLand Battle is not the only challenge to traditional Air Force thinking on centralized control of air assets. Indeed, a failure within DOD to achieve centralized control of air assets seems to be a part of a larger challenge our armed services face—that of achieving truly unified command in theater operations. In our third article, Colonel Thomas Cardwell argues that although the concept of unified command has been more or less accepted since World War II and is incorporated in Joint Chiefs of Staff Publication 2, we still have not achieved an effective implementation of this concept. Cardwell concludes that unity of command must be based on a "theater perspective of war fighting" and will involve the control of all "air combat forces" by a "single air component commander."

There is little doubt that in the next war, no less than in World War II, the Air Force must be capable of winning control of the air. We must still be ready to contribute what only a professional Air Force can give: control of the airspace over an extended battlefield on which our Army fights victoriously. To be so prepared, we must not only refine our capabilities continuously but remain always open to new ideas.

D.R.B.

THE *REVIEW* INVITES COMMENTS

Open debates of strategic, tactical, doctrinal, and technical issues are vital in preparing for the next war. Such debates can come only from an officer corps made up of well-educated, well-informed, motivated officers who are free to express their views openly. We assume we have such an officer corps and such debates and that the Soviets do not.

Several recent articles in our professional literature raise doubts about these assumptions and make us wonder about the vitality of our own discussions of professional issues. We solicit your views on the following quotations:

The greatest danger we face from the Soviet Army is not its numerical superiority but the possibility that its officer corps is intellectually superior. The Soviet study of war is institutionalized and the bright Russian Army officers are educated in the operational art. What would happen to NATO in the next war if the Soviets indeed have operational superiority over the allies?

COLONEL WALLACE P. FRANZ
"The Art of War,"
U.S. Army War College Art of War Quarterly, September 1983, p. 123

For reasons that are not yet clear, Soviet military writings in 1982 and 1983 stressed the tactical use of nuclear weapons. First was the publication of *Tactical Maneuver*, which appeared in late 1982. The author, a faculty member of the Frunze Military Academy, took various forms of military engagements in World War II and then discussed the use of nuclear weapons in similar types of battles. Throughout the work is the impression that success in warfare today will go to the side that is better able to utilize the results of nuclear strikes.

Had *Tactical Maneuver* stood alone, without any followups by other Soviet spokesmen, it still would have been a most significant work. But an article in the January 1983 issue of *Military Herald*, the official journal of the Soviet Ground Forces, indicated that a high-level decision had been made to emphasize the role of nuclear weapons in a theater war. Under the general heading, "Theory and Practice of Combined Arms Battle" was an article entitled, "Swiftness and Continuousness of the Offensive." *A note by the journal's editor stated that not all readers would agree with the author's opinions, and a discussion of the article would be welcomed.* [Emphasis added.] (This is a favorite ploy when the leadership has not made up its mind on a particular issue.)

DR. WILLIAM F. SCOTT
"The Themes of Soviet Stategy,"
Air Force, March 1984, p. 70

Have USAF tactics continued to develop to meet the [Soviet] threat? Or are we in danger of becoming only "technicians," of resting on our laurels as tacticians?

Tactics development in the Soviet Air Forces is a dynamic and continual process that should receive our constant attention.

CAPTAIN RANA J. PENNINGTON
"Closing the Tactics Gap,"
Air Force, March 1984, p. 88

Commentaries should be typed, double-spaced, and three to five pages in length. Address them to: Editor, *AU Review*, Bldg 1211, Maxwell AFB AL 36112

ANY review of U.S. Army tactical doctrine in the post-Vietnam era must focus on the Army project that went under the rubric of "the AirLand Battle." Contained in the fused syllables of this phrase were significant changes in battle doctrine. The changes were the culmination of several years of intensive doctrinal work by the U.S. Army Training and Doctrine Command (TRADOC) and were marked by considerable debate both within and outside the Army. This major project reflected the seriousness with which the Army, since the early 1970s, had regarded the technological edge that the Soviet Union was gaining in that decade in the tactical weaponry of its numerically stronger forces opposite NATO in Europe. In preliminary form, the new concept was first formally published in March 1981. After wide briefing throughout the defense establishment and to the highest levels of government, the AirLand Battle concept became official Army doctrine when further developed and infused into a revision of the key tactical manual, FM 100-5, *Operations*, published in August 1982.

In great part, the AirLand Battle concept sprang from the doctrinal perspective of General Donn A. Starry, who began a four-year tenure as the TRADOC commander at Fort Monroe, Virginia, in July 1977. Together with the major Army 86 Studies undertaken by Starry and his planners during 1978-80 to define new tactical field organization, AirLand Battle doctrine bid fair to be the dominant influence on the modernizing Army of the 1980s.

The development of the AirLand Battle concept and an explanation of the concept itself will be the focus of this article. Since the concept has roots that precede 1977, the contributions of General William E. DePuy, the first TRADOC commander, are worth considering first.

The DePuy Reforms

When General DePuy took over TRADOC in 1973, one of the most pressing problems that the Army faced was the need to update its weaponry. Fulfilling the immediate quantitative needs of the Vietnam War had interrupted the weapon development process for almost a decade, giving the Soviet Union nearly a generational gain in most categories of combat equipment. With little prospect of adequate funding, General DePuy, his staff, and his commanders set about defining and defending the engineering and development programs that would produce a much needed new generation of weapons.

In addition to his efforts in behalf of weapons development, DePuy had taken an intense interest in the reform of tactics and training, in line with tactical lessons drawn from the 1973 Arab-Israeli War. Out of this interest and attendant study had come the sharply revised Field Manual 100-5, *Operations*, of July 1976.[1] The new manual emphasized the critical de-

mands of "the first battle of the next war" on a battlefield where tempo and the destruction of materiel would dramatically surpass that of previous wars. The manual stressed better training, suppressive tactics, terrain use, and combined arms coordination to counter increased lethality of weapons of the 1970s. From the 1976 manual flowed a generation of practical "how-to-fight" tactical field manuals and training literature.

Finally, General DePuy initiated efforts to reorganize Army combat forces with the Division Restructuring Study and Evaluation of 1976-78. This project aimed at reorganizing the heavy divisions to harness the combat power of the oncoming new weaponry.[2]

These efforts, which DePuy led, were notable. Significant changes to modernize the Army were well along when General Starry replaced General DePuy as the commander of TRADOC in 1977. But there was still much to do. For one thing, the 1976 version of FM 100-5 had set in motion a pointed and lively doctrinal debate that raised important questions that needed to be answered. These doctrinal questions, along with issues associated with the Army's field organization, would consume much of General Starry's energy during his years as TRADOC commander.

The Early Starry Initiatives

In assuming command of TRADOC, General Starry brought with him a close interest in tactical doctrine that had been sharpened by his experience as a corps commander in Germany between 1976 and 1977. He saw the potential battle facing NATO forces as a structured "central battle" to be fought methodically and aggressively against attacking heavily armored forces of the Warsaw Pact. Based on the active-defense tactics outlined in the 1976 version of FM 100-5, this central battle would focus on a firepower battle along the forward edge of the battle area (FEBA). In General Starry's eyes, this concept still overlooked a crucial factor—the enemy's massive second-echelon forces, which, according to Soviet doctrine, would roll through the first echelon and exploit any advantages the first echelon might have gained.

In November 1978, through a major TRADOC planning document called the Battlefield Development Plan, General Starry depicted a battlefield view and weapon requirements concept based on fundamental components of the central battle, such as "target servicing," suppression and counterfire, and air defense. To the central battle and its tasks were added the concept of "force generation" and its various subordinate tasks, such as interdiction of enemy second-echelon forces at the commander's discretion and reconstitution of his forces as the battle progressed.[3] In force generation, the central battle commander had a responsibility at least as important as the initial assault. This responsibility involved "seeing deep" into the enemy's rear and concentrating combat power to attack the enemy second-echelon forces before they reached the battlefield. General Starry's aim in using the framework of the Battlefield Development Plan was to get division and corps commanders away from thinking in terms of branch organizations and capabilities. He wanted them to think instead in terms of new functions and concepts that he thought had become critically important in modern battle.

Starry also questioned features of the Division Restructuring Study of his predecessor and in October 1978 launched the major Division 86 project. This study, a commandwide effort, was based on the battlefield view and concepts of the Battlefield Development Plan. The Division 86 Study stimulated doctrinal thinking and was extended by the Chief of Staff of the Army, General Edward C. Meyer, in late 1979 into the larger Army 86 Study, encompassing not only the heavy division but the light division, corps, and echelons above corps organizations of the future Army.[4]

At the same time, a spirited doctrinal debate about the operations manual of 1976, FM 100-

5, was occurring both within and outside the Army.[5] Although critics generally liked and welcomed the 1976 manual for its clarity and stress on the tactical ramifications of the new lethality of modern weapons, they scored it on a number of important points. These included the manual's perceived defensive orientation, its dependence on tactics that appeared to emphasize firepower and attrition rather than maneuver, its apparent abandoning of the concept of a tactical reserve, and its emphasis on the Soviet breakthrough operational maneuver. As commander of the Armor Center at Fort Knox, Kentucky, during 1973-76, General Starry had contributed to the development of the 1976 manual. Now, several years later, he found himself in the position of defending and reconsidering different aspects of the manual.

The Extended Battlefield

Increasingly, the doctrinal inquiries of Army 86 had pursued the idea of a deeper battlefield or, as Starry and his planners began in 1980 to call it, the "extended battlefield." What they meant was that the battlefield had a deeper physical dimension, a time dimension, an air-land dimension now more critical than ever before, and a possible chemical and nuclear dimension. Brigade, division, and corps commanders had to see deep into the enemy's rear and to act to delay, disrupt, and destroy enemy second-echelon forces while simultaneously fighting the assaulting forces. A brigade commander looking beyond his forward line of own troops (FLOT) had to influence events up to 15 kilometers into the enemy's rear. A division commander had to influence events up to 70 kilometers beyond the FLOT, and the corps commander up to 150 kilometers. The commanders' areas of interest extended still deeper. But more important was the distance in *time* from the forward line to the oncoming enemy echelons, for this time governs the point when commanders must take action—12 hours away for the brigade, 24 for the division, and 72 for the corps. To handle this new depth of the modern battlefield, U.S. land and air forces had to wage a synchronized, fully integrated Air-Land Battle.

In the interest of improved clarity, General Starry chose "AirLand Battle" as the title for the new concept that involved such a close interaction between all air and ground capabilities.

The extended battlefield concept was much more offense-oriented than that of the central battle of two years earlier. It reflected the effects of the doctrinal debate that centered on the 1976 manual's alleged emphasis on the defense and on attrition warfare. But the extended battle view also encompassed a significant new element. In answer to the manifest readiness of Warsaw Pact forces to employ tactical nuclear and chemical weaponry, Army and TRADOC planners took steps during 1979-80 to include these aspects of what is known as the "integrated battlefield" into their tactical planning.

Noteworthy here were the results of the Army's tactical nuclear systems program review held at Fort Sill, Oklahoma, in December 1979. During the program review, Field Artillery Center planners had laid out analytical descriptions of the tactical nuclear battlefield for the Army to see. A targeting analysis by the Fort Sill planners showed that well-planned interdiction of the enemy's second or "follow-on" echelons not only could blunt the force of the attack but could critically interrupt its momentum. Interdiction could, in this way, create periods of U.S. tactical superiority. During these periods, the initiative could be seized for offensive action and the release authority for tactical nuclear strikes, if needed, could be secured. Thus, well-planned interdiction could create "time windows" for action that would not otherwise exist, given the enemy's great superior-

ity in numbers and firepower, thereby offering significantly wider opportunities for offensive action and maneuver.[6]

Still another doctrinal change occurred when, under the influence of the Soviet invasion of Afghanistan and the beginning of the Iranian hostage crisis in late 1979, Carter administration officials grew interested in the military demands for the non-NATO world. For the Army, the change was formally announced by General Meyer in a white paper of February 1980.[7] TRADOC's light division study of 1979-80 and the subsequent high-technology testbed project undertaken by the 9th Infantry Division at Fort Lewis, Washington, inaugurated doctrinal forays into the non-NATO arena. To these projects were added studies of a contingency corps and its higher command echelon and a 1983 effort to create a 10,000-man light division.

Introducing the New Doctrine

It was from these events of the 1970s that the extended battlefield concept emerged. TRADOC presented the concept at the Army Commanders Conference of October 1980, and General Meyer approved it at that time. A team headed by the U.S. Army Combined Arms Combat Developments Activity at Fort Leavenworth, Kansas, briefed the concept to all of the Army's major command headquarters in the ensuing months; and it was well received. Favorable responses also came from U.S. Air Force and Army units briefed in Germany and Korea. Meyer approved additional team visits to the corps and divisions during the early part of 1981. The team also took part in a 3d Armored Division test of a special fire support targeting cell concept, which was developed to select high-value targets for interdiction. In V Corps, the team demonstrated how tactical air control systems could support the targeting cells to press the deep attack.

The terminology of "extended" and "integrated" battlefields was awkward and, in part, overlapping in meaning. Even more awkward was the use of the two terms together to describe what TRADOC believed was emerging as a significant new doctrine. In the interest of improved clarity, General Starry chose "AirLand Battle" as the title for the new concept that involved such a close interaction between all air and ground capabilities.[8]

The development of the new doctrine was one thing; its acceptance by the Army and an influential cadre of civilian defense writers and critics was another.[9] Fresh in memory was the debate over the 1976 version of FM 100-5 with its active defense doctrine. In 1981, TRADOC Headquarters proceeded differently from the way it had with the 1976 concept. First, General Starry took pains to include the Army at large in the development of AirLand Battle, disseminating information through briefings and wide circulation of Fort Leavenworth's draft of the new FM 100-5 during 1981. The doctrine was well received. AirLand Battle was an offense-oriented doctrine that the Army found intellectually, as well as analytically, convincing.

The concept called for early offensive action, by air and land, to the full depth of enemy formations to defeat an enemy attack.

Second, after General Meyer approved the doctrine, TRADOC seized the initiative in presenting it to the military and civilian public. TRADOC personnel at Fort Leavenworth and Fort Monroe developed briefings about AirLand Battle, as well as a future battle concept for the 1995-2015 period (AirLand Battle 2000), and presented these briefings to Department of the Army action officers in the Pentagon and to the undersecretaries and assistant secretaries of DOD. The AirLand Battle presentation was also offered to members of the Congressional Reform Caucus and, subsequently, to still wider congressional

circles, where it was well received. Ultimately, the briefings were given to all principals of the Department of Army staff, to all the service chiefs and their deputies, and to Vice President George Bush.

These briefings stressed the importance of unfettered, imaginative doctrinal thinking. Against Soviet power, an attrition doctrine could not succeed. The U.S. Army had to rely on the strength of Western man, had to exploit his innovativeness, independent thinking, flexibility, and adaptability. According to these briefings, the AirLand Battle could not be adequately described by the traditional football metaphor with its terrain orientation. Rather, it should be seen in terms of a soccer game, where the orientation is on the enemy, the action is fluid, and independent action and maneuver could lead to collapse of the enemy's overloaded system.[10]

The AirLand Battle briefings thus informed influential Army, congressional, and administration officials about the doctrinal developments accompanying the transition to Army 86 and the new weaponry coming into production and deployment. The briefings of 1981-82 presented a doctrine that corrected the major problems of the 1976 FM 100-5 and appeared very sound.

The Operational Concept of AirLand Battle

The concept of the AirLand Battle published in March 1981 was explicit about the conditions of modern battle, and it was correspondingly candid about how Army units in combat had to deal with those conditions if they were to fight, survive, and win.[11] Topics that had previously been excluded from discussion because of prevailing national policies once again surfaced in the debate. Holding the heavily armored and far more numerous Warsaw Pact forces at risk by early continuous planning to employ tactical nuclear weapons if attacked and threatening to retaliate with chemical weapons should the Warsaw Pact employ its own large and well-trained chemical forces were ideas that could once more be discussed publicly, as they had been in the 1950s and 1960s.

The AirLand Battle dealt with the Army's major and most serious challenge—armored, mechanized, combined arms battle.

The concept called for early offensive action, by air and land, to the full depth of enemy formations to defeat an enemy attack. Mindful of the absence of clear and consistent American political aims in Vietnam and of the Clausewitzian maxim that "war is a continuation of policy by other means," the AirLand Battle concept stated:

> . . . once political authorities commit military forces in pursuit of political aims, military forces must win something—else there will be no basis from which political authorities can bargain to win politically. Therefore, the purpose of military operations cannot be simply to avert defeat—but rather it must be to win.[12]

These were forthright statements, clear in intent and disabusing the Soviet Union of any perception that shifting strategic power had opened for it a new freedom of action at theater levels. The AirLand Battle dealt with the Army's major and most serious challenge—armored, mechanized, combined arms battle. The new concept projected an explicitly offensive emphasis and had as its distinguishing feature an extended view of the modern battlefield—extended in both distance and time. The extended battlefield added emphasis on integrated attack by land and air forces and provided options embracing the tactical nuclear and chemical dimensions of modern war.

The authors of the concept did not see deep attack as a matter of choice but as an absolute

necessity for winning in an East-West confrontation in Europe. The great numerical superiority of the enemy's follow-on echelons, not the type of operational maneuver the Soviets might employ, was the significant factor that demanded it. The oncoming second echelon had to be slowed and broken up by a battle deep in the enemy's rear that would be fought simultaneously with the close-in contest. The deep attack required tight coordination with the close-in battle so that scarce means of attack would not be wasted. It required that planners not only anticipate enemy vulnerabilities but view this two-part battle as one engagement. With his second echelon disrupted, the enemy would find his operational scheme undermined; and, having lost the initiative, he would be forced to call off the attack.

The overall message conveyed by the AirLand Battle concept of 1981 was that the Army must leave behind the restricted notion of winning the fight only in the traditional "main battle area."

For effective implementation, the concept required sensors and surveillance systems to prevent surprise attack and to gain targeting and surveillance information. Also needed were dual-capable conventional and nuclear systems with the range and destructiveness to put enemy forces at risk, including forces in the second-echelon region. The concept also required command and control systems that operate automatedly and in near real time. When combined, these means make possible a defensive battle, part of which takes place far forward of one's main defensive position. Viewing the enemy far behind its forward line, commanders can begin early to delay and destroy follow-on echelons, while simultaneously engaging and defeating the first-echelon assault; then they can transition to attack and to finish the battle before the arrival of the enemy's remaining follow-on armies.

The concept delineated clearly how the time element figured into the deep battle. It detailed in hour-spans not only the time given to brigade, division, and corps commanders to attack their respective elements of the second-echelon formations but also the time given to see the enemy formations in the still more distant rear. Thus, each commander—brigade, division, and corps—has dual responsibilities under the concept: attack the enemy assault echelon and attack the follow-on echelon of the assaulting force.

The concept embodied a detailed scenario for the second-echelon attack. Critical here was what TRADOC writers called "intelligence preparation of the battlefield." Aided by a network of sophisticated sensor and communications systems, commanders would attack high-value targets to disrupt the enemy's forward momentum progressively. Three primary means of deep attack existed: interdiction (including air power, artillery, and special operating forces), offensive electronic warfare, and deception. The concept stressed an absolute need for an integrated plan of attack aimed at both the assault and the follow-on echelon. Because of the depth of the attack against the second echelon, the air aspect would dominate the early phase of the air and land battle.

The concept stressed that the Army's transition to the tactical ideas of the AirLand Battle had to begin at once. In line with the maxim "we must train as we will fight," commanders in the field had to begin immediately to practice the concepts by which they would fight in the 1980s. Above all, special cells for second-echelon targeting had to be established in all fire support elements. These cells had to be capable of nuclear, conventional, and chemical targeting. To make it all work, the corps had to have control of the requisite aerial sensors and intelligence processors.

The overall message conveyed by the AirLand Battle concept of 1981 was that the Army

must leave behind the restricted notion of winning the fight only in the traditional "main battle area." The Army was now "entering a new dimension of battle which permits the simultaneous engagement of forces throughout the corps and division areas of influence." It had to begin immediately to practice, learn, and refine the AirLand Battle concept.[13]

Concept to Doctrine: The New FM 100-5

At Fort Leavenworth, in the meantime, work was proceeding during 1981 on the revision of FM 100-5. Selected as principal author was Lieutenant Colonel Huba Wass de Czega, an officer assigned to the Command and General Staff College. General Starry met often with Wass de Czega and his assistants during the writing. Besides the wide staffing throughout the Army, TRADOC invited outside critics and writers to review and discuss the drafts and contribute their thoughts. TRADOC wanted the new FM 100-5 to embody fully the AirLand Battle. In September 1981, the manual was published in draft by Fort Leavenworth.[14] This draft was subjected to an extensive review by the Army prior to publication of the finished manual in August 1982.

In today's warfare, as in the past, the force that retains the initiative will win.

Like its predecessor, the new *Operations* was a significant doctrinal statement.[15] Not only did it embody important changes, but it reflected, in line with the shift in national strategic perceptions since the late 1970s, the more confident tone of an offense-oriented military operational doctrine.

In the 1980s, the new FM 100-5 notes, the U.S. Army could find itself in battle in any of a number of places against a variety of opponents: the modern mechanized armies of the Warsaw Pact, similarly organized Soviet "surrogates" in Southwest and Northeast Asia, or lighter well-equipped insurgents or terrorist groups in other parts of the world. However, the manual indicates that the land forces of the Soviet Union are the most serious challenge facing the modern Army.

Today, Soviet doctrine emphasizes the principles of mass and maneuver and seeks victory through a relentless prosecution of the offensive. If nuclear and chemical weapons are required to ensure operational success, the Soviets will use them. Indeed, their basic doctrine assumes such use, and their armies are equipped, armed, and trained to use nuclear and chemical weapons without need to pause for transition.

Against such an enemy, the manual notes, all available military force of all the services must be applied. In today's warfare, as in the past, the force that retains the initiative will win. On the integrated, air-land battlefield, the key to retaining the initiative is disrupting an enemy's fighting capability with deep attack, effective firepower, and decisive maneuver.[16] Furthermore, U.S. forces must plan to expect nuclear and chemical operations from the beginning of hostilities. First use of chemical and nuclear weapons by the enemy cannot be permitted to decide the conflict. On the modern battlefield, nuclear fires might well be "the predominant expression of combat power," with small tactical forces being used to exploit their effects. Such engagements would be short and violent. Decisive battles might last hours, instead of days or weeks.[17]

Modern electronic countermeasures could disrupt effective command and control severely, placing a premium on the initiative of subordinate commanders. Such initiative is a point of emphasis in the new manual, which adapts the German Army principle of *Auftragstaktik*, the ability of subordinate leaders in combat to act independently in the changing battle within the context of the overall plan. Airmobility, now a Soviet as well as U.S. capability, would, together with air power, extend the battlefield

to great depths. For the U.S. Army, logistical lines would be long and vulnerable. Rear areas would be subject as never before to attack and disruption by subversion and terrorist actions and by airmobile, amphibious, and airborne forces, as well as by air interdiction and long-range fires. Combat in built-up areas, including the extensive urbanized sections of West Germany, would be inevitable. All of this adds up to a battlefield situation that would be extremely fluid.

Under conditions such as these, battle would place a premium on leadership, unit cohesion, and effective independent operations. Leaders would need to be more skillful, more imaginative, and more flexible than ever before. Training, the manual writers affirm, is the cornerstone of success in battle, and training for war is the principal peacetime responsibility of all commanders: "On the day of battle, soldiers and units will fight as well or as poorly as they were trained before battle."[18] In the Army's units, training must concentrate on leaders and combat teams. Commanders must focus on building confidence and initiative in their subordinate leaders. Unit training must be realistic and as rigorous for support units as for combat units.

It is significant that the new manual again places the principles of war and their application at the center of Army thinking. The principles of war had been pointedly omitted from the operations manual of 1976 in a conscious attempt to avoid theory and to focus on the precise requirements of winning the defensive "first battle of the next war" in Central Europe. What the writers of the 1982 manual were striving for instead was a concept broad enough to encompass operations in all anticipated circumstances.[19]

The new FM 100-5 adds precision to earlier statements of the AirLand Battle concept. It is explicit about the intent of U.S. Army doctrine, and it conveys a vigorous offensive spirit. AirLand Battle doctrine "is based on securing or retaining the initiative and exercising it aggressively to defeat the enemy. . . . Army units will. . . . attack the enemy in depth with fire and maneuver and synchronize all efforts to attain the objective." It also notes that "our operations must be rapid, unpredictable, violent, and disorienting to the enemy."[20]

An increase in clarity has been added by inserting into the manual a new level of military art. Between tactics and strategy, the manual inserts the intermediate level traditionally recognized by the German and other armies as the operational level of large units (i.e., the operations of armies and corps that involve activities below the level of military strategy and above the level of tactics). Throughout the manual, the writers held to a clarifying distinction between circumstances and actions at the tactical level and those at the operational level.

Attacks that avoid the enemy's main strength but shatter his will or reduce his fighting capability are the fastest and cheapest way of winning.

The addition of the operational level resulted from a decision made by General Starry's successor at TRADOC, General Glenn K. Otis. This decision was made late in the writing of the manual. The addition of the operational level had been strongly urged by the Army War College and was discussed by German Army reviewers during the staff review process. Indeed, there was much doctrinal interaction with the German Army General Staff during the course of the Army's development of the new FM 100-5. General Starry favored a close doctrinal compatibility with German Army manual 100-100, *Command and Control in Battle.*

In outlining the dynamics of battle, FM 100-5 delineates the elements of combat power. Here, the manual departs from its predecessor in emphasizing maneuver as the dynamic element of combat. Maneuver is

> . . . the means of concentrating forces in critical areas to gain and use the advantages of surprise, psychological shock, position, and momentum which enable smaller forces to defeat larger ones. . . . It is the employment of forces through movement supported by fire to achieve a position of advantage from which to destroy or threaten destruction of the enemy.[21]

Firepower provides "the enabling, violent, destructive force essential to successful maneuver." Maneuver and firepower are "inseparable and complementary elements of combat."[22] Protection, the shielding of the fighting potential of the force in physical and morale terms, is another component of combat power.

The new manual places considerably more emphasis on leadership than had its predecessor. Although not measurable, leadership is an enduring military constant. "Leaders are the crucial element of combat power."[23]

Into its doctrine of the offense—the destruction of enemy forces—the new FM 100-5 introduces Clausewitz's idea that "when we speak of destroying the enemy's forces . . . nothing obliges us to limit this idea to physical forces: the moral element must also be considered."[24] Thus, attacks that avoid the enemy's main strength but shatter his will or reduce his fighting capability are the fastest and cheapest way of winning. Attack against enemy weakness (rather than force-on-force attrition battle) and maintaining the momentum of the initiative are the keynotes of the offensive doctrine. The authors of the manual drew freely on Clausewitz's emphasis on violent *effect*, combining it with Liddell Hart's doctrine of the "indirect approach," and joining these ideas to the AirLand Battle emphases on initiative, depth, agility, and synchronization. Five elements of offensive action are highlighted as the most fundamental: concentration of effort, surprise, speed of attack, flexibility, and audacity.

New emphases in defensive doctrine also are established in the new FM 100-5. The active defense, dependent on carefully concerted lateral movements by elements of the defending force, had been one of the most controversial elements of the 1976 doctrine. In the new edition, it gives way to a doctrine in which the defensive could vary from a static positional defense to a deeper, more dynamic force-oriented defense of maneuver, as the situation demanded. Defense might be forward or in depth and might rely heavily on strong points. As with the offense, the operational concept of the defense calls for engaging the enemy throughout the depth of his formation to disorganize him and create opportunities for offensive action.

The new manual is more explicit than its predecessor about the question of reserves. The 1976 manual had asserted that a division commander who spread two of his brigades thinly across a wide area, holding his third brigade in reserve, would be defeated by a breakthrough attack.[25] But the new manual returns to a more traditional reliance on reserves. Commanders down to brigade normally would retain about one-third of their maneuver strength in reserve.

The shifting of forces by lateral movement that had characterized the active defense is discouraged in the new manual. This movement is now seen to be an especially vulnerable operation that an enemy might easily disrupt or prevent by air or artillery interdiction. Moreover, vacating a sector to move laterally actually invites enemy penetration and is, in any case, psychologically difficult.[26]

The new FM 100-5 recognizes the inseparability of tactics and logistics: what cannot be supported logistically cannot be accomplished tactically.

Additional sections of the new FM 100-5 outline the problems of how to support a fighting force whose consumption of ammunition, fuel, repair parts, and other logistical supplies could be expected to be enormous. Emphasis is placed on fast forward resupply, foward maintenance, and, where possible, conservation.

The new FM 100-5 recognizes the inseparability of tactics and logistics: what cannot be supported logistically cannot be accomplished tactically. An addition in the new manual is a special section on joint and combined operations, since the U.S. Army in the most likely warfighting situations will be fighting alongside another service or as part of a combined force.

The new FM 100-5 reflects a pronounced sense of history by incorporating a number of germane military maxims. For example, one finds in the new manual the Clausewitzian concept of friction, which explains why in war even "the simplest things become difficult." Also included in the manual are examples from military history, such as General Patton's use of the Norman roads to gain surprise and avoid the heavily defended modern routes. There is also the injunction of Sun Tzu that "the worst policy of all is to besiege walled cities," as borne out, for the writers, at Stalingrad and Tobruk.[27] The manual also uses brief battle descriptions to illustrate doctrinal points. Two examples are the Vicksburg Campaign, used to illustrate the importance of speed and surprise in the indirect approach, and Tannenberg, as a demonstration of exploiting fluid conditions to transition from the defense to the attack.

Significantly, the new manual notes, as the 1976 manual had not, the political aspect of warfare. Defeating enemy forces in battle does not always ensure victory. "Other national instruments of power and persuasion will influence or even determine the results of wars. Wars cannot be won . . . without a national will and military forces equal to the task."[28]

Also of importance is the fact that the "air-land war" has changed in definition from its 1976 meaning. No longer simply cooperation and mutual support between the land and air arms, AirLand Battle in the 1980s refers to dual and simultaneous battles on the forward line and deep in the enemy's rear echelons, by air power and ground forces working in close concert.

Finally, and not least, the clear turn of phrase and apt metaphor that readers of the 1976 manual had found striking are not lost in the new FM 100-5. Conscious that clear ideas turn on cogent phrases and lucid writing, the manual's writers worked to avoid the pitfalls of jargon and specialty speech. In this aspect, they both borrowed and invented, employing, for example, the arresting Clausewitzian image of the defense as "a shield of blows," along with the AirLand Battle concepts of *deep battle* and of *collapsing* the enemy's fighting structure.

With publication of the revised FM 100-5 of August 1982, the concept of AirLand Battle was established as the Army's fighting doctrine for the decade ahead. Intimately bound up with the restoration of U.S. strategic capabilities in the early 1980s, the new doctrine provides a forthright intellectual basis for an army that is reassuming an explicitly offense-oriented readiness. Since it puts the Army in a much better position to defeat a Soviet attack, AirLand Battle is a notable contribution to deterrence as well.

Fort Monroe, Virginia

Notes

1. Field Manual 100-5, *Operations*, Headquarters Department of the Army, 1 July 1976.

2. See John L. Romjue, *A History of Army 86*, Vol. I, *Division 86: The Development of the Heavy Division*, Headquarters TRADOC, June 1982, pp. 1-10 and 42-48.

3. Letter ATCD-PD, TRADOC to distribution, 17 November 1978, subj: Battlefield Development Plan. Ten tasks were envisioned as encompassing all aspects of battle. The five critical tasks of the central battle were target servicing, air defense, suppression-counterfire, logistical support, and command-control-communications (C^3)-electronic warfare. The commander's five critical tasks in force generation were interdiction, C^3, force mobility (mine-clearing and bridging), surveillance-fusion, and reconstitution. Several of the critical tasks were later revised.

4. Romjue, pp. 10 ff. and 124.

5. For a discussion of the early debate in the service and defense journals during 1976-78, see TRADOC Annual Historical Review, Fiscal Year 1978, August 1979, pp. 139-54.

6. General Donn A. Starry, "Extending the Battlefield," *Military Review*, March 1981, pp. 31-50.

7. Chief of Staff, U.S. Army White Paper 1980, "A Framework for Molding the Army of the 1980s into a Disciplined, Well-Trained Fighting Force," 25 February 1980.

8. Message 291305Z January 1981, Commander TRADOC to distribution, subj: The AirLand Battle.

9. The record is clear that the major intellectual force behind the formulation of AirLand Battle was General Donn Starry. He was aided significantly by the TRADOC Deputy Commanding General, Lieutenant General William R. Richardson, who commanded the Combined Arms Center at Fort Leavenworth, and by Richardson's staff, in particular the author-designee for the revision of FM 100-5, Lieutenant Colonel Huba Wass de Czega. Major General Jack N. Merritt (Field Artillery Center Commander), Colonel Anthony G. Pokorny, and Lieutenant Colonel Steven Doerfel at Fort Sill helped develop the concept analytically from the central battle ideas of 1977 to AirLand Battle. Pokorny had had an earlier central role in the formulation of the Battlefield Development Plan. Brigadier General Don Morelli played an active role, especially in the briefing of AirLand Battle to DOD, congressional, and administration circles. Important also in the formulative work was Morelli's deputy, Colonel Edwin G. Scribner, and Colonel Frederick M. Franks of the TRADOC combat developments planning directorate. Authorship must be considered multiple and includes many planners not named here.

10. Memorandum for Record ATCS-H, TRADOC Historical Office, 30 January 1981, subj: Concepts and Doctrine Conference, 28-29 January 1981, Headquarters TRADOC.

11. TRADOC Pamphlet 525-5, *Military Operations: Operational Concepts for the AirLand Battle and Corps Operations—1986*, 25 March 1981

12. Ibid., p. 2.

13. Ibid., p. 21.

14. Field Manual 100-5, *Operations* (final draft), 4 September 1981.

15. Field Manual 100-5, *Operations*, Headquarters Department of the Army, 20 August 1982.

16. Ibid., pp. 1-5 and 4-1.

17. Ibid., pp. 1-3 and 4-4.

18. Ibid., p. 1-4.

19. Ibid., pp. B-1 to B-5.

20. Ibid., p. 2-1.

21. Ibid., p. 2-4.

22. Ibid., pp. 2-4 and 7-7.

23. Ibid., p. 2-6.

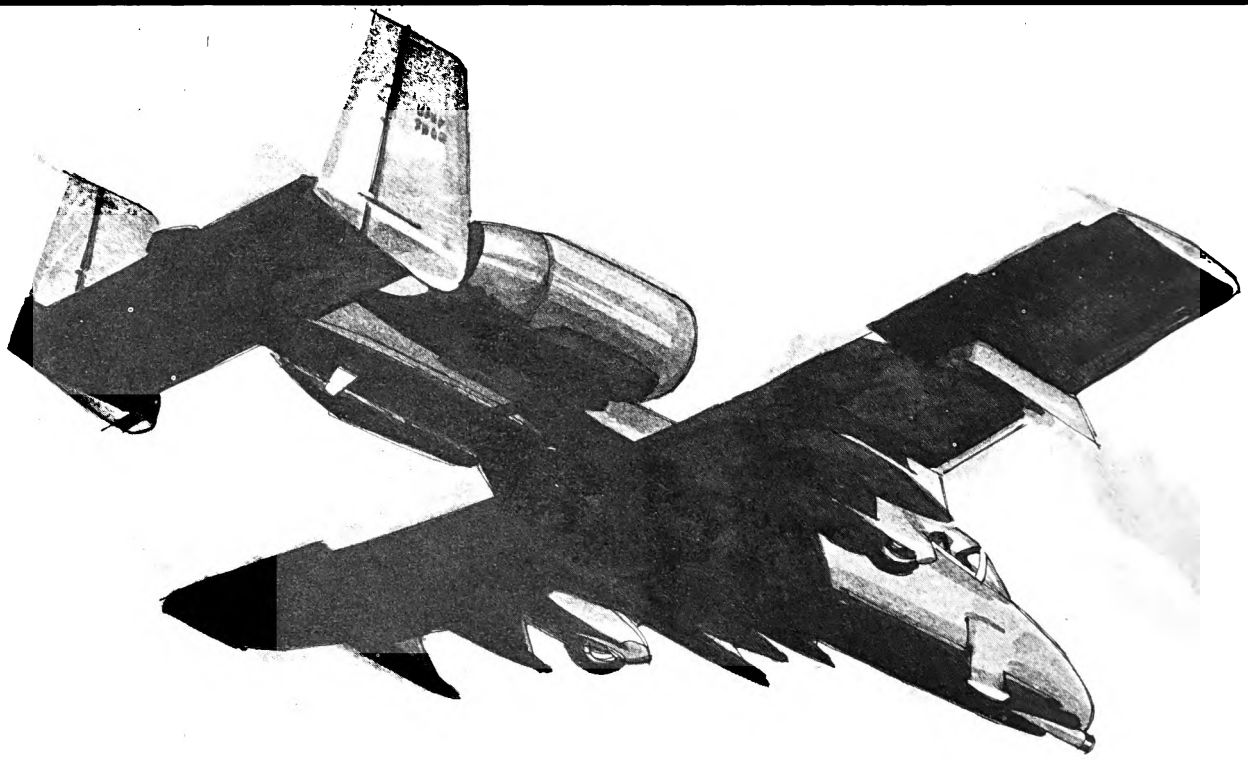
24. Ibid., p. 8-4.

25. Field Manual 100-5, *Operations*, 1 July 1976, p. 5-3.

26. Field Manual 100-5, *Operations*, 20 August 1982, pp. 11-8 and 11-9.

27. Ibid., pp. 4-1, 3-5, and 3-8.

28. Ibid., p. 1-1.



TACAIR SUPPORT FOR AIRLAND BATTLE

MAJOR JAMES A. MACHOS

AIRLAND Battle is the U.S. Army's new fighting doctrine. The name implies cooperation and agreement between the U.S. Army and Air Force, but, in fact, AirLand Battle doctrine has been a unilateral development of the U.S. Army. Only recently has the Air Force become actively involved with the doctrine. A Memorandum of Understanding, signed in April 1983 by Generals Edward C. Meyer and Charles A. Gabriel, has been hailed throughout much of the Army as full Air Force endorsement of AirLand Battle doctrine. However, to the more critical observer, the agreement represents only an official agreement for the Air Force and Army to cooperate in "joint tactical training and field exercises based on the AirLand Battle doctrine."[1] It does not acknowledge AirLand Battle doctrine as the sole governing principle for joint training and exercises, nor does it concede unequivocal primacy of AirLand Battle doctrine over established Air Force doctrine.

The advent of the U.S. Army's AirLand Battle doctrine has forced land commanders to broaden their battlefield perspective—which, in turn, has increased Army interest in the availability of tactical air (TACAIR) to support Army combat efforts. From the Army commander's viewpoint, *controlling* allocated TACAIR is the best way to ensure that TACAIR will be available to support his combat operations. On the other hand, the air forces required to support ground forces operate under Air Force doctrine that calls for centralized control of air assets to ensure their effective use. From the airman's viewpoint, air assets must be concentrated first to win the battle in the air and then to carry out strategic

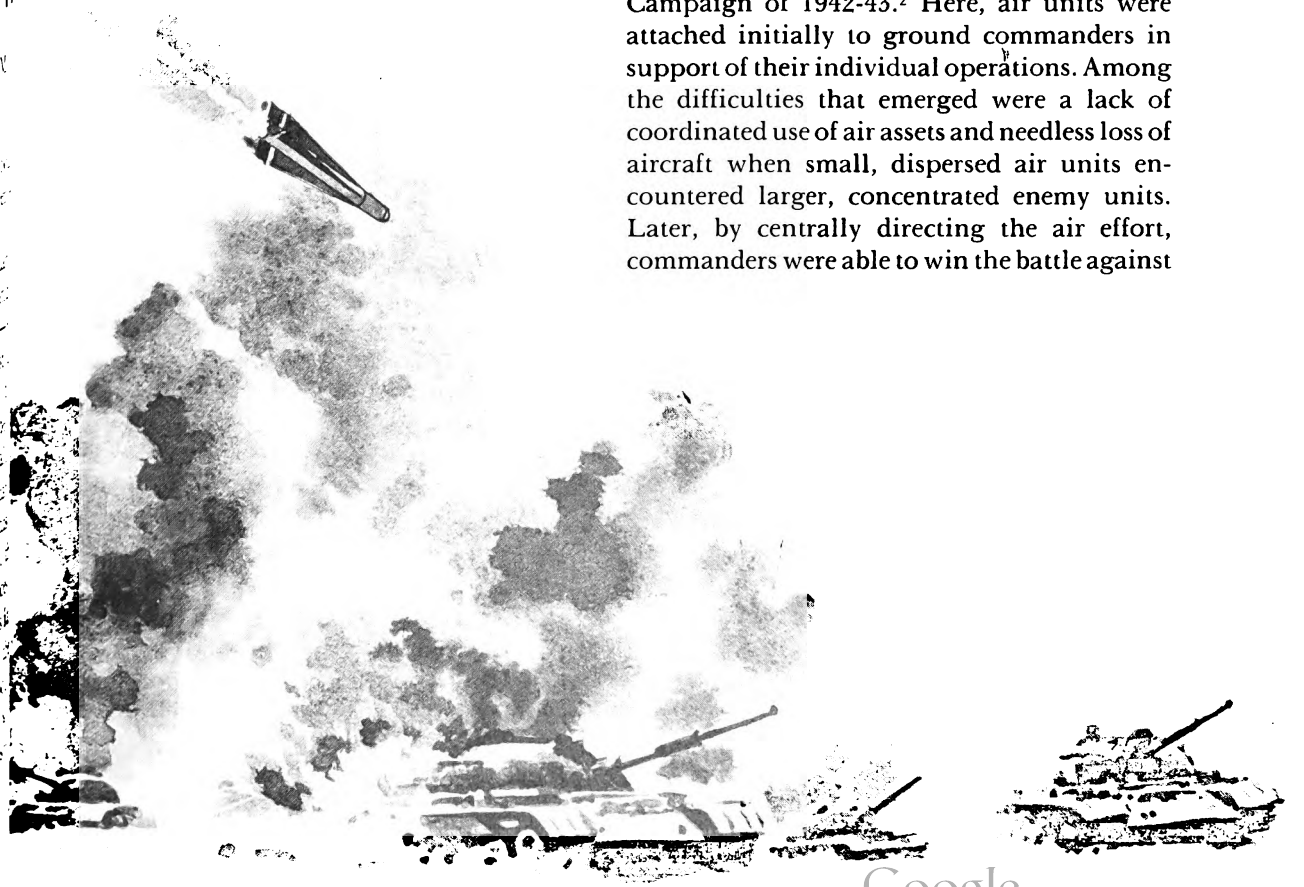
operations and operations in support of the land battle. Obviously, this divergence in outlook needs to be understood and reconciled.

Air Power Doctrine and the Tactical Air Control System

Basic Air Force doctrine is contained in Air Force Manual 1-1, *Functions and Basic Doctrine of the United States Air Force,* which describes the fundamental principles governing the application of air power. Among the more important of these principles are centralized control and decentralized execution. The exceptional flexibility of air power (its ability to transport personnel and equipment and to project firepower at greater ranges and speeds than traditional land- and sea-based systems) suggests that its application can best be viewed from a theater perspective. Centralized control allows the air component commander to employ air power effectively throughout the theater by focusing it on specific theater objectives when necessary. To accomplish the mission effectively, the air component commander delegates to his subordinate commanders responsibility for detailed mission tasking, planning, and execution.

Because of the capabilities arising from the air weapon's flexibility, air power has become a major factor in warfare. Often it has provided the extra shock and extra firepower that were vital to success in ground combat operations. Because air power has proved so valuable in supporting the ground battle, ground commanders frequently have sought greater control over air assets.

Perhaps the most often cited example of the difficulties involved in ground commanders' controlling air assets is the North African Campaign of 1942-43.[2] Here, air units were attached initially to ground commanders in support of their individual operations. Among the difficulties that emerged were a lack of coordinated use of air assets and needless loss of aircraft when small, dispersed air units encountered larger, concentrated enemy units. Later, by centrally directing the air effort, commanders were able to win the battle against



enemy air power *and* support the ground battle.

From the standpoint of air operations, the North African experience indicated that "there must be a command structure to control the assigned air power coherently and consistently and to ensure that . . . air power is not frittered away by dividing it among" various other commands.[3]

A point worth emphasizing is the battlefield perspective resulting from operations in North Africa: air power must be viewed and employed as a theater asset. It is the theater perspective, arising out of combat experience, that leads the Air Force to hold that air power must be centrally controlled to be effective. Thus, centralized control of air power is a basic element of Air Force doctrine; it reflects what combat experience indicates is fundamental to the success of theater air operations.

Air Force doctrine further identifies nine basic operational missions for air forces. Of these, three are the primary responsibility of tactical air forces: close air support, air interdiction, and counterair operations.[4] In conducting those three theater missions, the air component commander controls the employment of TACAIR forces through the tactical air control system (TACS).

The heart of the TACS is the tactical air control center (TACC), which is the focal point for all air-related command, control, communications, and intelligence (C^3I) activities. (Depending on the total number of forces employed in a theater, there may be more than one TACC.) Furthermore, the TACC's intelligence capabilities and its access to national intelligence-gathering systems make it the theater focal point for near-real-time information on the enemy. This access to intelligence data, plus the concentration of communications capabilities, makes the TACC the logical command and control center for effective theater-wide application of tactical air power. The TACC also includes liaison elements from other services in the theater, facilitating closer integration of air operations with the activities and operations of the other services.

In most established theaters, the Army liaison element in the TACC is the battlefield coordination element (BCE). As the land component representative, the BCE provides to tactical air planners a clear perception of the land component's plans, operations, and requirements for TACAIR support. Being collocated with the TACC, the BCE can provide feedback on the current ground situation and TACAIR support efforts and facilitate the crossflow of other operational data between land and air forces. It provides a means for the air component commander, through the TACC, to react, replan, reorganize, or redeploy air assets quickly and *correctly* to support ground operations.

Thus, Air Force insistence on centralized control of air resources rests on two key points: the necessity for a *theater* perspective in applying tactical air power to decisive points on the battlefield and the fact that the *established* communications and intelligence capabilities of the TACC facilitate the rapid and effective application of TACAIR to these decisive points.

AirLand Battle

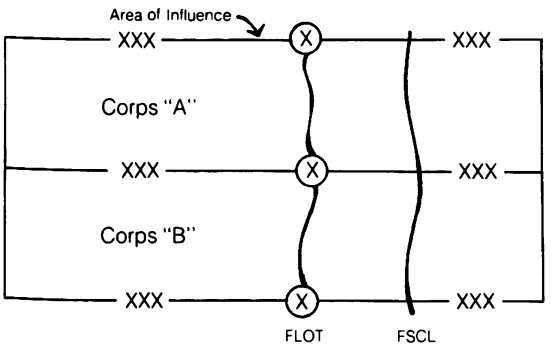
Field Manual 100-5, *Operations*, is the basic document describing how the U.S. Army intends to fight in future conflicts. The approach to combat outlined in this manual is what is known as AirLand Battle. "It emphasizes tactical flexibility and speed as well as mission orders, initiative among subordinates, and the spirit of the offense."[5] According to this manual, modern conflict presents the Army with these challenges: the nonlinearity of future battlefields, the development of imaginative and flexible leadership, maintenance of unit readiness, and unit and individual training. To operate on the modern battlefield, the Army must be ready to fight as a team in joint and combined operations, for only by coordinating all available military forces in pursuit of common objectives can the United States hope to win.

AirLand Battle doctrine relies on complementary actions by combat forces of all services. By carefully synchronizing the various organic and supporting fires, the ground commander can create the synergism necessary for him to engage and defeat numerically superior foes. TACAIR provides a large part of the ground commander's fire support and therefore has assumed a high priority in his planning for offensive actions.

AirLand Battle Focus: Corps Operations

For the Army, the corps is the focal point for AirLand Battle. To fight the battle and give coherence to overall control of battlefield operations, the corps will fight the enemy in an assigned "area of influence." (See Figure 1.)

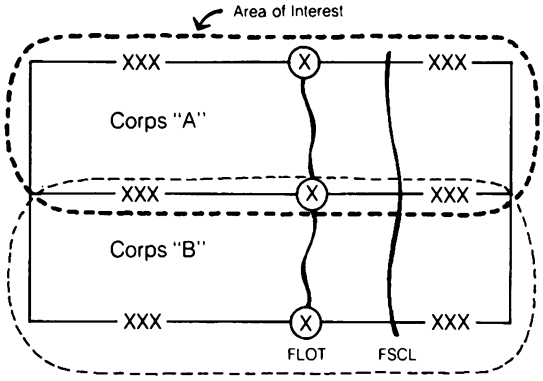
Figure 1. The Area of Influence



This area normally contains enemy forces whose actions can affect the corps' close-in battle; its boundaries are assigned by higher land headquarters. In a multicorps situation, these boundaries ensure that the operations of one corps will not interfere with those of an adjacent corps. Adjacent corps are required to coordinate on operations that cross or may cross into another corps' area of influence.

To acquire the necessary intelligence to support its attacks on the enemy, the corps monitors activities in an area called the "area of interest," which extends beyond the assigned area of influence. (See Figure 2.) Of special note is that while areas of influence do not overlap, areas of interest often do.

Figure 2. The Area of Interest



The actual geographical size of these areas is determined by various situational factors[6] and the reaction time that a particular unit needs to counter new battlefield developments. For a corps, the normal reaction time is 72 hours. Thus, the normal corps area of influence extends to 72 hours, while the area of interest ends at about 96 hours. These time guidelines are translated into distances based on enemy movement capability, terrain, etc., resulting in nominal corps boundaries of 150 kilometers beyond the forward line of own troops (FLOT) for the area of influence and 300 kilometers for the area of interest.

In executing AirLand Battle doctrine, corps commanders will integrate the actions of all organic and support combat elements to achieve their battlefield objectives. They will attempt to extend combat operations to the maximum depth of the opposing enemy formations. In so doing, they will be guided by several fundamentals of AirLand Battle doctrine. These fundamentals stress indirect approaches, speed and flexibility, offensive initiative, clearly defined objectives and operational concepts, a clearly designated main effort, rapid follow-up, and deep attack. The last of these fundamentals is perhaps the most controversial ele-

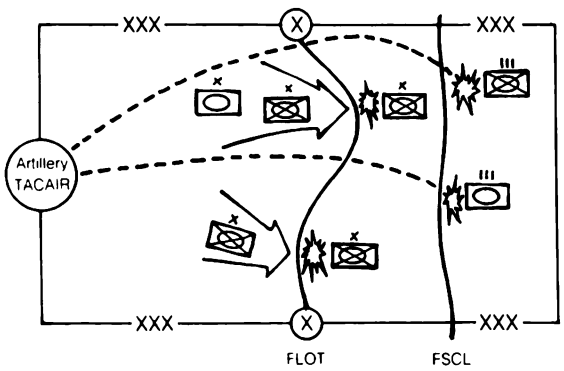
ment of the Army's new doctrine, for it is "deep attack" that many equate to AirLand Battle doctrine.

Deep Attack

The central importance of deep attack to AirLand Battle doctrine is clearly established in FM 100-5: "Deep attack is neither a sideshow nor an unimportant optional activity; it is an inseparable part of a unified plan of operation."[7] Deep attack refers not only to actual attacks against enemy formations at greater distances from the FLOT than that traditionally associated with organic fire support capabilities but to operations planned in depth of time, distance, and resources. To the ground commander, this means that he must carefully plan all of his actions (logistics, maneuver, fire support, etc.) as far in advance as possible. The corps commander's principal assets for deep attacks are artillery and TACAIR support.[8] He is expected to orchestrate the use of these and other available assets to delay, disrupt, divert, and, when possible, destroy selected enemy forces to accomplish specific goals in support of his operation.

Doctrinally, deep attacks are carried out for four basic reasons that give them slightly different forms.[9] In the first form, firepower is used to disrupt enemy forces and delay their entry into the main battle area. (See Figure 3.)

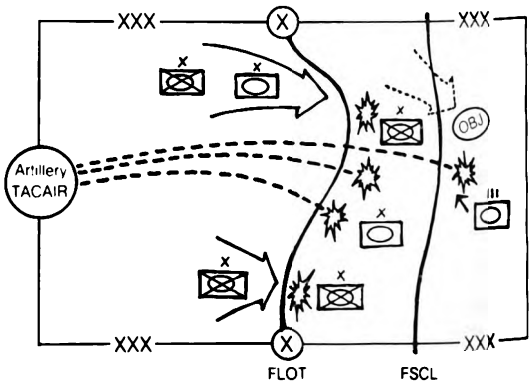
Figure 3. Deep Attack I



This firepower should permit the corps commander to isolate and defeat enemy forces in detail (i.e., to isolate small groups of enemy forces and attack them with locally superior friendly forces). An added benefit is the confusion, delay, and deterioration of command and control that should occur in the enemy formations because of the deep attacks. As shown in Figure 3, the corps commander conducts this form of deep attack with his own organic fire support in coordination with the TACAIR effort.

In the second form of deep attack, firepower is directed against enemy forces in depth not only to prevent them from reinforcing committed enemy units but also to prevent them from interfering with friendly offensive actions against the flank or the rear of close-in battle forces. (See Figure 4.)

Figure 4. Deep Attack II



The third form of deep attack is more complex and difficult to carry out. (See Figure 5.) It involves engaging enemy forces far to the rear, using both firepower and maneuver ground forces, while concurrently fighting the close-in battle. These operations prevent the enemy from massing his forces and destroy his combat momentum by subjecting his entire force to attacks by friendly firepower. This form of deep attack requires combined arms fighting in close coordination with supporting forces (i.e., the Air Force).

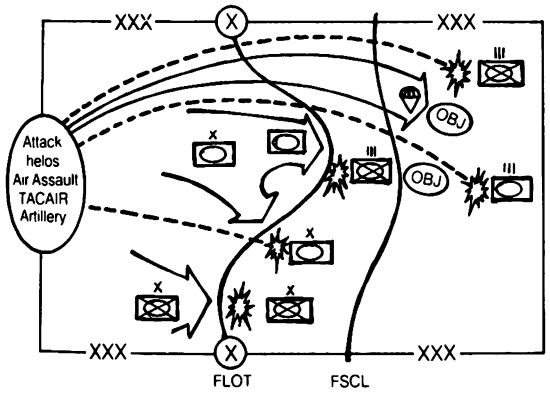
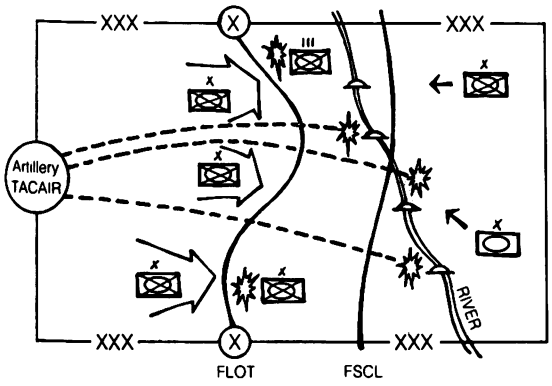


Figure 5. Deep Attack III

The fourth form of deep attack is carried out to destroy or neutralize particular enemy threats or advantages. (See Figure 6.) Examples of these might be enemy nuclear-capable weapons systems or enemy bridging units and

Figure 6. Deep Attack IV



equipment. Such deep attacks focus narrowly on the destruction of specific targets to achieve the stated objective.

Joint AirLand Battle?

AirLand Battle doctrine puts ground commanders, especially corps commanders, in the position of being extremely interested in the use and control of air interdiction to accomplish their deep attack objectives, for they have only limited organic assets with which to attack enemy forces far beyond the FLOT. Army doctrine requires that these commanders plan operations so as to anticipate and take advantage of opportunities that these deep attacks will create in the close-in battle. From their perspective, they can best do that by "calling the shots" themselves in the conduct of deep attacks.

However, to allow each corps commander the luxury of "calling his own shots" with air interdiction would fragment the *theater* air interdiction effort. The theater perspective would be replaced by several narrow, possibly competing, corps perspectives. The success of air interdiction missions in support of ground operations would rest heavily on personalities and the individual "bargaining" power of each corps commander. In at least some ways, such a situation constitutes a return to practices that proved unworkable during the North African campaign. The result? TACAIR's ability to mass forces to meet and defeat the enemy at the critical time and place would be eroded.

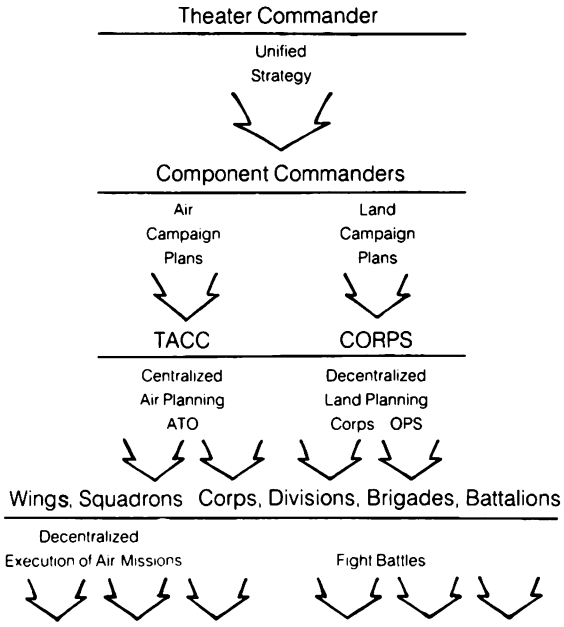
AirLand Battle doctrine has indeed broadened the perspective of ground commanders. However, FM 100-5's emphasis on corps operations and the Army's general reluctance to acknowledge more than logistical and support responsibilities for echelons above corps create an imbalance in perspective of the two major components of joint warfare. The air component commander concerns himself with air operations across the theater, while the Army's corps emphasis in ground operations tends to splinter the land perspective in the theater.

To remedy this situation, the Army needs to recognize an operational responsibility for Army echelons above corps (e.g., Field Army, Army Group) to function at the theater level, providing overall guidance and continuity to ground operations through planning and directing long-range land campaigns.[10] This approach would give the Army and the Air Force equivalent air and land command levels and permit planning campaigns from a common theater perspective. Such a common perspec-

tive would ensure that air and land efforts would complement one another.

How would such a conceptually balanced approach to theater warfare be applied in practice? To begin with, combat operations within a theater of operations would be viewed in terms of "stratified responsibilities." (See Figure 7.)

Figure 7. Stratified Responsibilities



Broadly speaking, the theater commander is responsible for developing a unified strategy involving achievable objectives, given available logistical support and political constraints applicable to his particular situation. Through the air apportionment process, the theater commander establishes priorities for the air effort. The air component commander then knows how he must distribute air assets among his different missions. In a process similar to air apportionment, the theater commander assigns available ground forces and logistical support for the land campaign. The land component commander then knows what resources he will have for his portion of the theater campaign.

At the next level, using the guidance of the theater commander's strategy and his allocation of resources, the air and land component commanders plan specific campaigns and establish priorities of effort for the forces under their command. Based on the air apportionment and the assignment of ground assets, the land component commander identifies specific objectives and sets priorities for available TACAIR, fire, and logistics support for each of his corps.

At the next level of responsibility, command and control elements monitor and direct day-to-day operations to achieve campaign objectives. Working within the priorities established by the land component commander, the corps commanders communicate directly with the BCE at the air component commander's TACC to coordinate their TACAIR support, ensuring that any newly developed targets are identified, prioritized, and integrated into the air support effort.

At the lowest level, tactical combat units execute specific missions and fight battles to accomplish their assigned objectives.

In effect, this model assigns to the theater and component commanders responsibility for establishing "priorities of effort," which include a list of approved targets/target types. The TACC and corps and division headquarters are responsible for developing and refining specific target lists. Combat elements of the wings, squadrons, corps, divisions, brigades, and battalions then attack selected targets.

TACAIR and Deep Attack

How might this "stratified responsibilities" model be applied in providing TACAIR support to AirLand Battle deep attacks? Again, the four forms of deep attack demand some variations.

In the first form of deep attack, TACAIR would assist in restricting the presentation rate of enemy forces primarily by air interdiction missions controlled and directed by the TACC.

(See Figure 3.) Targeting based on the broad objectives of the planned ground operation would be planned by the TACC, in consultation with the BCE. Although these objectives would stem initially from the land component commander's guidance, they would be refined subsequently by each corps. Corps objectives would then be transmitted to the BCE/TACC, and the corps could nominate targets for attack to the BCE/TACC when those targets appeared to be beyond the attack capability of organic systems and the corps' close air support sorties.

The execution of the second form of deep attack would be much like the first, with the added responsibility of flank/rear protection of friendly forces. (See Figure 4.) Again, this could be accomplished by broad objective guidance for air interdiction support (e.g., "protect 3rd Infantry Division's southern flank"), coupled with corps direction for specific close air support attacks when and where needed.

The fourth form of deep attack (Figure 6) is perhaps the least complicated. Operations to destroy specific enemy capabilities, by their very nature, could be orchestrated entirely at the component level, much as major air interdiction campaigns and joint suppression of enemy air defenses (J-SEAD) campaigns are structured now to be carried out.[11] They require only that the separate air and land attacks be coordinated in timing and purpose.

It is the third form of deep attack that requires the highest degree of air and land coordination for success. (See Figure 5.) The extent of such operations demands long lead-time coordination and planning by the staffs of the air and land forces involved. The broad spectrum of air and land operations to support such a battle plan may require rapid and effective shifts of emphasis in attacks both deep in the enemy's rear and close to the FLOT. Also, such jointly complementary operations may demand the expenditure of considerable additional air assets to establish *localized air superiority* over decisive areas of the battlefield and enable the corps to use close air support and attack helicopter assets in deep attack operations. Thus, the air component's major contribution to the deep attack may be in the air-to-air arena. At the same time, J-SEAD operations would be needed to support both the air interdiction effort and the close air support sorties flown in support of the maneuver ground forces.

FOR air and land forces to function together effectively in joint operations, it is imperative that the Air Force and Army have equivalent command levels and a common perception of objectives and the actions required to support those objectives.

If AirLand Battle doctrine is adhered to, each corps commander will have planned his operation well in advance. By providing land campaign plans to his BCE early in the planning stage, the land component commander can inform the air component commander of the future main ground effort, allowing him sufficient time to plan and apply air support for that effort *throughout the Army planning period,* as well as during the battle. Even if the main ground effort is known only in general terms, early knowledge of that effort allows TACAIR to disrupt, delay, divert, or destroy enemy forces as they move toward the objective area, while concurrently protecting or isolating friendly approach avenues to the battlefield area. By the time the operation begins, air interdiction missions will have already been flown to support the operation. Additional air-to-air sorties can be provided, if necessary, to allow Air Force CAS and Army attack helicopter assets to conduct operations free from the threat of enemy fighters. Thus, TACAIR will be supporting the ground operation from inception throughout execution.

During operations similar to the third form of deep attack, each corps undoubtedly will detect, identify, and select targets for attack that it feels are crucial to its battle plan. Providing the BCE with these targets will allow the

TACC, in consultation with the BCE, to adjust air interdiction (or battlefield air interdiction) missions effectively to support the main effort of a particular corps, a division, or other ground unit. Decisions on where to apply available air interdiction missions would be based on knowledge of each corps' operational plans, the current ground situation, and the priorities and objectives of the land component commander. At the same time, the corps will be employing their organic and other supporting assets against targets developing as the battle unfolds. Thus, the corps would have the flexibility to direct their more immediately available firepower assets (close air support, artillery, and attack helicopters) to decisive areas of the battlefield, if necessary under a "protective umbrella" provided by the Air Force.

Deep attack operations planned and conducted in such manner do not allow each individual corps commander to "bank" on a predetermined number of air interdiction sorties in support of his operation. However, this coordinated approach does ensure that the main ground effort in the theater will receive an appropriate weight of the theater air support effort. Likewise, should the need arise, the theater air support effort could be rapidly concentrated and redirected to support any individual corps operation, gaining the full advantages of the flexibility of air power. By sharing the responsibility for locating, identifying, and developing deep attack targets, corps can focus their intelligence collection efforts on those areas of the battlefield that are of immediate concern to their advancing, engaged, or forward deployed forces. Closer-in targets could be attacked with minimum delay by organic corps assets or close air support assets while air interdiction missions would attack deeper targets identified by the corps or the TACC/BCE, based on the corps' battlefield objectives. Thus, TACAIR would have the flexibility to concentrate forces effectively to meet decisive developments in the enemy disposition across the entire battle front.

IN SPITE OF the acknowledged need for close coordination between air and land forces on the modern battlefield, there is often considerable discord as each service tends to adhere to its own unique doctrinal position. But success in future wars demands that the U.S. Air Force and Army achieve procedural harmony on the battlefield. The "stratified responsibilities" model outlined here is one possible way to reconcile our differences to ensure battlefield success.

Air-Land Forces Application Agency
Langley Air Force Base, Virginia

Notes

1. Department of the Army, Department of the Air Force, *Memorandum of Understanding on Joint USA-USAF Efforts for Enhancement of Joint Employment of the AirLand Battle Doctrine*, 21 April 1983.

2. Arthur W. Tedder, *With Prejudice: The War Memoirs of Marshal of the Royal Air Force, Lord Tedder, G.C.B.* (Boston: Little, Brown and Co., 1966). The section "Middle East, November 1940-May 1943" contains an excellent account of the air power struggle in North Africa.

3. General William W. Momyer, USAF (Ret), *Air Power in Three Wars: WWII, Korea, Vietnam* (Washington: U.S. Government Printing Office, 1978), p. 39.

4. Department of the Air Force, Air Force Manual 1-1, *Functions and Basic Doctrine of the United States Air Force* (Washington: U.S. Government Printing Office, 1979). Chapter 2, "Functions and Missions of the United States Air Force," lists the nine basic operational missions as: strategic aerospace offense, strategic aerospace defense, space operations, airlift, close air support, air interdiction, counterair operations, surveillance and reconnaissance, and special operations.

5. Department of the Army, Field Manual 100-5, *Operations* (Washington: Headquarters Department of the Army, 1982), Preface, p. i. Subsequent explanations of AirLand Battle doctrine and deep attack were developed from chapters 1, 2, and 7.

6. Ibid., p. 2-2. These factors are described as mission, enemy, terrain, troops, and time available (METT-T).

7. Ibid., p. 7-2.

8. Ibid., p. 7-13.

9. Ibid., pp. 7-16, 7-17.

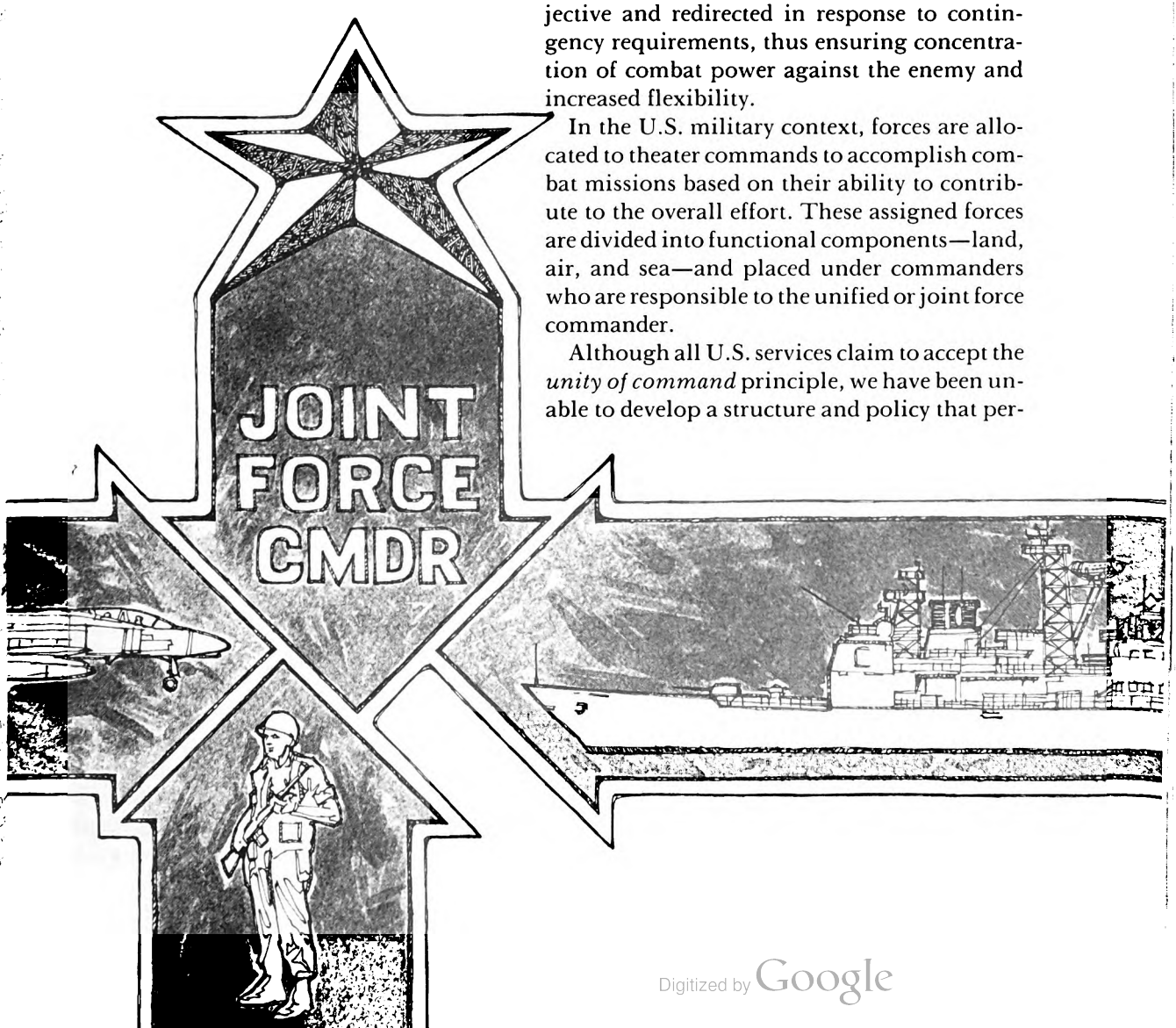
10. In all fairness, the U.S. Army Training and Doctrine Command (TRADOC) and Army War College are presently working on a "Theater Operations Concept" to fill the doctrinal void for Army echelons above corps.

11. USREDCOM Pamphlet 525-3/Training and Doctrine Command Training Text 100-44-1/Tactical Air Command Pamphlet 50-23, *Joint Suppression of Enemy Air Defenses (J-SEAD) Operations*, 11 June 1983, contains details of the concept and procedures for J-SEAD operations.

THE QUEST FOR UNITY OF COMMAND

COLONEL THOMAS A. CARDWELL III

TO ACCOMPLISH theater military objectives in support of national policy requires a coherent approach to war fighting. Such an approach involves a detailed knowledge of warfare that includes military history, service doctrine, tactics, and the capabilities of one's own forces. History suggests that an important aspect of this approach is a unified command structure in which a single commander controls all forces assigned to a theater for operations. So widely accepted is this concept of *unity of command* that it is often viewed as a *basic principle of war*. A unified command structure permits combat power to be effectively directed toward an objective and redirected in response to contingency requirements, thus ensuring concentration of combat power against the enemy and increased flexibility.



In the U.S. military context, forces are allocated to theater commands to accomplish combat missions based on their ability to contribute to the overall effort. These assigned forces are divided into functional components—land, air, and sea—and placed under commanders who are responsible to the unified or joint force commander.

Although all U.S. services claim to accept the *unity of command* principle, we have been unable to develop a structure and policy that per-

mit true unity of command. Since 1940, the concept underlying U.S. command structures has gradually evolved from a doctrine of cooperation to a doctrine of unified operations, and now, back to mutual cooperation. But mutual cooperation is not the doctrine in Joint Chiefs of Staff Publication (JCS Pub) 2, which outlines doctrine and principles formally accepted by all the military services.

In reviewing the evolution of the U.S. military's command structure and doctrine for joint and combined operations since 1940, I would argue that we have failed to achieve true *unity of command.* Furthermore, when one examines current service philosophies, it appears that these philosophies thwart efforts to achieve unity of command as required by JCS Pub 2.

Historical Review

World War II was a turning point in the development by the United States of a unified organization for theater war, as it was the first time the United States used the unified approach to war fighting.[1] When the war started, the United States did not possess a unified command structure. In the event of war, the services were expected to cooperate voluntarily; this was known as the doctrine of mutual cooperation.[2] However, the United States had the option to invoke the doctrine of unity of command if cooperation proved inadequate.[3]

By early 1942, it was apparent to many military leaders that the doctrine of mutual cooperation would not work under the pressure of war. Thus, in the spring of 1942, overall command of the Pacific Ocean area was vested in the Commander in Chief of the Pacific Fleet. At nearly the same time, General Douglas MacArthur was placed in charge of a second unified command, with responsibility for the Southwest Pacific area. Some months later, in the European theater, the British Chiefs of Staff recommended a command structure along the lines of the U.S. unity of command doctrine. The Combined Chiefs soon established a unified command arrangement for the 1942 Allied invasion of North Africa and approved a unified command structure for the European theater.[4]

The unified command structure that was developed in Europe during World War II placed the combined allied armies, navies, and air forces under a single commander in each of two European theaters. Within the combined armies structure, separate commanders were named for land and air forces. This structure became the foundation for three important developments in the U.S. command structure for theater warfare: it confirmed the unity of command doctrine, laid the groundwork for a separate air force, and established a model for the unified command structure.

In 1947, the Joint Chiefs of Staff (JCS) proposed a reorganization of the U.S. military. The National Security Act of 1947 embodied some of the JCS recommendations and provided for the unified direction of the armed forces and for their integration into an efficient team of land, sea, and air forces. Additionally, this act created three military departments (Department of the Army, Department of the Navy, and Department of the Air Force), established the Air Force as a separate service, and formally recognized the unified command structure. In 1949, the National Security Act of 1947 was amended to give the Secretary of Defense direct authority and control over the services.[5]

Associated with these developments in the postwar era were discussions of military command structures, as the newly created military departments attempted to develop a workable command arrangement for theater war. Each service had its own view of how to make the command organization function. Against this backdrop, the United States entered the Korean conflict in 1950.

Early in the war, General Douglas MacArthur, Commander in Chief, United Nations Command, did not organize his forces along the lines of the approved unified command structure.[6] Basically, the United Nations Com-

mand did not have a naval, land, or air component.[7] Soon General MacArthur recognized that the command arrangement he had developed was not operating as he desired; he then established a land component command and directed the other two components, Far East Air Forces and Naval Forces Far East, to provide the air and naval support that he, as theater commander, required.[8]

MacArthur's Korean structure set the stage for the first full-scale experiment with a true unified command structure having three components. There were problems, for the Navy would not put the naval air assets involved in supporting the land war under the control of a single air component commander, preferring instead to "coordinate" its air operations with those of the Air Force. However, on the whole, the unified command system proved an effective means to control theater-assigned assets.[9] The Korean War provided the conceptual foundation for the control of operational theater forces in Vietnam.

Between the Korean and Vietnam wars, there was relatively little discussion of command and control of theater-assigned assets. One major development during this time, however, was the Defense Reorganization Act of 1958, which separated the forces of the unified and specified commands from the military departments and stipulated that operational control over all combat-ready forces would be exercised by unified and specified commanders. When theater operations were required, the services were to provide forces to a theater organization that would be commanded by a single commander.

The Vietnam experience provided another opportunity to achieve a unified command structure. During the early stages of our Vietnam involvement, the structure used to control activities in Vietnam was the Military Advisory Group (MAG), which was established on 17 September 1950. In 1955, the MAG was redesignated the Military Assistance Advisory Group, Vietnam, which supervised U.S. military activity that was limited to organizing and training Vietnamese units. This organization lasted until the early 1960s.

In 1962, the Military Assistance Command, Vietnam, known as MACV, was formed. MACV was an operational headquarters and had the staff elements needed to direct military operations. Soon the Army and Air Force began to argue that MACV should be a theater unified command with land, sea, and air components. The Navy opposed such an arrangement and argued that the Pacific Command (PACOM) should provide the unified command structure for Vietnam, with the Commander in Chief, Pacific, controlling all forces assigned to Vietnam.[10]

The result of all this was an incredibly complex command structure in Vietnam. At the top of the structure was the Pacific Command, the unified command with three components: Pacific Air Forces; Pacific Fleet; and U.S. Army Pacific. The U.S. Military Assistance Command, Vietnam was a subunified command, subordinate to Pacific Command: the MACV commander was responsible for the U.S. war effort in Vietnam, yet PACOM controlled most of the air campaign against North Vietnam. Further, the MACV air component commander did not exercise operational control over B-52s taking part in the war, and during most of the conflict he had no authority over Marine air units based in South Vietnam. The commander, MACV, had no continuing operational control over 7th Fleet units operating off the coast of North and South Vietnam, and he had no authority over South Vietnamese forces.[11]

This command structure soon proved unworkable, and some senior military leaders began to argue for a single, simplified command structure to handle the expanding war. With the war spreading into Laos, new questions about command relations arose. In an effort to resolve these matters, the Army recommended that all forces in Vietnam and Thailand be placed under the commander of MACV. The Navy disagreed with this idea.[12] After four years of discussion, the Joint Chiefs of Staff decided not to change the command structure but

simply to realign some of the forces.

The issue of a single manager for air and questions about the command structure were raised in 1967. In 1968, the Deputy Secretary of Defense directed that Marine air assets based in South Vietnam would come under the control of the Air Deputy, MACV.[13]

In spite of considerable efforts to resolve command issues, numerous command problems remained until the Vietnam War officially ended in 1973. Since then, the services have confronted the issue of unified command in other situations, notably in the creation of the Rapid Deployment Joint Task Force and the debate over the control of tactical air assets in theaters of operations. But we still do not have a command structure reflecting the philosophy in JCS Pub 2. A major reason for this continuing failure is conflicting service philosophies.

Theater Command Structure: JCS Pub 2 versus Service Philosophies

JCS publications provide guidance for the U.S. conduct of theater war. The basic principle of these publications is unity of effort, the idea that effective military operations require the combined activities of land, sea, and air forces. This combination of activities is accomplished through unity of command, which is provided through a unified command structure. Thus, when two or more services are required to accomplish a specific military objective, they are employed as a team under the direction of a single commander. The unified commander has operational command of these forces and exercises this command through his component commanders.[14]

While all of the services formally acknowledge the principle of unity of effort, each service applies the principle in accordance with its own service perspective. A basic difference that surfaces centers on how one defines the components that are integrated into the unified command. The Army and Air Force believe that the functional components (air, land, and sea) should be the basic elements of a theater organization—land forces would come under the land component, air forces under the air component, and naval forces under the naval component. However, the Navy and Marine Corps believe that service components (USA, USN, USAF, USMC) should be the basic building blocks of the theater structure, which means that control of air assets would be divided among the Marines, the Navy, and the Air Force.

Another important area of disagreement concerns disposition of Marine Corps forces. The Army and the Air Force believe that the Marine force should come under the naval component when involved in amphibious operations or other operations in support of naval campaigns, but they assert that Marine combat forces should be assigned to the operational control of the land and air component commanders during sustained operations ashore. The Marine Corps agrees that when operating in amphibious or naval operations its forces should come under the naval unified or naval component commander; but during sustained operations ashore, the Marine Corps believes that its forces should come directly under the theater or joint task force commander. Thus, the Marine Corps would operate as a *uniservice* command.[15]

In regard to control of naval air forces, the Navy has similar views to those of the Marines. According to the Navy, all naval assets, including naval aviation, should come under the naval component commander. Even when naval aviation assets are employed over the land, they should remain under the operational control of the naval component commander and operate in an in-support-of role.

THIS article began with the observation that unity of command is virtually a

principle of war. In reviewing forty years of U.S. military history, however, it is apparent that U.S. Armed Forces have failed to achieve full unity of command. While all four services in today's DOD establishment formally agree with the principles of war fighting and theater organization as specified in JCS publications, they apply the principles in different manners.

True unity of command will come only when all services accept a theater perspective of war fighting. Under such a perspective, all land combat forces are employed under a single land component commander, all naval forces are employed under a single naval commander, and all air combat forces are employed under a single air component commander—with each of these commanders responsive to the overall strategy mapped out by the theater commander. The doctrine guiding the operation of this theater command structure must be that of centralized control and decentralized execution. Centralized control permits combat power to be directed toward an objective and redirected in response to contingency requirements. On the other hand, decentralized execution gives to lower-command echelons the flexibility they need to take advantage of transient opportunities offered by a rapidly changing combat environment.

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I wish to thank Major Jeffrey W. Coyle, USAF, for providing editorial assistance in the preparation of this article.

Notes

1. *Command and Employment of Military Forces*, Vol. II, Part C, Air War College, Extension Program, Maxwell AFB, Alabama, 1952, p. 5. See also John L. Frisbee, "New Life for JCS at Forty," *Air Force*, February 1982, p. 86. Frisbee states that from the late 1700s until the early 1940s the direction of U.S. forces in wartime has been a loose process called mutual cooperation. From 1903 until 1942 the Joint Army-Navy Board operated under the doctrine of mutual cooperation. Thus, in the early forties, we in effect had two separate command structures—one for naval forces and one for land forces. The U.S. Chiefs of Staff did not approve the doctrine of command until April 1942.

2. Frisbee, p. 86.

3. *Command and Employment of Military Forces*, p. 5. The doctrine of unity of command could be placed in effect by agreement between the Secretaries of War and Navy, by the commanders of the service forces, or by the President.

4. Ibid.

5. John L. Frisbee, "Command Lines for Combat Forces," *Defense 81*, August 1981, p. 10.

6. It is interesting to note that as early as 1946, the Joint Chiefs of Staff had issued a directive (JCS 1259 27, 11 December 1946) to theater commanders which required unified commanders to establish a joint staff to provide the specialized knowledge and advice for the employment of land, naval, and air force forces. See Robert F. Futrell, *The United States Air Force in Korea, 1950-1953* (New York: Duel, Sloan and Pearce, 1961), p. 44.

7. Futrell, p. 44.

8. Ibid.

9. Ibid., p. 55. General Otto P. Weyland reached this same conclusion when, on 10 October 1950, he stated: "Whenever combination of Air Force, Army, and Navy are in a joint command it is essential that the Commander-in-Chief have a joint staff with proportionate representation of the services involved."

10. General William W. Momyer, USAF (Ret), *Air Power in Three Wars* (Washington: Government Printing Office, 1978), pp. 66-68.

11. Lieutenant Colonel John J. Land, Jr., *Command and Control and Communications Structure in Southeast Asia Area* (Maxwell AFB, Alabama: Airpower Research Institute, 1981).

12. Ibid., pp. 68-78. For a discussion on the Air Force point of view on unified command and the air component, see Colonel Thomas A. Cardwell III, "Managing Theater Air Assets," *Military Review*, May 1982, pp. 40-45. This article traces the Air Force view on single manager for air. See also General Momyer's book *Air Power in Three Wars*, pp. 20-68.

13. "The Single Manager Problem: The Creation of an Operational Control System for US Tactical Air in I Corps of South Vietnam during 1968," (Washington: JCS Historical Division, July 1976), pp. 1-25. Previously classified. Declassified by SM-197-81, 20 March 1981. See also General Momyer, *Air Power in Three Wars*, p. 82; and General William C. Westmoreland, *A Soldier Reports* (New York: Doubleday, 1967), pp. 335-40.

14. JCS Pub 2, *Unified Action Armed Forces (UNAAF)*, October 1974, pp. 9, 44, 46.

15. JCS Publication 1, *Dictionary of Military and Associated Terms*, September 1974, defines *uniservice* command as "a command comprised of forces of a single service."

IRA C. EAKER
SECOND-PRIZE WINNER

LEADERSHIP TO MATCH OUR TECHNOLOGY

LIEUTENANT COLONEL HARRY R. BOROWSKI

IN THE United States, military doctrine and planning are shaped by three forces: economic resources, political considerations, and, particularly since World War II, technology—both existing and potential. This last element has come to dominate the process of doctrinal development in this country and has overshadowed other aspects that are critical to overall military capability. In fact, America's affinity for and increasing reliance on technology as a mainstay for its military doctrine have led our nation into a dangerous approach to force employment. Command and control of combat forces today, specifically that of our NATO armies poised to fight in Western Europe, falls woefully behind our capability to bring mass destruction to the battlefield.

Command and control of Western armies today is heavily centralized at high levels and overwhelmingly dependent on electronic communication systems of varying sophistication. While these systems represent the best that our state-of-the-art technology and current budgets will permit, they are not hardened or capable of withstanding damage from attack or jamming without suffering significant losses in reliability. In short, our command and control is vulnerable to failure in a wartime environment. While we enjoy some system redundancy, our fallback solutions must look to the leadership ability of local commanders and, in some cases, other individuals to carry out critical actions at appropriate times. This means, of course, more delegation of authority to lower levels—a reversal of a 125-year trend. History sheds much light on how centralized command and control evolved by way of advancing technology.

AMERICANS have always prided themselves on their problem-solving ability. As colonials in a wilderness, they survived on common sense, innovation, and a reliance on individualism. Encountering chronic labor shortages, they found solutions in mechanical de-

vices and other technological advances; it is not surprising that the reaper and sewing machines were invented in the United States. The Franklins and the Edisons found a proper environment in our free-market society to develop their skills, register their patents, and earn profits. In the nineteenth century, Americans developed the habit of using machines wherever possible, instead of muscle or even capital; and this tendency spilled over into military operations. Rifles, weapons, railroads, and the telegraph represented significant technological advances in the world's first modern conflict, the American Civil War. Specifically, the telegraph soon found its way into the command and control of armies and the way Americans waged war.

Jefferson Davis, a West Point graduate and seasoned commander from the Mexican War, always held his own generalship in the highest regard. During the Civil War, as President of the Confederacy, he decided to control his military commanders through departmentalization, aided by the new communications marvel, the telegraph. At one point in 1864, he directed General Robert E. Lee, operating north of the James River in Virginia, to route his messages to General Pierre G. T. Beauregard, situated just a few miles away south of the river, via the War Office in Richmond. The telegraph made this arrangement possible—unfortunately for the Confederacy, as it turned out.

By World War I, improved communications and field telephones permitted even greater dispersal of field units and their headquarters. Because of the large numbers of soldiers fighting and the extended range of artillery, headquarters sat far behind the lines. As a result, commanders and staff officers often lacked personal knowledge of conditions at the front. After the Battle of the Somme in 1916, for example, the British Expeditionary Force's Chief of Staff finally toured the front and exclaimed: "Good God! Did we really send men to fight in that?"[1] One can only speculate what difference this centralized control behind the lines may have made on the course of the war but, at the very least, it created a gap between the fighters and their commanders. Meanwhile, on the seas, the Allies countered the U-boat threat by using the convoy system. In this new approach, Admiral William S. Sims commanded vessels in three distant geographical locations, not from the quarterdeck of a warship, but from a desk in London.

Communication systems improved and became more widespread by World War II, and with the improvements came more evidence of centralized command and control. Twentieth Air Force, operating from the Marianas, came directly under the control of the Joint Chiefs of Staff in Washington, much to the chagrin of the theater commander, Admiral Chester Nimitz. Later, during the Korean War, the combination of command capabilities and military stalemate resulted in warfare in which battalion commanders often directed platoon movements. The Vietnam conflict was not such a stalemate, but helicopters prompted an even further increase in centralized control. Aloof from the ground conditions, higher commanders attempted to direct small units, to the frustration of their platoon and company leaders. The advent of satellites and sophisticated telecommunications accelerated the trend even further. President Lyndon B. Johnson and his staff controlled combat execution to an unprecedented degree during the war. Stories of targeting decisions made on Pennsylvania Avenue are well known to military officers; the resulting damage or value of the process remains open to speculation.

More recently, we know about the elaborate communications link between President Jimmy Carter in Washington and Colonel Charles Beckwith in southern Iran during the aborted hostage rescue mission in 1980. Beckwith decided to cancel the mission when preagreed conditions did not materialize.

Nonetheless, communication with the commander in chief was deemed necessary before the ill-fated return began.

Without belaboring the point, it is clear that technology over the past century and a half has permitted rapid communications between wartime commanders over increasingly greater distances. The result has been a growing reliance on technology for command and control, a promise of greater flexibility for using forces, and more centralized direction farther from the combat zone.

The effect of this trend, especially in the face of potential battlefield conditions in Europe, is certainly open to question. Given the vulnerability of NATO command, control, communications, and intelligence (C^3I) systems today, Western military leaders are gravely concerned. Not unexpectedly, their planners are looking toward technology for solutions. For example, a projected system of communication satellites designed solely for worldwide military use, called MILSTAR (military strategic tactical and relay system), will provide the minimum essential communications for strategic and tactical forces in combat. Great care has gone into the engineering of this new system to ensure its survivability, durability, and flexibility. Designers stress that MILSTAR will be virtually jam-proof because of its narrow operating band system and will be safe from hunter-killer satellites. On paper and in theory, MILSTAR should greatly enhance our total C^3I capability.

Despite our current optimism concerning such systems, it is wise to remember that other engineers in the past spoke glowingly about other systems, only to see unanticipated events upset their "apple carts." Repeatedly in the history of warfare, new inventions have appeared to give their holder an advantage but soon another system or tactic emerged to negate that edge. Tanks, for example, took much away from the machine gun; and when the British coupled radar with fighters, they disproved the early ideas of air pioneers about defense in the skies. Eventually, some effective defense system will emerge against MILSTAR, and so the battle in weapons technology will continue.

Meanwhile, we may be overlooking other elements that might be useful in our struggles to build the desired C^3I system in Western Europe. Specifically, military leaders may not be paying enough attention to the intangible human elements that translate into effective leadership. The fruits of technology can never ripen without them.

Here again, history can be instructive. Frederick the Great and generals of the Napoleonic era, for instance, placed great emphasis on coup d'oeil—the ability of a commander to observe the battle from above the fray and, with the sweep of his eye, assay the course of the battle and determine the action necessary to bring victory. Timing was central to success. After his classic victory at Austerlitz, Napoleon recalled that if he had prematurely committed or delayed the advance of his center and reserves, he would have suffered defeat.

The Prussians, unwilling to pin their hopes on such individual genius, took a new approach to battlefield command. Their officers, trained in the most advanced military schools of the time, clearly understood Prussian military doctrine and goals in a given conflict. Commanders at all levels enjoyed the confidence of their superiors to execute their part of a war plan in consonance with the overall objective. Von Moltke the Elder understood the "fog of war" and knew that the best answer to it lay with trained commanders capable of independent action directed toward a common objective. Prussia's impressive defeat of France in 1870-71 stemmed, in part, from the flexibility enjoyed by Prussian field commanders. When German generals executed the Schlieffen Plan forty-four years later, they still held freedom to command, but evidence suggests that centralized control from the general staff was developing.

One could argue, therefore, that a negative correlation exists between advances in communications technology and the level of reliance on independent command judgments. Over the years, some would contend, the U.S. military, wittingly or unwittingly, has moved steadily in this direction. If this tendency continues, at some point we may be placing our military in unnecessarily difficult and potentially disastrous positions. Are we there now?

As noted earlier, technology promises to advance the flexibility of force employment. But with sophisticated command and control, the converse more often proves true. If a superior commander enjoys instant access to his subordinates, there is great temptation for him to assume responsibilities more appropriately belonging to a lower level of leadership. Consequently, the on-scene commander may be unable to take advantage of opportunities that suddenly arise. The result is *rigidity* in command, control, and execution of forces, not *flexibility!*

SO WHAT needs to be done? Our military must pay more attention to developing independent decision-making and command-judgment ability in our officer corps in the likely event our highly developed technical systems sputter or fail us. Unfortunately, since World War II, we seem to be less concerned about whether our commanders possess this ability. Within the Air Force, Strategic Air Command probably started this trend. When General Curtis E. LeMay inherited the job of building SAC and fulfilling the awesome responsibilities given to him by the nation's leaders, he found it necessary to develop standard operating procedures for every task and for every officer serving in the command. In fairness to General LeMay, there was no other way of building this command efficiently for a variety of reasons. But the system carried within it some seeds of trouble: it inhibited the type of leadership development we need now. The SAC command post, for example, soon became the hub of control, approving aircraft takeoffs and landings and giving wide-ranging advice to aircrews facing problems in the air. The practice spread to other commands. Military Airlift Command, in particular, adopted and patterned many centralized control procedures after SAC. In the late 1970s, however, the commander of MAC undertook a deliberate effort to reverse this trend by directing that aircraft commanders be given back their exercise of command to the greatest possible extent. Whatever the results of this program, it acknowledged that we had not been doing all we could to develop command judgment among our officers.

If history is any indicator, the opening battles of the next conflict will not match expected scenarios and may well be won or lost by the judgments of a few key men—judgments made when established plans and procedures offer no answers. At the point where technology fails and unexpected events develop, our commanders will be stripped to their basic leadership skills—skills they began to develop as cadets and junior officers, skills they need to exercise and broaden continually as they become commanders. If our system does not permit this growth, it carries the seeds of eventual failure.

The 1970s gave us two interesting examples of the type of leadership we will need at the highest and lowest levels. During the *Mayaguez* rescue mission, poor intelligence and the initial absence of forward air controllers led to complete chaos in the air, exacerbated by everyone talking on the radio. A lieutenant, Donald Backlund, recognized that no one was taking charge. By force of his personality, he gained control of the radio and kept some semblance of order among the airborne helicopters until the forward air controllers arrived. His initiative and judgment prevented the mission from deteriorating further and gave it the chance for success. Three Air Force Crosses were awarded to fliers for actions

taken that day. Certainly, they were brave officers; but the margin for their success came from their ability to execute the necessary actions independently without direction from "above."

Similarly, when the Yom Kippur War erupted, existing plans and procedures failed to provide the Military Airlift Command with the execution authority and direction necessary for airlift across the Mediterranean to Israel. The commanders of MAC and the Sixth Fleet made telephone contact, worked out a deployment plan, and carried out the mission consistent with national policy. They knew what U.S. objectives were, understood the circumstances, and possessed the decisiveness to take the necessary action.

Whether at the company grade level or at star rank, decisive command judgment under fire is invaluable. In the area of command and control on a European battlefield, it may be equal to a MILSTAR or a well-organized command post back in Belgium. In the nineteenth century, the fog of war rolled gently onto European battlefields; in the 1980s, it would dash in with hurricane force. Will our current command and control system, heavily dependent on technology and greatly centralized, serve us well in an environment that we can only approximate, even in our most realistic exercises? How well will our officers function if systems fail or become disrupted? Would it be valuable for our commanders to have more training in independent battlefield action and to carry commensurate authority to pursue known objectives? Are there not clear gains to be realized in developing coup d'oeil within a twentieth-century framework or borrowing some training philosophies from the Prussians to complement a system which, by some professional judgments, is vulnerable to complete breakdown?

IN THE last analysis, command and control ultimately rests with human decision makers, advanced technology notwithstanding. Failure to develop that human skill and to equip our officers with the ability to execute independently may hinder our forces decisively in wars to come. In seeking solutions to C³I problems, military planners would do well to recognize that developed human capabilities are as important as technology. Command leadership needs to be a full-time player in the realm of C³I concepts.

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Note

1. B. H. Liddell Hart, *The Real War 1914-1918* (Boston: Little, Brown and Company, 1930), p. 343.

EQUALITY IN THE COCKPIT

a brief history of women in aviation

LIEUTENANT COLONEL NANCY B. SAMUELSON

Someday, I dare say, women can be flyers and yet not be regarded as curiosities?[1]

Amelia Earhart

ARE women who fly aircraft in the 1980s still considered curiosities? Recent conversations and correspondence with Air Force female pilots and navigators indicate that many individuals in both the military and

"Fifinella," a Walt-Disney-designed gremlin (shown above), was the mascot of the Women's Airforce Service Pilots (WASP) during World War II. . . . Women have been active in aviation throughout its history.

civilian segments of society still consider them so. The *reentry* of women into military flight training programs in the 1970s provoked an excessive amount of publication, especially when one realizes how few women actually entered these programs and how limited their duties were to be. Even the *Air Force Times* was guilty of some sensationalism in its article titled, "Dangers to Female Pilots to be Checked on Planes," yet the only problem the article identified was that flight suits and boots (designed for men, of course) were too large for women![2] Surely not a very serious problem nor a difficult one to solve.

After the WASP (Women's Airforce Service Pilots) was disbanded in 1944, military aviation was virtually closed to women. The civilian sector of society did not encourage women to enter flying occupations in the post-World War II era either. A number of the WASP and other female pilots attempted to enter commercial aviation, but they were discouraged in a variety of ways. Not until 1973 did a female pilot fly as a regular crew member of a scheduled American airline.[3]

Since women have been involved in aviation from the days of the early balloon flights and have piloted everything from balloons to space vehicles, why are women who fly still regarded as exceptions and curiosities? One of the answers to that question is obvious. The "now society" of our modern era, concerned with "real-time" events, "state-of-the-art" technologies, and "future shock" scenarios, spends little time studying and contemplating past history. Even in such aviation-oriented communities as the Air Force, there is little knowledge of women's achievements in aviation. (The pioneering efforts of male pilots are not common knowledge either; however, documentation on male contributions is much easier to find than that covering female achievements.)

Another factor that has limited recognition of women's aviation contributions is a societal attitude that women in many other areas have encountered also. Simply put, women are discouraged in a variety of ways from entering nontraditional or hazardous jobs or careers. Certain views of the general population, statements and decisions of specific influential individuals, and many policies of institutions and government agencies have served to limit women's participation in aviation and other "manly" careers.

Yet the history of women in aviation is worth examining, and women's achievements in military aviation merit recognition. Similarly, in this era in which our nation needs the maximal benefits of its human potential, it may be helpful to explore the role that specific individuals and institutions have had in discouraging women from entering or fully participating in aviation careers.

The Beginning through World War I

According to early records, women's involvement in aviation seems to have begun less than seven months after the first manned balloon flight: Madame Thible of Lyons, France, went for a balloon ride on 4 June 1784. During that same year, the famous balloonist Jean Pierre Blanchard began his flights; and twenty years later, in 1804, his young second wife (Marie-Madeleine-Sophie Armant Blanchard) made her first flight. Madame Blanchard later was appointed as Chief of Napoleon's Air Service, replacing another great balloonist, M. Garnerin. Her primary duties seem to have been exhibition flying for the entertainment of crowds. Her career as the best-known woman aeronaut ended in July 1819, however, when her balloon caught fire from fireworks attached to it. She crashed near Tivoli Gardens and died of a broken neck.[4]

In 1903, about five months before the Wright Brothers made their first flight at Kitty Hawk, Aida de Acosta made a solo flight in a dirigible powered with a three-horsepower engine. Brazilian air pioneer Alberto Santos-Dumont built this craft. Miss De Acosta had expressed a great deal of curiosity about the machine, and Santos-

Dumont had answered her questions and shown her how to operate it. She was photographed by a newspaper reporter while flying the machine over the suburbs of Paris. Her family was horrified at the publicity, and her mother extracted a promise from Santos-Dumont that he would never mention the episode in any of his writings.[5]

By 1910, aviation was already flourishing in both Europe and North America. In Europe, several women were gaining recognition. On 8 March 1910, Baroness Raymonde de la Roche passed a qualifying test and was issued a license by the Aero Club of France. She is believed to be the first woman in the world to receive a pilot's license. A few months later, she was seriously injured in a crash, but, fully recovered, she was racing again within two years. In 1913, the baroness won the Coupe Femina, an award established to honor women fliers. She was killed in 1919 when flying an experimental plane that crashed.

Meanwhile, in 1909, Hélène Dutrieu of Belgium began flying, and in May 1911, she entered a race in Florence, Italy. She was the only woman in the group of fifteen fliers competing, and she outflew her rivals to win the coveted Italian King's Cup. Later, she set a new world nonstop flight record for women, and in 1913, she was awarded France's Legion of Honor.[6]

In the United States, women were very much part of the action in aviation. Blanche Scott and Bessica Raiche were the first two American women to solo. Scott soloed on 2 September 1910, but there was considerable doubt about whether she intended to do so. A gust of wind may have caused her to become unexpectedly airborne, or she may have talked a mechanic into speeding up the governor in order to solo before her instructor, Glen Curtiss, thought she was ready.[7] But there was no doubt about intent when Bessica Raiche flew solo on 16 September 1910. Subsequently, a month later, Raiche was honored by the Aeronautical Society of America (American Division of the Fédération Aeronautique International). Her award was a diamond-studded medal bearing the inscription, "First Woman Aviator in America." She and her husband designed and built aircraft and worked with the Wrights for a time. Later, she gave up flying and became a physician.[8]

Women who were not pilots supported aviation in other ways. Various stories about Katherine Wright's support of her brothers were reported. Some claimed that she contributed part of her salary as a school teacher to her brothers' aircraft business; others said that she actually assisted in various stages of construction of aircraft. Most of these accounts have been dismissed today as "fables," yet we do know that Miss Wright traveled with her brothers, was feted at parades and other celebrations, and flew as a passenger with her brothers on occasion. Another aviation supporter was Mrs. Alexander Graham Bell, who financed and named the Aerial Experiment Association. Other members of the group included Mr. Bell, Glen Curtiss, and Lieutenant Thomas E. Selfridge. Their objective was to advance the science of aviation.[9]

With the advent of World War I, a number of well-known female pilots volunteered for military service, but only a few were actually permitted to serve in the military. Hélène Dutrieu volunteered for war service with France's Air Patrol in 1914 and was accepted. She made flights from Paris to check on the location and movement of German troops.[10]

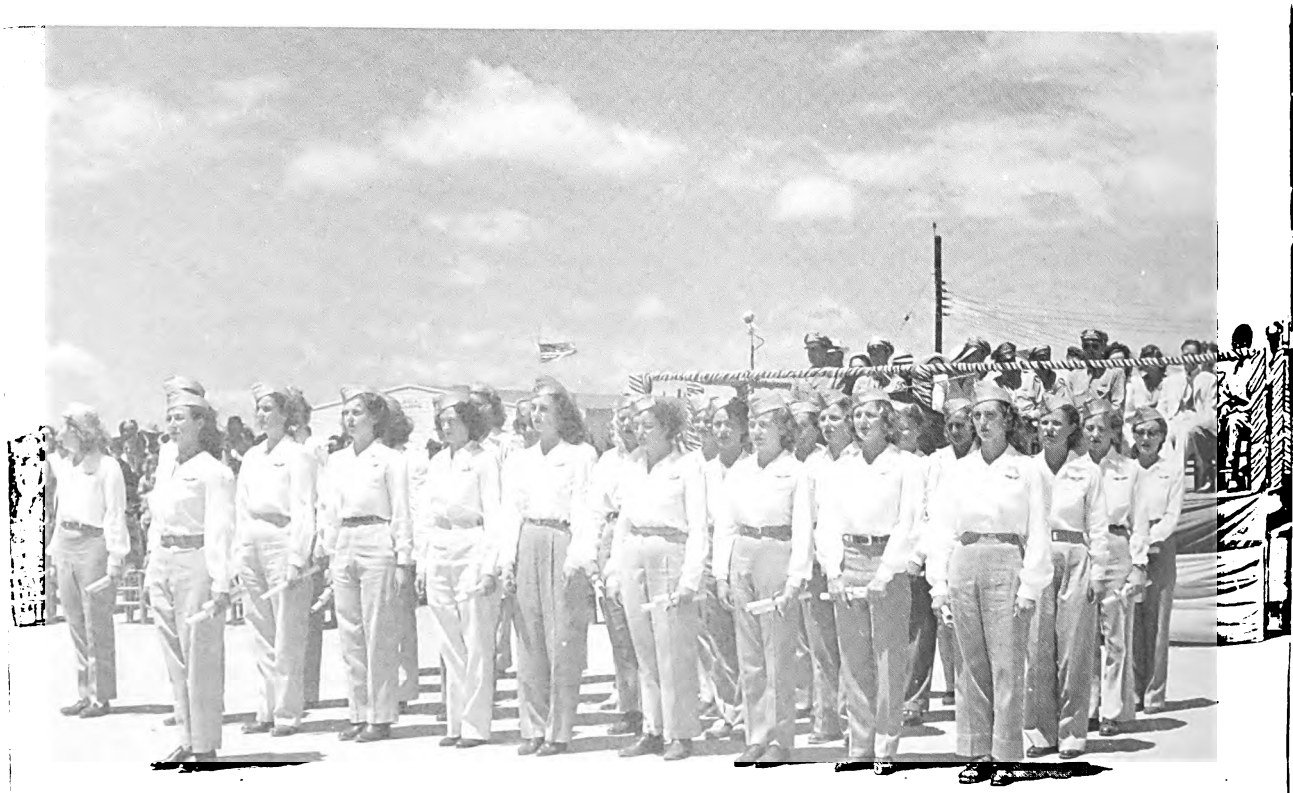
In Russia, Princess Eugenie M. Shakovskaya was assigned duty as an artillery and reconnaissance pilot; Lyubov A. Golanchikova, a test pilot, contributed her airplane to the czarist armies; Helen P. Samsonova was assigned to the 5th Corps Air Squadron as a reconnaissance pilot; Princess Sophie A. Dolgorukaya was a pilot and observer with the 26th Corps Air Squadron; and Nadeshda Degtereva was posted to the Galician Front, where she flew reconnaissance missions.[11]

In the United States, many women had established outstanding flying records, and several

During the Second World War, American women flew in a variety of support roles, which included ferrying aircraft, towing targets for Army artillery practice, testing repaired aircraft, and helping to train their male counterparts. The WASP candidate above is posed atop a Fairchild-125. One of the WASP graduating classes of 1943 is shown below.

volunteered repeatedly for duty as military pilots. Congressman Murray Hulbert of New York introduced a bill in Congress to permit women to join the Flying Corps and go to France; however, the bill did not pass. Women then found other ways to support the war effort.[12]

The famous Stinson family was very active in aviation. Katherine was a well-known stunt flier. By age nineteen, she had flown in England, China, Japan, and Canada. In 1917, she set a new world nonstop distance record for both men and women. Her sister Marjorie was a licensed pilot also. The girls taught their brothers, Eddie and Jack, to fly; and in 1915, the Stinsons established San Antonio's Stinson Field and began a flight training school. The brothers were later to found Stinson Aircraft Company, but in 1915, Katherine and Marjorie were the principal instructors at the school. Marjorie became known as the original "flying school marm." A number of Canadians trained at the school went on to England and received commissions in the Royal Naval Air Service.



In June 1944, these WASPs were headed for long cross-country flights (note the suitcases); by the end of that year, WASP was disbanded.

This group of students was referred to as the Texas Escadrille; all of its members were male.[13]

Katherine wanted to enlist as a fighter pilot but was turned down. She toured the country and collected pledges for nearly $2,000,000 for the Red Cross. Her nonstop distance record was established while she was touring the country on a Liberty Bond Drive. Later, she went to Europe as an ambulance driver. She became seriously ill as a result of her European service and never flew again after World War I.[14]

Other female pilots—Bernetta Miller, Alys McKey Bryant, and Helen Hodge—found other ways to serve. Miller joined the Women's Overseas Service League and went to the front as a canteen worker. She was awarded the Croix de Guerre and numerous American citations for her work. Bryant submitted repeated applications to fly in combat but ended up as a test pilot and instructor. For a time, she assisted the Goodyear Company in building military dirigibles. Hodge taught U.S. aviation cadets and made exhibition flights for the war effort.[15]

Ruth Law, another well-known stunt pilot, "bombed" American cities with circulars asking for Red Cross donations. She also made a 2500-mile cross-country flight to advertise Liberty Bonds. Air Corps officials decided that she would be of help in recruiting men to be pilots. She was authorized to wear a military uniform and posed for a number of recruiting posters. Although she was also authorized to teach military fliers, her fund-raising and recruiting activities left her little time for instructing.[16]

1920 to World War II

During the two decades following World War I, the field of aviation expanded by leaps and bounds. Records were set, only to be broken within weeks or days sometimes. Air races became popular, aviation clubs and associations were formed, oceans were crossed, transcontinental flights became common, and barnstormers and movie stunt pilots performed seemingly impossible feats of daring. Aviators went farther, faster, and higher than ever before—and women were a part of it all.

Ruth Law's name continued to be synonymous with stunt flying. Phoebe Fairgrave Omlie achieved similar fame as a stuntflier for the movies by her piloting in "The Perils of Pauline." Elinor Smith, at age seventeen, earned international acclaim and a reprimand from the Department of Commerce for flying under *all four* of the East River Bridges in New York City. Smith, Viola Gentry, and Bobbie Trout outdid each other in setting new endurance records for women. Trout and Smith were the first civilian pilots to refuel in midair. In January 1929, they stayed in the air for 45 hours and 5 minutes. In January 1931, Trout and Edna May Cooper set another refueling record of 122 hours and 20 minutes. In August 1932, Louise Thaden and Frances Marsalis stayed aloft for more than eight days.[17] (By contrast, on 1 January 1929, five pilots aboard the *Question Mark* set the first Air Corps refueling record of 150 hours and 40 minutes.)

One feminine name connected with aviation became a common household word—Amelia Earhart. Amelia was sponsored and financially backed by millionaire-publisher George Palmer Putnam. Putnam arranged for and financed many of her flights, exploiting her achievements through books written by "AE" (as he called her), lecture tours, product endorsements, and campaigns featuring Earhart in person. He marketed everything from sports clothes to luggage, using Amelia Earhart's name. Amelia married Putnam eventually, and he continued to exploit her achievements throughout her life. Yet, there is little doubt that her accomplishments in aviation were significant. She held private, industrial, commercial, and transport pilot licenses. She was the first person in the world to cross the Atlantic by air twice, first as a passenger and second as a solo pilot. She was active in aviation research and served as an advisor in aeronautics at Purdue University. She was the first person to fly nonstop from Newark, New Jersey, to Mexico City and to fly from Hawaii to California. She made the first continental flight in an autogyro (aircraft with a horizontal rotor, which was a forerunner of the helicopter). In 1932, Amelia was awarded both the Distinguished Flying Cross and the National Geographic Special Medal for her solo flight across the Atlantic. Additionally, she served as aviation editor for *Cosmopolitan* and wrote at least three books about her aviation experiences.

One of Earhart's most lasting contributions to aviation was the first organization of women fliers. It was named the Ninety-Nines for the number of charter members and, of course, Amelia Earhart served as the first president. Today, it is still a very active international organization of licensed women pilots, which continues to work for the advancement of women in aviation. The Ninety-Nines sponsor not only an Amelia Earhart Scholarship trust fund to prepare women for careers in aviation but also the All-Woman Transcontinental Air Race (better known as the Powder Puff Derby) and a number of other competitive and proficiency-building flying activities to encourage flying skills. They also are active in many air safety programs and charitable relief activities.[18]

Amelia Earhart's career ended when she disappeared in 1937 while attempting another first—a flight around the world at the equator. Her disappearance became and remains one of the greatest mysteries of aviation history. Yet, regardless of her fate in the South Pacific, her name and legend live on.

Another recipient of a National Geographic

Medal for achievement in aviation was Anne Lindbergh. Her husband, Charles, is still widely remembered for his history-making aviation achievements; however, few people today are aware of Anne's contributions to some of the famous Lindbergh flights. A pilot and an accomplished navigator and radio operator, Anne flew as copilot and radio operator with her husband over the Orient in 1931 and around the inner rim of the four continents that border the Atlantic in 1933. She was the first female recipient of the National Geographic Hubbard Medal in 1934. She was cited for greatly increasing public interest and support of an important industry and for encouraging millions of people to appreciate air travel as being safe, comfortable, and "enchanting."[19] Today, Anne Lindbergh is best known as an author. Two of her earliest books, *North to the Orient* and *Listen! The Wind,* are about the flights for which she received the Hubbard Medal in 1934.

One other very well-known aviatrix of the era was Jacqueline Cochran, who apparently thrived on adversity and challenges. She was reared by foster parents in sawmill camps in the rural South and went to work in the cotton mills at age ten or eleven. Determined to better her lot in life, she obtained work in a beauty shop and owned her own shop while still in her teens. She became interested in flying as a possible tool for marketing cosmetics. She received her license in 1932 and became the owner and manager of a very successful cosmetic firm. However, flying became her new and real vocation. Early in her flying career, she married financier Floyd Odlum. Like Earhart, she had extensive private financial backing from her husband for most of her aviation activities. By age thirty-five, she was acknowledged as the number-one female flier in the United States. In 1938, she won the Bendix race and, in the process, set a new west-east transcontinental record for women. In 1940, she set two speed records for men as well as women.[20]

Cochran played a vital role in World War II and continued to set records well into the 1960s. Before her life ended, she had accumulated an extremely impressive number of awards and honors, including the Distinguished Service Medal, the Legion of Merit, the Distinguished Flying Cross (three times), the Gold Medal of the Fédération Astronautique International, the International Harmon Trophy (fourteen times), the French Legion of Honor, and the Wings of the Spanish Air Force.[21]

World War II

Some of Cochran's most impressive achievements came while she was in the Women's Airforce Service Pilots in World War II. Indeed, Cochran was a driving force in getting this organization started. She made at least two unsuccessful attempts to get General Henry H. "Hap" Arnold, Chief of Staff of the Army Air Forces, to establish a group of women pilots in the Army Air Forces, with her as head of the group. Arnold later stated that he had doubts about "whether a slip of a young girl could fight the controls of a B-17."[22] Failing in her efforts to persuade U.S. military leaders, she turned her attention to England. Cochran knew that the British were using women pilots in their Air Transport Auxiliary (ATA), so in 1942 she recruited twenty-five seasoned American female pilots and took them to England to fly for the ATA. In the meanwhile, without any knowledge of Cochran's proposals to Arnold, Nancy Harkness Love activated a group of twenty-eight women pilots to ferry aircraft under the auspices of Air Transport Command. This group, originally based at New Castle Army Airfield in Wilmington, Delaware, was known as the Women's Auxiliary Ferrying Squadron (WAFS), and Love was appointed as its commander.

Cochran, always ambitious and determined to head any group of American women pilots, came back to the United States and again saw General Arnold. Apparently more convincing than she had been earlier, Cochran was appointed Director of the Women's Flying Train-

In 1953, President Dwight D. Eisenhower, with Secretary of Defense Charles E. Wilson and Secretary of the Air Force Harold E. Talbott, presented Jacqueline Cochran with one of her fourteen "Aviatrix" Harmon International trophies—this one for breaking the sound barrier and establishing a women's speed record in an F-86 Sabre jet. Major Charles E. "Chuck" Yeager, another aviation pioneer, received the "Aviator" Harmon International Trophy. Cochran continued to set records well into the 1960s.

ing Detachment (WFTD) at AAF Headquarters in Houston, Texas. Sometime later, the WAFS and WFTD were merged to become the WASP, headquartered at Avenger Field in Sweetwater, Texas. Love remained as executive officer, while Cochran became Director of Women Pilots.

As the WASP geared up for operations, over 25,000 applications were received. Of these, 1830 women were accepted and 1074 won wings. The primary mission of the WASP was to ferry aircraft from manufacturers or repair depots to operational bases in the CONUS. (It is a common misconception that the WASP

flew aircraft to Europe: they were never permitted to do this. On 17 June 1941, Cochran did fly a bomber to England. However, when male ferry pilots learned of this proposed flight, they threatened a strike. Thus, Cochran was permitted to make the flight only after she agreed to relinquish the controls of the aircraft to copilot Captain Grafton Carlisle during takeoff and landing. In September 1943, Nancy Love and Betty Gillies were scheduled to ferry a B-17 to Prestwick, Scotland, but when they reached Goose Bay, the flight was canceled by direction of General Arnold. Arnold had ordered that no women fly transoceanic planes until he had time to study and approve the matter; he never approved such flights.) The WASP also towed targets for Army units training new gunnery crews, did radio control flying, tested aircraft after repairs, gave instrument instruction to male pilots, and flew a variety of other missions. Thirty-eight (eleven training and twenty-seven operational) WASP died in service during the war.[23]

In August 1977, the first class of female Air Force officers graduated from the Air Force Undergraduate Pilot Training course. These ten women have been followed by others eager to be a vital part of the Air Force team in the 1980s.

The WASP lived under military rule and discipline but were not accorded military status and benefits until 1977, when Senator Barry Goldwater's bill "to provide recognition to the Women's Airforce Service Pilots for the service to their country during World War II" was finally approved. With the passage of this act, the WASP were assigned veteran status and issued honorable discharges.[24]

The WASP established an outstanding flying record. They flew everything in the Army Air Corps inventory, and their safety record was better than that of male pilots flying similar missions. They lost less time for reasons of physical disability than did their male colleagues.[25] (Several sources suggest that their lower time loss can be attributed to less drinking by female pilots and to the propensity of males to travel with "a little black book.")[26]

As the war began to wind down, many flight instructor programs phased down also, and a number of male instructor pilots who had been training cadets in civilian schools were looking for new jobs. These male pilots wanted to take over the ferrying missions that WASP had been performing. Without "required government job" status, these male pilots became subject to the draft as well as unemployment. The displaced male pilots were championed by Congressman Robert Ramspeck, and a bitter battle ensued. Ramspeck won, and in late 1944 the WASP was disbanded.[27]

In addition to the WASP, other female military pilots flew during World War II. They too established excellent records. The British ATA had more than 100 "ata girls," who accounted for about one-quarter of the total ATA pilot force. These women pilots flew every plane in the British inventory—120 different types of aircraft. Seventeen of them (fourteen pilots, one flight engineer, one nursing sister, and one cadet) forfeited their lives while flying with the ATA.[28]

While the accomplishments of the women of WASP and ATA were significant, the achievements of Soviet female pilots in World War II were even more impressive. Over a million Soviet women served in the Armed Forces, and many saw combat, including women pilots. The performance of these female pilots was outstanding. The Soviets had three all-female air regiments, and many other female pilots flew in other units. One female fighter regiment carried out 4419 combat missions and the women's 587th night bomber regiment flew 25,000 combat sorties. Flight Commander Irina Soodova flew 1008 operational sorties. Another woman commanded an otherwise all-male air regiment that flew bombing missions behind enemy lines.[29] In 1943, the 588th regiment was awarded elite status which was denoted by a new unit designation—46th Guards Regiment. By the end of the war, every woman in this regiment had been decorated, and twenty-three of them were honored with the coveted title "Hero of the Soviet Union."[30]

Hanna Reitsch and other women served as test pilots in Germany, and a few other women flew as military pilots in other countries. Clearly by the time World War II was over, women had proved that they were first-class pilots in both civilian and military roles, capable of flying any aircraft in the world.

DESPITE their experiences during World War II, women were forced into the fringes of aviation after the war, not uncommonly having to move into wholly unrelated career fields. Why the giant leap backward?

For countless generations, society as a whole has held strong attitudes about what women can and should be allowed to do—even in the sometimes flamboyant eras of invention and change. Thus, as early as 1795, the Chief of Police of Paris expressed his view that women could not possibly stand up to the strain of riding in balloons. He felt, for their own sakes, women must be protected from the temptation to fly.[31]

Similarly, more than a century later, in 1911, the sheriff of Nassau County, New York, de-

cided that he would curtail Mathilde Moisant's flying activities by arresting her for flying on Sunday. She avoided him by flying to another airfield. (Later, a court decided that flying on Sunday was no more immoral than driving a car on that day.)[32]

In 1938, the Civil Aeronautics Administration (CAA) established experimental flight training programs for men only. Later, one female was allowed to participate for every ten males. But in 1941, war seemed imminent and women were again eliminated from the training. These programs were viewed as training for fighting military pilots and as "no place for a woman." A comment by Al Williams, a navy pilot who set two world speed records, illustrates well the attitude toward women in aviation that prevailed in the United States on the eve of World War II:

> I admit I may be a bit old fashioned, but I don't believe we as a nation are ready to send women into combat. Woman is entitled to equal rights with man—even though she is something apart from and finer than man. The moral indices and real worth of any nation lies in the fitness of its women—as women.[33]

Other influential persons in aviation who were aware of women's accomplishments and might have helped to expand the roles of women in aviation were also surprisingly restrictive in their views. Eddie Rickenbacker took the executives of Boeing to task in 1930 for hiring the first airline stewardess. He argued that flying was a man's occupation and should stay that way. Ironically, Ellen Church, the first stewardess, was a pilot and was seeking employment as such when Boeing hired her to serve food and look after passengers.[34]

Charles Lindbergh also had ideas about "woman's place" in aviation:

> There is no reason why women should not fly, but they should not be encouraged in entering aviation as an occupation. Their greatest contribution to life can be made in other and less material ways. How can a civilization be classified as "high" when its women are moved from home to industry, when the material efficiency of life is considered first and the bearing of children second, if not third.[35]

Even female pilot Jackie Cochran expressed similar views:

> I've always assumed that we would never put women into combat. If for no other reason than because women are the bearers of children, they should not be in combat . . . A woman can do almost anything if she works hard enough. But there's something in me that says a battlefield is not the place for women.[36]

During the four decades since the WASP of World War II was disbanded, attitudes have changed very little. As a result, women today are still limited in what they are permitted to do in aviation, regardless of their aspirations or their talents. There are 185 female Air Force pilots; and while one or two are test pilots, these women are restricted, for the most part, to flying noncombat aircraft. NASA has admitted a few females into its astronaut program, yet only one American woman has flown in space. Furthermore, the female astronauts have all been designated "mission specialists;" none are mission pilots.

Few of today's women who would be fliers have the bankroll of a George Putnam or a Floyd Odlum to pay for their flight training and the purchase of high-performance aircraft. (Even very wealthy individuals could not afford to buy SR-71s, F-15s, and other sophisticated aircraft.) Modern state-of-the-art equipment is entirely in the hands of the military, other government agencies, or large civilian corporations—structures that still retain male-dominated decision-making processes. By law, policy, and practice, these agencies have limited the utilization of women. In the 1980s and beyond, significant advances in aviation research will be achieved, new flight records will be attained, and many missions will be flown to ensure the defense of our nation and the freedom of peoples elsewhere. Until they are admitted in more than token numbers to the circles accomplishing these acts, women who fly will continue to be regarded as curiosities,

and equality in the cockpit will remain little more than an abstract goal.

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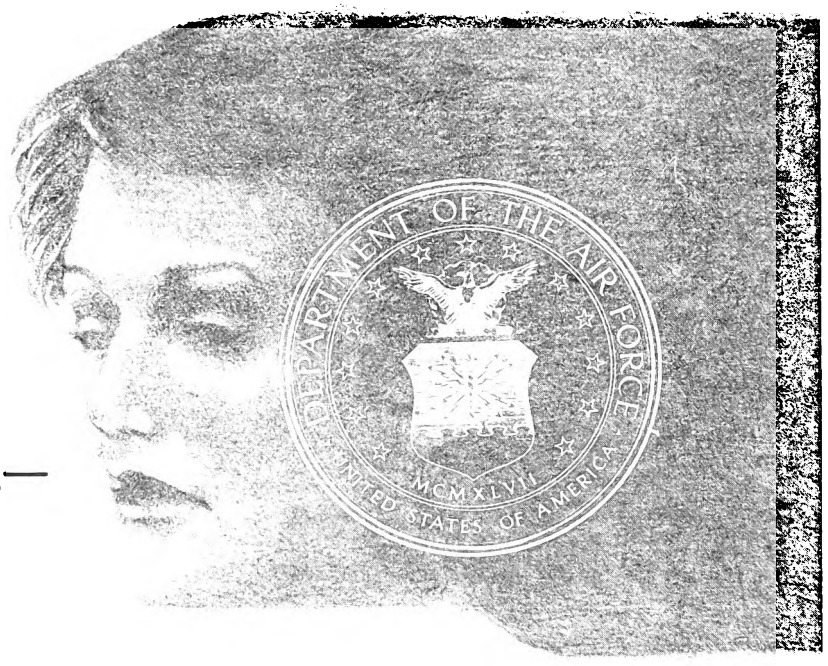

THE AIR FORCE WIFE— HER PERSPECTIVE

MAJOR MARK M. WARNER

Since the American wife first began to accept pay for work outside her home, she has been variously described. She's been compared with . . . Lizzie Borden, Florence Nightingale and Joan of Arc. She's been derided because she abdicated her traditional place in her home, applauded because she alternately toils in the halls of commerce and the walls of domesticity.[1]

AS THE world moves into the mid-1980s, the role of women in the family and home is undergoing significant changes. The women's liberation movement, an inflationary economy, and changing value systems are contributing factors in these changes. The Air Force community reflects these societal changes in a number of areas. For example, traditionally closed career fields, such as pilot utilization, are now open to women. More than twenty-five years ago Nancy Shea, in a book titled *The Air Force Wife,* concluded that military wives had three basic responsibilities: to create congenial homes, to rear quality families, and to strengthen their husbands' morale. And depending on the rank held by their husbands, they assumed additional responsibilities outside the home, such as setting good examples for airmen's wives, supporting Air Force activities, or promoting squadron morale and spirit. The idea was that wives had definite responsibilities in support of their husbands. If they fulfilled their "duties," they could claim half of every promotion, every success, and every medal earned by their husbands.[2] In other words, the traditional role of Air Force wives was to follow and support their husbands and maintain happy homes.

The purpose of this discussion is to examine the changing role and perspectives of Air Force wives in the light of ongoing trends in American society. Are Air Force wives still oriented to their traditional roles, or have other pursuits become more important? What do they want? What are their points of view? Should they have a role? Should they be required or expected to participate in Air Force activities? What do they want from life? Does the Air Force complement or conflict with their personal lives, jobs, families, husbands, or sense of selves? A number of studies reveal that few people have bothered to ask Air Force wives for their opinions of themselves and the Air Force. A survey conducted by the author asked Air Force wives to describe their

attitudes regarding social and recreational activities in the military, roles expected of them, and the impact of military policies on their personal lives.

The survey was conducted among wives of students and faculty members at the Senior Noncommissioned Officer Academy, Squadron Officer School, Air Command and Staff College, and Air War College, and wives of noncommissioned officers serving in the Headquarters Squadron at Maxwell Air Force Base. Altogether, 242 surveys were returned from a total sample of 480, a return rate of approximately 50 percent. While the sample is fairly representative of the participating organizations, no attempt was made to draw inferences concerning groups of wives representing specific organizations or ranks.

The survey asked wives to indicate agreement or disagreement with a series of statements and gave them the option of including written comments. It also required specific responses to a number of open-ended questions. The results were broken down into percentages of total responses for four groups by rank: noncommissioned officer, lieutenant/captain, major, and lieutenant colonel/colonel; a combined tabulation showed average percentages for all groups. Percentages discussed here do not include neutral responses, such as "neither agree nor disagree." They reflect either positive responses, "strongly agree" and "agree," or negative responses, "disagree" and strongly disagree." Although percentages between ranks varied somewhat, this discussion reflects combined total percentages only. Three major divisions of the survey investigated wives' perceptions of Air Force activities, their roles, and their personal needs and desires.

Air Force Activities

Air Force activities were defined in the survey as wives' clubs, volunteer work, projects, fund raisers, coffees, command performances, or other activities requiring wives to give freely of their time. In response to the statement, "I enjoy participating in Air Force activities," two-thirds or 66.1 percent of the wives stated that they enjoy these events. They qualified this statement with such comments as "I enjoy participating when it fits me; only if I am not expected to participate; it depends on the activity and the base; or I only enjoy them sometimes." When asked about the worth of Air Force activities, two-thirds or 66.4 percent of the wives again agreed that they are worthwhile (5.1 percent disagreed), and only 40 percent agreed that current involvement in these activities is reasonable. Approximately 58 percent of the total group did not desire any more activities, and 12.9 percent desired more involvement. Approximately one-third or 33.9 percent of the wives felt that Air Force activities should be more meaningful and responsive to their needs and desires. They felt that involvement in activities should be strictly voluntary and that many activities are overly organized, "busy work," expensive, inefficient, time-consuming, and somewhat purposeless. They stated further that the Air Force was not responsible for entertaining them. Wives seeking more varied activities suggested increased emphasis on current Air Force issues, personal development, and informational groups.

More than 60 percent of the wives agree that they should not be expected to participate in Air Force activities. They felt that participation should be strictly voluntary but that support for husbands is also important. Thirty-seven percent felt pressured to participate, and 47 percent felt no pressure. Twenty-seven percent thought their husbands had been pressured to have them participate, and 55 percent had detected no pressure. Comments in this area centered around the idea that the amount of pressure depended on the personality of the commander and his wife's attitude, their bases of assignment, and the nature of particular activities. Increased rank brought increased pressure. Some felt more pressure 10 years ago than today, and still others felt pressured by a sense of duty. In response to the statement, "I believe it is necessary for me to participate in Air Force activities for my hus-

band to be promoted," 62.9 percent disagreed, and 26.3 percent agreed. Again, many stated that the necessity to participate in activities to assist in promotion of their husbands increased with rank. Although most wives disagreed with the statement, they commented that participation is never detrimental and is generally helpful. Many wives thought that their husbands would be promoted regardless of their actions. In reflecting on the tone of Air Force activities, 35.7 percent of the wives felt that activities are not patronizing events, and 31.9 percent perceived that they are patronizing. The word *dependent* was viewed as irritating: many wives are not dependent, and some make more money than their husbands. More than two-thirds or 69.1 percent agreed that participation in other activities is more important to them than Air Force activities, and only 8.7 percent disagreed with the statement. The leading outside activity more important than all others is any event involving the family. Other more important activities are church, jobs, and school functions.

Wives were divided on two open-ended questions concerning Air Force activities. For example, the question, "Which Air Force activity do you like the most?" brought a variety of responses indicating the most significant preferences for volunteer work, ranging from Red Cross to thrift shop, and for activities involving the husband's squadron or immediate work area. Officers' wives club and small group get-togethers were also high on the list. Opportunities to meet new people, joint husband/wife functions, travel, dining outs, base open houses, youth programs, general socializing, and family activities were often mentioned. Interestingly, a similar number of wives reported that officers' wives clubs are high on their list of least liked activities. Other less desirable activities are cocktail parties, command performances, fund raisers, formal receptions, large gatherings, dining outs, and nonjoint husband/wife events.

The responses to questions and statements about Air Force activities seem to indicate that wives generally do not object to participating in these activities if they are voluntary, not expected, and freedom of choice is observed. Most wives feel that their participation in activities does not determine whether their husbands are promoted, but participation may be helpful, especially with increased rank. They stated that they need no more activities generated by the Air Force. Activities considered more important than Air Force activities centered around the family. The most liked activity was volunteer work, and the least liked was the officers' wives club. Apparently, some Air Force activities have more meaning and worth than others, and wives will continue to select activities that appeal to them as individuals.

Role of Air Force Wives

The next major area of the survey dealt with the role of Air Force wives. The survey revealed strong negative reaction to the statement, "I think the 'traditional role' (wife is expected to follow and support the husband in his profession and not work outside the home) of the military wife is important and should be the model for the future" (75.7 percent disagreement and 12.4 percent agreement). Most wives felt that they could follow and support their husbands and still work outside the home, but others also agreed that the economy has forced many women to work outside the home to finance family needs and desires. Some felt that traditional roles in this respect would become more important with increased rank or that the pressure would at least increase. Still others mentioned that either the individual or the couple should establish its own guidelines but that mutual support was important in any event. Finally, the matter of individual identity and total acceptance of working wives has become an Air Force issue.

More than 87 percent of the women surveyed felt that roles of Air Force wives are changing. The main idea was that many women are returning to work in search of additional money and personal fulfillment. Further, most of the

sample felt that their roles are changing too slowly. When asked whether wives should have roles in the Air Force, 54.0 percent agreed and 23.4 percent disagreed. Wives who agreed felt that their roles should be self-defined but supportive of their husbands. Those who disagreed stated that their husbands, not they, were paid for working and that the Air Force should no longer expect to get "two for one." Others stated that they were equal partners with their husbands and that mutual support centered on the family. More than 53 percent agreed and 22.9 percent disagreed when asked whether Air Force leaders expect wives to act in traditional roles. Generally, most wives felt that although some leaders favor traditional roles, wives' roles will change during the next 10 years to the point that work outside the home will be totally acceptable.

The survey showed mixed responses to the statement, "When my husband comes home and says that I am expected to attend an Air Force-related event, I am happy to participate regardless of my interest in the function or my other personal commitments" (53.3 percent disagreed and 28.7 percent agreed). Many wives explained that willingness to participate depends on the event. Others stated that their husbands would never expect such behavior and that they make joint decisions on such matters. Still others stated that they would attend events in support of their husbands. In responding to the statement, "The Air Force is a specialized profession; therefore, it requires more from me than might be expected in the civilian world," 53.3 percent of the sample agreed and 36.4 percent disagreed. For example, alerts required by the Strategic Air Command and periods of war definitely make the Air Force more specialized and require more of wives. But most comments indicated that certain types of civilian jobs are just as specialized as jobs in the Air Force.

One survey question concerning the roles of Air Force wives was open-ended: "I think the role(s) of the Air Force wife should be. . . ." By far the most frequent response was that Air Force wives should support their husbands not only in relation to the Air Force but also within the framework of a good marriage. Many wives stated that they understood their roles in support of their husbands but that they should also be able to pursue their own goals at the same time. Some felt that their roles should be a matter of individual choice—friend, lover, helpmate, mother, homemaker, or careerist apart from the husband. Still others felt that they are part of a joint support system; that is, husbands should support their wives just as wives support them. And some stated that they should have no role in Air Force affairs.

Regarding roles, the respondents felt that the traditional role of the Air Force wife is changing to the extent that today wives are more responsive to societal demands and the state of the economy than ever before. They believe that they should have a role, but that it should be self-defined, support-oriented, and compatible with individual desires.

Personal Needs and Desires

The last major area of the survey dealt with a variety of issues concerning the effects of official policies and programs on the personal needs and desires of Air Force wives. When asked to compare their needs and desires with those of their husbands, 93.7 percent of the wives felt strongly that their values are just as important as those of their husbands. Most wives felt that they live in partnership with their husbands and that together they function as family units. They expressed a somewhat different reaction to the statement, "Air Force leaders are sensitive to my needs and desires." In this instance, 38.1 percent disagreed and 31.6 percent agreed. Many wives stated that while some leaders are sensitive to their needs, others are insensitive; others felt that leaders need not be sensitive to their needs, since the Air Force mission comes first; and still others suggested that many leaders pay lip service to their needs and desires. Some of the wives stated that leaders are slowly becoming more sensitive in this area. Fifty-six percent of the sample

agreed and 17.5 percent disagreed that the Air Force should exert more effort in requesting and encouraging wives to assume supporting responsibilities rather than *expecting* them to play specified roles. Such comments as "You get more done if you ask," "no one likes to be told," and "*please* is a nice word" reflect attitudes in this area. Most wives felt that, after making requests of them, the Air Force should "graciously accept whatever answers they give" and thank them for their efforts.

The survey results were interesting in the important area of jobs. In describing their husbands' careers, 69.9 percent of the wives agreed that their husbands are solely responsible for their own progression. They qualified their agreement by stating that support and help from the family are beneficial, but at the other end of the spectrum, 55.1 percent agreed and 37.0 percent disagreed with the statement that wives should be free to "do their own thing" in life without any adverse effect on their husbands' careers. However, they also felt that wives should exercise this freedom "within moral limits" and never in conflict with husbands. The idea of mutual support and teamwork in the marriage is important. They indicated that wives should not bring embarrassment to their husbands and that they should keep their behavior "within the limits of good taste." More than 85 percent stated that their jobs are just as important as their husbands' jobs. The survey defined jobs as whatever the wives believed them to be: jobs as housewives or jobs outside the home. Again, the concept of mutual support and team effort was deemed the important issue in perceptions of jobs in either category. More than 55 percent of the wives disagreed with the statement that the Air Force "conflicts with my job." Most comments suggested that PCS moves handicap them in getting promoted or holding jobs.

The final area concerning the needs and desires of wives centered in the family. As to whether the Air Force conflicts with or enhances family life, 55 percent felt that it enhances family life and only 18.5 percent felt that it conflicts with the family. The wives cited traveling, meeting new people, broadening experiences, and promoting family closeness as the greatest enhancements, and long working hours and TDYs as major sources of disenchantment. The statement, "The Air Force conflicts with my personal life," brought 57.4 percent disagreement and 23.5 percent agreement. Some wives stated that the Air Force is "part of my personal life" and that it provides a wealth of valuable experience. Forty-nine percent of the wives disagreed and 42.4 percent agreed that the Air Force provides adequate compensation (money and benefits) for the quality of life desired for their families. Most women felt that the income was adequate but that Air Force jobs should be more closely aligned with their civilian counterparts. A major complaint focused on the lack of benefits for family dental care, routine moving expenses, and compensation for losses from the sale of homes required by PCS moves. Many wives perceive an erosion of benefits in the face of concurrent demands from the Air Force for more effort. The statement, "I enjoy the new opportunities, new friends, and changes in my environment (home, job, etc.) associated with Air Force PCS moves," brought 77.8 percent agreement and only 11 percent disagreement. Most wives felt that living in different areas of the country and the world is one of the most positive benefits offered by the Air Force. The only major concerns centered on the difficulties of leaving and finding jobs and the emotional shock for high school children forced to leave their friends at the peak of their teenage years.

One can draw a number of conclusions from this part of the survey.

- Air Force wives view their needs and desires as important as those of their husbands, and they perceive that Air Force leaders are sometimes insensitive to these concerns.

- Husbands are solely responsible for their careers, but some help from the family is beneficial.

• Wives should be free to "do their own thing," and the Air Force does not significantly conflict with their jobs, families, or personal lives.

Finally, when asked whether or not they were happy with Air Force life, 83.7 percent of the wives felt happiness, and only 6.3 percent felt unhappiness. This is a good testimony for the Air Force lifestyle.

The Air Force Wife in Perspective

What are the causes of these changing attitudes among Air Force wives? For one thing, American society as a whole is changing because people are demanding greater freedom in selecting their personal and family lifestyles. Certainly, the women's liberation movement has opened many doors formerly closed to women. Continuing problems with the national economy have forced many women into the job market and out of their traditional roles to provide funds for children of college age and to support a desired quality of life. In recent decades, the accelerated rate of change in technology, legal relationships, social behavior, education, and economic systems has created vastly diverse experiences in value programming between generations, and these shifts are reflected in the attitudes and lifestyles of today's Air Force families. Many men and women are seeking new balances between work and family responsibilities, and they are searching for greater meaning in leisure activities and family companionship. Work has declined as a central interest in life and as a primary determinant of self-images. Traditional family patterns have shifted to nontraditional patterns that sanction the employment of wives outside the home and give priority to the family over the husbands' careers.[3]

The impact of these changes on Air Force policies is significant. Since Air Force wives play central roles in the lives of military members and their families, they exercise a direct influence on the Air Force mission. The military mission and the military family now compete for the same resource, the service member's time and commitment. Mission requirements have traditionally demanded priority over the family, but many modern military families place their own needs above the mission.[4] With changes in the traditional roles of Air Force wives have come similar changes in the social activities that commit them as hostesses and participants. The Air Force must accept situations that do not require active participation of wives; commanders must fill gaps when wives are unable or unwilling to participate; and many activities involving wives must be reorganized, eliminated, or appropriated. The Office of Air Force Family Matters conducts continuing studies reflecting interest in these and other issues, such as dual-career families, spouse employment, retirement, retention, parenting, midlife crisis, and reluctance to move. And as American society continues to change, these and other issues will continue to receive emphasis.

Finally, the last portion of the survey asked for responses to the statement, "If I could change *one* thing in the Air Force, I would change. . . ." Here the wives offered some significant recommendations. They admit a sense of excitement in moving, but many felt that they move too often. They frequently asked "What is wrong with staying at the same job more than three to five years as long as their husbands are happy and productive?" They suggested that the Air Force could save millions of dollars by reducing the number and frequency of moves. But when it becomes necessary to move, they felt that military families should receive more compensation to offset major costs not reflected in current benefits. Many wives perceived a lack of quality in medical facilities, particularly mentioning irritating appointment systems, their sense of being treated like second-class citizens, and inadequate dental care. Others suggested improvements in base housing facilities and preference for lower-ranking families who cannot afford to live off-base. As a group, the wives desire fewer remote tours and TDYs for their husbands and

more emphasis on family needs and desires, with less pressure to join traditional organizations.

The wives indicated that they would raise many of these same issues if they "could tell the Chief of Staff of the Air Force *one* thing about Air Force life." Emphasis on the family, fewer PCS moves, more money when moves are necessary, and better medical and dental programs are recommendations that stand out. Some wives suggested that the Chief should explain to the civilian world the hardships of military life and the lack of comparable pay and benefits. Others desire more significant roles in selecting assignments, and many would tell the Chief that the Air Force is indeed "a great way of life." Responses included such typical comments as these: "It is a good life"; "I love it"; "Thank you . . . Sir"; "Godspeed."

THE RESPONSES to the survey apparently reflect three basic conclusions:

- Air Force wives do not object to participating in Air Force activities if they are strictly voluntary and if wives are free to choose preferred activities.
- Traditional roles of Air Force wives have changed allowing them more freedom to pursue individual interests and maintain support for husbands at the same time.
- Most wives are happy with Air Force life insofar as the military does *not* significantly conflict with their jobs, their families, or their personal lives.

As participants in Air Force life, we must all consider the implications of these views and, when appropriate, accept constructive changes consistent with the Air Force mission. Perhaps the following comment by one Air Force wife captures the essence of attitudes held by other wives toward military life: "Aside from being left alone to contend with broken cars, sick kids, blizzards, and heatwaves, it's a hell of a way of life."

Air Command and Staff College

Complete tabular data in rank percentages are available through the *Air University Review* office.

Notes

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2. Nancy Shea, *The Air Force Wife* (New York, 1966), pp. 9-12.
3. Chaplain (Maj. Gen.) Richard Carr, USAF, Dr. Dennis K. Orthner, and Chaplain (Maj.) Richard J. Brown III, USAFR, "Living and Family Patterns in the Air Force," *Air University Review*, January-February 1980, p. 76; Morris Massey, *The People Puzzle* (Reston, Virginia, 1979), p. 21; Dennis K. Orthner, *Families in Blue*, Office of the Chief of Chaplains, USAF, 1980, p. 9; Larry W. Black, "Changing Patterns of Air Force Families," student paper, Air Command and Staff College, 1982, p. iii.
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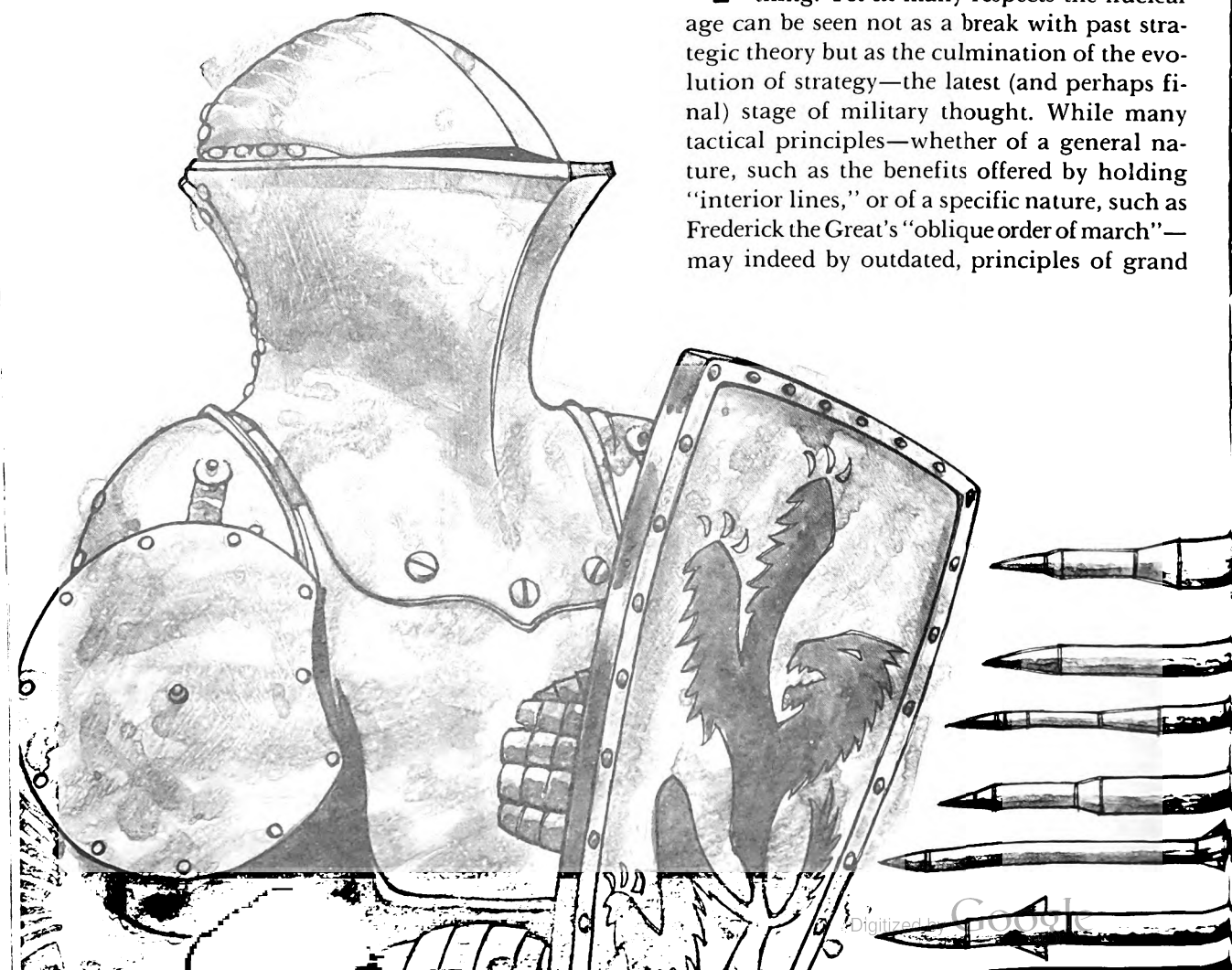
CLASSICAL MILITARY STRATEGY AND BALLISTIC MISSILE DEFENSE

MAJOR OWEN E. JENSEN

The application of lessons of the past to current and predicted military issues always required a proper appreciation of changed technological conditions, but not until the latter half of the nineteenth century did the problem of adjustment offer any difficulties. In the twentieth century it became increasingly critical, and with the advent of nuclear weapons the entire value of past military experience as a guide to the future was called basically into question.

Bernard Brodie[1]

THIS seems to be conventional wisdom: nuclear weapons have changed everything. Yet in many respects the nuclear age can be seen not as a break with past strategic theory but as the culmination of the evolution of strategy—the latest (and perhaps final) stage of military thought. While many tactical principles—whether of a general nature, such as the benefits offered by holding "interior lines," or of a specific nature, such as Frederick the Great's "oblique order of march"—may indeed by outdated, principles of grand



strategy have continued to evolve.

Military thinkers of the past were not necessarily wrong in their identification of underlying elements of grand strategy, but they may have been wrong in seeing those elements as constant and unchanging. Similar themes, ideas, and principles have seemed to recur in every conflict, but their recurrence over time was on a constantly ascending scale. In this article, I shall discuss specific instances to support this thesis, but at this point one other general thought needs to be considered. That is the idea that grand strategy developed differently in what we now call the Western nations (particularly in the United States) than it did in the Soviet Union. Although both are equally rooted in classical strategic theory and both are valid expressions of grand strategy, the strategies of today's East-West rivals, like races of men evolved from a single ancestor, gradually acquired distinctive features. With this in mind, let us examine the origins of U.S. nuclear strategy, then consider options to that strategy, and, finally, assess the impact of opposing choices on decisions for or against ballistic missile defense.

Nuclear Strategy: Links with the Past

As the magnitude of war increased, the need for political control over the initiation, the extent, and the cessation of hostilities also increased.

> Today . . . with truly cosmic forces harnessed to the machines of war, we have a situation for the first time in history where the opening event by which a great nation enters a war—an event which must reflect the preparations it has made or failed to make beforehand—can decide irretrievably whether or not it will continue to exist. Obviously, therefore, we cannot go on blithely letting one group of specialists decide how to wage war and another decide when and to what purpose, with only the most casual and spasmodic communication between them.[2]
>
> War . . . is an act of policy. Were it a complete, untrammeled, absolute manifestation of violence (as the pure concept would require), war would of its own independent will usurp the place of policy the moment policy had brought it into being; it would then drive policy out of office and rule by the laws of its own nature. . . . It is clear, consequently, that war is not a mere act of policy but a true political instrument, a continuation of political activity by other means.[3]

Clausewitz began his treatise *On War* with an exploration into the nature of war and examined it as a totally violent experience. To him, that was an abstract concept. With the present state of weapons evolution, it has become reality.

He then qualified his concept, however, and allowed that wars were not theory but reality, and in reality they are not fought merely for the sake of violence but to achieve political goals. Clausewitz also stressed that military aims had to be subjugated to political goals and that "this conception would be ineluctable even if war were total war."[4] Today, in an era in which a first strike may be the entire war, domination

of military aims by political goals is paramount not only in theory but in reality as well. In no nation today is the military given advance approval for first use of nuclear weapons. Historically (and even today regarding conventional weapons), military commanders have been authorized to fire back if fired upon. However, this authorization does not apply to nuclear weapons. For almost every contingency, advance approval for even second (or responsive) use of nuclear devices has been withheld. Because the destructive capacity of weaponry has increased to the point where policy controls military imperatives, Clausewitz's dictum has reached its purest form.

The main question, however, is whether there are any political goals that may be achieved by nuclear weapons. Hasn't the awesome power of such weapons canceled out any possibility that war can even be considered as a political instrument? That answer may also be found in Clausewitz and an examination of the *evolution* of military history, expressed as:

Political goals themselves must be realistic and not overreach military capabilities.

Clausewitz defined war as an "act of force to compel our enemy to do our will"[5] and pointed out that mere destruction of forces or occupation of territory was sometimes insufficient to accomplish that goal. He noted his own native Prussia as an example where complete defeat and occupation (by Napoleon) nevertheless failed to effect a *lasting* change of will. To the contrary, Napoleon's overambitious political goals eventually led to significant, permanent changes mostly for his own country, France. The lessons of this are twofold: If an *attacker* realizes that by prosecuting a total war (versus a limited war) it may be in danger of allowing political goals to exceed military capability and thereby risking the destruction of itself, the very society it is attempting to impose or protect, then the attacker would be foolish to initiate the war at all; and if a *defender* is faced with the complete uprooting of the essence of its society, then it has nothing to fear by fighting to the bitter end—accepting total war as having no worse consequences than surrender.

History is replete with examples. Athens had every prospect of maintaining its empire ad infinitum until it decided to attempt complete hegemony in the middle of the Peloponnesian War by invading Sicily. By thus overreaching its military capability, the empire was lost.[6] Likewise, Carthage had the strength to maintain its territory versus Rome, but by resorting to total war, it lost totally. When the third Punic War was over, "nine-tenths of the [Carthaginian] population had perished. . . . By order of the Roman Senate . . . [Carthage] was completely destroyed, and the survivors sold as slaves."[7] The reason why no decisive "Napoleonic" victories were achieved in the American Civil War while they were won in the Austro-Prussian and Franco-Prussian wars was not that weapons technology had given a decisive advantage to the defense (for the defending Europeans had weapons of equal destructive power), but that the North was attempting to impose a totally new order on the South, which caused an escalation to total war. In Europe, on the other hand, Bismarck and Moltke made it plain that their objectives were much more limited and not worth complete mutual destruction. In contrast, Napoleon and Hitler risked all and lost all by allowing political goals to exceed military capability in the face of adversaries who were fighting for the preservation of their very societies.

My point here is to suggest that because nuclear war today has evolved into what would be an act of total violence (a concept that for Clausewitz was merely abstract), it has crystallized the ultimate consequences, and therefore the choices, involved in total war. Where it was possible for Athens, Carthage, Napoleonic France, or Nazi Germany to mistakenly contemplate victory or at the worst (if defeated) a maintenance of the prewar status quo, such error in thought is no longer possible. By evolving to its pure form, war has identified its own consequences with absolute clarity. An

attacker today does risk total destruction if it attacks a defender that can retaliate massively.

Recall that Clausewitz held that if war were a "complete, untrammeled, absolute manifestation of violence (as the pure concept would require), war would of its own independent will usurp the place of policy the moment policy had brought it into being."[8] That is obviously true today and was equally true in the past. Certainly for Carthage and to a lesser extent for both Germany and Russia in World War II, the consequences of war rivaled the possible results of nuclear holocaust. The lesson is that war has not changed from being a practical political instrument into an impractical political instrument in the nuclear era, but that at its *extreme* it was always impractical. The difference is that as war's destructiveness has evolved in magnitude, this lesson has been made obvious where before it was obscured. The only way to use war as a policy instrument now (as before) is by limiting its application—either by restraining political objectives or by increasing the effectiveness of defense.

U.S. Strategy: A Preference for the Offensive

Bernard Brodie instructs that "military doctrine is universally, and has been since the time of Napoleon, imbued with the 'spirit of the offensive.' "[9] While the universality of his statement may be criticized, it has certainly held true with regard to U.S. strategic thought. At the beginning of the Civil War, "the image of Napoleonic war with its brief, climactic battles had impressed itself upon the popular mind as well as upon soldiers . . . and it stimulated the usual popular impatience [especially in America] to have wars over with promptly."[10] Nearly every one of the leading generals on both sides in the Civil War had been educated at West Point during an era when the strategic thought of Jomini, Napoleon's Swiss expositor, provided the bedrock of military instruction. Jomini made no secret of his preference for the offensive over the defensive and stressed that the whole purpose of strategy was to bring forces into battle with the object of destroying an enemy's army. Jomini called for boldness in warfare: "I would make [war] brisk, bold, impetuous, perhaps sometimes even audacious."[11]

As U.S. military strategy began to be employed beyond its own borders, it was embodied in the Navy; and naval thought at the time for all of the great naval powers focused almost exclusively on the ideas of Alfred Thayer Mahan.

> Mahan pored through the pages of Jomini in his effort to formulate a new science of naval strategy, and many of the principles of naval war which he suggested are naval applications of Jomini's precepts.[12]
>
> Jomini's dictum that the organized forces of the enemy are the chief objective pierces like a two-edged sword to the joints and marrow of many specious propositions. . . . the enemy's ships and fleets are the true objects to be assailed on all occasions.[13]

As air power entered into U.S. strategic thought it was borne in the writings of Italian Brigadier General Giulio Douhet, a total proponent of the offensive. "His basic argument is two-fold: first, the nature of airpower requires that 'command of the air' be won by aggressive bombing rather than by aerial fighting, and second, an air force which achieves command thereby ensures victory all down the line."[14] He saw no hope for air defenses and every likelihood of rapid, total victory through bombardment of an enemy's cities and resources. It may be safely stated that there was not an atom of support for defenses in all his work.

The connection of Douhet to U.S. strategy was direct, via members of the Bolling Commission, who were considerably influenced by his concepts on a fact-finding tour examining military aviation during 1917;[15] and indirect, in that Douhet merely expressed what was generally a consensus of knowledgeable Western opinion of that time. Subsequently, U.S. air doctrine "adopted Douhet's de-emphasis of

fighters, whether for defense or for escort of bombers, and a corresponding emphasis on destroying the enemy's air force at its bases."[16] Even General William "Billy" Mitchell's writing (although it is largely tactical and probably not derived from the Italian) is "pure Douhet"[17] where it discusses the strategic use of air power.

As the United States entered the nuclear era, its choices seemed almost preordained. Although at first, both air defense and strategic bombing progressed together under Eisenhower's New Look strategy, clearly it was the offensive side that received the primary emphasis; and whatever balance existed did not survive the transition to the missile age. It was not the balanced offensive and defensive force structure advocated by Bernard Brodie in his 1959 book, *Strategy in the Missile Age*, that was chosen, but rather the course advocated by Oskar Morgenstern in *The Question of National Defense* (also 1959), which advocated reliance on the creation of powerful strategic offensive forces.[18] During the Kennedy-Johnson-McNamara years, defenses against bombers were almost totally scrapped; and in the Nixon-Ford-Schlesinger years, antiballistic missile systems were given up as well.

As a result, the United States was left with an unnerving and rather absurd reliance on a strategy of mutual assured destruction (MAD), trusting the fate of American society to the rationality of nuclear adversaries. It was said to be in our U.S. interest to forgo defenses totally in favor of the offense, making the nation vulnerable so that the other side would not suspect it of planning a first strike. To many observers, however, the MAD strategy was shortsighted. It ignored the possibility of technological breakthroughs that could render offensive forces themselves vulnerable and lead to dangerous consequences. Only in North America, where the ravages of war were largely unknown, could vulnerability have been conceived as an asset. As Henry Kissinger observed:

> One reason [behind this strategy] was the growth of the school of thought to which I, myself, contributed . . . which considered that strategic stability was a military asset, and in which the historically amazing theory developed that vulnerability contributed to peace and invulnerability contributed to risks of war. Such a theory could develop and be widely accepted only in a country that had never addressed the problem of the balance of power as a historical phenomenon. And . . . only also on a continent which was looking for any excuse to avoid analysis of the perils it was facing and that was looking for an easy way out.[19]

Adopting the MAD strategy, the United States consciously and willingly entrusted the fate of the nation to the Kremlin's self-restraint. For other nations such a policy would truly be considered "mad." "Since emphasis on active defense was nearly nonexistent, official policy [also] considered civil defense almost pointless. In short, U.S. nuclear decision-makers strove to retain sharp swords, but defensive shields were foregone."[20]

Alternative Evolutionary Patterns

While U.S. strategic thought has focused almost entirely on the offensive over the past century, options recognizing the benefits of defensive strategy have evolved in other societies, most notably in the Soviet Union. These options were also rooted in past strategic theory and practice.

In the middle of the fourteenth century, the Battle of Crécy between forces under Edward III of England and Philip VI of France demonstrated the ability of the English longbow to penetrate armor and overcome the theretofore unassailable dominance of mounted knights. For the first time in nearly a thousand years, defensive infantry gained the upper hand against mounted troops.[21] Previously heavy cavalry, employed exclusively on the attack, had dominated warfare; and armies unfortunate enough to find themselves on the defensive had been forced to retreat inside fortresses and suffer the starvation and privation of siege. Thus, technological change opened a new era of military history; and since Crécy (with its verdict solidly reaffirmed 70 years later at Agin-

court), "infantry has remained the primary element of ground combat forces."[22]

Change indicated at Crécy, however, spread slowly to the armies of Europe. Decades passed before it began to impact military development in the Russian Empire, which at the time of Crécy was still being ravaged by mounted Mongolian armies. Nevertheless, the ascendancy of common infantry, emphasizing the strength of Russian numbers, along with defensive advantage offered by possession of vast territory for retreat and maneuver, was to have profound influence on the development of strategy in Russia.

In 1708-09, the tactical genius of Charles XII of Sweden took him into combat deep in the Ukraine, where Russian retreat, maneuver, and scorched-earth strategies brought the Swedish army to exhaustion and total defeat by a huge army under Peter the Great.[23] A pattern of Russian strategy was thereby established. It accepted severe sacrifices in territory and lives while maintaining a strategic defensive to exhaust an adversary until he could be overwhelmed. That strategy continues to this day.

Even the great Napoleon, on whose campaigns offensive doctrine rests, experienced defeat from this simple but effective Russian strategy when he marched to Moscow in 1812. Although his final defeat was averted for some time, the final demise of his empire began when he crossed the Russian frontier and began pouring the resources of France upon empty steppes. The implications of this lesson were largely ignored by one great Napoleonic interpreter, Jomini, who chose instead to emphasize the magnificence of Napoleon's conquests. However, another interpreter, Clausewitz, understood the inherent strength of defensive strategy and chose to stress heavily that "defense is a stronger form of fighting than attack."[24] Thus a divergence in strategic theory began that emphasized the differing geopolitical realities in East and West and evolved to the distinctly different military postures of today. These differences are particularly clear now that weapons for strategic defense are considered separately from those of strategic offense and conscious choices must be made regarding which type of system will receive budgetary allocations.

Defeat for Russia in World War I was inextricably intertwined with internal political collapse and revolution, but the civil war that followed found foreign expeditionary forces once more swallowed up by the vastness of the territory and the numerical superiority of a peasant army. In the Second World War, traditional Russian strategy was classically employed yet again as Hitler met a fate nearly identical to that of Charles XII and Napoleon. By accepting losses in both land and manpower that would have been disastrous for smaller nations, the Soviets absorbed the Nazi offensive thrust and husbanded its strength until a killing counterblow could be delivered. Clausewitz may not have approved of the crudity and inefficiency of the campaign, but he would have accepted the conclusion as inevitable.

In the nuclear age, the only change in fundamental Soviet strategy is that the counterblow will not be delayed. While great sacrifices undoubtedly will have to be made, this prospect is not a new idea. And at the same time that punishment is being accepted, it will be returned with overpowering force. However, aware that their nation has experienced the ravages of invasion many times in its history, the Soviets are not content to entrust their fate merely to the rationality of their adversary and the ability of their empire to accept and survive an onslaught. They intend to mount an active defense-in-depth and think it insane to do otherwise.

> In the mid- to late-1950s, when the Soviets were assessing what kind of strategy and matching capabilities were required for war in the nuclear age, an interlocking defense network composed of antiaircraft/antiballistic missile systems and adequate protection for the civilian population and industry was high on the list of priorities.... [A decade later, as Kosygin confessed to Lyndon

> Johnson, the Soviets were] palpably mystified by the lack, after more than two decades of strategic competition, of a coherent American doctrine and strategy for attaining a meaningful victory out of nuclear war.[25]
>
> . . . the U.S. must look at Soviet defensive capability in terms of ballistic missile defense, air defense, and civil defense. A recent Central Intelligence Agency Study determined that Soviet civil defense efforts cannot neutralize the U.S. response with nuclear weapons to a Soviet first strike. That study is absolutely correct as far as it goes . . . but it misses the whole point. If the Russians can achieve an antiballistic missile technology breakthrough and add that to their active air defense capability, then civil defense takes on an entirely different role. This is one reason why development of high-energy-laser and charged-particle-beam weapons has become so important. . . . The USSR does not have to have an air-tight defense but only the capability to limit damage to an acceptable level *as it perceives it*.[26]

Thus Soviet strategy has developed on historically sound experience, yet in a way different from U.S. strategy. The Soviets do not dismiss war and the huge loss it will bring as "unthinkable." They accept that it might occur, make plans to keep the damage to acceptable levels (by their standards), and build weaponry capable of delivering a killing blow to their opponent.

Prescriptions for Change

History seems to show that a balance between offensive and defensive capability is needed. As a Royal Air Force officer, reflecting on Douhet's theories after the Battle of Britain, commented: "If it is true that 'the bomber will always get through,' as it is popularly stated, it is equally true that 'not all the bombers will get through' against adequate defenses."[27] With proper emphasis and investment in research, the same observation could be made regarding strategic missiles. And as the various elements of both active and passive defense are brought together, the contribution of each will be multiplied. It is only by looking at the "whole" effect of defense along with the effects from offensive action that strategic possibilities can be examined realistically.

A second historical lesson applicable to today's choices between strategies and their associated specialized weapons systems is the realization that military means must be related to political ends. This fundamental Clausewitzian precept has often been forgotten at great cost in the past. In World War I, for example, "Foch gives little indications in his writings of having thought about the matter at all. . . . Yet if the total war of the future is fated to be one where victory is pursued blindly, and therefore at wholly incommensurate costs which destroy its meaning, it will be more akin to the first than the second of the two world wars."[28] Once a nation is equipped with sufficient offensive arms to obliterate its potential adversaries, further increases in offensive weaponry add little to security or the advancement of political goals. The cost of multiplying this offensive firepower is simply disproportionately high to the benefits derived.

But that is not true of defensive investment—particularly in the United States where so little defense exists. In fact, initial expenditures on defensive measures would probably bring the highest return for U.S. military dollars because there is so much room for investment before the onset of diminishing returns.

In the first place, active defenses could help protect U.S. strategic offensive weapons, hopefully destroying a portion of any Soviet attack capability launched against counterforce targets and preserving U.S. retaliatory might. Results following a Soviet first strike might therefore not reflect such a gross asymmetry in favor of the U.S.S.R. as is currently contemplated. To Bernard Brodie, this point constitutes a basic principle about defense in general:

> Known ability to defend our retaliatory force constitutes the only unilaterally attainable situation that provides potentially a perfect defense of our homeland. Conversely, a conspicuous inability or unreadiness to defend our retaliatory force

must tend to provoke the opponent to destroy it; in other words, it tempts him to an aggression he might not otherwise contemplate.[29]

Second, active defense offers a realistic possibility—perhaps the only realistic possibility—of reducing or eliminating the frightening specter of nuclear holocaust that has haunted most of the world for over three decades. One approach might be for both sides to develop massive and highly effective defenses on a scale of both quantity and quality that could meet and destroy any combination of nuclear attack launched against them. By using various weapons and tactics, such defenses would reduce the effectiveness of offensive systems so drastically that a climate and a motive conducive to disarmament could result. Such a development, however, envisions a highly optimistic evolution of defensive versus offensive weaponry, which is historically and logically questionable. It would be better to assume that if both offensive and defensive weaponry continue to be developed, each will contain elements of strength and weakness with neither achieving total dominance. In such an event, defenses would contribute to deterrence only to the extent that greater uncertainty was introduced to offensive planning. Nuclear attack would be forestalled by eliminating certainty of destruction and replacing it with less quantifiable probabilities.

Another (more realistic) way of eliminating the specter of nuclear war would be for defensive strategies to be employed along with negotiated arms reductions. Assuming that reductions in strategic nuclear weapons will be approved eventually by both the United States and the Soviet Union, it is obvious that ballistic missile defense (BMD) systems would multiply the effect of such reductions. It is generally held that the primary problem with BMD is the sheer mass of incoming missiles that would have to be faced in a short time. If the numbers were reduced, associated defensive solutions would be more viable. Even first-generation ABMs (Sprint/Safeguard) were touted as possessing good capability against limited or Nth-country (China) attacks.[30] Eventually, if both sides drew down to, say, 200 launchers, defensive weapons might begin to achieve virtually certain protection. Furthermore, any reluctance to take the final step beyond reductions to total nuclear disarmament, stemming from a desire to retain at least limited options to employ weapons of mass destruction in times of crisis, might be overcome. Where without defenses there could be great misgivings about total nuclear disarmament, if it could be shown that small offensive weapons reserves were useless in the face of effective defenses, incentives would exist to continue the arms reduction process. In other words, defensive weapons would promote both a climate and a motive for disarmament by eliminating any threat of surprise. Such prospects however, depend on the development of defensive systems on both sides before they are needed. Obviously, the sooner development can begin, the better.

In summary, then, one can see that the fundamentals of current grand strategies are deeply rooted in past strategic theory and, in fact, represent the culmination of classical theory in its purest form. A distinct difference between U.S. and Soviet strategic doctrine exists, with the United States preferring to stress the offensive while the Soviets pursue a more balanced approach. To remove Soviet temptation to strike at vulnerable U.S. weapons and to serve as a "multiplier" to any arms reductions, U.S. adoption of some elements of defensive strategy and development of associated weaponry seem reasonable and worthwhile.

Admittedly, there are those who claim that BMD is destabilizing. They point out that if either nation perceives the other to be gaining a technological breakthrough—deploying defensive systems unilaterally and gaining protection that the other cannot obtain—it may feel

forced to launch a preemptive strike before such defenses could be set in place. Such arguments, however, do not militate against U.S. *development* of BMD but only against the manner and timing of *deploying* such systems.

If the United States finds itself facing a numerically superior nuclear force capable of destroying two legs of its triad (ICBMs and bombers), Soviet temptation to strike at this area of vulnerability, as pointed out by Bernard Brodie, might provide a motive for attack. If such a Soviet force were augmented by comprehensive antimissile defenses, that motive would be even stronger because the means of negating a substantial portion of the remaining U.S. weapons, the SLBMs, would be in hand. The United States would, in effect, face forceful cancellation of its strategic forces altogether by the offensive and defensive combination of Soviet arms.

If, on the other hand, the United States pushed ahead as rapidly as possible with research and development, then unilateral deployment of BMD systems by the Soviets would be obviated by U.S. ability to deploy similar systems apace. Once both nations have defensive systems in place, those systems will begin to produce the beneficial, stabilizing effects discussed earlier. The issue is how to get safely from here to there. Clearly, however, if the United States attains the capability to deploy effective BMD weapons, then it can set the pace for mutual deployment; if it is not in a position to keep up with the Soviets, however, the United States will be faced with the uncomfortable possibility that the Soviets may not be willing to modify or restrain their deployment schedule.

In the end, however, the debate could be moot. Given the present state of research and development of various forms of BMD on both sides and the investment emphasis placed on pushing those programs ahead, defensive systems for both of the superpowers could be developed at about the same time. If the United States accepts the importance and logic of strategic defenses as the Soviets have, it might only be necessary for each nation to pursue diplomatic contacts and intelligence gathering to ensure themselves that no short-term, unilateral disadvantages developed. Regardless of the likelihood of concurrent timing, it is clear that the United States should pursue antimissile defense as vigorously as possible, recognizing that it is the only type of strategic program still capable of matching political goals with military aims. The inertia of U.S. preference for offensive strategy, whether disguised as theories such as mutual assured destruction or pseudoscientific investigations such as cost-benefit analysis, must be overcome.

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22. Ibid.

23. Robert K. Massie, *Peter the Great: His Life and World* (New York: Alfred A. Knopf, 1981), Part Three: The Great Northern War, pp. 289-516.

24. Clausewitz, p. 84 and Book Six. It must be acknowledged, however, that his rationale on this point was derived primarily from the wars of Frederick the Great rather than the Russian defensive campaign of 1812.

25. Mark E. Miller, "Soviet Strategic Thought: The End of an Era?" *International Security Review*, Winter 1980-1981, pp. 8 and 2.

26. Clarence A. Robinson, "Missile Defense Gains Support," *Aviation Week & Space Technology*, 22 October 1979, p. 16. This quote was taken largely from remarks attributed to John M. Collins, senior researcher for the Library of Congress. Emphasis added.

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28. Ibid., pp. 53-55.

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Air University's Center for Aerospace Research, Doctrine, and Education (CADRE) held a workshop on "Low-Intensity Conflict and Modern Technology" on 22-23 March 1984. Sixty-one participants, including officers from all services, representatives from defense industries, and scholars gathered to analyze seventeen articles prepared for the workshop. The articles examined various policy, doctrinal, and technological questions relating to low-intensity conflict and were designed to raise questions on the role of military power in the "small wars" that are part of today's world. CADRE plans to publish the workshop proceedings at a future date. For further information on the conference and the publication of the proceedings, contact CADRE/RIC, AUTOVON 875-5307 or commercial (205) 293-5307.

air force review

BILLY MITCHELL AND THE GREAT TRANSCONTINENTAL AIR RACE OF 1919

DR. WILLIAM M. LEARY

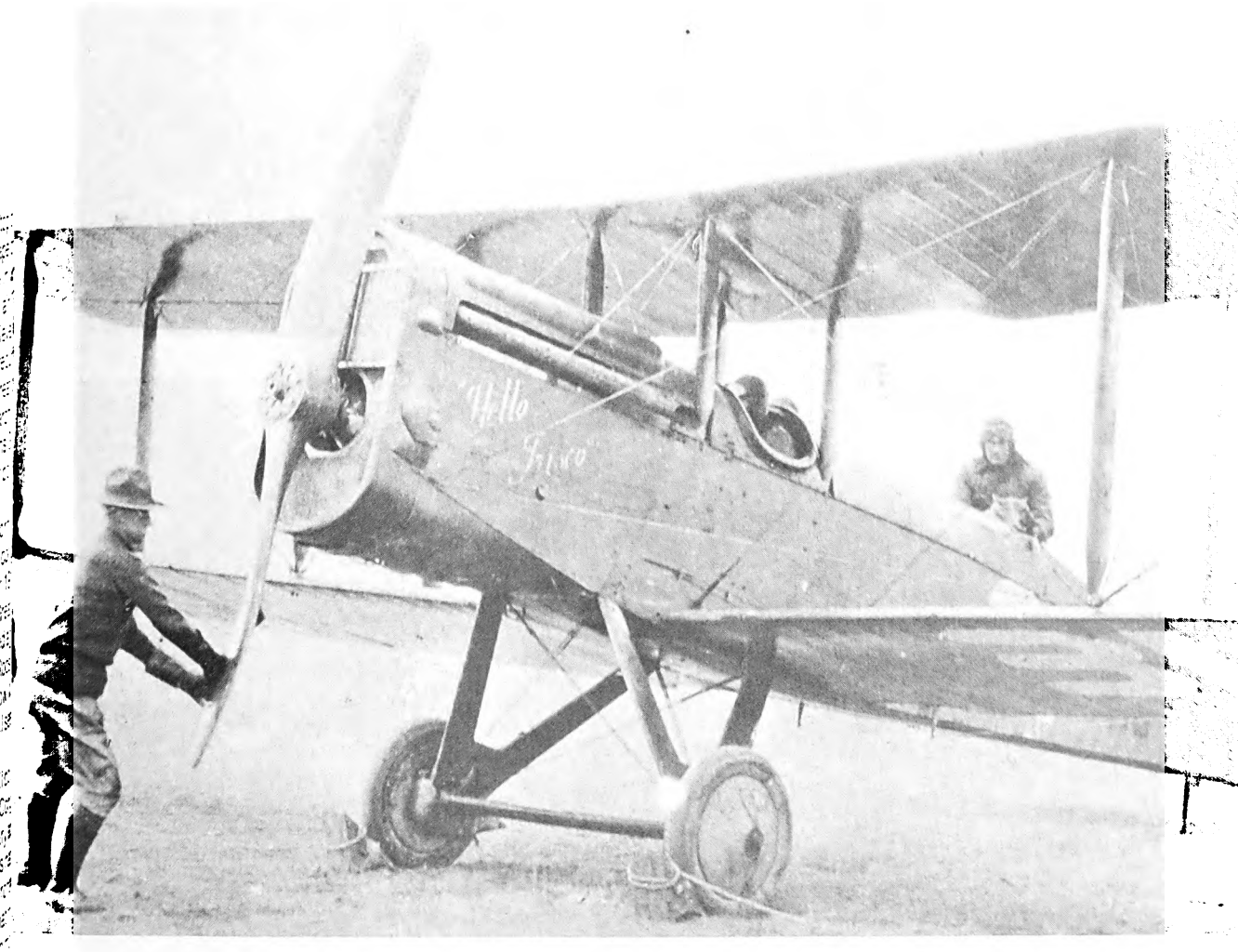
GENERAL William "Billy" Mitchell climbed to the top of the mountain during the Great War and saw the shape of the future. A new world opened before him, an age in which "the destinies of all people will be controlled through the air." The dawning of this "aeronautical era" (Mitchell came to believe, with the passion of an Old Testament prophet) meant that the security—and greatness—of the United States depended on the creation of an air force second to none. Returning from France in March 1919 to take charge of the Air Service's Training and Operations Group, the flamboyant airman set out to preach the gospel of air power to the unenlightened.[1]

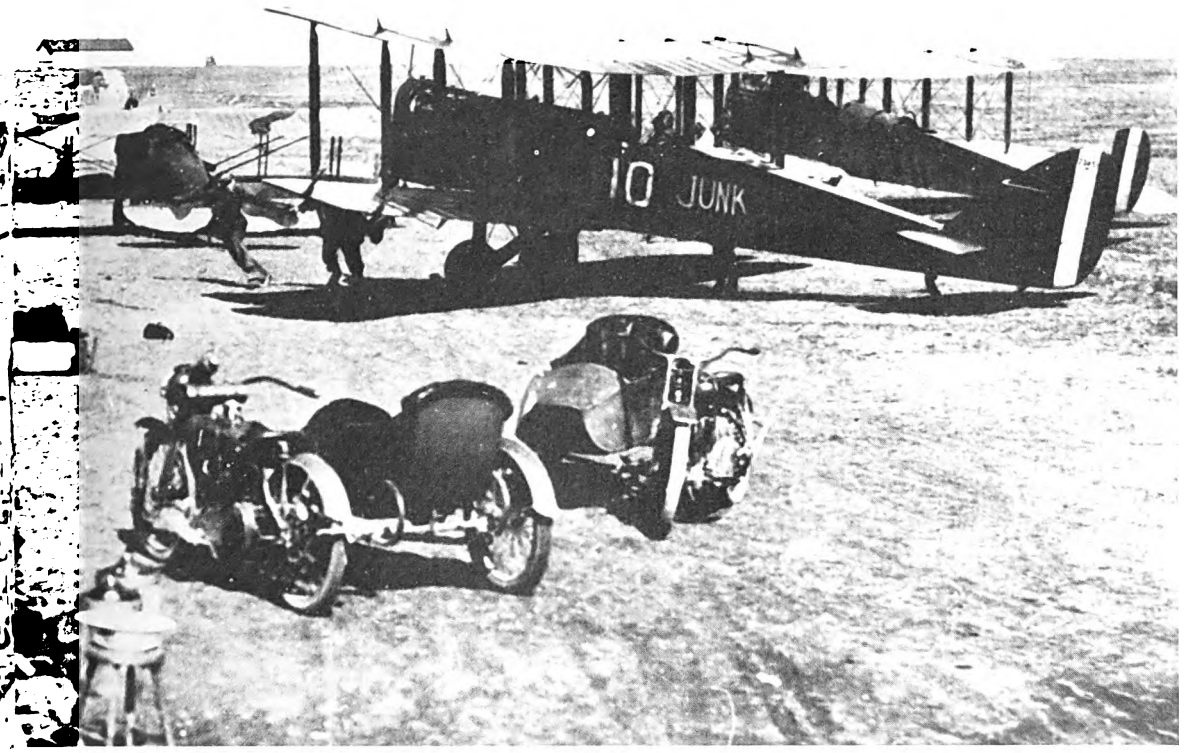
The essential first step along the road to aerial superiority, Mitchell argued, was an independent air force. At his urging, congressional supporters introduced legislation in midsummer 1919 to establish an expanded, unified air service modeled on Great Britain's Royal Air Force. But with powerful opponents arrayed against the scheme (Assistant Secretary of the Navy Franklin D. Roosevelt, Secretary of War Newton D. Baker, and President Woodrow Wilson all came out against independence), the reorganization bill seemed certain to fail.[2]

Undaunted by the dismal outlook on Capitol Hill, Mitchell counted on favorable public opinion to silence all opposition. With Congress scheduled to consider the unification proposal and military appropriations in the fall, he drew up an imaginative plan to focus national attention on aviation. To demonstrate the progress that aeronautics had made during the recent war, Mitchell announced that the Air Service would fly across the North American continent en masse.[3]

Mitchell's scheme was breathtaking. Although a number of aviators had flown across the United States since Cal Rodgers first accomplished the feat in 1911, the transcontinental trip was still a hazardous adventure. Landing areas were few and far between, especially in the western part of the country; aircraft instrumentation could be best described as primitive; and navigational aids and accurate weather information did not exist. Yet Mitchell wanted to *race* from New York to California. The Air Service insisted on the official designation of "Transcontinental Reliability and

General William "Billy" Mitchell, who masterminded the transcontinental race, is shown on the facing page giving advice to a pilot who will fly in the competition. . . . Below, Lieutenant Belvin W. Maynard, who will win the race, is about to begin the 150-mile leg across the Rockies. Maynard's dog Trixie accompanied him on the flight and can be seen in the rear of the plane.

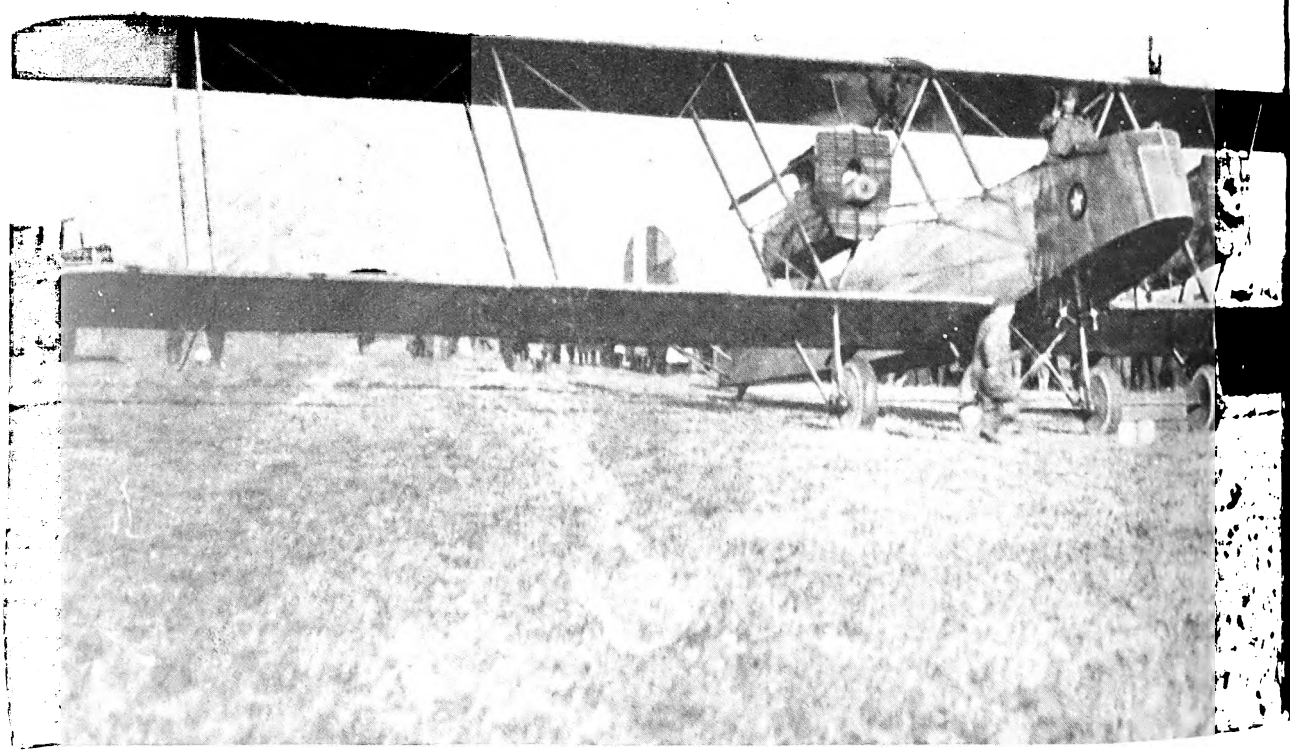




The airfields in 1919 lacked the many conveniences and the orderly appearance of today's airports. The DH-4 in the foreground is down for refueling during one of the 30-minute stopovers of the race.... Lieutenant Colonel Harold B. Hartley, commander of the 1st Pursuit Group in France during World War I and one of the prerace favorites, is shown (left, below) in the SE-5 single-seater pursuit plane that he flew in the race.

Endurance Test," but no one harbored illusions about the true nature of the event. As the *New York Times* announced, Americans were about to witness "the greatest air race ever attempted."[4]

Preparations went forward without delay. Air Service officers selected a route that would run from New York to Buffalo, skirting the Appalachian Mountains, then along Lake Erie to Cleveland before turning westward to Chicago and Omaha. Aviators would pick up the tracks of the Union Pacific Railroad at Omaha, continuing to San Francisco via Cheyenne, Salt Lake City, Reno, and Sacramento. The railroad route was compelling: it followed favorable terrain, supplies and equipment could be moved easily by rail to intermediate points, and the tracks—known to airmen as the "iron compass"—would serve as the primary navigational aid from Omaha to San Francisco.



In deference to the operational limitations of contemporary aircraft, which cruised at about 100 miles per hour and carried enough fuel to keep aloft for only two or three hours, Mitchell's planners established twenty refueling or control points along the 2701-mile route. Contest rules called for a minimum stop of thirty minutes at each point. Also, in the interests of safety, flying was restricted to daylight. Originally conceived as a one-way crossing, with contestants starting at New York and San Francisco, the Air Service responded to criticism and changed the event to a round-trip race—thus neutralizing the possible advantage of prevailing westerly winds.[5]

The starting date—8 October 1919—turned out to be opportune: Americans needed a diversion after a terrible summer of nationwide unrest and violence. Scattered racial incidents had culminated in a bloody Chicago race riot in late July, which left 36 dead. September saw the climax of postwar labor troubles, with a police strike in Boston and a bitter dispute in the steel industry. Two days before the air race was scheduled to begin, federal troops occupied Gary, Indiana, in an effort to quell mounting violence in the steel town. And all this came at a time when Woodrow

The twin-engine Martin bomber flown by Captain Roy Francis attracted a crowd at Binghamton, New York, on its westward journey. It later crashed near Omaha, Nebraska. (Both Captain Francis and his passenger, French Captain Paul de Lavergne, survived the crash.) One of the Martin's engines was used to replace Maynard's engine, which failed due to a broken crankshaft.

Wilson hovered near death: the President, in the midst of a raging national debate over ratification of the Versailles Treaty, had collapsed following a speech at Pueblo, Colorado, on 25 September.[6]

For a brief time, at least, people could put aside thoughts of the nation's ills and turn their attention to Roosevelt Field, Long Island. By early October, some 48 airplanes stood ready to start the great air race. A few esoteric models attracted considerable interest (a captured German Fokker and a twin-engined Martin bomber particularly stood out), but the bulk of the competing aircraft were staid DH-4s, a wartime biplane of British (de Havilland) design and American manufacture. The press speculated on the outcome of the contest. Prerace favorites included Lieutenant Colonel Harold E. Hartney, former commander of the 1st Pursuit Group in France; Captain Field K. Kindley, fifth-ranking American ace; and Lieutenant Belvin W. Maynard, recent winner of the New York-to-Toronto race.[7]

The morning of 8 October dawned clear and cool with a fresh northeasterly wind. More than 2000 spectators showed up for the day's festivities. The 22d Infantry Band provided music, while ladies of the War Camp Community Service passed out

sandwiches and coffee to contestants and guests. Assistant Secretary of War Benedict Crowell, a friend of the Air Service and supporter of unification, represented Secretary Baker, who tactfully had found better things to do. Billy Mitchell, of course, had come from Washington, where he had been testifying in support of a separate air force before House and Senate committees.

Shortly before 9:00, the throaty roar of a dozen engines caught the crowd's attention. Starting honors went to Commodore L. E. O. Charlton, British air attaché, who was participating as a courtesy. But Charlton's Bristol fighter developed engine trouble, and Lieutenant J. B. Machle, next in line, took off first at 9:13. Conforming to rules, Machle rose to 1000 feet and circled the field before setting course for the first control point at Binghamton, New York.

Departures were routine until it came time for Lieutenant Maynard to leave. As he prepared to start the 400-hp Liberty engine of his DH-4, the flier's dog, Trixie, ran up to the airplane, barking and jumping with excitement. Maynard climbed down, picked up the Belgian police dog, and hopped back on board. He took off with the obviously delighted Trixie hanging over the side of the open cockpit. The crowd cheered with pleasure.

Secretary Crowell took advantage of a lull in the proceeding to speak with the press. "It is beyond dispute," he said, "the greatest aerial contest in the world." Pointing out that the United States lagged sadly behind Europe in the development of aeronautics, Crowell voiced the hope that the race "will awaken people" to the need for increased American effort in this critical area.

The secretary then decided to get into the spirit of things and asked to be taken up for a ride. Mitchell promptly made the necessary arrangements. Sporting borrowed goggles and a leather coat, Crowell waved to the crowd as he clambered into the cockpit of a Curtiss biplane. The aircraft taxied to the edge of the field, turned into the wind, and began its takeoff run. Just as the wheels left the ground, the engine failed. The Curtiss stalled to the right, a wing tip struck the ground, and the aircraft turned over on its back. After a moment of stunned silence, the crowd rushed out onto the field. Crowell and pilot M. G. Cleary emerged from the wreck, shaken but uninjured. "That's the shortest flight on record," Crowell quipped to reporters. The secretary said that he was ready to go up again, but unfortunately, a "pressing appointment" in the city prevented his making another flight. Assuring Captain Cleary that the accident was not his fault, he posed for a photograph with the embarrassed aviator before hastily leaving the field.[8]

There was a good deal less excitement in San Francisco, where a small group of fifteen contestants stood ready to depart. Even the weather—seasonal low clouds and fog—seemed in keeping with the subdued mood. Although few in numbers, the West Coast contingent did boast several noted fliers, including Major Carl Spaatz, assistant air officer for the region; Major Dana Crissey, commander of Mather Field at Sacramento; and Captain Lowell H. Smith, who had flown for Pancho Villa in the early phases of the Mexican revolution. Colonel Henry H. "Hap" Arnold, destined to lead the Army Air Forces in World War II but at that time in charge of military aviation on the Pacific coast, joined a group of local officials to bid farewell to the airmen.[9]

The end of the first day saw Lieutenant Maynard—dubbed the "flying parson" by the press because he had left a Baptist seminary in 1917 to join the Air Service—clearly in front. Maynard reached Chicago by dark, a distance of 810 miles from New York, while his three nearest competitors spent the night in Bryan, Ohio. These were the fortunate ones. Eighteen fliers failed to get beyond Buffalo.

The eastern half of the transcontinental route was strewn with debris. Commodore

Charlton, who had departed after engine repairs, wrecked his Bristol fighter during an emergency landing near Ithaca, New York. Lieutenant George McDonald's DH-4 suffered a similar fate when he was forced down in Pennsylvania. Lieutenant D.G. Gish and his observer, Captain Paul de Lavergne, French air attaché, narrowly escaped death when their aircraft caught fire over Livingston County, New York. Neither had a parachute; Gish managed to crash the DH-4, his only alternative, before flames reached the cockpit. The intrepid de Lavergne transferred to a Martin bomber, piloted by Captain Roy Francis, and resumed his trip across the country.

Sergeant W. H. Nevitt, observer in a de Havilland flown by Colonel Joseph Brant, was not so lucky as Gish and de Lavergne. Engine trouble forced down Colonel Brant near Deposit, New York. The airplane crashed on landing, and Nevitt was killed.

Meanwhile, the racers eastbound from San Francisco managed to cross the treacherous Sierra Nevada Mountains without incident. Eleven of the fifteen fliers reached Salt Lake City by afternoon. There, due to poor field conditions at the next control point, they were held overnight. But the first day had brought tragedy to this group also. Major Crissey and his observer, Sergeant Virgil Thomas, arrived over Salt Lake City in late afternoon shortly after 5:00. Crissey circled the field, waving to the crowd that had gathered to greet the airmen. All seemed in order until the final approach. Crissey came in at an abnormally steep angle. The aircraft stalled and them plummeted to the ground. Both occupants were killed.

On Thursday, 9 October, Maynard left Chicago at first light. Encountering severe turbulence en route to Des Moines, he became airsick for the first time in his flying career. At North Platte, Nebraska, he met and exchanged greetings with the eastbound leader, Captain Lowell Smith. Maynard continued on to Cheyenne, while Smith spent the night in Omaha. The "flying parson" ended the day with a lead over Smith of 236 miles, or a little more than two hours' flying time.

Casualties continued to mount behind the leaders. Rainstorms east of the Mississippi caused numerous forced landings, and four aircraft suffered major damage. Lieutenant A. M. Roberts and his observer survived an especially close brush with death. In an effort to make up for lost time, Roberts chose the direct route, over Lake Erie, between Buffalo and Cleveland. His engine failed, and he had to ditch in the lake. Luckily, a passing freighter saw the crash and picked up the two men.

Snowstorms over Wyoming led to a fatality in the west. Lieutenants E. V. Wales and William Goldsborough were en route to Rawlins from Cheyenne, flying close to the ground below low clouds, when they encountered a snowstorm. Wales lost forward visibility. Suddenly, a mountain loomed ahead. Wales threw the aircraft into a violent turn, stalled, and dove into the ground. Lieutenant Goldsborough emerged from the wreck with serious injuries but managed to walk three painful miles for help. His effort was in vain. When rescuers returned to the aircraft, they found Wales dead.

The third day of the race began with problems for Lieutenant Maynard, who had hoped to arrive in San Francisco by sundown. Frosty overnight temperatures at Cheyenne resulted in an ice-clogged overflow pipe, which, in turn, caused the engine to overheat on starting, damaging the radiator. Sergeant William E. Kline, Maynard's observer-mechanic, made the necessary repairs, but the job took five hours. Maynard ended the day at Saldura, Utah, three control points and 518 miles from his final destination.

Meanwhile, Captain Smith continued to lead the eastbound contingent, with Major Spaatz and Lieutenant Emil Kiel in hot—and acrimonious—pursuit. Kiel arrived at Des Moines twenty-four minutes before Spaatz. When the major landed, he pro-

tested that Kiel had left Omaha, the previous control point, two minutes before the required thirty minutes for stopovers. The officer-in-charge honored Spaatz's complaint and forced Kiel to wait an additional two minutes at Des Moines. Shortly before nightfall, Spaatz and Kiel caught up with Smith at Bryan, Ohio. New York lay only 560 miles away, and they would have the advantage of the early rising sun. Maynard's lead in the west had vanished.

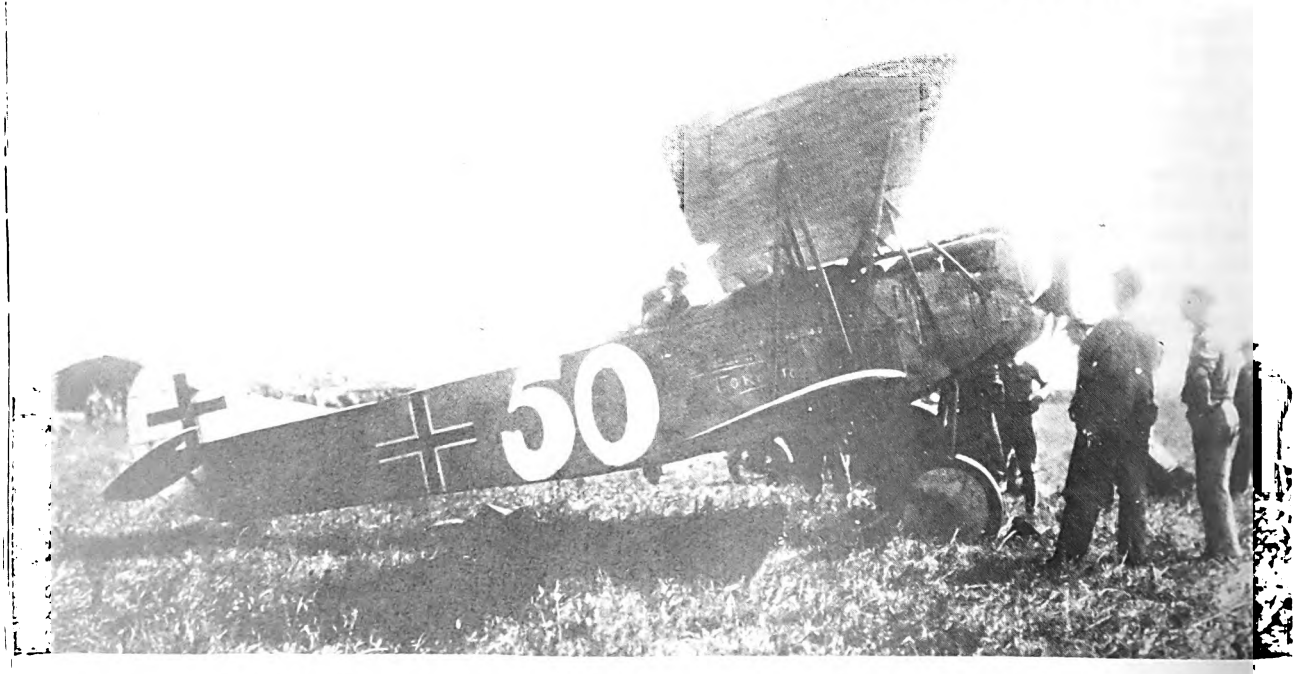
Unfortunately, the third day of the race also saw three serious accidents and one more fatality. Major A. L. Sneed, piloting a DH-4 short of fuel, made a very hard landing at Buffalo. The aircraft bounced high in the air and then smashed down on its nose. The observer, Sergeant Worth C. McClure, catapulted out of his seat, suffering a broken neck.

On Saturday, 11 October, the end of the first phase of the Transcontinental Air Race proved anticlimactic. Maynard left Saldura at first light, found ideal weather en route, and arrived in San Francisco without incident at 1:12 in the afternoon. On hand to greet the slender, bespectacled aviator, who had just set a new transcontinental speed record, was the chief of the Air Service, Major General C. T. Mehoher, who was accompanied by Colonel Arnold and a small group of officials and spectators.

Maynard had won because the eastbound fliers had run into trouble. Smith, Spaatz, and Kiel left Bryan at dawn, headed straight into threatening weather. Captain Smith, battling rainstorms, could not find the airfield at Cleveland. Coming down to ask directions, he damaged the landing gear and propeller of his de Havilland. Repairs took five hours, putting him out of contention.

Spaatz and Kiel located Cleveland without difficulty, but minor mechnical prob-

Several German Fokkers captured during World War I flew in the race. The Fokker shown here on the starting day of the contest still bore its German markings.



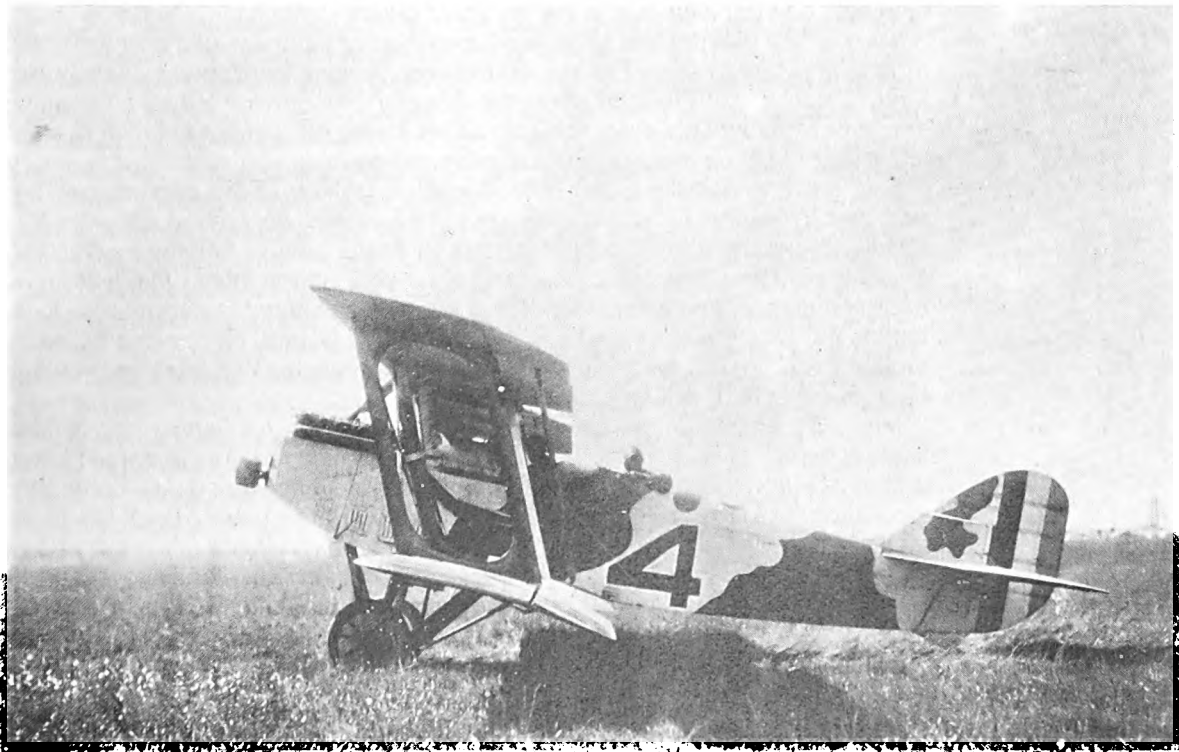
lems plagued their journey. In late afternoon, Spaatz arrived at Binghamton, where he encountered a brief delay. Kiel, who landed shortly after Spaatz, was asked to delay his departure until ten minutes after the major left, in deference to his senior. Kiel refused, and both men took off at the same time. Spaatz gained the lead en route to New York, but he landed by mistake at the Hazelhurst airport, adjacent to Roosevelt Field. Discovering his error, Spaatz took off immediately. It was too late. Kiel beat him to Roosevelt by twenty seconds.

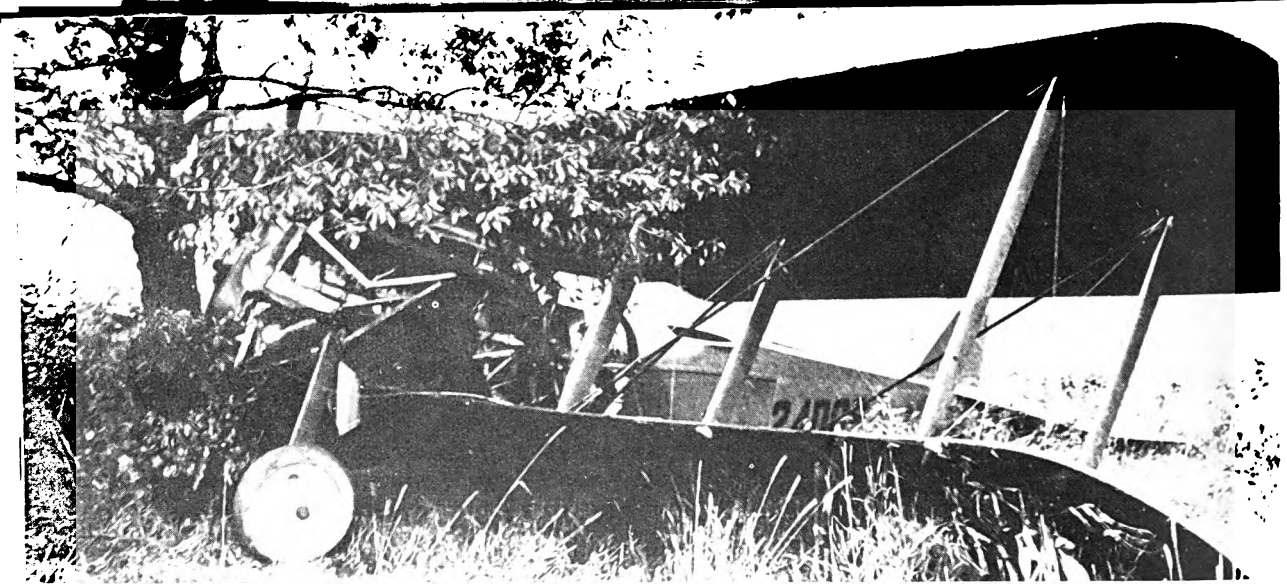
Mercifully, the day had been free of serious accidents.

Sunday, 12 October, offered twenty-four hours of rest under contest rules and provided time to take stock of the past week's events. A majority of contestants had yet to complete the one-way crossing, and the race already had claimed five lives (seven, if the deaths of two fliers en route to the starting point were counted) and produced numerous injuries. The press tended to be philosophical about the losses. "Man," an editorial in the *New York Tribune* announced, "is compelled to pay the toll to a nature which is jealous of his progress." But some of the participants took a less detached view. Major Spaatz, destined to become the first chief of staff of the United States Air Force in 1947, opposed continuation of the race. No further useful purpose, he believed, could be served by going ahead. If the War Department insisted, then the fliers should return at a leisurely pace via a less hazardous southern route. Lieutenant Kiel was even more outspoken. "No one," he told a reporter, "can make me race back to California. . . . The train will be good enough for me." The American Flying Club urged Washington to call an end to the contest.

The War Department remained unmoved. The Army was the Army. Orders called

A camouflaged La Pere two-seater prepares to take off from one of the grassy airfields used in the race.





Accidents plagued the transcontinental race. Some accidents occurred even before the race started. This DH-4 crashed at Bustleton, Pennsylvania, as the pilot was en route to the start of the contest. Including two fliers who were killed en route to the starting point, seven fliers lost their lives as a result of the race.

for a double crossing of the continent, and orders *would* be obeyed.

Lieutenant Maynard resumed his flight in accordance with contest rules (not counting Sunday, forty-eight hours after his arrival) on Tuesday afternoon, 14 October. Spaatz got under way from New York the next morning, followed by Captain Smith. Lieutenant Kiel, who did not receive a train ticket from his superiors, complained that his aircraft needed extensive repairs and delayed his departure.

Monday and Tuesday had been marked by a number of accidents, as stragglers completed the first leg of the race. Wednesday, 15 October, however, brought fatalities. Lieutenants French Kirby and Stanley C. Miller experienced an engine failure near Evanston, Wyoming. Their aircraft stalled during an attempted deadstick landing, and both men died in the resultant crash.

The demise of Kirby and Miller produced the first severe public criticism of the air race. The *Chicago Daily Tribune* led the way, terming the contest "rank stupidity." Even Congressman Fiorello LaGuardia, one of the Air Service's staunchest supporters, spoke out in opposition. The casualties, he noted, were out of all proportion to those that might be expected in cross-country flying.[10]

This growing hostility stung Billy Mitchell, architect of the contest, and he responded in testimony before Congress. The blame, he argued, lay with the de Havillands, aircraft that had been foisted on a reluctant Air Service by Washington officialdom. The DH-4 (all of the fatal accidents had involved this type) had an unprotected gasoline tank. Moreover, the tank was placed in a hazardous location behind the pilot; during crash landings, pilots were likely to be crushed between the tank and the engine. Mitchell left the distinct impression that the race would have been much safer if different aircraft had been used.[11]

Mitchell's attack on the favorite whipping boy of the Air Service, the "infamous flaming coffin" of World War I, did not pass unchallenged. As Lieutenant Maynard and others would later point out, the plane's record was a good deal better than its reputation. The DH-4 had a pressure-feed (rather than a gravity-feed) fuel tank that lacked the rubber covering of tanks in some other aircraft and could explode when hit by a bullet. But pressure-feed tanks were common in airplanes flown during the Great War, nor was the absence of a rubber coating unusual. Certainly, the placement of the tank was unfortunate, and the British corrected this in the DH-9. Yet,

again, this basic design was not remarkable. About half of the war's combat aircraft had tanks located behind the pilot, including the famous Spad and Sopwith Camel. Thus, although the DH-4, like the B-26 of World War II, did have detractors and skeptical critics, many fliers swore by the airplane.[12]

In any event, none of the five fatal accidents could be attributed to design problems. Modern accident investigators—perhaps too easily—would likely have singled out pilot error as a major factor. Two incidents (Crissey and Sneed) clearly were due to poor landing technique. Two others (Kirby and Brant) occurred on deadstick landings. Engine failure was an everyday event in 1919, and pilots were expected to come down safely in such circumstances. Lieutenant Wales's accident, if it happened today, would likely be blamed on poor judgment: the pilot had flown into weather conditions beyond his ability to handle.

Mitchell had wanted publicity but not the kind that followed the latest fatalities. Nevertheless, the race continued. It seemed almost like a matter of pride for Mitchell—perhaps not personal pride, but pride in the Air Service.

On 16 October, fate turned against Lieutenant Maynard. A broken crankshaft forced him down forty miles west of Omaha. The "flying parson" needed a new engine. Even if he could find one, normally it took about three days to make the necessary repairs. But Maynard was a resourceful and determined young man. He located a Liberty motor in Omaha, courtesy of Captain Roy Francis, whose Martin bomber had crashed earlier in the week. Although the airplane had been demolished, one of its engines had escaped damage. Francis had the engine trucked to Maynard and arranged for searchlights so that the repair crew could work through the night. Sergeant Kline, in charge of the engine change, performed a minor miracle: the airplane was ready to fly in eighteen hours.

Captain Lowell Smith, an equally determined individual who had become the westbound leader, ran into problems also. On the evening of 15 October, his aircraft was destroyed by fire in Buffalo when lanterns being used by mechanics ignited a wing. He received permission to continue the race if he could find a replacement aircraft. Prospects seemed dim until Major Spaatz arrived on the 17th. It took only a little pleading before Spaatz agreed to turn over his DH-4 to the eager captain. Happily, Spaatz bowed out of a race which he now considered pointless. Smith, who later would lead the first round-the-world flight in 1924, went on to conquer wind and weather, becoming the first West Coast flier to complete the round trip when he arrived in San Francisco on 21 October.

Maynard, however, had already won the race. The lieutenant had no serious problems after Omaha and landed at Roosevelt Field in the early afternoon of Saturday, 18 October. More than 1000 people turned out for the victory ceremony, including the aviator's wife and two young daughters. The girls seemed especially happy to see Trixie, surely the first dog to make the double crossing of the North American continent by air. When asked to explain his success, Maynard credited Sergeant Kline's mechanical feats, good luck, and the fact that he had relied extensively on his compass for point-to-point navigation. General Mitchell took the opportunity to announce that Maynard's arrival marked the end of America's isolation. The race, he said, amply demonstrated the capability of air power. Maynard, collecting his family and Trixie, headed for home. Three years later, on 7 September 1922, the young pilot would meet his death while stunt flying at a county fair in Rutland, Vermont.[13]

Although the Great Transcontinental Air Race disappeared from the front pages of the nation's newspapers with Maynard's arrival in New York, the contest continued.

By the time it officially ended on 31 October, thirty-three aircraft had completed a one-way crossing and eight had made the round trip. While accidents continued during the final stages of the race, there were no more fatalities.

The human cost—seven lives—had been high, even during a period when flying could be an extremely hazardous business. The Air Service lost seventy-four aviators in cross-country operations during 1919 at a rate of one man killed every 274 flying hours. But fatalities in the air race occurred at the rate of one per 180 hours. Put another way, losses in the race fell just one short of the number of Americans killed while serving in France with the Lafayette Escadrille during twenty-two months of combat.[14]

And what was accomplished?

The announced purpose of the contest was to test the reliability and endurance of Air Service equipment. The race certainly demonstrated that the aircraft of 1919 were far from reliable and that endurance was more human than mechanical. But these results could have been obtained in a far less costly manner.

Mitchell, of course, had had other motives. He had wanted to create a congenial climate of public opinion so that Congress would approve plans for unification and vote substantial appropriations. His scheme did not work. A separate air force remained years away; in 1920, Congress would slash Air Service funds to the bone.[15]

Mitchell failed to realize his objectives through the transcontinental race, and even more bitter disappointments lay ahead for the outspoken airman. Still, while historians may call into question the effectiveness of Mitchell's role in promoting the needs of the Air Service after World War I and during the 1020s,[16] his compelling vision of the future of aviation was vindicated in time. In the final analysis, General William "Billy" Mitchell proved to be the prophet of air power for the United States.

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Notes

1. See Wesley Frank Craven and James Lea Cate, *The Army Air Forces in World War II*, 7 vols. (Chicago, 1948-1958), I, pp. 24-25, and Alfred F. Hurley, *Billy Mitchell: Crusader for Air Power* (New York, 1964), pp. 39-40. The quotation is from General Mitchell's *Winged Defense* (New York, 1925), p. 3.

2. Hurley, pp. 45-51.

3. Isaac Don Levine, *Mitchell: Pioneer of Air Power* (Cleveland, 1944), pp. 191-92.

4. *New York Times*, 8 October, 1919.

5. Details of preparation can be found in File 373, "Transcontinental Reliability Flight," Army Air Forces, Central Decimal File, 1917-38, Record Group, 18, National Archives, and Office of Director of Air Service, "Report on First Transcontinental Reliability and Endurance Test," 5 February 1920, *Air Service Information Circular*, vol. I. See also Ray L. Bowers's excellent article, "The Transcontinental Reliability Test," *Airpower Historian*, January 1961, pp. 45-54, and April 1961, pp. 88-100.

6. the turbulent postwar period is detailed by Burl Noggle, *Into the Twenties: The United States from Armistice to Normalcy* (Urbana, 1974).

7. *New York Times*, 8 October 1919.

8. Details of the race, except where notes, are taken from the *New York Times*, 9-31 October 1919.

9. *San Francisco Chronicle*, 9 October 1919.

10. *Chicago Daily Tribune*, 18 October 1919; *New York Times*, 18 October 1919.

11. U.S. House of Representatives, Subcommittee No. 1 (Aviation) of the Select Committee on Expenditures in the War Department, *Hearings*, 66th Congress, 1st Session (Washington, 1920), pp. 2644-50.

12. See testimony by Maynard and Major James A. Meissner, ibid., pp. 3657-64, 3773-78.

13. On Maynard's death, see the *New York Times*, 8 and 12 September 1922.

14. Bowers, pp. 97-98.

15. Despite claims by Levine (*Mitchell*, p. 192) and others, the air race did not make a major contribution to the later establishment of the Post Office's transcontinental air mail route.

16. For a sharply critical treatment of Mitchell's activities, see Thomas Worth Walterman, "Airpower and Private Enterprise: Federal-Industrial Relations in the Aeronautics Field, 1918-1926," doctoral dissertation, Washington University, 1970.

R in my opinion

CIVIL AIR PATROL AND THE TOTAL FORCE

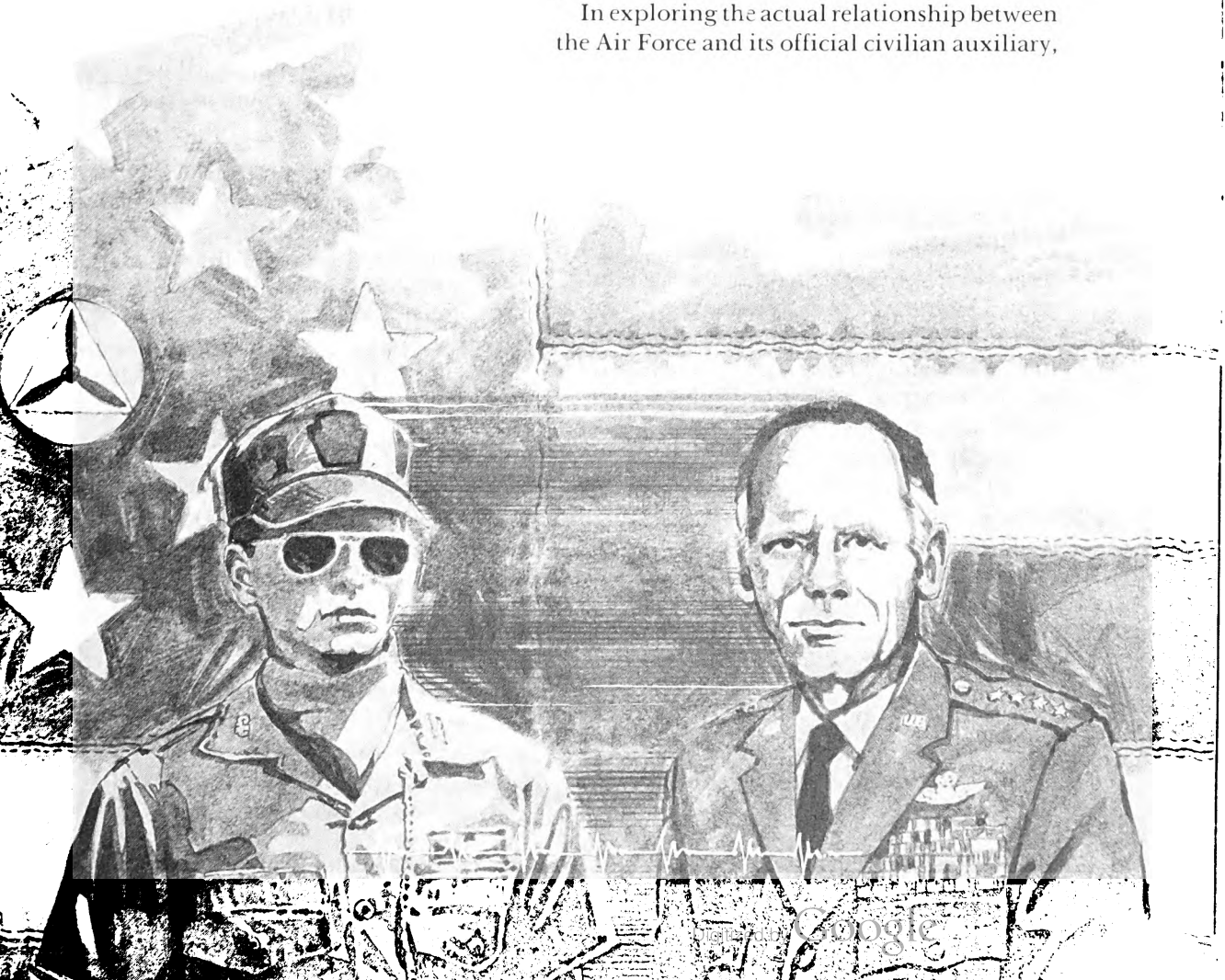
GLENN E. OVERBY II

The total force is an entity composed of active duty military and full-time civilian personnel, the reserve components of the United States, and allied forces.[1]

[Civil Air Patrol] is a vital part of the Total Force Policy.[2]

TWO statements from authoritative Air Force sources, yet obviously in contradiction? Does George Forschler's strikingly direct comment indicate an official shift of opinion, or is it simply an imprecise choice of words that happened to be quoted?

In exploring the actual relationship between the Air Force and its official civilian auxiliary,



I shall discuss the mission of the Civil Air Patrol (CAP), the relationship of that mission to the Air Force mission, and the current image that Air Force and the Civil Air Patrol have of one another. In so doing, I hope to point the way to where Air Force doctrine on the Civil Air Patrol should be.

The Civil Air Patrol has three coequal missions which, when accomplished together, fulfill the purposes that its congressional charter sets forth. These missions are *aerospace education*, the *cadet program*, and *emergency services*.

The *aerospace education* mission is "to provide an understanding of the nature of the earth's atmospheric and outer space environments. the vehicles which travel through these environments, and the social, political, economic, technical, and philosophical impacts of these environments and vehicles upon a global society."[3] This mission has two program subdivisions: *external* programs (workshops, seminars, demonstrations, etc.) for educating nonmembers in the community at large and *internal* programs of formal training for CAP members.

The *cadet program* mission is "to produce Dynamic Americans and Aerospace Leaders."[4] CAP cadets are young people who are 13 to 20 years old. Their training program involves five areas: aerospace education, leadership laboratory, moral leadership, physical fitness, and an activity program to reinforce these aspects. Cadets wear a modified Air Force uniform, participate in a military structure in their home squadrons, and earn cadet grades (with positions of commensurate responsibility) ranging from cadet airman through cadet colonel. Cadet training is sufficiently varied and demanding that only 600 cadets nationwide have risen all the way to the cadet colonel grade during CAP's history.

The *emergency services* mission is the aspect for which the Civil Air Patrol is best known. It is "to save lives and minimize disasters through its search and rescue, communication, and disaster relief facilities and Civil Defense affiliations."[5] Emergency services operations can be subdivided into *air search and rescue*, in support of the Aerospace Rescue and Recovery Service, and *disaster relief*, in support of various state and county agencies. When CAP units perform search and rescue on call from the Air Force, the Air Force reimburses the Civil Air Patrol and its members for certain fuel, oil, maintenance, and communications expenses.

These three missions are prosecuted by an all-volunteer force of some 65,000 members, of whom about 40,000 are senior (adult) members and the other 25,000 are teenage cadets. This is a force comparable in size to a numbered air force and equivalent also to nearly two-thirds of the entire Air National Guard roster.

ALL of this is well and good, but how does it affect the Air Force?

These CAP missions contribute directly to the success of Air Force functions and missions in three ways:

- The cadet program provides a *manpower base* for future enlisted and officer personnel.
- The entire CAP program provides *community outreach* for the Air Force.
- CAP operations under the Aerospace Rescue and Recovery Service in emergencies provide an expeditious, *cost-effective contribution* to an Air Force function important to the nation.

manpower base

The Civil Air Patrol cadet program takes thousands of aerospace- or military-minded teenagers each year and exposes them to the Air Force in miniature. The Air Force derives its greatest benefits from the Civil Air Patrol in this manner.

Among Air Force Academy nominees, AFROTC enrollees and scholarship winners, and service enlistees, CAP cadets and former cadets are found in far greater proportions than what they constitute in the overall teenage population. Furthermore, these cadets and

former cadets enter service life with knowledge of military customs and courtesies, familiarity with aerospace subject matter and terminology, and leadership experience—all of which place these former cadets "a cut above" their peers from the start.

Recognizing the benefits of cadet training, the Air Force has established a basic training bypass program and initial advancement as high as pay grade E-3 for qualified cadets.

community outreach

The Civil Air Patrol operates more than 1900 units disseminated through every state in the Union. Often these squadrons are in small towns or sparsely populated areas that are tens or hundreds of miles from Air Force installations. In many communities, the local CAP squadron is the area's only week-to-week contact with the Air Force. The presence of Civil Air Patrol around the country increases the amount of direct exposure that many of our citizens have to the Air Force.

Furthermore, most CAP units maintain a variety of contacts in their host cities and towns, often participating in all manner of community activities as well as supporting local relief efforts in emergencies. Such functions are readily seen by the citizenry as the "Air Force" reaching out to help and to work with the "man in the street" and the community at large.

cost-effectiveness

Air Force Manual 1-1, *Functions and Basic Doctrine of the United States Air Force*, the fundamental doctrine outlining what the Air Force is all about, identifies several Air Force functions that are sometimes far removed from the battlefield.

> Public confidence and stability are advanced by . . . providing emergency relief in time of natural disaster.[6]
>
> We must provide strategic defensive forces to . . . support a national civil defense system.[7]
>
> . . . our rescue and recovery units use their resources to help civilians in distress.[8]
>
> Our military training must provide a smooth transition from the civilian to the military way of life.
>
> Professional military education (PME) is designed to give our people the necessary skills and education to become effective leaders. . . . [PME] provides an in-depth view of the role of the military in a democratic society.[9]

What do these areas have in common? The Civil Air Patrol is involved in all of these functions.

The Civil Air Patrol flies 70-75 percent of all search and rescue hours flown under the Aerospace Rescue and Recovery Service. CAP members train on their own time, at their own expense. Even when the Civil Air Patrol is flying for the Air Force, the Air Force expends only a fraction of the actual cost for each CAP member involved in search duties. Also, CAP aircraft are smaller, more fuel-efficient, and better suited to low-altitude visual search than Air Force aircraft. The whole arrangement adds up to a tidy cost savings for the Air Force.

But the CAP-USAF relationship is not as clean and tidy as I have implied so far. The primary reason is *ignorance*—within both organizations. Many Air Force people have no idea or have erroneous ideas about what the Civil Air Patrol is and what it does. In particular, the ways in which CAP activities directly benefit the Air Force are not widely known.

On the other side of the balance sheet, many CAP members fail to realize the direct link to the "real" Air Force that most civilians impute to the Civil Air Patrol. CAP officers are sometimes "commissioned" with as little as eight hours of formal training. Many members are not even required to wear the uniform, and most will tolerate the most blatant violations of uniform regulations because these "are not important so long as we get the job done."

But underqualified officers and sloppy uniforms do not simply diminish the CAP reputation—*they reflect adversely on the Air Force.* It is no wonder that hostility exists in some quarters.

WHAT is Civil Air Patrol's relationship to the Total Force policy?

Civil Air Patrol, in my opinion, is a contributor to the Total Force and a part thereof, and I believe that Air Force doctrine should recognize this fact.

The tripartite mission of the Civil Air Patrol provides continuing, direct support to the Air Force in fulfilling necessary Air Force noncombatant missions. Furthermore, because this inexpensive support frees Air Force resources for better execution of other missions, the Civil Air Patrol supports indirectly the Air Force combat role as well.

While the minor doctrinal point I have proposed is little more than formal acknowledgment of a fait accompli, I also believe that both the Air Force and the Civil Air Patrol have some soul-searching to do in regard to the status and value of the Civil Air Patrol. This soul-searching is needed even if no formal doctrinal change is considered for adoption. Air Force personnel need to be more aware of their own auxiliary, to realize its contributions and its limitations, and to think about how mutual cooperation can best be achieved. Meanwhile, CAP members need to recognize their responsibility for upholding the Air Force image. The trend toward more training and professional education for CAP officers needs to be accelerated, and uniform standards must be adhered to. Furthermore, since all CAP missions contribute to the Air Force mission, all CAP members should concentrate on upholding all three missions.

Through this proposed educating of all concerned and through a belated official acknowledgment of the USAF-CAP relationship, I believe that the Civil Air Patrol—our "unnumbered air force"—will take its proper place as a minor but important part of the nation's Total Force.

Hq Michigan Wing
Civil Air Patrol, Westland

Notes

1. AFM 1-1, *Functions and Basic Doctrine of the United States Air Force*, 14 February 1979, p. 3-10.
2. George P. A. Forschler, Deputy Assistant Secretary of the Air Force for Reserve Affairs, quoted in *Civil Air Patrol News*, April 1982.
3. Civil Air Patrol National Headquarters, *The Relationships of the Purposes, Missions and Programs of Civil Air Patrol* (CAP Pamphlet 304), Maxwell AFB, Alabama, 18 May 1981, p. 2.
4. Ibid., p. 3.
5. Ibid.
6. AFM 1-1, pp. 1-1-1-5.
7. Ibid., p. 1-8.
8. Ibid., p. 2-30.
9. Ibid., p. 4-10.

books and ideas

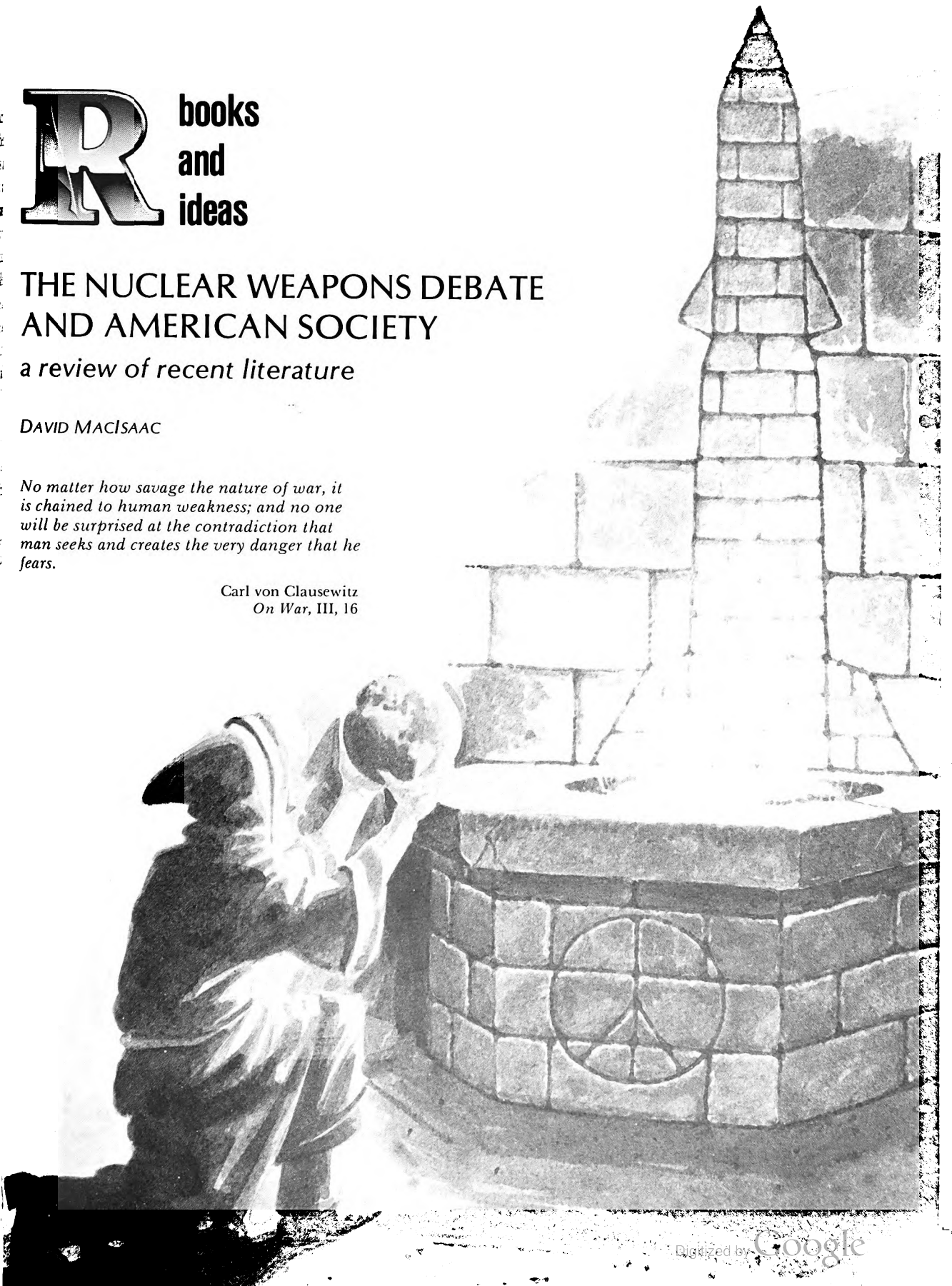
THE NUCLEAR WEAPONS DEBATE AND AMERICAN SOCIETY

a review of recent literature

DAVID MACISAAC

No matter how savage the nature of war, it is chained to human weakness; and no one will be surprised at the contradiction that man seeks and creates the very danger that he fears.

Carl von Clausewitz
On War, III, 16



IF ONE were to judge from the number and variety of recent articles, books, and speeches denouncing the present administration's plans for modernizing our nuclear forces, one could make the case that the consensus widely presumed to have been revealed by the 1980 election results was among the shortest-lived of any we have seen regarding defense policy. This review of some of the more strident examples from the recent antinuclear literature will include some speculations as to why that might be so. Perhaps it would be best to begin, however, by questioning the assumption that, where atomic and later nuclear weapons have been concerned, there has *ever* been wide agreement in the United States.

For most Americans, questions of nuclear weapons policy never became front-burner issues until October 1957, when the result of a Soviet technological experiment, Sputnik, was interpreted to signal our immediate vulnerability, the existence of a "missile gap," and the dire need to "do something" about both of these new and frightening situations. Earlier scares—like the Soviets' first atomic explosion announced in September 1949 and their first claimed thermonuclear test in August 1953—had been safely weathered, owing largely to a general feeling that we so outnumbered the Soviets in both weapons and the capability to deliver them that they would not dare challenge us "on the nuclear front." In a sense, then, it could be argued that a consensus view held generally firm to late 1957, at least among the public at large.

After Sputnik, consensus became harder to find and, where it could be located (or claimed), existed at a lesser level of general acceptance. The Kennedy administration decisions to expand both our conventional and nuclear capabilities did not meet with wide resistance and, for the prototypical man in the street, certainly seemed to have been prudent during the first flush of "victory" following the Cuban missile crisis. (Some objections were raised to the President's handling of that crisis, but most were soon quieted when the President managed to force through a limited test-ban treaty in 1963.) Nor was there any widespread criticism of our then recently announced declaratory policy of counterforce targeting; i.e., aiming our nuclear weapons at Soviet military forces and capabilities, both nuclear and conventional, as opposed to Soviet industry or cities.

By the midsixties, with a new U.S. President distracted by both Vietnam and his goals for the Great Society, the secretary of defense had abandoned counterforce and was talking about assured destruction, the ability to destroy, even if we were attacked first, 67-70 percent of enemy industry and 25-30 percent of enemy population. The goal of this policy shift, so far as the public was told, was to create a condition of mutually assured *deterrence* by assuring the Soviets that under any conditions of war initiation the result could be nothing other than their certain obliteration. Despite the horrific implications of this announced policy, the general public did little more than tune in (or out), watch (or turn away), and trust in the higher authorities. Until, that is, 1969 and the debate over whether to create, and if so where to base, an antiballistic missile system.

Shooting our bullet at their incoming bullet, both of them nuclear-tipped, with the encounter taking place over the United States, while technically challenging, proved politically unsaleable. When the idea was seemingly put to rest as a part of the SALT I agreements in 1972, the public relaxed once again, although listening and watching more closely now and holding out high hopes for future SALT agreements and a continuing relaxation of tensions with the Soviet Union (and, after 1972, China); *détente* was not yet a dirty word except among those who had opposed the idea from the beginning.

Then came 1976, the election of Mr. Carter, and the almost immediate perception—first brought on by his early and fumbling attempts to deal with the energy crisis—of a weakness in leadership ability in the person of the Presi-

dent. On the nuclear weapons issue, however, the President at first gave every indication of sharing the public's gut feeling that it was high time to put a cap on the competition in nuclear arms and take positive steps to reduce the weapons inventories on both sides. And yet, by the end of 1979, whatever hopes the President had originally entertained regarding limits on nuclear weapons had been dashed, brought down by a combination of Soviet brigades in Cuba, challenges to *both* his anti-B-1 decision and his pro-MX decision, the revolution in Iran, the hostage crisis, the Soviet invasion of Afghanistan, and, finally, the failure of the Tehran rescue mission. Held personally responsible for these setbacks by a goodly portion of the electorate and accosted by defense conservatives for whom any intimations of parity with the Soviet Union were anathema, President Carter by 1980 had lost any chance he might ever have had of influencing the public on issues affecting either nuclear weapons policy *or* dealing with the Soviet Union.

"In defense circles," as the journalists say, Mr. Reagan's election in November 1980 was widely perceived to reflect a new consensus, if not indeed a mandate, for increased defense spending, particularly in those areas needed to close an emerging "window of vulnerability" brought on by an "unprecedented" Soviet buildup of strategic forces during the 1970s, when the United States, lulled by "the false hopes of détente," sat idly by doing "nothing." Outside the so-called defense circles, among the general public, plenty of support was available at first. And yet, within months, the new administration found its views on nuclear weapons policy coming under fire. The rapidity with which this occurred will puzzle historians in the years to come. In struggling to find answers to why the years 1981 through 1983 spawned such a widespread and virulent antinuclear weapons movement, they will surely look for at least some hints in the books reviewed here.

HUGH SIDEY began a short essay on "Coming to Terms with Nukes" (*Time*, 5 December 1983) with a reminder that "it was Britian's Field Marshal Douglas Haig in World War I who confessed he never went to the front lest the squalid horror of trench warfare diminish his will to send armies to their death." He went on:

> There is in the current protests against our nuclear arsenals at least the faint echo of the question raised more than half a century ago about Haig. Are the men and women in the White House, Pentagon, and State Department grown so callous from their endless war games and box scores of missiles and megatonnage that the potential human tragedy has receded in their deliberations?

One man who answers Sidey's question in the affirmative is *Los Angeles Times* writer Robert Scheer in *With Enough Shovels: Reagan, Bush, and Nuclear War.*† The book has a three-part theme: (1) those in charge of arms control measures in the Reagan administration are and have long been inveterate foes of dealing with the Russians on anything, but especially on arms control; (2) these same men, virtually all civilians of an intellectual bent, believe that we can endlessly stockpile nuclear weapons and threaten to use them, without at the same time increasing the risks of war; and (3) these individuals reveal a curious gap between the bloodiness of their rhetoric, to which they have become hostage, and the apparent absence of any ability to visualize the physical consequences of what they advocate. Strong stuff this, suggesting something close to bias or perhaps even personal animus.[1] For this reason, the author's orientation and research me-

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†**Robert Scheer, *With Enough Shovels: Reagan, Bush, and Nuclear War* (New York: Random House, 1982, $14.95), xx + 286 pages.**

thods immediately take on a singular importance.

Mr. Scheer is forty-seven, married, the father of three, and lives in California. A former editor of *Ramparts* magazine, he has taught at City College, Antioch, and Berkeley, and has published articles in *Esquire, Washington Post,* and *Playboy.* In 1976, he became a staff writer for the *Los Angeles Times,* where much of the material in this book first appeared under his by-line between 1980 and 1982.

The book's arrangement is unusual. Of its approximately 300 total pages, the text proper takes up only 124 pages and is divided into nine short chapters on topics such as "The Committee on the Present Danger," "Team B," "The Window of Vulnerability," and "Civil Defense." There follow some 90 pages of notes, which provide both his sources and commentary thereon (along with additional examples of the point in the text that is supported by the footnote). For example, one note runs a full seven pages (158-64) and another runs to five pages (190-94). The final 80 pages contain portions of eight interviews conducted between 1980 and 1982 with presidential candidates Ronald Reagan and George Bush (summer/fall 1980), then-Director of the Arms Control and Disarmament Agency Eugene Rostow and former director Paul Warnke (both in 1981), former Secretary of Defense Robert McNamara and former Secretary of State Cyrus Vance (both in 1982), and physicists Herbert York and Hans Bethe (both in 1982).

Scheer's title is lifted from the now notorious interview he conducted "very late one autumn night in 1981" with Thomas K. Jones, who works for the Undersecretary of Defense for Research and Engineering and whose duty title is Deputy Undersecretary for Strategic and Theater Nuclear Forces. Mr. Jones, a former Boeing engineer, had been quoted to the effect that Soviet civil defense measures were such that 98 percent of the people living in the Soviet Union would survive a major nuclear attack.[2] Scheer decided he'd like to get some details about this and arranged for an interview. In the course of their discussions, Mr. Jones is reported to have uttered the following thoughts (printed on the dust jacket of Scheer's book, separated by ellipses): "Dig a hole, cover it with a couple of doors and then throw three feet of dirt on top . . . . It's the dirt that does it . . . . If there are enough shovels to go around, everybody's going to make it."

When Scheer's report of this interview was published in the *Los Angeles Times* on 16 January 1982, it created a minor uproar. By March, the editorial writers for the *New York Times* were muttering about "The Dirt on T. K. Jones" and wondering aloud whether he was only a character in Doonesbury or perhaps the peace movement's mole inside the Reagan administration. A subcommittee of the Senate Foreign Relations Committee demanded that he appear for questioning, a demand parried three times until Senator Larry Pressler (R-South Dakota) threatened to send the sergeant-at-arms to round up Mr. Jones. The subcommittee refused to accept the assurances of Assistant Secretary of Defense Richard N. Perle that he, and not Mr. Jones, spoke for the administration on Soviet civil defense. Eventually, Jones appeared and backed away from some of his earlier statements.[3]

Although Mr. Jones thus takes a central role in Scheer's portrayal of what he sees as the "curious mind-set" affecting civilian policymakers in the Reagan administration, Jones does not stand alone. Others holding views that Scheer finds equally puzzling include Perle, Richard Burt (Director of Department of State's Bureau of Politico-Military Affairs), Richard Pipes (then a staff member of the National Security Council), Eugene V. Rostow, Paul H. Nitze, and Louis O. Giuffrida (Director of the Federal Emergency Management Agency). Scheer's particular concern, above all, seems to be with the world view of the Committee on the Present Danger, founded by Rostow and Nitze in 1976 and dedicated to "righting the balance" between the United States and Soviet strategic

forces. On pages 144-46, Scheer lists no fewer than fifty-one members of the committee's board of directors who have held positions in the present administration, a list headed by the President himself.

In sum, Mr. Scheer seems to have come away from his research and interviews thoroughly convinced that if it is *not* true that a bunch of "crazys" are too close to the nuclear button, there are nonetheless a few who now and then at least sound a bit eccentric. He would have been less surprised, perhaps, if he had known of this exchange that took place in September 1980 under a previous administration.

> Senator GLENN: I get lost in what is credible and not credible. This whole thing gets so incredible when you consider wiping out whole nations, it is difficult to establish credibility.
>
> Secretary [of Defense] BROWN: That is why we sound a little crazy when we talk about it.
>
> Senator GLENN: That is the best statement of the day. I agree with you.[4]

Nonetheless, Scheer perseveres, all the while acting the role of the offended virgin and all but luxuriating in the "lunatic hilarity" of some of the comments his questions elicited.[5] His saving grace, which readers will find sobering as well, is that he does more quoting than commenting. One thing is certain: there are some people in government who are not likely to invite Mr. Scheer and his tape recorder back for another interview.

THE Committee on the Present Danger, to which Scheer devoted a short chapter, is the subject of a book-length treatment by sociologist Jerry W. Sanders, whose *Peddlers of Crisis* "has passed through many seasons."† His investigations began in 1977, he writes, and grew into a dissertation for the University of California at Berkeley by 1980. His principal findings were first given wider circulation by Richard J. Barnet in a long piece on "The Search for National Security," which appeared in the *New Yorker* for 27 April 1981. Now we have the published book, one whose conclusions raise a question as to how Sanders presented himself to the key personalities of the CPD who cooperated with him, he avows, both willingly and graciously.[6]

Sanders begins in 1950 with NSC-68 and "the militarization of containment," which led to the establishment of "Containment Militarism," a doctrine which he says held sway in our government until at least 1968, when it began to give way to a new doctrine of détente. In doing so, he reminds us that the first Committee on the Present Danger was founded in 1950 by James B. Conant, Tracy Voorhees, and Vannevar Bush. CPD-I, as he calls it, was politically bipartisan, recruiting its members from the internationalist wing of both parties and dedicated to support of the Truman administration's rearmament program brought on by the outbreak of the war in Korea. Following that program's general acceptance and the election of General Dwight D. Eisenhower to the presidency, it disbanded in 1953.

CPD-II, cofounded in 1976 by Eugene Rostow and Paul Nitze (and consciously drawing its name from the earlier committee), was different in at least two major respects: first, it was established in opposition to government, initially to Gerald Ford and Henry Kissinger and shortly thereafter, with heightened vehemence, to Jimmy Carter; and second, it was distinctly partisan, drawing its membership exclusively from among so-called right-wing defense conservatives for whom the short-lived era of détente was seen to foreshadow America's decline coupled with the Soviet Union's rise to a posi-

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†Jerry W. Sanders, ***Peddlers of Crisis: The Committee on the Present Danger and the Politics of Containment*** **(Boston: South End Press, 1983, $20.00), xiv + 371 pages.**

tion of unassailable strength, a position from which it could then be relied upon to try to take over the world, by threat if not by force.[7]

Sanders then recounts the major triumphs of the committee: the successful challenge to the early and midseventies CIA estimates of Soviet strengths and intentions (symbolized by the victory of the outside consultants, headed by Richard Pipes, who formed Team B in the fall of 1976); the "war" against the Senate confirmation of Paul Warnke, President Carter's nominee to head the Arms Control and Disarmament Agency; and the campaign to sink the SALT II treaty. Regarding the latter instance, Sanders describes a $2,000,000 campaign launched by the committee in September 1978, which came to involve the distribution of some 200,000 pamphlets, testimony before congressional committees by seventeen CPD members, and a total of 479 television and radio talk show appearances. Taken altogether, he sees the story of the committee as "an extraordinary tale of elite intrigue and mass manipulation, one with grave implications for this nation and the world." (p. 8)

Military members active and retired will have a tough time with this book if they are among the majority who have assumed all along that the committee was and is "on our side." Nonetheless, the detailed description of the committee's assumptions and accompanying zeal might give some pause to those who feel that the committee's conclusions and recommendations are both self-evident and unexaggerated. If so, one must ask, why all the frantic lobbying? Also, despite the sociologist's tendency to label things rather than simply describe them, Sanders's arguments are for the most part laid out in plain English.

In the end, as with Scheer, one is led to wonder whether Sanders is likely to be welcomed back for further interviews. Several pages after acknowledging Mr. Nitze's willing and gracious assistance, he describes him as "a veteran leader of apocryphal threats, gaps, and other assorted hysterias, [now in 1976] opening a new house of mirrors, this time featuring a 'window of vulnerability.' " (pp. xi, 9) In fact, on the very first page of his Introduction, directly after quoting Eugene Rostow and Nitze, he quotes the late C. Wright Mills: "Such men as these are crackpot realists: in the name of realism they have constructed a paranoid reality all their own." (The fact that the comment by Mills dates from 1956, whereas those of Rostow and Nitze are from 1981 and 1980, respectively, is buried in the end notes to the book; it is difficult not to infer devious intent in this accurate but nonetheless potentially misleading technique.)[8]

Scheer and Sanders are by no means alone in discerning an unbroken pattern of thinking regarding the Soviets that has long reigned supreme in the higher councils of government.[9] I shall return to this subject later but for the moment would point out one theme that thus far bodes only ill for all of us: the people on both sides of the nuclear weapons debate tend to start from diametrically opposed positions regarding the Soviet Union and its aspirations—and then talk right past one another.

ANOTHER recent book treating primarily civilian contributions to nuclear strategy is Fred Kaplan's *The Wizards of Armageddon*.† Kaplan is a young journalist for the *Boston Globe* who holds a Ph.D. in political science from Massachusetts Institute of Technology. His basic message is spelled out in boldface on the dust jacket: "For thirty years a small group inside the U.S. strategic community has devised the plans and shaped the policies on how to use the bomb. This is their

†**Fred Kaplan, *The Wizards of Armageddon* (New York: Simon & Schuster, 1983, $18.95), 452 pages.**

untold story." If we forgive the usual publisher's hype of "untold," we can find in these pages the story of the men, primarily of the Rand Corporation, who have elaborated the various theories of deterrence since 1945. Among the central players treated by Kaplan are the late Bernard Brodie and Herman Kahn, Robert S. McNamara, Henry Rowen, James R. Schlesinger, Albert J. Wohlstetter, and William Kaufmann (under whom Kaplan apparently studied at MIT).

While Kaplan's tale defies easy summary, owing to the number of players involved (and the complexities, real or contrived, of their thinking), it is nonetheless a sobering, even disturbing, account; one in which personal ambitions, jealousies, and severe second thoughts about the very nature of their work play larger roles than most people have realized. His portrayals of Brodie and Wohlstetter are particularly striking, the latter of the two seeming to emerge, although not labeled such, as the Dr. Strangelove of Kaplan's story.[10] Central to this analysis is the story of the Rand "vulnerability study" of 1953-54, spearheaded by Wohlstetter and addressing the emerging vulnerability of Strategic Air Command, both in the United States and at overseas bases, as the Soviets began to acquire an atomic striking capability.[11] With that report, Kaplan writes,

> Wohlstetter made the issue of calculated vulnerability the central focus of strategic analysis generally . . . . As the theory trickled down not just through the corridors of RAND but also in Washington and other sectors of the "strategic community," the concern about vulnerability grew into an infatuation, then an obsession and finally a fetish of sorts. Eventually, it would wend its way into the political realm and—apart from Wohlstetter's original intentions or logic—become entangled with claims of a "missile gap;" it would sit at the center of grisly scenarios about Soviet first-strikes and American weakness; it would provide the rationale for a host of new weapons that the military wanted to build; and it would serve as a powerful engine driving at least the American side of the nuclear arms race over the next quarter century and beyond (pp. 109-10).

It is this issue of "calculated vulnerability," leaping across the thirty years since 1954, that Kaplan sees as the central explanation for the present posture of those now in charge of nuclear weapons policy. Like Scheer and Sanders, Kaplan seems to view today's fears as illusory or at least exaggerated, but nonetheless compelling and probably impossible to ignore or simply deny, by those who feel obligated by their responsibilities to find some "perfect" answer to our problems.

Despite its many strong points, this book has one truly major failing that will lead many military readers to discount it. The author simply can't get the *military* parts of the story straight, committing a string of egregious errors that are all but mind-boggling. The U.S. Strategic Bombing survey was not "a group of economists" (p. 35); General George Kenney did not retire on leaving SAC in 1948 (p. 43); the occasion for Billy Mitchell's court-martial was not as Kaplan states (p. 54); it is not true that General Nathan Twining, commander of the Fifteenth Air Force from 1943 to 1945, did "tactical, not strategic, bombing during World War II" (p. 239); SAC in 1960 was not "merely one of several commands under the Air Staff's wings" (p. 245). Our various Berlin adventures seem to pose a particular problem for Kaplan. In 1948, he has us "dropping packages of aid into the city by parachute [!] for more than 300 days" (p. 291), and in 1958-59, he has the United States sending in "very-high-altitude transport planes, which Soviet fighters attempted but failed to intercept." (p. 292)

Errors of the kind cited here pose a difficult problem for a reviewer, who cannot help wondering whether they are matched by similar ones regarding the civilians on whom Kaplan concentrates. I suspect not but cannot be certain. Nevertheless, with this major caveat, I am led to recommend the book especially to those who have at one time or another played a part in the business of nuclear deterrence but have never before found the opportunity to study the associated problems and proposed or

adopted solutions over the long haul since 1945. Such readers, who will come equipped with their guard up, will find much that is new to them.

ANOTHER recent book on nuclear weapons and strategy that provides a perspective from inside the weapons industry is Robert Aldridge's *First Strike!*† From the late 1950s until the end of 1972, Aldridge was an engineer with the Lockheed Missiles and Space Company, where he led an advanced-designed group that worked on the Polaris and Poseidon missiles. On 2 January 1973 he quit, having become convinced that the work he was doing was immoral. Since then, he has been giving talks and writing articles. In his own words,

> I started gathering highly technical and isolated facts and putting them together using common language so people could understand what is happening. As I delved deeper into Pentagon activity I discovered a pattern more sinister than I had imagined. Evidence indicated that the Pentagon is looking far beyond what is needed for defense. It is developing the instruments which will allow the United States . . . . to launch a disabling and unanswerable first strike. (p. 19)

Hence this book and its title.

Aldridge opens with background chapters on "The First Strike Syndrome" and "The Strategic Nuclear Triad." Subsequent chapters treat the developmental history of both the Trident and MX missiles (both excellent chapters), as well as such other topics as penetrating bombers, cruise missiles, antisubmarine warfare, missile and bomber defense, space warfare, and command and control. A concluding chapter on "The Profit Imperative" makes it clear that the sinister Pentagon of his Prologue has plenty of outside help in formulating its designs. In fact, Aldridge is convinced that investment by "giant US corporations in the Third World has become the overriding consideration in US foreign policy," (p. 278) which he sees as nefariously interventionist. From this sweeping generalization, he goes on to conclude that the competition in nuclear arms is not the root problem we face. "The root problem, as I see it, is more basic. I can most succinctly describe it as personal selfishness and the urge to control." (p. 291) The first charge applies presumably to defense industry and the second to government, although this distinction must be inferred.

Such a serious indictment results in a story with too many villains to keep up with. But one need not accept Aldridge's entire argument to find some value in the author's insights and documented assertions. While a little less laying on of blame would have helped his case, he is obviously both serious-minded and knowledgeable. Aldridge seems to be saying that we need to be thinking seriously about matters of weapons acquisition and use, rather than letting industry run wild while we sit back accepting on faith whatever the government at any given moment sees fit to tell us.

He also has a gift for casual asides. The targeting of the enemy's governmental control apparatus (the so-called decapitation option) sounds to him "like international assassination plots gone nuclear." (p. 35) In discussing so-called counterforce targeting, he reminds us that when *we* seek the capability we label it "damage limitation" but when we see the *Soviets* doing it we call it "war-fighting doctrine." (Not everyone who writes on these matters has Aldridge's feel for the nuances of nuclear Newspeak.) In short, this is a valuable book, deserving of a larger audience than it is likely to get, especially from among those who become uncomfortable reading bareknuckled criticism of government policy. Perhaps most significant is that the book is symptomatic of a

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†**Robert C. Aldridge, *First Strike! The Pentagon's Strategy for Nuclear War* (Boston: South End Press, 1983, $20.00), x + 325 pages.**

growing feeling that the legitimate bounds for secrecy have been too long and too roughly overridden, sometimes for purposes, however well meant originally, that have little to recommend them any longer.

SEVERAL recent books must be giving nightmares to those in the Pentagon and elsewhere charged with keeping the secrets. Three that variously fit this category are Peter Pringle and William Arkin's *SIOP;*† Paul Bracken's *Command and Control of Nuclear Forces;*†† and the first volume of *The Nuclear Weapons Databook* by Thomas Cochran, William Arkin, and Milton Hoenig.†††

Peter Pringle is *The* [London] *Observer's* man in Washington, and William Arkin is Director of the Arms Race and Nuclear Weapons Project of the Institute for Policy Studies. (The IPS is widely regarded in the conservative press as "radical Left"; those associated with it pay that price but do not seem to let it bother them much.) In their book, it appears that Arkin crunched the numbers while Pringle wielded the pen.[12] One strong point up front for both authors: it is clear they have done more real world research than many writers. Apparently, they both accompanied a B-52 training mission with the 5th Bomb Wing at Minot (bouncing along at 400 feet and all). Furthermore, they seem to know more about launch-control procedures in Minuteman and Poseidon cockpits than some of us will feel comfortable with their spelling out.

Nonetheless, their title, *SIOP* (pronounced "sigh op" and standing for single integrated operational plan), is misleading, since the book's principal topic is not past and present operations plans for nuclear war but rather the command and control techniques and hardware designed for warning, release, and launch orders. In treating these matters, the authors go into detail in a number of sensitive areas such as SIGINT, ELINT, ERCS, the DSP, etc.[13] Many will find all this a bit unnerving, as did many of the officers with whom the authors discussed their project, but they will *not* find the actual details of any SIOP, past or present.

The real concern of the authors is whether the SIOP has become a mere symbol of presidential control over nuclear weapons, a control capability which they see as being eroded by the increasing elaboration of the so-called C³I networks. Their feeling is that presidential control in reality no longer exists in any but the most ideal circumstances. More important, they believe that in a worst-case scenario, "if the civilian authority is destroyed, the new system also ensures that the military is able to carry on to fight a nuclear war—on its own." (p. 225) Even in a less than worst-case scenario, they suggest that the net effect of current and programmed developments (specifically, the IONDS, or integrated operational nuclear detection system) might be "to increase the influence of the military in *any* decision to use nuclear weapons." In their words:

> It would work like this. The military, with their highly sophisticated sensors and computers giving them immediate information of events as they happen, would be able to present persuasive arguments to the president about what he should do next by asserting that their information has

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†**Peter Pringle and William Arkin, *SIOP: The Secret U.S. Plan for Nuclear War* (New York: W. W. Norton, 1983, $16.95), 287 pages.**

††**Paul J. Bracken, *The Command and Control of Nuclear Forces* (New Haven: Yale University Press, 1983, $19.95), xii + 252 pages.**

†††**Thomas B. Cochran, William M. Arkin, and Milton M. Hoenig, *The Nuclear Weapons Databook*, Volume I, *U.S. Nuclear Forces and Capabilities* (Cambridge, Massachusetts: Ballinger, 1984, $38.00; $19.95 paperback), xx + 340 pages.**

more relevance than any political considerations. (p. 239)

This concern is widely shared in the current literature[14] and can be expected to become a hotly debated matter in the months ahead. It will prove uncomfortable for the services, but neither wishing it away nor trying to squelch discussion will work in the end. The problems we now face are of our own making and, for an increasing segment of the public, unacceptable in their present form. As Pringle and Arkin point out (and this view is central to the rising chorus of criticism), "United States strategic nuclear policy was never 'approved' by any part of the democratic process . . . [but rather was] conceived and nurtured in the greatest secrecy." (pp. 244-45)

If a stated or implied sense of resentment regarding the record of secrecy in nuclear planning can be said to pervade all the books thus far mentioned—thereby rendering their arguments moot in the eyes of many long-accustomed to view secrecy in such matters as both necessary and good—no such argument can be raised against Paul Bracken's *Command and Control of Nuclear Forces.* Bracken, a young professor at the Yale School of Organization and Management, has no time for resentments or blame laying. His concern is with our warning, intelligence, and alerting systems and how they actually function in crisis or near-crisis situations. As *Air Force Magazine* was quick to note immediately on the book's publication in December, Bracken's is a "penetrating and often disturbing study of nuclear force management." My own feeling is that this is an understatement; that Bracken, in fact, has produced the single most important book on nuclear issues that has appeared in the last decade.[15]

Hardware (whether of weapons, delivery systems, or communications engineering) is not his concern. Neither are any of the various nuclear employment theories or the no-win debates that rage between the MADmen (those favoring mutually assured deterrence/destruction) and the NUTs (nuclear use theorists). His focus instead is on the management of forces at the moment they would go on alert and as they would perform during a war. His goal is to identify potential flashpoints and triggers that might lead to catastrophe. Some of these might be correctable, but, more important, a clear awareness of their existence might lead both sides to the realization that the arms controllers need to shift their emphasis from weapons to the establishment of what he calls nuclear "rules of the road" governing the *operation* of forces and alerts. As things now stand, *or* as they are likely to stand following *any* number of technical fixes to the C³I network,[16] the vertical integration of intelligence, warning, alerting, and command functions has led *both* sides to the point where we have, in effect, "institutionalized a nuclear showdown." He then shows in detail how, "at any moment these forces can be triggered into alert, and decades of sleepy, unexamined confidence that 'it can't happen here' would disappear." (pp. 1 and 239)

Bracken's approach is both historical and analytical. Following chapters on the evolution of the U.S. and Soviet warning and intelligence networks, he summarizes the history of U.S. nuclear war planning and then gets to the heart of his analysis in a chapter on "Problems of Assessment." Here he contrasts peacetime and wartime information regimes, the latter of which he convincingly shows will lead to "informationally decentralized nuclear wars" conducted by separate "islands" of disconnected forces. "The source of his insight," one reviewer writes, "is the recognition that the system involves organizations which turn any crisis into a series of discrete questions requiring human decisions and control."[17] "When time may be short, and when the danger in passivity seems great," another reviewer writes,

> who can tell what kind of alerting action a particular commander may urge *or what such action may call forth from others?* . . . Mr. Bracken persuasively argues that the kind of nuclear war

> we are least likely to have is the kind that is usually assumed by those who play war games—the kind in which centralized command and control persist, and each side is assumed to be able to assess the actions of the other. Even if command and control . . . remain complete into the depths of a crisis, no one can tell what particular action might cause the tightly coiled spring to snap [leading to] victory only for chaos.[18]

By far the scariest of Bracken's chapters is the one on "The Special Problems of War in Europe," the most informative chapter on nuclear weapons in Europe I have ever seen. Here he gives all the numbers and describes the types of systems (no less than nine), vulnerabilities, interacting effects of alerts on both sides, and improbabilities of *ever* resolving go/no-go decisions at political levels of the alliance. Almost teasingly, he shows that the hopelessly complicated command structure governing nuclear weapons in Europe is closely related to a political strategy that emphasizes deterrence above all. Theater nuclear war in the perspective of Europeans is not intended to be an intermediate substrategic war, nor is it designed to regain battlefield advantage—the ways in which Americans usually envisage it. Rather, in the European view, it is specifically intended to enforce deterrence by requiring *any* major war to be a nuclear one. His conclusion borders on the perverse.

> The NATO strategy of relying on nuclear weapons is politically and militarily credible because the governing command structure is so unstable and accident-prone that national leaders would exercise little practical control over it in wartime. What other command mechanism could possibly be built . . . that, for all practical purposes, is tantamount to a regional doomsday machine? (p. 164)

Again unlike a number of other writers, Bracken concludes with some suggestions for improving things. (pp. 238-47) These are worth serious consideration, but not more so than several of his en route warnings directed to those presently charged with improving our command and control mechanisms. They, even more than the rest of us, must force themselves at all times to:

- remain skeptical of purported technological solutions to problems that have deep organizational roots (p. 168),
- remember that the *real* problems are things like crossed lines of authority, confusion, inability of standard operating procedures to solve problems, and a less than confidence-inspiring integration of political and military decisionmaking (except on paper; witness, for example, the travails of the *Pueblo* and *Liberty*), and
- avoid at all costs the common infatuation with the communications engineering aspects of command and control, lest they become like the drunk who looks for his lost keys under the streetlight because that's where the light is. (p. 220)

THE final item in our trilogy of nightmare-producing books is the first volume of a projected eight-volume *Nuclear Weapons Databook*, already touted in the press as among the most unwelcome books the Pentagon has seen in many a season. The authors of this first volume, *U.S. Nuclear Forces and Capabilities*, are Thomas Cochran, a physicist currently with the National Resources Defense Council, Inc. (like the IPS, generally critical of current policies); William Arkin, coauthor of *SIOP;* and Milton Hoenig, a Cornell University physicist formerly associated with the Arms Control and Disarmament Agency. Future volumes in the series will treat, among other topics, Soviet nuclear forces, U.S. nuclear weapons production facilities, the history of U.S. nuclear weapons, and the inventories and capabilities of other nuclear-armed nations.

The book is essentially an encyclopedic presentation of nuclear weapons systems, ranging as far back as the Genie air defense missile of the 1950s (which the authors claim is still on line in some Air National Guard squadrons) and as far into the future as the Army's alleged

Continued on page 94

A Sampler from the Nuclear Bookshelf

Well over 200 books on nuclear weapons issues have been published in English during the last two years alone. The books, articles, essays, and papers listed here represent only a sampling from among the best literature I have seen. For reasons primarily of space, none of the books treated in the accompanying essay is included in this supplementary list.

Books

Michael Carver, *A Policy for Peace* (London: Faber & Faber, 1982). Field Marshal Lord Carver, former Chief of Defense Staff, United Kingdom, argues against *any* reliance on nuclear weapons.

Lawrence Freedman, *The Evolution of Nuclear Strategy* (New York: St. Martin's Press, 1982). So far the best single-volume history; originally published in London, 1980.

Robert Jervis, *The Madness beyond MAD: The Illogic of American Nuclear Strategy* (forthcoming from Cornell University Press). A stinging critique of the so-called "countervailing strategy."

George Kennan, *The Nuclear Delusion* (New York: Pantheon, 1982). Kennan sadly reiterates what he has been preaching, primarily to deaf ears, for the past thirty years.

Michael Mandelbaum, *The Nuclear Question* (New York: Cambridge University Press, 1979); *The Nuclear Revolution* (Cambridge University Press, 1982); and *The Nuclear Future* (Ithaca, New York: Cornell University Press, 1983).

Laurence Martin, editor, *Strategic Thought in the Nuclear Age* (Baltimore, Maryland: Johns Hopkins Press, 1979). See especially Chapter 5, "The Evolution of Nuclear Doctrine," by Henry S. Rowen.

Thomas Powers, *Thinking about the Next War* (New York: Knopf, 1982). Nineteen provocative essays originally published in *Commonweal* between 1976 and 1982.

Jonathan Schell, *The Fate of the Earth* (New York: Avon Books, 1982). The manifesto of the antinuclear weapons movement, originally serialized in three consecutive issues of the *New Yorker* during February 1982.

David N. Schwartz, *NATO's Nuclear Dilemmas* (Washington: Brookings Institution, 1983). An unsettling history of the alliance's nuclear strategies that reads like a comedy of errors. For a shorter account, see J. Michael Legge, *Theater Nuclear Weapons and the NATO Strategy of Flexible Response,* Rand Report # R-2964-FF, April 1983.

Donald M. Snow, *The Nuclear Future: Toward a Strategy of Uncertainty* (Tuscaloosa: University of Alabama Press, 1983), urges a nuclear strategy based on and enhancing uncertainty, the "central reality" in the area of nuclear armaments.

George W. Tiller, Lieutenant Colonel, USAF, *Arguments of Anxiety: The Nuclear Debate and American Strategy* (Air War College Research Report No. AU/AWC-83-236, April 1983). Winner of the Commandant's Award, AWC Class of 1983.

Kosta Tsipis, *Arsenal: Understanding Weapons in the Nuclear Age* (New York: Simon & Schuster, 1984).

U.S. Congress Office of Technology Assessment, *The Effects of Nuclear War* (1979). In 1982, Cheshire Books released a jazzed-up version of this gloomy report under the title *The Day after Midnight.*

Leon Wieseltier, *Nuclear War, Nuclear Peace* (New York: Holt, Rinehart, & Winston, 1983). Originally appeared as a special issue of the *New Republic,* 10 and 17 January 1983. See also George W. Ball's review essay, "Sovietizing U.S. Policy," in the *New York Times Book Review,* 2 February 1984.

Harold Willens, *The Trimtab Factor: How Business Executives Can Help Solve the Nuclear Weapons Crisis* (New York: William Morrow, 1984).

Solly Zuckerman, *Nuclear Illusion and Reality* (New York: Viking Press, 1982). Lord Zuckerman's thesis is stated in a single sentence: "Once the numbers game took over, reason flew out the window."

Articles/Essays/Papers

Desmond Ball, "U.S. Strategic Forces: How Would They Be Used?" *International Security,* Winter 1982/83. See also his "Can Nuclear War Be Controlled?" *Adelphi Papers,* No. 169, Autumn 1981, and "Targeting for Strategic Deterrence," *Adelphi Papers,* No. 185, Summer 1983. While Gray (in his article listed on facing page) argues the need to at least *plan* for controlling nuclear war, Ball says that such planning is inevitably based on false assumptions.

Paul Bracken and Martin Shubik, "Strategic War: What Are the Questions and Who Should Ask Them?" *Technology in Society*, vol. 4, no. 3 (1982).

Bernard Brodie, "The Development of Nuclear Strategy," *International Security*, Spring 1978. The final statement from the late dean of U.S. nuclear strategists, whose *Strategy in the Missile Age* (Princeton, New Jersey: Princeton University Press, 1959) remains even today the best book ever written on its topic.

Theodore Draper, "How Not to Think about Nuclear War," *New York Times Book Review*, 15 July 1982, and the ensuing exchange in the issue of 23 September 1982. See also his "Dear Mr. Weinberger: An Open Reply to an Open Letter," and "On Nuclear War: An Exchange with the Secretary of Defense," same journal, issues for 4 November 1982 and 18 August 1983. Also see his "Nuclear Temptations," same journal, 19 January 1984.

Aaron L. Friedberg, "A History of the U.S. Strategic 'Doctrine,' 1945 to 1980," *Journal of Strategic Studies*, December 1980.

Nicholas H. Fritz, Jr. (Colonel, USAF), "Clausewitz and U.S. Nuclear Weapons Policy," *Air University Review*, November-December 1982.

Raymond L. Garthoff, "The NATO Decision on Theater Nuclear Forces," *Political Science Quarterly*, Summer 1983.

Leslie H. Gelb, "Is the Nuclear Threat Manageable?" *New York Times Magazine*, 4 March 1984.

Colin S. Gray, "Nuclear Strategy: The Case for a Theory of Victory," *International Security*, Summer 1979.

Michael Howard, "On Fighting a Nuclear War," *International Security*, Spring 1981. Originally presented at UCLA on 20 November 1980 as the first annual Bernard Brodie Distinguished Lecture on Politics and War. Mr. Howard is the Regius Professor of Modern History at Oxford and the author, more recently, of "Reassurance and Deterrence: Western Defense in the 1980s," *Foreign Affairs*, Winter 1982/1983.

Fred Charles Iklé, "Strategic Principles of the Reagan Administration," *Strategic Review*, Fall 1983. The official word from the undersecretary of defense for policy.

Benjamin S. Lambeth and Kevin N. Lewis, "Economic Targeting in Nuclear War: U.S. and Soviet Approaches," *Orbis*, Spring 1983.

Robert S. McNamara, "The Military Role of Nuclear Weapons: Perceptions and Misperceptions," *Foreign Affairs*, Fall 1983. Although the former secretary of defense still refuses to come out of the closet on matters related to Vietnam, he is now speaking and writing widely on nuclear weapons issues.

Michael Nacht, "Nuclear Deterrence to the End of the Century," *Naval War College Review*, November-December 1983.

Thomas Powers, "Choosing a Strategy for World War III," *Atlantic Monthly*, November 1982. The first detailed accounting of the origins of Presidential Directive-59 to appear in the open literature. See also his "What Is It About?" *Atlantic Monthly*, January 1984. The "it" of the title is the Soviet-American global competition, especially in nuclear weapons.

David Alan Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945-60," *International Security*, Spring 1983. A truly ground-breaking essay by a young historian widely viewed as the leader in his field. See also his prize-winning "American Atomic Strategy and the Hydrogen Bomb Decision," *Journal of American History*, June 1979.

Carl Sagan, "Nuclear War and Climatic Catastrophe: Some Policy Implications," *Foreign Affairs*, Winter 1983/1984. The "Nuclear Winter" thesis in an article designed for lay readers; see the 23 December 1983 issue of *Science* for two articles on the details of the scientific analyses involved.

Jonathan Schell, "Abolition," *New Yorker*, 2 and 9 January 1984. Schell's answer to his critics who complained that he finished *The Fate of the Earth* without offering any solution to the problems he described.

Leon Sloss and Marc Dean Millot, "U.S. Nuclear Strategy in Evolution," *Strategic Review*, Winter 1984. Candid analysis of the evolution of the "countervailing strategy" by one of its authors [Sloss].

John Steinbruner, "Launch under Attack," *Scientific American*, January 1984, argues that the policy would actually endanger *our* missiles while they would be in flight.

Albert Wohlstetter, "Bishops, Statesmen, and Other Strategists on the Bombing of Innocents," *Commentary*, June 1983. See also the December 1983 issue (same journal) for the extended discussion engendered by this article.

plans for making the Assault Breaker missile "dual capable." The authors state that we presently have a stockpile of some 26,000 nuclear weapons, of twenty-four different types, ranging in explosive power from the equivalent of 200,000 to 18,000,000,000 pounds of TNT. They state that the total cost of nuclear weapons runs to some $35,000,000,000.00 a year; that, on average, five new weapons are manufactured each day (while three are withdrawn); and that current plans call for the production of nineteen new types (as against thirteen that will be retired or replaced), leading eventually to an inventory of 28,665 weapons. Along the way, they state that there are presently 114 naval vessels and 73 attack submarines that routinely carry nuclear weapons, that at least 15 types of tactical aircraft are dual-capable, and that a total of 722 U.S. "combat units," comprising 110,000 military personnel, are "certified" for nuclear warfare.

Unlike the annual military balance volumes of the International Institute for Strategic Studies in London (abbreviated each year in the December issue of *Air Force Magazine)* or the SIPRI (Stockholm International Peace Research Institute) yearbooks on *World Armaments and Disarmament*, this first volume of the *Databook* is impressively (if incompletely) documented. It contains literally hundreds of footnotes that provide the sources for the authors' numbers and projections (if not their meaning). Those sources are mainly technical journals, congressional hearings, and some 200-plus documents declassified following successful challenges under the Freedom of Information Act.

A major problem with this mix of sources involves the extraction therefrom of discrete items which, when placed together in a particular context, sometimes add up, in the figurative sense, to more than is warranted. Another is that the information is not always accurate. The authors, like many others caught up in the Washington maelstrom, often forget a cardinal rule: "Just because it is [or was] classified doesn't mean that it is [or was] true!"[19] They also must have short memories regarding the accuracy of unsworn testimony offered to congressional committees by special pleaders of all stripes. Their tendency is to take all advertised numbers and capabilities at face value. Here we have no mention whatever of the mixed record of cruise missile and Pershing II operational tests, nor anything on the now three-year-old debate over ICBM accuracy. The overall effect is to leave the impression that the authors have sought to present the most horrific possible picture of the power at our disposal. Unstated, but easily inferred, is the authors' apparent feeling that spilling the beans about our weapons capabilities is both necessary and good.

Not everyone will agree, and many in positions of authority and responsibility will be dismayed. Nonetheless, this effort—like Bracken's, but for different reasons—represents a delayed-fuze time bomb of sorts. No writer of consequence on these matters is likely to neglect it. And others will not refrain from quoting its figures as gospel (especially when they can be made to help support a conclusion already arrived at). In this sense, the authors have succeeded in what was perhaps their principal purpose: getting the numbers game out in the open, down to specifics, and open to debate.

THIS excursion into some of the recent literature on nuclear weapons and policies will have achieved its purpose if it no more than alerts those on active service that, where nuclear policy is concerned, there is something serious going on out there in American society. The freeze movement; films like *The Day After* and *Testament* (the first Hollywood productions in twenty years focused on the results of nuclear war); the formation of professional groups among lawyers, businessmen, and physicians committed to putting a cap on the arms competition; the reports of discontents in Europe regarding trends in U.S.-Soviet relations—these and other manifestations of a rising con-

cern are hard to miss, however ill-advised they may seem.

The general public is beginning to wonder whether something has gone amiss somewhere along the line. "The View from the Street Corner," as *Time* labeled it in its first issue for 1984, is tending in the direction of questioning whether things are quite right (or under control) regarding nuclear weapons. Stated in its starkest and least welcome form, what seems to be emerging is a more general feeling that there is not, nor has there ever been, a clearly logical set of guiding principles supporting U.S. nuclear strategy; that our policies and attendant strategies may not be well matched; that what we really have is a pile of capabilities and options that are likely to be employed, if deterrence appears to be failing, according to the attitudes and biases of those in charge at any given moment; that those attitudes are never fully formed (and, in fact, never can be until the moment of decision has arrived); and that the most far-reaching and long-lasting results of employing our capabilities will be those neither intended nor foreseen. And all this *despite* what "the other side" may have in mind.

So if any of this is true, where does a person go from here? *Not* into hiding, I would hope, and not into the readily available defensive mode that rejects all criticism as subversively intended (or, to coin a phrase, disinformationally wrought). The critics may be wrong, particularly regarding details to which they are not privy, but they are serious. Not only that, but they include among their number more than a few formerly *very* senior officials of the United States government, military as well as civilian. That fact alone should give pause to those who would dismiss the critics out of hand—often by citing the illogic of some of their arguments or the kooky (lunatic?) behavior of the fanatics among them. (Every viewpoint must live with fanatics on both sides of it.) None of us need fall into the trap that Major General Howard Estes decried in these pages in November 1982 when he observed that the most severe critics of seeking agreement with the Soviets regarding nuclear weapons are sometimes "totally uninformed" officers who don't know much about strategic arms limitation "but are quite sure they do not like" the idea. This was no put-down of anybody, but rather a plea, based primarily on his own experiences while still on active duty, for "the encouragement by top Air Force leadership of the frank expression of views that might not be universally popular, either within or without the Department of Defense." (To which line, we may be assured, the shades of all Air Corps Tactical School faculty members rose in applause!)

What General Estes was saying, in effect, was that the service could well be at the point where it could use more officers like those whom Major General I. B. Holley, Jr., has long sought to recruit in these pages—those who, once free from the daily responsibilities attendant to the cockpit or launch control facility, "will go out of their way to seek and welcome evidence that seems to confuse or contradict the received wisdom of their own, most cherished beliefs." A tall order, to be sure, and not the safest path on which to plot a career. But with that approach, previously hidden questions can surface, sometimes leading nowhere but at other times leading to new answers (or at least new approaches to problems shaped in circumstances of an earlier era). The bottom line in all this is that those on active duty bear a heavy responsibility to see that matters don't get out of hand and that unpopular or uncomfortable problems are not ignored. Change is more likely to be productive if driven from within rather than directed from without.

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Notes

1. See especially pages 13 and 120-21. *If* animosity is present, it is well disguised. Scheer gives every indication that he spent a great deal of time "bending over backwards" in his effort to be that which he could not be; i.e., impartial.

2. For the background and details of this assertion, see the following report, apparently not discovered by Scheer: *Industrial Survival and Recovery after Nuclear Attack: A Report to the Joint Committee on Defense Production, U.S. Congress*, prepared by the Boeing Aerospace Company, a division of the Boeing Company, Seattle, Washington, 18 November 1976 (available from the Defense Technical Information Center). See in particular pp. B-1 through B-10, where Mr. Jones replies to fourteen specific questions regarding the somewhat less than scientific basis for his calculations regarding population survival.

3. These events (not treated by Scheer in his book except tangentially in the notes on pp. 138-40) can be traced in: *Los Angeles Times*, 16 January 1982, p. 1, and 15 March 1982, Part II, p. 9 (where Mr. Jones, with unconscious irony, advised that "Civil Defense for America Is No Laughing Matter"); *Inquiry*, 15 March 1982, pp. 3-4 ("Gallows Humor at the Pentagon"); *Washington Post*, 17 March 1982, p. 4; *New York Times*, 17 March 1982, p. 16, and 19 March 1982 (for editorial referred to); *Time*, 29 March 1982, p. 24 ("Dig a Hole"); *Chicago Sun-Times*, 1 April 1982 editorial, "A Nest Egg for Doomsday"; *Washington Post*, 1 April 1982, p. 1, "Pentagon Official Retreats, Calls A-War Unwinnable," and p. 3, where Mary McGrory comments caustically on Jones's long-awaited testimony; *Baltimore Sun*, 2 April 1982, p. 15 for John L. Hess's comments, which conclude, "In the words of Mr. Reagan, let us pray;" and *Washington Post*, 12 May 1982, where Judy Mann promoted Mr. Jones to "Gen."

1. *Nuclear War Strategy*, Hearings before the Committee on Foreign Relations, U.S. Senate, 96th Congress, 2d session (Top Secret hearing held on 16 September 1980; sanitized and printed on 18 February 1981), p. 22.

5. The quoted phrase is borrowed from Anthony Lewis's comments on "Atoms and Politics," *New York Times*, 8 November 1982, p. 17.

6. *Peddlers of Crisis*, p. xi, for both the qouted words and the reference to the "quite willing, indeed gracious" cooperation the author received from, among others, Paul Nitze, Jeane Kirkpatrick, Richard Allen, Norman Podheretz, Charles Tyroler II, Max Kampelman, Charles Burton Marshall, and Lieutenant General Daniel O. Graham, USA (Ret).

7. For a brief account of the connections between the two committees, see Samuel F. Wells, Jr., "The United States and the Present Danger," *The Journal of Strategic Studies*, March 1981, pp. 60-70.

8. *Peddlers of Crisis*, p. 7 and C. Wright Mills, *The Power Elite* (New York: Oxford University Press, 1956), p. 356.

9. The periodical literature (excluding *Commentary* and *The National Review*) and the Op-Ed pages are full of such pieces these days. For one of the best, see Robert H. Johnson, "Periods of Peril: The Window of Vulnerability and Other Myths," *Foreign Affairs*, Spring 1983, pp. 950-70. (Professor Johnson's "other myths" include NSC-68, the 1955 Killian Report, and the 1957 Gaither Report. Johnson writes from the experience of having worked on the NSC staff in the mid-1950s when the Killian and Gaither reports were presented.)

10. Strangelove is here used in its now almost generic sense. (Kaplan, by the way, seems unaware of Stanley Kubrick's often stated claim that he modeled Strangelove on a professor at Harvard named Kissinger. Like most writers, Kaplan seems to think Kubrick had Herman Kahn in mind.)

11. Originally Rand Report R-244-S (untitled), closely held but briefed at SAC and the Pentagon beginning in March of 1953; later incorporated as the summary at the beginning of A. J. Wohlstetter et al., *Selection and Use of Strategic Air Bases*, RAND R-266, April 1954, which was a massive, 424-page Top Secret study. The first that the public heard about the implications of these studies was in Wohlstetter's article "The Delicate Balance of Terror," *Foreign Affairs*, January 1959, pp. 211-34.

12. How else to account for the consistent misspelling of "MacNamara" throughout the book, a reference to Melvin Laird as a former "Senator," and the omission of Arkin's middle initial, which he elsewhere always uses?

13. Signals intelligence, electronic intelligence, Emergency Rocket Communications System, the Defense Support Program; all details regarding these remain highly classified, but Pringle and Arkin (and Bracken) provide general descriptions of each, including hardware involved, associated costs, and functional history.

14. John Steinbruner, for example, writes of the "potentially overwhelming pressures [on responsible military commanders] for outright preemption under intense crisis circumstances when the prospect of an unavoidable war would be facing them." See p. 44 of his article listed in the Sampler on p. 93 of this issue.

15. An extreme statement, to be sure, but offered without apologies. For knowledgeable if more restrained support, see the reviews by Lawrence Freedman (in *Book World*, 11 December 1983) and McGeorge Bundy (in the *New York Times Book Review*, 9 October 1983). Freedman calls the book "brilliant" and observes that "Bracken has succeeded in putting the nuclear debate on a new plane." Bundy says simply that there is nothing better in the open literature.

16. Regarding the C³I network, I cannot resist quoting here the first footnote in Bracken's book: "Some references in the past few years employ the phrase 'command, control, communications, and intelligence,' or even 'command, control, communications, computers, intelligence, and informational processing.' An understanding of the definition of command and control will show these additional terms to be redundant." (p. 3)

17. See the review by Lawrence Freedman, cited in note 15 above.

18. McGeorge Bundy in the review cited in note 15 above.

19. In its pure form, this "law" is stated as follows: "Just because it's classified don't mean it's true!" I am indebted to Don Oberdorfer, diplomatic correspondent of the *Washington Post* for pointing this out to me one day (using, to be sure, better grammar).

POTPOURRI

Fighting Armies: NATO and the Warsaw Pact (Volume 1), **Fighting Armies, Antagonists in the Middle East** (Volume 2), and **Fighting Armies, Nonaligned, Third World, and Other Ground Armies** (Volume 3) edited by Richard A. Gabriel. Westport, Connecticut: Greenwood Press, 1983, 250 pages, 173 pages, 273 pages, respectively, $95.00.

Making war is a unique mixture of men, machines, determination, training, skill, and luck that makes true combat capabilities difficult to assess. Yet this is the task that editor Richard A. Gabriel has set for himself and his contributors in his new trilogy *Fighting Armies: NATO and the Warsaw Pact; Fighting Armies: Antagonists in the Middle East;* and *Fighting Armies: Nonaligned, Third World, and Other Ground Armies.*

The three works are divided into chapters, each surveying the combat capabilities of a selected nation. Not all nations in a given category are covered: for example, only seven NATO powers and three Warsaw Pact powers are included in Volume 1. Throughout the three volumes, the chapters are fairly well standardized. There is the usual manpower and equipment tally, but the key sections of the chapters are assessments of recent combat experience, training and doctrine, the officer corps, the NCO corps, and conclusions drawn from the information presented. The latter make these volumes interesting reading, since the combat capabilities of men always are crucial in war.

We know what the contributors attempted to accomplish. The question now becomes: How well have they accomplished their objective? The answer is that although there is some variance in quality, for the most part, they have done their task very well.

The chapters on Greece and Turkey are excellent. Well documented, well written, and thoughtfully organized, they are as good an analysis of this sensitive and overlooked NATO flank as I have seen. The military, social, and political problems are woven carefully into a tapestry that portrays the combat capabilities of these two nations very clearly.

The chapter on Israel is also excellent, but the authors (two correspondents with *Time* magazine, one of whom had combat experience in the Israeli forces) managed it all without the use of a single footnote, so it reads somewhat like a *Time* article. The lack of documentation may annoy readers who like to know specific sources of information. The chapter on Iran may be more satisfying for scholars: it is well footnoted, informative, and well written.

Probably the most provocative chapters concern U.S. and Soviet combat capabilities. The U.S. section is written by Richard A. Gabriel and Paul L. Savage, who achieved fame with *Crisis in Command: Mismanagement in the Army* (1978). Much of that book is synopsized in the U.S. section. (I read *Crisis in Command* shortly after its publication and found it to be an excellent and insightful work. However, the book certainly could not have made the authors popular with the Department of the Army.) Their comments on the lack of a national strategic doctrine to guide the use of military forces, training, and the effects of careerism on the officer corps are well worth reading. Also, the overall section on the Total Force, especially problems with the Army Reserve component, track very well with other studies on the subject. On the other hand, the authors seem overly concerned about the size of the officer corps, setting 5 percent as the optimum percent of officers to enlisted men. It seems to me that rather than comparing the size of U.S. Army officer corps to some hard and fast percentage, it would be wise to examine the sophistication of the military force and the size and complexity of the logistical train. Such analysis seems to be beyond these authors.

Within the U.S. section is a long discussion of the quality of Army recruits, social alienation of the individual recruits, overrepresentation of minorities, and drug problems. The bottom line of the authors' analysis is that stupid, alienated, doped soldiers do not fight well—not exactly a shocking revelation to a military professional. Most of the source material that the authors used for this part of their study came from the 1978 to 1980 time period, a time when the disparity between civilian pay and military pay was at its highest and the services were unable to compete successfully with the civilian sector for quality people. This situation has since been remedied, so that in 1984 the services are having their best recruiting year ever and attracting high-quality recruits for both the enlisted force and the officer corps. The authors' concern about the high proportion of minorities and the low social class of recruits seems ill-founded. The problem is not that we have too many minorities in the military or that the services attract individuals in low social and income classes. Good pay, coupled with high standards, ensures a high-quality force. Thus the past two years have yielded increasingly promising recruits and a steadily improving overall force. Similarly, the lenient policy on drug abuse that the services adopted during the late 1970s has been adjusted, and the armed forces have made substantial progress on the drug abuse problem during the past three years.

While the U.S. Army can be judged to have been shorted in this trilogy of assessments, I believe, its Soviet counterpart has been treated very well. In the section on the Soviets, written by Richard A. Gabriel and William Martel, one notices the lack of any discussion of drug or alcohol abuse in the Soviet armed forces. Yet heavy use of alcohol in the Soviet Union is well documented by other analysts, and serious drug abuse is suspected. Furthermore, Gabriel and Martel do not mention the problem the Soviets have with social alienation and integration of their minorities into the army, although numerous sources indicate that the problem is significant and that the Russians are making little headway in relieving it. For an author of Gabriel's capabilities to highlight the alienation and drug problems of the U.S. Army and then to omit them from the analysis of the

Soviets is cause for concern. As far as covering the actual combat capability of the Soviet army, the section is thought-provoking and well done. Highlighted are the tremendous resources the Soviets expend for their armed forces, the doctrine of the offensive, the will to use military force, and the problems the Soviets have had in developing a professional NCO and officer corps. Most impressive is the discussion on the Soviets' use of reserves. The authors state that six of the eight divisions initially deployed in Afghanistan were reserves who were mobilized within ten days and deployed in the field for ninety days before being replaced by normal rotation. The Soviet capability in this area is unmatched and perhaps represents the greatest strength of the Red Army. However, if the reader relied on Gabriel's work only, I think he would get the impression that the Soviets stand ten feet tall and are virtually unbeatable. On the other hand, balanced with other viewpoints, this evaluation of the Soviet army would be helpful in attaining what is probably the true picture; that is, the Soviets have a military force with enormous capabilities saddled with a political and social system that stifles imagination and retards formation of trust and respect among ranks.

I was very favorably impressed with these three volumes and would recommend them as an excellent survey work, especially for officers who would like to broaden their knowledge about the armies of a large number of countries. They would be especially useful as a starting point for further research on the capabilities of the countries covered.

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Military Lessons of the Falkland Islands War: Views from the United States edited by Bruce B. Watson and Peter M. Dunn. Boulder, Colorado: Westview Press, 1983, 170 pages, $17.95.

The rush to learn lessons from the South Atlantic War of 1982 produced an abundance of forgettable commentary in the United States. *Military Lessons of the Falkland Islands War*, however, is an anthology of second-generation analysis, tempered by time and a firmer grasp of the war's facts. Although the selections are still too dependent on British sources, this book is a worthy companion to Max Hastings and Simon Jenkins's *The Battle for the Falklands* and may be the best single study for officers who have only enough time and interest to read one book.

Edited by two officials of the Defense Intelligence College, Commander Bruce Watson, USN, and Colonel Peter Dunn, USAF, *Military Lessons* includes essays by both military officers and civilian defense analysts of proven expertise. As a group, they might be characterized as the executive-branch wing of the military reform movement; that is, the authors are probably more temperate (yet no less committed) in their commentary than their congressional counterparts might be. Some of the writers—William J. Taylor, Jr., William J. Ruhe, Norman Friedman, Frank Uhlig, Jr., and Harry G. Summers, Jr.—are better known than others, but all of the contributors demonstrate analytic skill and deft writing. The only excessively academic essay is a piece on political and strategic warning, written by Gerald W. Hopple; but even it has its insights beneath the language of pseudoscientific international relations theory.

By and large, *Military Lessons* treats the salient areas of operational interest: submarine activity, operations of surface vessels and maritime aviation, the air war, amphibious operations, and ground warfare. Ruhe's short chapter on "smart weapons" is especially interesting, and coeditor Dunn provides a useful summary of the lessons, as does William Taylor in the introduction. These lessons are crafted especially for American readers. They focus on the demands of "out of theater" air-maritime operations, the perils of fighting even second-rate powers that have modern weapons and some men skilled and courageous enough to use them, and the likelihood that the Falklands War's quaint Victorian character has obscured its relevance to the development of warfare since 1945.

Although this book has rich material for military analysts, its usefulness might be greater if it contained separate chapters on the full range of electronic warfare, the conduct of operations at night and in foul weather, and the role of air-ground coordination in the land campaign. Some of the authors might also be slightly tainted with anglophilia, but the Argentines have not yet been very forthcoming in discussing *their* military lessons (except for those concerning the Argentine air forces).

As Colonel Dunn correctly observes in his conclusion, the key ingredient for military success is political resolve, however silly or purposeless a war may appear in retrospect. The basic British problem was that its armed forces had become NATO-centric in ways that the U.S. Armed Forces have not. A nation cannot easily wage war outside its self-defined regional sphere of influence if regional influence is all that national policymakers have wanted, for the armed forces (at least in a democracy) are soon shaped (in composition and readiness) to reflect policy goals. Luckily for Great Britian, her military transition had not been completed in 1982. For the United States, the Falklands War validates our current wide (and expensive) range of military capabilities. While in some situations the Falklands War became a "near-run" thing for the British, the same war fought by a U.S. joint task force would have been a "turkey shoot." Where military capability and political will work closely in common, of course, such a war should not occur in the first place.

Military Lessons of the Falkland Islands War makes an important contribution to the current debate on military reform, but its implicit message is that human action, political and military, still creates and then resolves international conflict.

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A Hero for Our Time: An Intimate Story of the Kennedy Years by Ralph G. Martin. New York: Macmillan, 1983, 596 pages, $19.95.

A Hero for Our Time is not scholarly in the customary sense, and its inspiration owes far more to journalism than to political science. Basically, it is a series of short and highly personal vignettes, chronologically arranged from John F. Kennedy's early years to his death and focusing on his presidency. Some of its "revelations" might better have appeared in the *National Enquirer*, but one supposes that the text was reviewed carefully by a libel lawyer before publication. The personal escapades that adorn its pages are generally in the form of quotations from Kennedy associates rather than assertions of fact by the author, Ralph Martin.

How many of the intimate details of Kennedy's life recorded here are accurate and how many are not is hard to determine. Certainly every rumor that I am aware of is discussed: Kennedy's love life, his Addison's disease, his severe back problems, his tempestuous relationship with Jacqueline, his cynicism, etc. Yet the book is not mean-spirited, and from its well-written pages emerges the figure of a privileged and complex man of great gifts who grew tremendously while in office and captured the imagination of a generation.

Readers interested in the Kennedy presidency will find this book hard to put down, but the account is not a substitute for more serious analyses. The Kennedy books by Sorensen, Schlesinger, and Halberstam, for example, put many of the events into clearer political and historical perspective. But a book like *A Hero for Our Time* provides a human dimension to the events of the era. The Kennedy mystique is still a force to be reckoned with in Democratic circles and national politics, and this volume describes how it began.

Most interesting are the speculations on the 1964 campaign and a possible second Kennedy term. A Kennedy-Goldwater contest would have been far more edifying than the character assassinations and the "Daisy Girl" commercials that occurred in 1964. Many possibilities for his second term were discussed: a rapprochement with China, social legislation on a more realistic scale than the Great Society, and a possible (but not at all certain) extraction of U.S. military elements from Vietnam. It is interesting to speculate, but part of the mystique is that we shall never know.

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Harrier: Ski-jump to Victory edited by John Godden. Oxford, England, and Washington: Pergamon-Brassey International Defence Publishers, 1983, 132 pages, $18.00 cloth, $9.00 paper.

John Godden is a public relations and marketing man with British Aerospace and has a professional background in journalism. *Harrier: Ski-jump to Victory* is copyrighted by British Aerospace and serves as a vehicle for advertising the Harrier. But the selling is far from heavy: the last three chapters are reserved for a résumé of the vertical/short takeoff and landing (V/STOL) aircraft's development and deployment, as well as a survey of the Harrier's characteristics, operational advantages, and potential for further development. The opening chapter outlines the sequence of events that made up the British campaign in the South Atlantic. Ten subsequent chapters contain personal reminiscences. Basically, *Harrier* is another book on the Falklands War, seen through British eyes; but it is a good one and worth waiting for. Godden has obtained personal accounts from an interestingly broad cross-section of participants: Royal Navy squadron commanders, Royal Air Force pilots, and Navy/Air Force engineers and technicians, including both officers and enlisted men. Revealed are insights into tactics, weapon delivery, escape and evasion, search and rescue, battle damage repair, and most other aspects of the human and technical challenges faced in war.

The stories are told with liberal helpings of British understatement, but the sheer satisfaction of a job well done and the level of excitement that operational combat generated shine through clearly. The underlying message from the accounts is that the highest possible standards of peacetime training will pay dividends when put to the test in war. To quote one of the Navy Harrier pilots, the commander of No. 809 Squadron, "It was to be my last operational flying appointment and it was my first continuous combat experience in twenty years of almost nonstop flying. . . . I think the most satisfying feature of my flying career was that the training and experience of those twenty years had proved to be right. There was little waste in those years . . . We did not fail."

This is a well-illustrated book, containing over 100 photographs—a good number of them published for the first time. But the personal accounts provide the real worth of the book: nearly all the previous book-length coverage of the war has been written by nonmilitary observers and analysts. These ten personal narratives by Harrier operators and maintainers offer a rich source of insight into the high-speed, complex demands of modern warfare.

Another point worth noting: the Harrier seems to be quite a good aircraft! Thus, British Aerospace may be forgiven for telling us so. Twenty-five years after the first design efforts toward it were initiated, the Harrier proved its worth in a unique demonstration of versatility and operational effectiveness. Godden's compilation explains in exciting detail how the aircraft went to war and "ski-jumped" to victory.

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Changing U.S. Military Manpower Realities edited by Franklin D. Margiotta, James Brown, and Michael J. Collins. Boulder, Colorado: Westview Press, 1983, 267 pages, $25.00.

This hardcover volume is a collection of essays derived from a conference of the Inter-University Seminar on Armed Forces and Society which was held in 1979 at Maxwell Air Force Base, Alabama. The original papers have been updated, but in the four years that it took to get the collection into print, the issue of military manpower ceased to

command the interest it still deserves. Furthermore, the results of more recent conferences or studies of the subject—notably, the Report of the Atlantic Council of the United States (which documented serious deficiencies in the military manpower system) and the Report of the President's Military Manpower Task Force (which essentially ratified existing policies)—have appeared already. So why bother with another book on the subject? There are several reasons.

First, despite the overwhelming success of the All Volunteer Force (AVF) since late-1980, serious problems remain unaddressed. Certainly, better pay, improved personnel management, and a much improved public image have combined to make military service attractive again. But the improvement in the AVF's fortunes coincided also with the longest, deepest recession since the end of World War II, leaving lingering doubts about the ability of the AVF to attract and retain quality and quantity in a healthy economy. Also unanswered by the AVF's current success are questions about its ability to maintain the strength of both the active and reserve components in a shrinking demographic pool. Yet another set of unanswered questions emerges from the dramatic increase of married enlisted members, single-parent military families, women in nontraditional military skills, etc. All of these issues are addressed in this volume.

Several essays in *Changing U.S. Military Manpower Realities*, written by some of the better-known scholars in the field (Coffey, Janowitz, Blair, and Segal), are restatements of familiar critiques. Essays addressing Air Force women in nontraditional jobs (by Robert Caldwell, David Hale, Frank J. Kane, and Patricia Dallenbach), Anne Hoiberg's essay on women in the Navy, and three essays probing the subject of the military family (by Edna Hunter, Richard Brown III, et al., and Sabra Woolley-Downs) are important additions that give this volume an unusual breadth for books of this genera. Too often, analyses of military personnel matters play numbers games with the quantity, quality, gender, and representativeness of the armed forces. Family issues receive almost no attention at all. The inclusion of women and families in this collection make it worthy of special consideration.

The introductory essay by Franklin D. Margiotta, which sets this book apart from most of the recent publications on the subject of military manpower, merits particular attention. Margiotta's thesis—essentially the message underlying the entire collection—is that "changing military manpower realities may be the single most critical and persistent issue impinging upon U.S. policy in the 1980s and 1990s." That position is not new, but I have not read a better single essay in support of that view in the half-dozen books on the subject that have appeared since 1980. Margiotta reviews the familiar facts and trends before reaching the same conclusion as others: "The sum of the evidence . . . suggests that legitimate questions remain about the ability of the [all volunteer] military to defend the United States adequately in the near future." Margiotta does not stop with the numbers game. He believes that the root cause of the military's people problems is social, not demographic or economic. During the decades since World War II, the United States has experienced a revolution in social norms and values. The result is a fundamental change in the way our society—especially youth—views and values military service and the way U.S. military services view themselves and society. "Today," Margiotta asserts, "it is increasingly difficult to convince young Americans to adopt the values, norms, and sacrifices of military service in a peacetime environment, and it is increasingly difficult to rationalize continued military sacrifice and service to quality military members." Furthermore, as the military has tried to adjust to changing social trends, "the self-image of the military as a macho, almost all-male, relatively white institution has been shattered." The result is "a sense of quiet doubt and frustration." This military identity crisis would exist regardless of what military manpower procurement and retention system the United States employed, Margiotta contends.

Thus, despite its clear shortcomings, Margiotta believes that the All Volunteer Force will continue for the foreseeable future "barring a major and threatening international crisis, or a significant shift in the U.S. political system and the Congress. . . ." His recommendations, which include a more systematic and integrated approach to manpower policy formulation, are worth reading, as are the other essays in this collection.

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Strategic Studies: A Critical Assessment by Colin S. Gray. Boulder, Colorado: Greenwood Press, 1982, 161 pages, $27.50.

Colin Gray boldly states that *Strategic Studies* is based on the following assumptions: because of state structure and geopolitics, the Soviet Union is a permanent adversary (not a "misguided friend"); since knowledge of nuclear-weapon technology is already widely dispersed, it cannot be removed as a permanent, important factor in world politics; international politics is a dynamic process wherein states rise and fall in relative influence, and nuclear weapons, though important, have not altered the basic nature of international political rivalry; and military power, even military nuclear power, remains the ultima ratio of security communications.

For Gray, there are no alternatives to strategy and strategic studies. They are a fact of life, and the bottom line for the United States is that we just don't have another option. It is, of course, regrettable that too often strategy has been "designed in error and executed without skill," but this circumstance does not change the essential situation. Soviet strategists are busy preparing to wage war efficiently, Gray believes, while, simultaneously and unfortunately, the strategists and politicians of the United States are more concerned with "the process of arms race and crisis" than with the actual conduct of war. Even the literature that pours out of the U.S. strategy think tanks is thin of actual operational analysis.

Gray's ability to distinguish between fair and unfair criticism of strategic studies is well illustrated in this interesting volume. Thus the author states that while it is easy to criticize the errors of the studies conducted in the 1950s and 1960s, most of that criticism is misdirected. Even critics can

miss the mark. The sensible thing to do, according to the author, is to criticize the vulgarization of strategic thinking that occurred during the second half of the 1960s in the McNamara Pentagon—an example of which is the policy of mutual assured destruction (MAD). Today, defense strategists are almost in consensus that the U.S. theory of nuclear deterrence of the 1960s was wrong (or inappropriate), that the theory of "limited war" does not work in the terms of domestic political viability, and, finally, that the U.S. approach to arms control in the 1970s was not appropriate for dealing with the Soviet Union. As for the future, "the several demonstrable weaknesses in strategic studies should be viewed not as discouragement, but rather as a challenge to do better in the future."

Strategic Studies is a valuable book worth reading and discussing by all students.

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The GDR: Moscow's German Ally by David Childs. London: Allen and Unwin, 1983, 352 pages, $30.00 cloth, $14.50 paper.

The German Democratic Republic (GDR), with a rich heritage that is definitely and unmistakably Western, should offer an ideal case study of the applicability of Marxism-Leninism under highly favorable conditions. Yet David Childs of Nottingham University combines political history and structural analysis of the East German system to present a chronology of failure. He is embarrassingly reluctant to stress that fact. His book jacket summary refers to the GDR as "one of the most successful socialist experiments of our time." One hopes the irony was deliberate. Childs is at pains to show that the GDR began as an advanced industrial region. Its defense budget is hardly backbreaking. Its oftencited burdens of reparations and population loss—the latter checked by some of the most physically obvious barriers anywhere in the world—seem to be far in the past. On page after page, Childs establishes the burdens of irrelevant and incompetent planning. Still, he concludes that it is "a matter of judgment" as to why the GDR's alleged economic progress has provided so little of the good life for its ordinary citizens. Perhaps he is too victimized by British intellectual "goodthink" to state the obvious. What is wrong in the GDR is the fundamental approach of "scientific socialism": the mania for centralized control, the insistence on making every aspect of human life a political matter.

Childs is more effective in tracing the GDR's development from a zone of occupation to a client state that has become more Communist than the Soviet Union. The GDR's growing international legitimacy has involved other powers' abandonment or modification of positions rather than any significant initiatives or achievements of the GDR itself. Childs demonstrates clearly, albeit unwillingly, the fatuity of détente and *Ostpolitik* applied to a system more completely politicized, more dependent on the goodwill of the Soviet Union, than any other in Eastern Europe.

However, while the GDR has produced its own brand of ideologues working to make the system's control absolute, their success remains dubious. Childs does not probe deeply into the way things actually happen in the GDR, as opposed to the way they are supposed to happen. Nevertheless, he demonstrates that East Germans at all levels, intellectuals and workers alike, continue to question, to challenge, and to identify more with Germany as an entity than with the Democratic Republic under which they live. This enduring attitude, in turn, guarantees the GDR's survival as a police state—"liberal" by the standards of Heinrich Himmler or Lavrenti Beria perhaps, but a police state nonetheless, and far more deserving of characterization as such than Child's soft-shoe approach allows.

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The First of the Few: Fighter Pilots of the First World War by Denis Winter. Athens: University of Georgia Press, 1983, 223 pages, $17.50.

Don't be fooled by this book's ambiguous and somewhat deceptive title. It is neither a "rehash" of the aerial campaigns of the Great War nor another set of biographies of the first aces. Author Denis Winter has adopted an altogether fresh approach. By examining a large number of pilot memoirs and important archival material, he has provided a composite picture of *how* the first British fighter pilots trained, fought, lived, and died.

Two motifs run through this volume and give it a freshness not always found in Great War monographs. The first is the terrible human price technological inferiority exacts in war. By 1909, Britain had spent £2500 on aircraft research and development as compared with £47,000 in France and £400,000 in Germany. (p. 18) This halting prewar aviation effort forced the Royal Flying Corps (RFC) to design or develop literally everything required to fly and fight—from aircraft to training programs to flight medicine. If the results were heroic and ultimately successful, the cost was horrifying. British losses were four times the German totals; and of the 14,166 RFC/RAF pilot deaths in the War, fully 8000 occurred in training accidents in the United Kingdom. (p. 36)

Winter's second recurring theme is the essential continuity of Great War combat flying with World War II and, by implication, with today. Despite the groundbreaking, at times groping, efforts of the early fighter pilots, the Great War aviators managed to develop the tactics, doctrines, and attitudes that formed the core of fighter pilot procedures in all air forces of the 1939-45 conflict and heavily influence us today—a remarkable achievement despite the fearsome cost.

First of the Few is a brilliant little book which told me more about air-to-air combat in the Great War than any other single volume. The author even managed to include a short chapter on aircraft maintenance and the peculiar problems and pitfalls of servicing the first fighters. For Great War aficionados, for the airman interested in his "roots," and even for the Project Warrior seminar or study group, this treatment of the development of Britain's fighter arm will prove informative and entertaining—while offering impor-

tant insights into the complex relationships of man, technology, and combat.

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Jet Planes of the Third Reich by J. Richard Smith and Eddie J. Creek. Boylston, Massachusetts: Monogram Aviation Publications, 1982, 400 pages, $69.95.

The qualities of this lavishly illustrated and beautifully produced book can be summed up in two words: magnificent and frustrating.

The intelligent organization, comprehensive scope, and—particularly—the effective use of pictorial material richly merit the "magnificent;" for the "frustrating," read on.

The hundreds of carefully selected photographs, many previously unpublished, plus judiciously chosen plans, perspective drawings, and full-color paintings illustrating the mind-boggling gamut of Nazi Germany's principal jet aircraft programs, explain the steep price and are at the heart of this book's appeal. The effective use of relevant pictorial material, well integrated with the smoothly written text and displayed to full advantage in the 9" x 1" format on high-quality paper, is arguably the book's strongest point. This is not simply a matter of visual attractiveness, for the photos are themselves a major source of evidence. The authors clearly know their photographic sources inside out. They have, moreover, intelligently defined the scope of their study and are to be commended for resisting the urge to depict scores of wild-eyed, pie-in-the-sky turbojet and ramjet proposals that never progressed beyond general arrangement drawings, concentrating instead on projects on which metal was actually cut. This still covers a lot of ground—rocket-boosted variants of the Messerschmitt Me 262 and alternate engine installations for the Arado Ar 234 are given full treatment, for example—but the study retains its focus.

The authors' research appears to have been exhaustive and has produced not only a balanced chronical but some surprises as well: the extent of efforts to make a night fighter out of the Ar 234 bomber, for instance, and the convoluted evolution of the Heinkel He 162 Volksjäger among them. The narrative is apparently accurate, at least within the limits of my ability to check and is more comprehensive than any other readily available source, seven of the nineteen chapters and two of the four appendixes being devoted to the operational record.

Frustration emerges with "appears" and "apparently" in the preceding paragraph, for the authors use no footnotes. Except where it is clear that they are relying on pictorial evidence or interviews with surviving participants, we can only guess at their sources. This is not a trivial matter, since, by implicit admission (p. 8), the authors are apparently limited in their ability to deal with original German texts. The value of the work to serious scholars is sharply reduced as a result and without benefit to the general reader. This is a point of particular frustration, since the addition of citations would have entailed negligible cost to the publisher and little additional effort by the authors, whose research, one suspects, was both thorough and sound.

The effects of this shortcoming are exacerbated by the absence of a comprehensive analytical overview. The point is most easily made by example: Three photographs show a late production Me 262 A-1a with an odd, checkerboard pattern, defense of the Reich tail marking. (pp. 350-51) This marking, the authors conclude, indicates the aircraft's probable assignment to an *Industrie Schutz Schwarm*, an industry protection unit. Both the marking and the assignment of first-line jet fighters to this type of unit were previously unknown to me, having encountered no reference to either in the secondary literature, and knowledge of them is certainly not commonplace. Yet we are not told how the authors arrived at their conclusion or on what evidence. They give us no hint of how widespread this practice may have been.

If, in fact, the Third Reich assigned numbers of its tactically most potent fighter to decentralized, ad hoc, local protection units—and the evidence of the photographs is persuasive—it helps to explain why such superior weapons were, in the aggregate, so ineffective. Certainly, clear evidence of a mind-set capable of producing the dysfunctional dispersion of operational assets as indicated is of major significance in itself; the point cries for documentation and amplification.

On a more general level, explicit reference is never made to the Third Reich's counterproductive fragmentation of developmental effort, to which this book offers eloquent, if inadvertent, testimony. Indeed, the Nazi regime's dispersion and dilution of some truly remarkable engineering talent is the major theme of the book; it is unfortunate that it remains an unstated one. We can only hope that Monogram, whose praiseworthy publishing efforts are unmatched in many important respects, will see fit to make use of historically trained editors for future offerings of this sort. The price they pay by not doing so is to reduce a potentially definitive work to a nicely packaged collection of source photographs for the specialist and an engaging narrative and tantalizing picture book for the general reader.

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The Miracle of Dunkirk by Walter Lord. New York: Viking Press, 1982, 323 pages, $17.95.

As a popular military author, Walter Lord generally approaches his subject from a "heroic perspective." His latest effort, a retelling of the Dunkirk evacuation of May-June 1940, is no exception. It combines his fast-paced writing style with an eye for the dramatic so that the role of the participants often comes alive for the reader. Especially well etched is his description of Vice-Admiral Sir Bertram Ramsay, "a resourceful, resilient man," who directed the evacuation effort from his headquarters in Dover and who later gained even greater renown as the naval commander for Overlord. Equally interesting are Lord's numerous vignettes of lesser-known persons such as Douglas Tough, a Teddington dock operator, who requested and at times commandeered boats on the Thames to assist in the evacuation. Lord was able to include similar sketches by contacting some 500 survivors, often with the help of the Dunkirk Veterans Asso-

ciation in Leeds, and the individual reports provide the backdrop for what those nine emotion-filled days were really like.

While the author concentrates on the British side of the story, the French ally and the German enemy are not altogether neglected. Hitler's famous "halt order" of 24 May, which allowed the Allies a three-day respite to establish an effective defensive perimeter around Dunkirk, is particularly well described as is the valor of the French soldiers during the final hours before the surrender. The book is further enhanced by clear, well-placed maps and excellent photographs, many of which have never been published before.

Nevertheless, despite its many positive features, Lord's account does have some disturbing aspects. For one thing, he overemphasizes the part played by the Stuka dive-bomber at the expense of the Me-109 and other Luftwaffe aircraft. In addition, though generally well researched, he does not seem to have consulted such standard works as Jacobsen, Bond, and volume two of the German official history. He has also failed to use the British War Cabinet and the Chiefs of Staff papers, and thus his treatment of Allied decision making at the highest levels is not as precise as it might have been. In fact, he seldom moves past the descriptive to the analytical level. As a result, the broader issues surrounding the Dunkirk operation—such as how it fits historically into World War II and the twentieth century and why it is important—these considerations make up only a small portion of the narrative. Yet it is good to keep in mind that Lord is not interested primarily in an analytical approach but rather in giving an accurate, yet vivid recreation of how 338,226 Allied soldiers managed to escape from almost certain captivity to fight another day. In this respect, *The Miracle of Dunkirk* is eminently successful.

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Fighter Pilot: The First American Ace of World War II by William R. Dunn. Lexington: University Press of Kentucky, 1982, 234 pages, $18.00.

As the title implies, William R. Dunn earned the distinction of becoming the first American ace of the Second World War. He accomplished that feat before the United States had entered the war, while serving in the British Royal Air Force's American-manned Eagle Squadron. Only twenty-five years old at the time, Dunn was already a veteran of both the Canadian and American armies. After service with the Eagle Squadron, he transferred to the American Army Air Forces in 1943 and saw action in the European and China-Burma-India theaters. After the war, Dunn advised and fought for the Chinese Nationalist Air Force and later became air consultant to the Shah of Iran, Mohammed Riza Pahlevi. He missed involvement in the Korean conflict but made up for it in Vietnam, where, although no longer on flying duty, he added to a vast collection of medals by earning a second Bronze Star during the Battle of Saigon.

Dunn outlines his tumultuous military career in straightforward prose. He does not reflect on the philosophical questions that war might present from the seat of a cockpit but instead vividly narrates the stirring, hard-living, sometimes riotous existence of the fighter pilot at war. Although Dunn offers a fatalistic account of the death and misery which was superimposed over the off-duty merriment, his tale, nevertheless, does not lack compassion. He is deeply moved by the sufferings of the maimed and by those who sacrifice their lives in combat. Still, on all occasions, Dunn is absolutely convinced that he is performing a necessary duty and that the cause he is fighting for is a noble one. Of course, that does not prevent him from venting his wrath at the desk-bound planners he considers responsible for sending so many young men to untimely deaths on poorly organized, futile missions.

Dunn had extensive experience flying the British Hurricane and Spitfire as well as the American P-47 Thunderbolt and P-51 Mustang. In a provocative appendix, he evaluates the leading Allied fighters of World War II and also offers insightful comments on the battle worthiness of an opponent he faced countless times in combat, the Messerschmitt 109. Dunn's opinions may surprise some veteran fighter pilots and students of air warfare, particularly his direct comparison of the Thunderbolt and Mustang.

Fighter Pilot is a true-life adventure story that can appeal to both the general reader and the military historian. It is highly recommended.

First Lieutenant Kenneth Schaffel, USAF
Office of Air Force History
Bolling AFB, D.C.

Alexander of Russia: Napoleon's Conqueror by Henri Troyat. New York: E. P. Dutton, 1983, 335 pages, $17.95.

Here is a lively, popular biography of the czar of Russia who grew to maturity and ruled during the Enlightenment era of the French Revolution and Napoleon. The author, a Russian-born Frenchman, is very sympathetic to his subject, who by turns is shown as mystical and naïve, cruel and calculating. As in his previous works on Tolstoy and on Catherine the Great, Henri Troyat is a fine storyteller; his writing is suspenseful and vivid, particularly on the private life of the czar. There is not much novelty in Troyat's interpretation of events, which takes little account of English and German works. His sources are primarily French and Russian memoirs of court life—testimonies to vanished gilded splendor.

In Troyat's account, we learn that Alexander did not wish to rule, at least not on the death of his grandmother Catherine; that he felt lifelong guilt about the murder of his father, the eccentric Paul I; and that despite his talk of reform, he was a firm believer in the autocracy of old Russia. Like Stalin later, Alexander understood the necessity of appealing to nationalism when his country was invaded. Believing that he had been chosen by God to destroy the evil Napoleon, Alexander readily proposed messianic plans; of course, he himself had fallen under Bonaparte's spell at Tilsit. After 1815, the peak of his European popularity, Alexander may well have suffered an identity crisis. His announced constitutional projects came to naught, always stopped short of

execution. Napoleon thought "something was always missing in the Czar"; Metternich found in him "a strange combination of masculine virtues and feminine weakness." For those who wish to learn something of Alexander and about Russian character in general, Henri Troyat has provided a most readable version.

Dr. Maarten Ultee
University of Alabama, Tuscaloosa

The Plot to Steal Florida: James Madison's Phony War by Joseph Burkholder Smith. New York: Arbor House, 1983, 314 pages, $16.95.

That one of the Founding Fathers, James Madison, could finance a shabby land-grab operation on the flimsiest of excuses and show how true was his dictum that governmental "power . . . will ever be liable to abuse" are the revelations with which Joseph B. Smith hopes to surprise us.

This sensationally titled book, *The Plot to Steal Florida: James Madison's Phony War,* has a double purpose. Smith explores a neglected and largely unsuccessful attempt by the U.S. government, through bullying, to acquire the Floridas cheaply from Spain when Spain was weak. The author then tries to make analogies between Madison's Floridian dabblings and U.S. covert operations elsewhere approximately 160 years later. Smith does better with his first aim than with his second.

The method of acquiring Florida was to persuade Anglos, so-called patriots living under Spanish rule, to revolt, declare an independent republic, and almost at once request its annexation by the United States. If resident Anglos were content under the Spanish flag, then spurious armed patriots (enlisted on promises of Floridian land) could be introduced from neighboring states of the American union. In 1810, this technique worked in that part of Spanish West Florida around Baton Rouge; and in 1812, in East Florida at Fernandina. However, then, at the onset of war with Britain, Madison withdrew his support for the East Florida patriots. Part of West Florida stayed American.

Smith recounts all of the events in an interesting, even exciting way. Sometimes, however, when he seems to be striving for literary effect, he strikes a wrong note—for example, describing seventeenth-century Indians as doing "the hard-hat work" in building a fort, or having the Founding Fathers "put on their togas one arm at a time." Smith errs, too, with such generalizations as "the War of 1812 and the Vietnam War are broadly analogous" and "James Madison was greatly like them [i.e., Nixon and Kissinger] but not entirely." Such strained comparisons spoil *The Plot to Steal Florida.*

Dr. R. F. A. Fabel
Auburn University, Alabama

The Civil War Almanac edited by John S. Bowman. New York: Facts on File, 1983, 400 pages, $19.95 cloth.

The Civil War Almanac, edited by John S. Bowman, has pretensions of sitting on the same shelf as E. B. and Barbara Long's *The Civil War Day by Day,* Mark M. Boatner's *The Civil War Dictionary,* and Ezra J. Warner's two reliable source books, *Generals in Gray: Lives of the Confederate Commanders* and *Generals in Blue: Lives of the Union Commanders.* The inclusion of an introduction by distinguished historian Henry Steele Commager adds weight to the book. Probing the reasons why modern America continues to be fascinated with the Civil War, Commager concludes that while the war settled many issues, many more remain open and current.

Immediately following the introduction is a section on the chronological history of the causes of the war, the war itself, and reconstruction. Opening with a treatment of the introduction of black indentured servants into Virginia in 1619, what follows thereafter is largely a recapitulation of *The Civil War Day by Day* in condensed form. No mention or credit is given to the author(s) of this section.

The section on weapons of the war contributes nothing new or original. Indeed, it is introductory in nature, and material that is presented is often quite meager. For example, two excellent illustrations are captioned "Civil War cannons," with no attempt at more precise identification. Another illustration of a Napoleonic piece appears to be a crude line drawing pasted in as an afterthought.

The brief section on naval warfare is well written but without any identification of the contributor(s). It too lacks depth, and no citations are given.

The final section contains biographies of major leaders on both sides—political figures as well as military personnel. It seems useful and would be particularly helpful to those starting to study the Civil War. The information was complete; but again, no citations or author credits are provided.

Leaving much to be desired, the illustrations, in many instances, are either poorly captioned or fictitious. A color rendition of Union uniforms, taken from a well-known modern series of prints, is labeled as a Union recruiting poster.

For the uninitiated, *The Civil War Almanac* is an excellent introduction; for the scholar or the seasoned professional soldier, it leaves much to be desired. There is no bibliography and absolutely no indication of sources for the material within. Much of the information appears to have been culled from standard secondary works—mainly *The Civil War Day by Day.* Editors who may have worked with Bowman are not listed, and there is no hint to the authorship of the various sections. *The Civil War Almanac* fails as a reference, offering no new or significant contribution to the study of the American Civil War.

Dr. Robert D. England
Arkansas State University

Jane's Airport Equipment edited by David F. Rider. London: Jane's; Boston: Science Books International, 1982, 471 pages, $140.00.

This is another first in the Jane's line of technical annuals. Obviously, it is not something that every *Review* reader will run right out and buy, but this particular volume will certainly prove valuable to some Air Force operations.

Following a short introduction by the editor, David Rider, and a glossary of specialized terms, the bulk of *Jane's Airport Equipment* covers every conceivable piece of equipment involved in both military and civilian airfield operations. The major areas covered are emergency and fuel services, passenger and cargo handling, as well as the principal pieces necessary for aircraft maintenance. Air traffic control equipment is also detailed, including airfield lighting, radar, navaids, and communications. Each item is thoroughly covered and well illustrated.

Who is likely to find this book helpful? Those flying out of Andrews to all varieties of airfields will find this informative as will USAF aerial port squadrons, logistics planners, and base operations personnel. Air Force civil engineering might also find it worthwhile, as well as Military Airlift Command crews flying into non-USAF airfields overseas.

Captain Don Rightmyer, USAF
Mountain Home AFB, Idaho

U.S. Commercial Aircraft by Kenneth Munson. London: Jane's, 1982, 223 pages, $19.95.

At first glance, this book appears to be just another illustrated history of American airliners; but, in fact, its scope is much broader than that. Kenneth Munson, the prolific author of *U.S. Commercial Aircraft,* has done an excellent job of presenting a chronology of domestic aircraft employed by the nation's airlines (large and small) and by private firms and individuals in a wide variety of commercial applications.

As might be expected, Munson's book is designed around a "Jane's" format. Each aircraft is presented in at least one excellent photograph, accompanied by a narrative indicating major technical and operational characteristics. With only one or two paragraphs available per plane, the author cannot describe every variant and model change; but he does include those that are significant. Munson covers everything from the earliest Benoist flying boats of 1913 to the Boeing 757 and 767 airliners of 1982. The famous planes of Fokker, Douglas, Lockheed, and others are there, as are such obscure creations as the Barnhart "Wampus Kat" and Budd "Conestoga." Lightplanes and helicopters used in commercial roles are included also.

As the publisher's dust jacket description indicates, the book does not really unfold the story of the airline industry that many of these aircraft were designed to serve. Nevertheless, because the presentation of each subject airplane is chronological, Munson presents sufficient background to give the reader some sense of continuity. In addition, Munson has written an introduction that does sketch the development of U.S. domestic and overseas commercial aviation before, during, and after the Second World War. He also includes a brief, alphabetically arranged listing of most U.S. airlines, together with their significant formation and operating dates. These help fill in the background to the aircraft subsequently described, as does his appended technical data chart, which expands on the information provided in the main body of the book.

The book should be helpful to those readers having a need for a well-organized, thorough, pictorial coverage of U.S. commercial aircraft that have been developed through the years.

Dr. Don E. Alberts
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American Combat Planes by Ray Wagner. Garden City, New York: Doubleday, 1982, 565 pages, $29.95.

This is the third edition of this voluminous work, and it is a good start for anyone completing a reference library on American military aircraft. *American Combat Planes* covers the entire range of U.S. military *combat* aircraft from the very earliest days of the Wright fliers up to 1982. Although it makes no attempt to cover the cargo or liaison aircraft of the military, it is probably the best current source of quick reference material on U.S. combat planes. This is the type of book that you would use to look up that elusive aircraft you've heard of but never seen or to identify that strange-looking airplane you photographed at the last military open house.

The thirty-three chapters of the book are well organized into three major sections, with each chapter covering a major aircraft category. For example, in Part 1: The Biplane Period, 1917-32, there are separate chapters on multiengine bombers, Army pursuits, Navy flying patrol boats, and a good introductory chapter on the role of the combat plane.

Ray Wagner includes virtually every type of military combat plane, whether it was a mainstay with thousands produced, a prototype, a limited production, or, in some cases, only a mockup (such as the mysterious Republic XF-103). The text is necessarily limited by the amount of information available on each type of aircraft, and it offers no combat information or tales about the exploits of particular aircraft or pilots. Instead, the book provides a wealth of information on power plants, performance characteristics, and armament.

The new third edition is up-to-date with the latest information on the F-16 and the F/A-18. The only source material possibly more current would be a weekly industry magazine, such as *Aviation Week & Space Technology.* Those interested in the high low technology mix proposed by some defense experts can find some interesting parallels in the past by simply thumbing through this book. For example, in the U.S. quest to produce a cheap fighter out of nonstrategic materials during World War II, two Wooden Bell XP-77 fighter prototypes were built and tested. "The basic concept that a small, maneuverable fighter could be produced of nonstrategic materials at less than average cost and time was not borne out. Performance fell below the 350 mile per hour estimated, and a low-speed fighter that cannot force an enemy to do battle does not suit offensive tactics." This sounds remarkably like the results one could expect if the United States adopted the idea today that a "sky full of F-5s is better than a squadron of F-15s." Perhaps we can learn from history. As one experienced historian commented after reading the section on the XP-77,

"Here was an airplane that could do everything *less* well than its contemporaries, but at a lesser cost."

This work is not a book to curl up with and read by the fire. Rather, it is the perfect type of reference to use to research an individual aircraft quickly in its various modifications and models or to review a period of military aviation. With more than 1400 photographs and a well-written text, *American Combat Planes* is an excellent contribution to aviation history.

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Winged Wonders: The Story of the Flying Wings by E. T. Wooldridge. Washington: Smithsonian Institution Press, 1983, 185 pages, $25.00 cloth, $14.95 paper.

The central theme of E. T. Wooldridge's effort is the historical development of tailless aircraft from Alphonse Penaud's rubber-band-powered model (1871) to the graceful flights of John Northrop's winged bombers during the 1940s. *Winged Wonders* is developed in three parts. Part I is a history of tailless aircraft development from around the world prior to 1939. Part II, on the "Northrup Years," covers the development of the American flying wings from the early 1920s to the scrapping of the Northrup B-35 B49 bombers during the early 1950s. Part II also includes a section that discusses the application of tailless aircraft technology to both the military and general aviation markets from the early 1950s through the ultimate in tailless aircraft, the space shuttle *Columbia*. The third part, or Appendixes, provides a wealth of information for the aircraft buff. Included are details about the step-by-step restoration of the Northrop N-1M (Northrop's first true flying wing); the aircraft specifications for the XB-35, YB-35, and the YB-35A Flying Wings; the Flying Wing Bomber Record; and a Table of Early Tailless Aircraft.

This book started out to be the story of the restoration of the Northrop N-1M at the National Air and Space Museum's Paul E. Garber Facility. As the author gathered material for his account, he discovered that as significant as the Northrop contributions were, they were only a small part of the historical development of the concept of tailless aircraft. Thus, his study expanded in breadth in its present form.

Wooldridge has done an excellent job in presenting historical facts that he gathered not only from written sources but also from firsthand interviews of those people intimately involved in the development of the flying wings. His chapters are thoroughly footnoted and supported by an exhaustive bibliography, which contains sources found not only in the United States but also in other countries involved in the historical development of tailless aircraft, namely, Canada, Denmark, France, Germany, Japan, Switzerland, Turkey, the United Kingdom, and the Soviet Union.

While *Winged Wonders: The Story of the Flying Wings* is not the only book available on tailless aircraft, it can be labeled the first comprehensive history that covers their development in both the United States and Europe. Wooldridge provides both a pictorial history of tailless aircraft and the words to bring his subject to life. In doing so, he has done a service to the aircraft buff as well as those interested in aviation history.

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The Wildcat in World War II by Barrett Tillman. Annapolis, Maryland: Nautical and Aviation Publishing Company of America, 1983, 288 pages, $17.95.

The last in Barrett Tillman's series of aircraft "biographies," which he initiated with *The Dauntless Dive Bomber of World War II* in 1976, *The Wildcat in World War II* continues the same outstanding format as its predecessors. It is an authoritative, well-documented, flowing narrative of the Wildcat's history. Throughout the book, unimposing footnotes authenticate the lesser-known facts, while the documentation collectively appears at the end. The book does not cover every variation of engine, armament, or equipment employed by the Wildcat; instead, it concentrates on the operational phases of aircraft.

Tillman has included many outstanding operational photographs, personal insights of former Wildcat pilots and Grumman aircraft officials, and views of historians who are specialists in their fields of aviation history. His bibliography is divided conveniently into books and articles, followed by a lengthy and comprehensive index.

Wildcat has a remarkable personal quality often absent from operational histories; it is not drama documented with history, but historical fact presented as it happened, with all the frailties, mistakes, inconsistencies, and humor that make up life. While the readers do not witness the pilots more mundane routine, they can still feel the pain of broken bones caused by the whirling landing crank as the pilot sticks his knee in its path to keep it from totally unwinding! Although some of the nomenclature may be foreign to some readers, most is old hat to aviation enthusiasts, and tables are provided for the newer words. Tables also indicate total production rate, naval and marine aces, Wildcat model variants, and existing Wildcats for those who would like to get a bit closer to history.

Without question, Tillman's account of the Wildcat is a must for those who are interested in the aviation history of the Pacific theater during World War II.

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Tinker Air Force Base, Oklahoma

the contributors

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Lieutenant Colonel Harry R. Borowski (B.A., Kearney State College; M.A., University of Colorado; Ph.D., University of California, Santa Barbara) is Director of Military History at the United States Air Force Academy. He is a former KC-135 navigator and is author of *A Hollow Threat: Strategic Air Power and Containment before Korea* (Greenwood, 1982). Colonel Borowski is a graduate of Armed Forces Staff College and is a previous contributor to the *Review*.

Lieutenant Colonel Nancy B. Samuelson, USAF (Ret), (B.A., Harris Teachers College; M.B.A., Syracuse University) recently retired as Assistant Professor of Aerospace Studies, AFROTC Detachment 115, University of Connecticut. Earlier she served in various supply positions in the United States, England, and Thailand. She is a popular speaker on women in the military and in management, has taught management and marketing courses, and is a previous contributor to the *Review* and other publications. Colonel Samuelson is a graduate of Squadron Officer School, Air Command and Staff College, Armed Forces Staff College, and Air War College.

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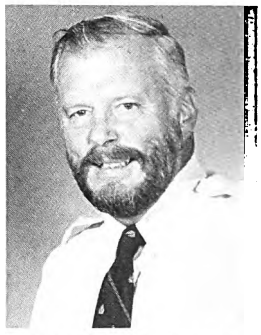
Glenn E. Overby is a major in the Headquarters Michigan Wing, Civil Air Patrol, serving as plans and programs officer. In civilian life, he is a partner in a firm that produces software for personal computers. He previously served in a variety of positions at Headquarters Michigan Wing and Headquarters Great Lakes Region, Civil Air Patrol. Major Overby is a graduate of Squadron Officer School, Air Command and Staff College, and Civil Air Patrol National Staff College.



David MacIsaac (A.B., Trinity College; A.M., Yale University; Ph.D., Duke University) is a Senior Research Fellow in the Airpower Research Institute of Air University's Center for Aerospace Doctrine, Research, and Education. Prior to his retirement from the Air Force in 1981, he served on the faculty of Air War College for three years. Earlier, he taught military history and strategy at the U.S. Air Force Academy and at the Naval War College, was a Fellow at the Woodrow Wilson International Center for Scholars, and served with the Air Force Advisory Group in Vietnam. Dr. MacIsaac has been a frequent contributor to the *Review*.

AWARD

The Air University Review Awards Committee has selected "The Inferno of People's War," by Major Thomas G. Waller, Jr., USA, as the outstanding article in the March-April 1984 issue of the *Review*.

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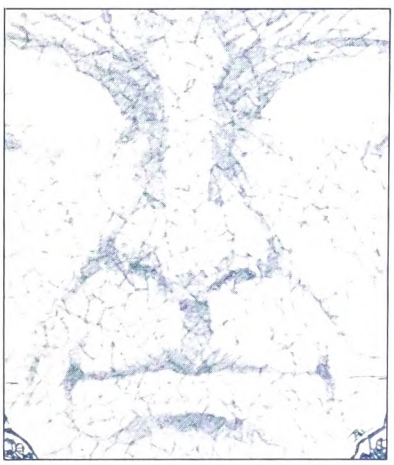
The Professional Journal of the United States Air Force

AIR UNIVERSITY review

JULY-AUGUST 1984



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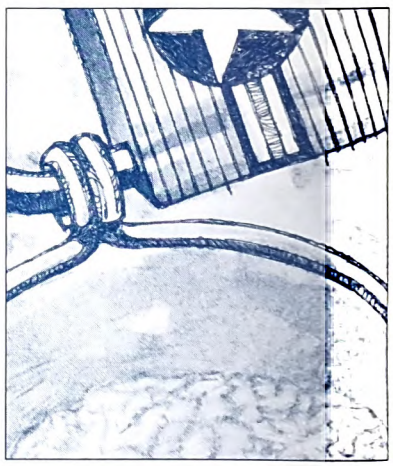

Could the Soviet Union be controlled by air power? Air University probed the matter in the 1950s—*page 22*

Attention

The *Air University Review* is the professional journal of the United States Air Force and serves as an open forum for exploratory discussions. The purpose of these discussions is to strengthen Air Force and DOD policies by presenting innovative thinking concerning military doctrine, strategy, tactics, professionalism, and related national defense matters. The *Review* is not to be construed as presenting policies of the Department of Defense, the Air Force, or Air University. Rather, the contents reflect authors' ideas and opinions that do not necessarily bear official sanction. Thoughtful and informed contributions are always welcomed.

AIR UNIVERSITY
review

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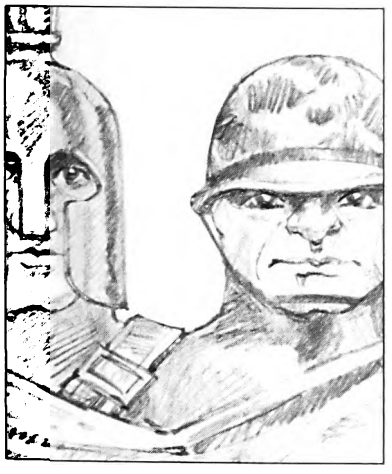

Is divergence between military and social values sometimes necessary?—*page 65*

Address manuscripts to Editor, *Air University Review*, Bldg. 1211, Maxwell AFB, AL 36112. *Review* telephone listings are AUTOVON 875-2773 and commercial 205-293-2773. Manuscripts should be submitted in duplicate. Military authors should enclose a short biographical sketch, including present and previous assignments, academic and professional military education; nonmilitary writers should indicate comparable information.

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EDITORIAL

WHAT COUNTS?

national style in war

The situations arising out of war are infinitely varied. They change often and unexpectedly and can rarely be foreseen in advance. Often it is precisely those factors that cannot be measured that are of the greatest importance. One's own will is confronted by the enemy's independent one. Friction and errors are everyday occurrences.

"Command of Troops," 1936 German Army Manual, quoted in Martin van Creveld, *Fighting Power: German Military Performance, 1914-1945*, p. 30

IF ONE is interested in discovering how America makes war, he can find no better place to begin his investigation than with Dr. Russell Weigley's *The American Way of War*. Weigley tells us that Americans tend to use a direct approach where strategy is concerned—the equivalent of a fullback plunge from the one-yard line. We define for ourselves the enemy's center of gravity and strike directly at that center with massed power. Such a strategy isn't subtle, but it worked for Grant against Lee and against *Festung Europa* in 1944-45.

We also tend to place great emphasis on technology in our approach to war. In America's formative years, we stressed the use of machines to overcome manpower shortages, in war no less than in peace; and we continue to do so. Indeed, it may not be far wide of the mark to say that a major element in America's national style in war is the view that superior technology is the key to military victory.

A third element in our approach to war is an image of war as a predictable, mechanistic phenomenon. War is reduced to a target system that can be destroyed by *x* number of rounds and bombs that require *y* number of guns, tanks, and planes to deliver. Given a specific, predicted improvement in weapon systems, the force structure can be reduced by a specific amount. This process seems to overlook the fact that in the hands of soldiers and airmen in the heat of battle, weapons seldom perform exactly as predicted. While the mechanistic image of war may be of some value in preparing for war, we must be cautious that it does not control the way we fight, lest we become too predictable and unimaginative in waging war. To ensure that we keep our minds and eyes open, we might remember Clausewitz's description of war as a contest in which force is aimed at an animate object that reacts. Not only will an enemy react, but he will act to disrupt and/or destroy our own forces and plans.

Still another element of America's style in war is somewhat related to the mechanistic view of war and derives from our national emphasis on counting. Patricia Cline Cohen has pointed out that Americans are *A Calculating People*, as the title of her 1982 book puts it. In tracing the rising influence of quantification in American society, Cohen presents several interesting observations. While noting the increasing emphasis that Americans have placed on numbers in their efforts to understand social developments, Cohen observes that Americans came to believe that "something that was counted or measured was known. Someone else could count it and get the same result. The exactness and objectivity of numbers meant that quantified information was a more truthful form of information than opinion, intuition, or judgment." (p. 219)

Yet Cohen also spends considerable time discussing the difficulties one encounters in quantifying social phenomena, observing that what one counts and how one counts it are frequently indic-

ative of bias and preconceptions—one tends to count what one thinks is significant. This explains the American idiomatic expression "what counts," meaning what is important or significant.

Furthermore, the idiom suggests another connection between numbers and what we consider important. What counts is what counts—what is important is what one *can* count: sorties, tanks, tons of bombs, howitzers, high-school diplomas, etc. The danger in military affairs of this national proclivity for counting becomes obvious when one stops to think about the nature of war.

War's atmosphere is composed of "danger, exertion, uncertainty, and chance." Within such an environment, the most important factors, the things that "count" most, are moral or nonquantifiable ones, such as discipline, morale, the genius of the commander, the quality of the officer corps, and plain old luck. At the most critical point in the officer's professional career, in the white heat of battle, counting may be the least important skill in his kit bag.

Several articles in this issue of the *Review* should help to increase our awareness of the importance of war's intangible aspects. Noting that the character of the commander is one of the most significant moral factors, General Raymond Furlong uses his knowledge of Clausewitz's *On War* to show how war games might help identify and develop officers with the qualities required in a successful commander. He points out that the best war game would be "unfair," in that it would be impossible to win because it places the would-be commander under great pressure, presents him with inaccurate data, and confronts him with totally unexpected events. Professor Roger Beaumont's article focuses on surprise and how its adverse effects on military organizations can be reduced. Surprise is also the theme of Captain Richard Bloom's article, which analyzes surprise and discusses the things one should do to achieve it.

Articles such as these help us remember the things that count most in war—the moral factors. Our national style in war must be based on the idea that the most important moral factor in war is an intellectually superior officer corps which fully understands modern warfare, appreciates its intangibles, and is prepared to outthink and outperform any other officer corps in war's demanding environment of "danger, exertion, uncertainty, and chance."

D.R.B.

THE *REVIEW* INVITES COMMENTS

Moral Factors in War

There are many signs that intangible factors play an important role where success in war is concerned. Does the American way of war reflect this point?

This fascination with the quantifiable *means* of war—military budgets, nuclear missiles and warheads, tanks, ships, aircraft, and "human resources"—is mirrored by those critics of the military whose attention is also focused on monies, hardware, and numbers. The fallacy of attempting to understand war in mathematical terms is illustrated by a bitter little story that made the rounds during the closing days of the Vietnam War: when the Nixon Administration took over in 1969, all the data on North Vietnam and the United States were fed into a Pentagon computer—population; gross national product; manufacturing capability; number of tanks, ships, and aircraft; size of the armed forces; and the like. The computer was then asked, *"When will we win?"* It took only a moment to answer: *"You won in 1964!"*

COLONEL HARRY G. SUMMERS, JR., "What Is War?" *Harper's*, May 1984, p. 75

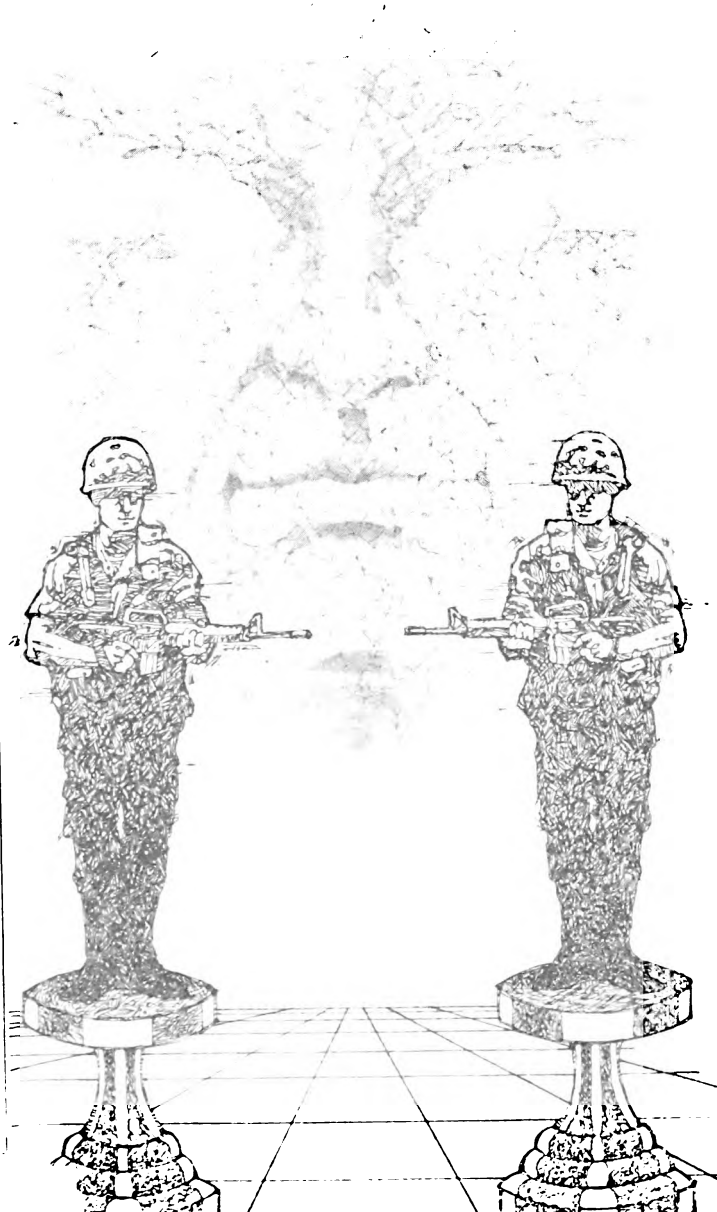
Studies associated with the development of the new FM 100-5 show that the outcome of battle is as often determined by differences in intangible factors—such as leadership, courage, skill and unit cohesion—as by numbers and mechanical factors.

COLONEL HUBA WASS DE CZEGE, "Challenge for the Future: Educating Field Grade Battle Leaders and Staff Officers," *Military Review*, June 1984, p. 4

Commentaries should be typed, double-spaced, and three to five pages in length. Address them to: Editor, *AU Review*, Bldg 1211, Maxwell AFB AL 36112.

The commander must trust his judgment and stand like a rock on which the waves break in vain. It is not an easy thing to do. If he does not have a buoyant disposition, if experience of war has not trained him and matured his judgment, he had better make it a rule to suppress his personal convictions, and give his hopes and not his fears the benefit of the doubt. Only thus can he preserve a proper balance.

Carl von Clausewitz, *On War*



CLAUSEWITZ AND MODERN WAR GAMING

losing can be better than winning

RAYMOND B. FURLONG
LIEUTENANT GENERAL, USAF (RET)

ONE of the great paradoxes of the military profession is that experience is the best teacher where war is concerned, yet most military men learn of war predominantly from peacetime studies. Today, our combat experience is rapidly disappearing. All those who participated in World War II and most of those who served in Korea have left the service. Even those who fought in the Vietnam War are dwindling in numbers. In the absence of real war, war games help us learn about war and evaluate military concepts.

War gaming in the modern context was introduced during the Napoleonic era by George Heinrich Rudolph Johann von Resswitz, a Prussian artillery officer. In the United States, the war gaming tradition began in the 1890s with the use of war games by the Naval War College, while in the Air Force we find the origins of war gaming in the 1930s when young captains and majors at Maxwell Field, Alabama, used such games to work out strategic concepts—concepts that later helped bring victory to the Allied forces in 1945.

Now, in the 1980s, the computer revolution has carried us into a new era of war gaming, one in which the potential of war games is greatly expanded. As we seek to take full advantage of computer simulations, it seems to me that we would do well to review some of the generalizations about war that are found in Carl von Clausewitz's classic study *On War*. Indeed, it might be worthwhile for all those involved with developing war games, including programmers, to take a special, intense course on the thoughts of Clausewitz.

GENERALLY, Clausewitz believed that war involved two basic types of factors: material and moral. The first of these refers to the things that can be counted in war—troops, wings, airplanes, tons of supplies, etc. Because every military commander must master the material factors of warfare, our modern war games must continue to train our officers in these more or less mechanical aspects of warfare. Logistical crises, such as airlift shortfalls, must be represented in the games. Adverse realities of warfare, such as a disrupted base structure, should be included also. These kinds of problems help commanders to understand the types of material problems they are quite likely to face in such operations as the wartime deployment of a unit to Europe. Other material problems help them to prepare for the process of actually directing their units and fighting in a wartime environment.

It is in the second area of war, the moral, where the designer of the modern war game will find his greatest challenge. And it is here that *On War* can be most helpful.

The moral factors in war, Clausewitz tells us, "are among the most important . . . ."[1] Certainly, one of the most significant of these moral factors is the character of the commander. A major concern in developing war games must be to produce a game that will help us to identify and develop those officers who have the character and intellect essential for success in warfare. Clausewitz's chapter "On Military Genius" is particularly useful in its description of the two qualities indispensable in the commander. The first is "an intellect that, even in the darkest hour, retains some glimmerings of the inner light which leads to truth . . . ." The second quality is "the courage to follow this faint light wherever it may lead." (p. 102) In other words, intuition and determination are the special characteristics to be sought in the effective commander, and these are most likely found in "a strong rather than a brilliant" mind. (p. 103) Taken together, these two qualities (intuition and determination) give the commander the "presence of mind" he needs to deal with the unexpected that is so much a part of the atmosphere of war. (p. 103)

All of this is summed up by Clausewitz in a statement about the "sort of mind" that is "likeliest to display the qualities of military genius." It is "the inquiring rather than the creative mind, the comprehensive rather than the specialized approach, the calm rather than the excitable head to which in war we would choose to entrust the fate of our brothers and children, and the safety and honor of our country." (p. 112) I believe that modern military war games can play an important role in identifying and developing such individuals.

The war game that develops and identifies the officer with the qualities desired for command must reproduce the elements of war: "danger, exertion, uncertainty, and chance." (p. 104) While the presence of danger might lie

only in the minds of the participants, exertion, uncertainty, and chance must lie in the design of the game. A war game should always overtax its players, giving them too much to do and too little time in which to do it. Warfare is the realm of uncertainty; "three quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty." (p. 101) Part of the reason for this fog of uncertainty is the poor quality of intelligence. It is no less true today what Clausewitz found: "Many intelligence reports in war are contradictory; even more are false, and most are uncertain." (p. 117) The battlefield commander must learn to expect the unexpected and must be able to live with the stress that is concomitant with decision making under conditions of uncertainty. If our games are to reflect reality, they must provide the kinds of information that commanders will receive in combat: correct, wrong, late, and unavailable. The war game that provides only timely and accurate information is unrealistic and counterproductive. A good war game will immerse the commander in a sea of poor information and faulty or inadequate intelligence. Only this kind of war game equips the commander for the circumstances he will encounter in real war.

The absence of information about some factors in war introduces a close relative of uncertainty—the unknown. The unknown, like uncertainty, will result in surprises for the commander, but it need not paralyze him. Instead, the wise commander will seek to identify what he does not know, aware that knowledge of what one does not know can help illuminate darkness and ease fear. It is fear that is most dangerous, for fear can drive commanders into despair and inaction.

To those things Clausewitz wrote about uncertainty and chance, I would add a few comments on unknown unknowns—those things that a commander doesn't even know he doesn't know. Participants in a war game would describe an unknown unknown as unfair, beyond the ground rules of the game. But real war does not follow ground rules, and I would urge that games be "unfair" by introducing unknown unknowns. How many war games introduce players to new, even imaginary, enemy weapons that have capabilities previously unascribed to a prospective enemy? How many present the player with the catastrophic failure of his own critical systems?

The relationship between training and the surprise that uncertainty, chance, and the unknown unknown produce in wartime was perhaps expressed best by General Curtis LeMay:

> What little schooling I got, I found was more likely to be wrong than right when you got out where the lead was flying around. So, we can be surprised, and we should expect to be surprised. That means that our training should provide for this. People should be trained to be surprised and react properly when it happens. This means to me that we should be prepared for this not only in training our people, but in being prepared with our weapons systems. This is the primary reason that I think we have to have manned systems in our strategic forces. They can react to surprise much better than the unmanned systems. And I'm sure we're going to be surprised.[2]

In addition, because warfare is a quintessentially human experience, war games need to reflect the fallible human element. If the game assures commanders that their orders will be carried out flawlessly, the game is unrealistic. One of Clausewitz's most useful insights is his idea of friction, "the only concept that more or less corresponds to the factors that distinguish real war from war on paper [or in a computer]." (p. 119) In the real world, some orders are carried out, some are executed poorly or too late, and others are not carried out at all. War games must expose commanders to these real-world frustrations.

INDEED, if a war game is developed properly, encompassing all of those aspects and factors that I have described, it may well end in the ultimate frustration for a game player—defeat. Because Americans like to win, games won are likely to be validated, while games lost may be

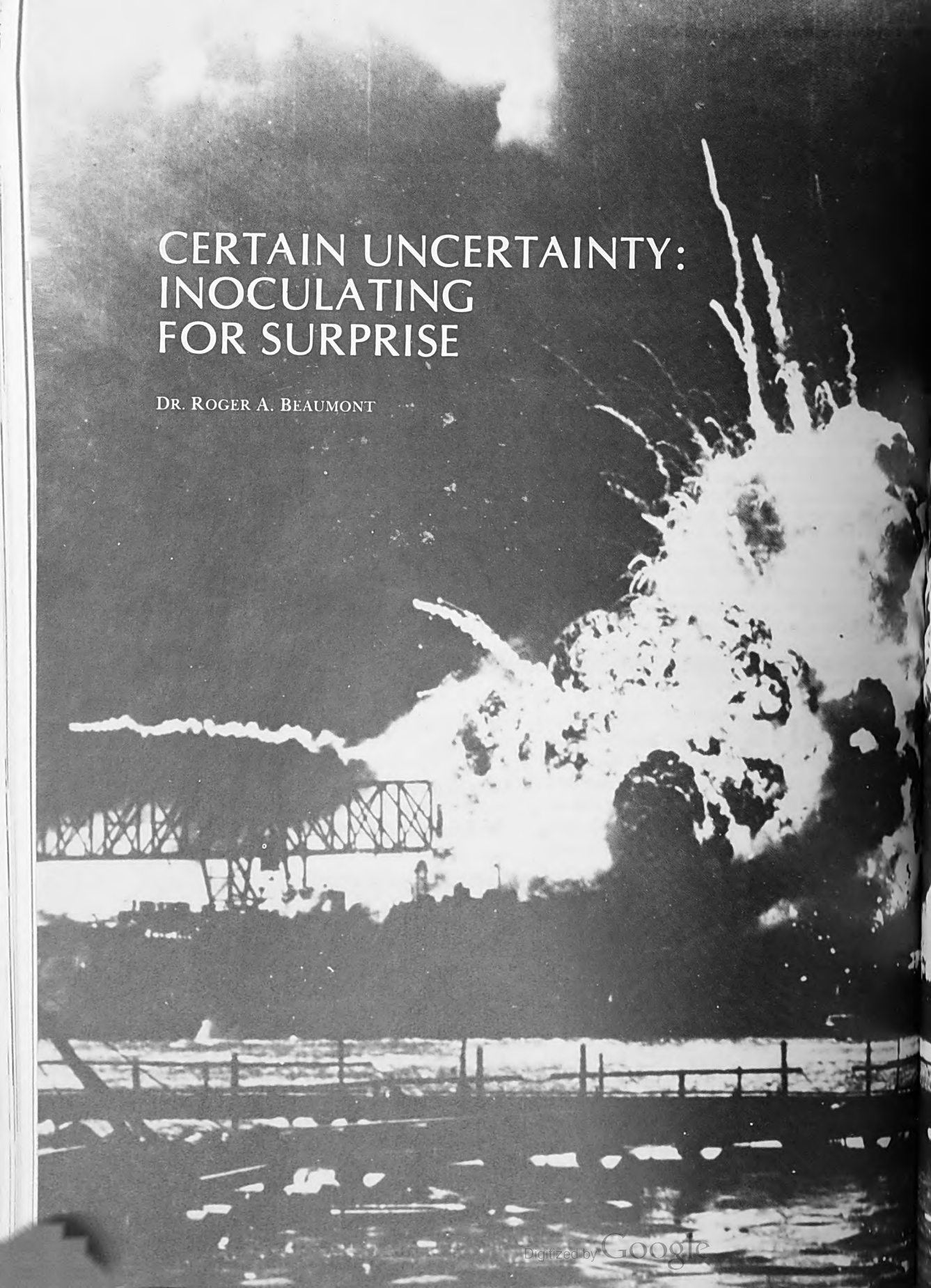
viewed as unfair, unrealistic, or both. Thus, a properly developed war game may well be not only an unpleasant experience for most participants but also an unpopular feature of one's military career. We must make our prospective commanders understand that where war games are concerned, we all might learn more by losing than by winning. Let us be prepared to win where victory really counts.

Montgomery, Alabama

Notes

1. Carl von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret (Princeton, New Jersey: Princeton University Press, 1976), p. 184. All other quotations cited with page numbers are from this edition of *On War*.

2. General Curtis E. LeMay, U.S. Air Force Oral History Interview, Maxwell AFB, Alabama: Albert F. Simpson Historical Research Center, March 1965, p. 24.



CERTAIN UNCERTAINTY: INOCULATING FOR SURPRISE

DR. ROGER A. BEAUMONT

CLAUSEWITZ called war the "province of chance," for, in essence, war is a collision of opposing *imperfect* systems. How much victory (or defeat) is a product or skill, leadership, situation, subsystem, or chance is not anywhere nearly as clear as searchers after a science of war would like it to be. Unhappily, much military history tends to present war as a kind of athletic contest, with much anecdotalism plus maps that suggest an order and precision that were not apparent to winners or losers at the time. In any case, the image of military commanders as martial virtuosos, or maestros of violence, lives on. The mythology of generalship is based on an assumption that commanders constantly and boldly impose their will on the complex tangle of sinews and tendrils of modern combat. The realities, while less glamorous, are not less real for their being undramatic: detailed logistical planning, lag-time, error, and the technical intricacies of the administration "tail" and of communication nets—these stand in tension with the popular images of combat at the cutting edge, where skill, courage, aggressiveness, craftiness, stamina, speed of thought, and reflex are at a premium. War is, after all, similar to football in more than one sense.

THE game of football, often drawn on symbolically by Americans in war, does have some analogies that are rather less apparent than is usually noted, particularly in the domain of roles. In the same way that support roles in military operations are well out of the picture in most fictional renditions and in much military history, so are the many people involved in the support of players and coaches, e.g., trainers, scouts, publicists, accountants, clerical personnel, and even owners and alumni. Beyond that, like war, football is unrelenting in its pressure on the coach and his quarterback. The case of "squad leaders in the sky" in Vietnam showed how some commanders, like some coaches, found it difficult to leave the

game in the hands of those actually "playing."

There have, in any case, been many instances of a split in view between sidelines and teams in the military realm, as the development of new technologies of transport and communication have extended the battle zone far beyond what any one commander's view could physically encompass. Thus, it has become necessary to extend the commander's abilities through the addition of a staff.

Staffs and headquarters have existed well back in the modern period. From their beginnings, the staff's function evolved incrementally from essentially housekeeping and personal service to the commander into a kind of administrative arm. After Waterloo, the rate of this evolution was accelerated as the synthesis of railways and telegraph systems began to have a radical impact on the scale and pace of warfare. It was also in the nineteenth century that technical functions and services became increasingly important as the industrial revolution gained momentum.

Nevertheless, the image of the heroic warrior lived on, creating a tension between the need for individual aggressiveness and skill in combat and the growing bureaucratization and mechanization of war. This tension was similar to the one that existed in the dichotomy between dashing entrepreneurship and anonymous professional management that appeared in the late nineteenth-century business world.

Under these conditions, friction and invidious comparisons between staff and line officers began to appear, compounding as time progressed. Such examples as the organizational battle between sailors and engineers in the U.S. Navy after the Civil War and the epithet "gabardine swine" aimed at some British staff officers in World War I indicate the trend. More recently, in the 1960s, this tension between line and staff personnel was revealed in the remark of a French paratroop commander in Algeria who distinguished between "those who fight—and the others." The result has been that line officers and troops and staff and support elements often have lost sight of their vital symbiotic relationship and have forgotten if they were to attain effective levels of teamwork, they would have to reappraise their predisposition to struggle for turf.

While the tension between the combat "teeth" and the supporting "tail" elements was aggravated by many who lamented the increase in the "tail," few in the military wished to address the difficulties. Thus, when military professionals, such as Charles de Gaulle in the 1930s in France and William Hauser in the 1970s in the United States, pointed out the expanding boundaries of the "tail" and the need to rationalize the player-quarterback-coach-manager boundaries to maximize the impact of the team, they met apathy or substantial hostility.

In the United States, some critics (e.g., Gabriel and Savage's *Crisis in Command* and "Cincinnatus's" *Self-Destruction*) traced the dilemmas of Vietnam to the rise of a managerial ethic, while many since then have called for a return to feudal-heroic values, pointing most often to the German model as the best prototype. Overlooked is the fact that although the self-image of "manager" has remained unpopular in the U.S. military, much of the career of professional officers is spent in performing bureaucratic-managerial tasks in a peacetime setting. The dominant prestige of the role of wartime commander-combat unit leader remains, creating an imbalance and generating disdain for these "tail" tasks—tasks that are vital if fighters are to battle effectively and win. The current evocation of Patton as a warrior in tension with a bureaucratic system is notably ironic, given Patton's great sensitivity to the need to avoid interfering with his subordinate commanders. In spite of his image, sensitive discussions of what Kipling called "the sweet-leaving-well-enough-alone" are threaded through the *Patton Diaries*. More recent recognition of the problem appears in stark form in Field Manual 100-5, *Operations*, which defines the role "battle captains," to achieve an American equivalent of the German *auftrags-*

befehlgebung/aufträgstaktik—i.e., the giving of the general-mission orders, rather than calling in detailed plays from the sidelines.

The most critical point of tension between players/quarterbacks and the sideline coach in the military realm is seen in respect to the threat and realization of surprise. Obviously, an attack on the nuclear triad by an enemy would be a catastrophe far worse than any experienced in history. Indeed, prognostication may prove ultimately to have been a wholly futile exercise. However, even before nuclear weapons appeared, the torrent of increasingly refined weapons pouring forth from the industrial revolution had increased the sense of uncertainty and futility on the part of planners and commanders. In conventional wars, great and small, and in guerrilla wars (and terrorism to an even greater extent), the point of decision-reaction has been forced down upon the young leaders on the spot, a phenomenon carefully traced by S. L. A. Marshall, while simultaneously a countercurrent to that trend has appeared in the form of C^3 technology. Thus, in the United States, presidential authority has been extended into even such very small-scale operations as the Gulf of Tonkin incident and the subsequent Rolling Thunder air war, the *Mayaguez* affair, and the *Eagle Claw* raid in Iran. It should be kept in mind, however, that such intervention at the combat contact level has been mainly in individual crises or in the closely controlled context of limited conflict related to the cold war. Thus, preemption of on-the-spot command discretion has been driven by anxiety radiating from the "red phone," i.e., the fear of nuclear escalation.

As much as some military professionals dream of a world in which they could proceed free of politics, it has been a very long time since generals had a freewheeling time of it—if they ever did. As a general, George Washington grappled with the Continental Congress; President Polk sent a special agent to oversee Winfield Scott in Mexico; Lincoln and Congress, like Johnson and Congress more than a century later, wrestled for control of the Army; and General Sherman exiled himself to St. Louis, Missouri, in deference to the reality of civilian control by Secretary of War Robert Lincoln. Similarly, General Arthur MacArthur was checkmated by Governor-General William Howard Taft in the Philippine Insurrection, General Pershing was constantly fending off inter-Allied pressures during the AEF's buildup and the Meuse-Argonne offensive, and General Henry "Hap" Arnold was subjected to constant nudging from President Roosevelt during the fitful course of deploying the not fully developed B-29 in China and the Pacific. President Eisenhower's problems with Admiral Darlan, the MacArthur-Truman controversy during the Korean War, and the politico-military Gordian knot of Vietnam are still fresh in the minds of many. Nevertheless, the myth of civil-military exclusivity dies hard. But a myth it is. In spite of the constitutionally defined preeminence of civilian authority, many military enthusiasts still seek an ideal world in which professionals practice the military art, free of sordid political concerns.

Interpenetration has, of course, run both ways; the *Grossegeneralstab* helped stifle German liberalism and gave Hitler a hand up to power at least twice. To be obedient and effective requires the ability to read nuances, to anticipate and to advise, to see political factors, and to be far from naïve. To return to the analogy: professional football coaches, players, and trainers must read the sports page, recognize the existence of a team budget, and develop a feel for the concerns of the managers, the owners, and the fans.

The anticipation of surprise, in any case, is very closely related to the realm of politics, inside the military services and outside, since surprise has as its target the coping capacity of not only the commanders and their staffs but the political elements in the opponent's society. The launching of Sputnik in 1957 may not have been a surprise to U.S. officials or to many scientists, but it was to many Americans.

time, place, and shape of force deployment may be the key element in surprise, as it was in the German blitzkrieg campaigns and at El Alamein during World War II and at Inchon, South Korea.

In a recent study, Barton Whaley identified sixty-nine cases of military surprise in the twentieth century. The implicit question is: What can one do about surprise in advance? The target of a surprise attack is the sense of self-confidence, the stability of mind, and the competency of the target, as well as physical destruction of forces. As Martin Blumenson has pointed out in analyzing relief of commanders in the U.S. Army, such actions may often not be necessary changes but reactions to stress felt by the relievers. Certainly, the pattern has been to relieve or otherwise humiliate commanders after a major surprise—i.e., to hunt for heads. General Short and Admiral Kimmel, the commanders in Hawaii, were shunted offstage after Pearl Harbor; General Fredendall, II Corps commander, was sent home after Kasserine Pass; General Bradley had one of his armies transferred to Field Marshal Montgomery's command immediately after the Germans struck the Bulge; and the failure to anticipate Chinese entry into the Korean War in 1950 made MacArthur's relief much easier, if not inevitable.

One can debate the question of competence in these cases, and one can argue that losers should be dumped to avoid spreading gloom through the ranks. This latter logic, however, denies victims a chance for redemption and ignores the fact that defeat is often the goad to dramatic action. Anthony Wayne avenged the Paoli Massacre, after much anguish; Admiral

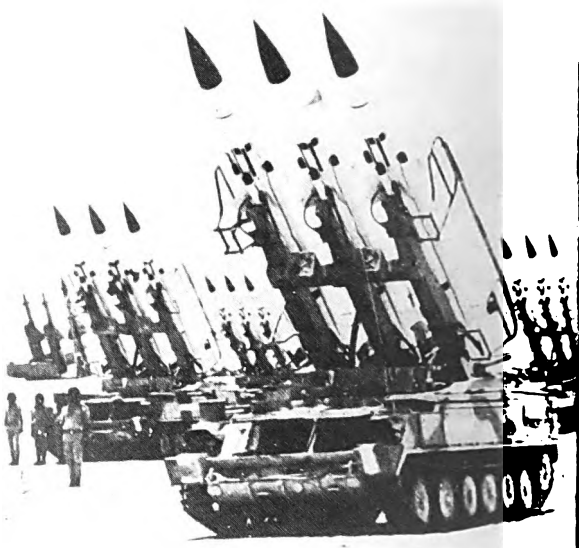
Elaborate deceptions diverted the attention of German armies guarding* Festung Europa *so that Allied forces landing in Normandy had the advantages of surprise on D-day.

Kelly Turner erased the stain of losing a ship; MacArthur "returned." Too quick a tendency to relieve overlooks the fact that relief can deprive an organization of leaders who have some practical knowledge of prevailing conditions. Even the most brilliant replacement will need some time before he can take charge effectively. The matter is certainly not as simple as it might seem on the surface. Relief can produce an atmosphere in which fear of risk-taking and near-hysteria can affect successors, and a broader sense of anxiety and resentment can build in the force as well. The sense of caution and rigidity prevalent among Union commanders (1862-64), in British forces after Dunkirk (1940), in the Red Army from the mid-1930s to 1942, and within the U.S. Navy from December 1941 to May 1942 are evidence of the effect. The frequency with which General Omar Bradley referred in his memoirs to senior officers being relieved is both alarming and thought-provoking.

IS THERE an antidote or an antitoxin to surprise? Certainly a need for a kind of inoculation is evident, a rigorous program of preparation, based on the fact that surprise is quite *likely* to happen. Techniques for preparing to cope after a disorienting attack include:

- operation of staffs, commanders, and units in conditions of zero and minimal communication, stressing the need for skill and initiative in using primitive techniques of communication and movement.
- development of a strong consciousness of the need to rest and rotate commanders and staffs.
- avoidance of single-option or obvious, linear strategies.
- minimization of blame assignment and browbeating in the command process.
- use of shadow staffs and commanders to feed major surprises into exercises, without regularity, pattern, periodicity, or frequency.
- training and maneuvers that include oper-

In October 1973, combining imaginative and innovative strategy with the technological surprise of such weapons as the SA-6 surface-to-air missile, the Egyptians caught the Israelis and most Western intelligence analysts comfortably contemplating past Ramadan "exercises." Their unexpected attack across the Suez changed the complexion of Middle East relations. . . . Ten years later, as U.S. forces began to move (below), most observers assumed that the mobilization was in response to the terrorist bombing of the Marine compound in Beirut. Actually, the troops' destination was Grenada.



ation of individual headquarters with key personnel removed and of headquarter nets with key headquarters removed.

- preparation of "fire-brigade" teams in major headquarters to establish alternate headquarters and to bolster them in cases of destruction or trauma.
- familiarizing troops with what staffs and support branches do and how the overall system works in a combined arms mode.
- avoiding "school-solution" standards in training and during exercises.
- rotating staff and commanders among roles and echelons.
- cross-training and assigning in order to break the sense of psychological surety that comes with familiarity (in obvious tension with the need for battle-unit cohesion).
- constant reminding of troops and headquarters that perfection and surety are not attainable and that the rectilinearity and detailed thoroughness sought for in a garrison can be a source of psychological discomfort to order-seekers in the turmoil of an operation.

The last point seems to fly in the face of traditional military organization and operations, which emphasize discipline, hierarchy, and authority. Yet that is not the case: the chaos, turmoil, fear, pain, and destruction inherent in war (words rarely used and not kept at very high levels of reality in much training maneuver or in doctrine) require discipline, hierarchy, authority, and high morale. Demanding the unobtainable or nitpicking in this context detract from these essentials.

Information that flows in a system under high stress is only an approximation of reality. How much can be learned about a game by reading play diagrams? In the same sense, graphics of command in combat and crisis, even in modern C^3 systems, are approximations. Under conditions of stress, people lose some of their ability to monitor, respond, and cope effectively. Simultaneously, they tend to be prey to pessimism and pettiness; hence, the maliciousness and blame-assigning that one can find in military history, biography, and autobiography. Fear manifests itself in many forms—from compulsiveness and fixation to pointless anger and rashness. Pretending "it isn't so" or imposing standards of unattainable excellence to generate stress may be useful up to a point, but such responses also can preclude both awareness of human limitations and methods of monitoring and controlling actual trauma. Just as the "care of the flier" program was a response to the unusual demands of aircraft piloting, "care of commanders and staffs" provision is needed in the sphere of C^3 networks and systems so that current barriers to commanders' disqualifying themselves are removed. In the same way that pilots can ground themselves when they sense problems developing or football players can seek medical aid when injured, the command-staff nexus should have a circuit-breaker available so that there is no stigma attached to temporary inadequacy and withdrawal from decision making. The tradeoff between establishing a reputation for toughness by overstressing *versus* ensuring the safety and needs of the command is a matter already under review but in need of far more scrutiny.

Advances in science and technology, coupled with increasing knowledge of human behavior, have been changing the nature of warfare steadily for almost two centuries. Success in war has often gone to those who have most effectively woven together seemingly contradictory elements of feudal warriorhood and the industrial revolution. Blindness to or rejection of implications of oncoming technology is correlated strongly with the definition of military failure and incompetence.

The basic challenge is to identify the strengths and weaknesses of the interactive system of command networks and to take advantage of them. It is essentially a problem in organizational engineering, a field of activity often relegated to the staff level in major organizations, even in those in which industrial engineering has a strong tradition. Ironically, the idea that materials might fail is accepted and

"designed around" or worked to the best advantage of the system under consideration, while human fallibility is not. Nevertheless, the inoculation of people to surprise and to failure is not to create excuses in advance or to predispose to failure, but to acknowledge very real limitations in human abilities and to puncture myths which, if accepted and compounded, could be far more deadly; i.e., adhering to a system where key players neither sense when to get off the field nor understand that they should even think about it.

In considering the function of Kipling's two imposters (triumph and disaster) in individual lives, it might be helpful to keep in mind that the principal wartime American commanders in chief (Washington, Lincoln, Roosevelt, and Truman) all suffered grave setbacks and disappointments to their ambitions and in their personal lives prior to assuming the burden of office. Many of the American generals who fit into the category of being at least contenders for great captains (e.g., Grant, Pershing, MacArthur, and Eisenhower) met similar adversities and tribulations. Their ordeals were seen later as a part of a hardening process, a hammering-out on the anvil of life that enhanced their greatness and, indeed, contributed to it.

The intentional imposition of stress on individuals, however, even for the purpose of preparing them for roles of increasing responsibility as commanders and controllers of expensive and critical networks at first glance appears to be inhumane and unethical. Yet, complex societies are literally cluttered with rites of passage: medical doctors, lawyers, academics, certain categories of business executives, chartered life underwriters, aircraft pilots, astronauts, and various skilled-trade people pass through arduous selection processes in which failure of some people aspiring to that status is implicit.

The intentional stressing of people to the point of failure in certain kinds and levels of military training is generally tolerated; even though labeling those who fail causes some anguish. Disappointment, stress, and a sense of limit are a part of the business of selection and preparation. Sensitizing commanders and controllers to recognize their own limits and allowing them to experience some degree of failure may thus be seen as a kind of prudent testing. As long as there are people in the loop of warfare, reliability and limitations will be somewhat uncertain but important factors. A continuing growth of knowledge about limits within the fusion of people and systems is vital to maximizing the benefits that each element can offer in a world of surprises.

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MILITARY SURPRISE: WHY WE NEED A SCIENTIFIC APPROACH

CAPTAIN RICHARD W. BLOOM

MILITARY surprise is an intriguing phenomenon. It is easily identified, it is highly prized, but it is not always easily available. Many historical accounts and theories of military surprise support this opinion. They include graphic accounts of past exploits, glowing reports of success, but only incomplete advice on how to achieve this dumbfounding action.

The advice takes one of two main approaches. First, we are told that military surprise is nothing that leadership, professional military education, and career broadening assignments cannot handle, i.e., that special training in military surprise is not needed. Such may be the case for the operational geniuses of U.S. military surprise from George Washington to George Patton. However, without specialized training, the typical operational commander will obtain surprise infrequently and usually by chance.

Second, we are told that if a set of principles, maxims, or commandments are followed, military surprise cannot be far behind. This approach is effective, when based on past accounts of military surprise. But it does not address how to handle novel and unique situations with characteristics that cannot be influenced or understood by a "tried and true" approach. Like the purveyors of books on how to succeed in business, sports, or life itself, our maxim makers offer some good information, but we are still not ready to set the world on fire.

In contrast to these two approaches, there is a psychological approach. It is based not only on historical accounts and theories of military surprise but on research and descriptions of

surprise as a human experience in all walks of life. It also presumes competence in the vital tools of achieving any military victory—logistics, intelligence, and operational savvy. Using this approach, it is possible to develop a definition and planning considerations for military surprise. Although these may not ensure success, they should reveal the kind of specialization needed to do it right.

What Is Military Surprise?

Military surprise is a combination of three psychological experiences: one of thought, one of emotion, and one of behavior.

First, a gap between what is real and what is thought to be real arises in the mind of the enemy; a "reality gap" occurs. How can we cause such a reality gap or maintain one that already exists? In low- or high-intensity military conflict, it is easiest to strengthen what the enemy already thinks and then to act contrary to it. In low-intensity conflict, the enemy has little need to question preconceptions; in high-intensity conflict, there is little time to do so. In moderate-intensity conflict, however, it is sometimes more beneficial to reverse or radically change the enemy's preconceptions, and then act contrary to these. Here, the enemy has both a need and the time to consider alternative views of reality.

Along with a reality gap, an emotional experience arises in the enemy. Usually, it consists of fear, anxiety, or anger; occasionally, boredom or apathy. These emotions are expressed bodily by changes in many hormone and nervous system functions. Mentally, they are expressed by changes in the speed, quality, and content of thought. These expressions, along with a reality gap, contribute to poor decision making. The enemy will tend to make decisions either too suddenly or too hesitantly. Historical accounts of military surprise reveal both types of reactions.

With poor decision making arises the sine qua non of military surprise: the enemy behaves in a manner more beneficial to us than to his own interests. Usually, this behavior involves a misallocation of operational, logistical, and intelligence resources—a reaction that may be only temporary as the enemy closes the reality gap and reduces the harmful effects of emotion on mind and body. However, by then, victory may already by ours tactically and/or strategically.

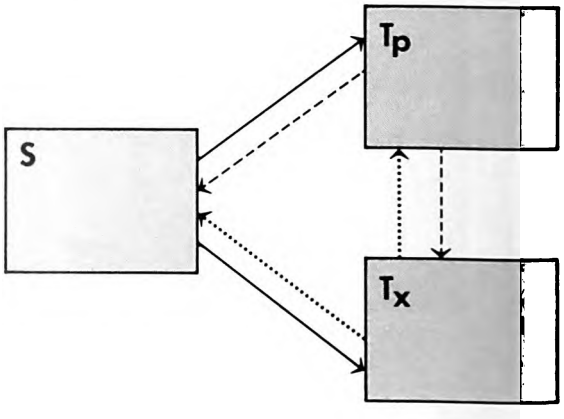
How Do We Achieve Military Surprise?

To surprise the enemy, we need to create or maintain both a reality gap and some emotion leading to poor decision making by the enemy. Doing this is an example of psychological influence. It can be accomplished through speed of maneuver, concentration of forces, security, or a separate deception plan.

As with any attempt at psychological influence, we must plan a coordinated sequence of operational actions that convey information to the enemy. These might include operational security (OPSEC) measures, cover and concealment, and anything else in the realm of human behavior, from writing a bogus letter to *not* moving a squadron.

Obviously, which sequence to develop depends on the scenario at hand. However, all scenarios have basic similarities. (See the accompanying diagram.)

Basically there are three classes of "players" in any scenario: *S*, the initiators of surprise; T_p,



the primary targets of *S;* and T_x, other targets. *S*, T_p, and T_x, may be any combination of people, groups, and organizations. For example, T_p can be the leader of a nation-state, a segment of a military planning staff, an entire tactical intelligence system, or all of these.

From my analysis of historical accounts, I have found that military commanders and planners have had an intuitive feel for who or what T_p should be. On the other hand, they seem to ignore or only superficially consider T_x, which can be either inadvertent or intended. T_x might be any or all of the following:

- A less vital target of *S:* an enemy operational staff without direct authority over troops; enemy forces that are not an immediate threat to us.
- Any potential player in the scenario who observes our actions: a friendly or neutral commander not briefed into our plan who observes the unfolding of our execution schedule.
- Any potential player in the scenario who does not observe our actions: a friendly or neutral commander not briefed into our plan who does not observe the unfolding of our execution schedule but nevertheless may become a "fly in the ointment" unintentionally. (This possibility emphasizes the importance of coordinating with all affected commands before implementing any attempt at surprise.)
- A potential player in a future scenario: an enemy operational commander whom we may face soon, who notes our style and track record in military surprise.

Having identified the players, we can now examine the playing field.

S, T_p, and T_x interact within a context (the oval in the diagram). In analyzing historical accounts, I have found it useful to segment this context into five dimensions (politico-military, economic, sociocultural, psychological, and physical) and three levels (global, regional, and local). The resulting fifteen types of information are interdependent and affect the enemy's behavior, as well as our own.

Instead of quibbling about the exact number and nature of these information types, note that nonmilitary (e.g., sociocultural) factors can significantly affect attempts at obtaining military surprise. Such factors may have played a large part in our being militarily surprised by the People's Republic of China in Korea during November 1950, for example. Also note that while many commanders and planners focus on surprising T_p and perhaps T_x (the solid lines in the diagram), in reality, all players may be trying to surprise the others (the dotted and dashed lines in the diagram). Thus, with the many webs of surprise and countersurprise, many arrows might emanate from and be directed toward *S*, T_p, and T_x simultaneously.

WITH these thoughts in mind, let us consider a planning sequence that can facilitate obtaining military surprise. Six sequential considerations seem to be necessary.

What is our goal? First, we must decide what we ultimately want to happen. For what purpose should we attempt military surprise? Usually, this comes down to the specific operational goals or national objectives we wish to support. Too often, however, commanders and planners start right in, developing ways to surprise the enemy without being sure of what they want to achieve. The "give me ten pounds of military surprise" approach is not the way to go.

What are our objectives? Next, we must determine the targets (friend and foe). Who are they, and what should they do so that we realize our goal?

In general, anyone or anything that can influence the goal is a potential target. For example, facing a "cultlike" totalitarian adversary, we might select a single individual decision maker as the primary target. More often, however, we would like to influence some combination of leaders and operational/planning staffs.

Once we have chosen a target, how should

we influence the target's behavior to help achieve our goal? There are many possibilities, all involving the misallocation of target resources—personnel and materiel. We might influence when a target behavior will occur, what the behavior will be, where it will occur, how it will be carried out, how frequent or intense it will be, and what purpose the adversary will hope to fulfill. In short-term situations, we would usually seek to affect the target's operational, support, and intelligence actions during battle. In long-term situations, the target's order of battle during a series of skirmishes may be the object that we wish to influence.

What are the psychological parameters? We must next consider how our targets must think and feel so that our objectives will be achieved. What reality gap and emotions will lead to poor decision making and the target behavior we desire?

To identify these parameters, it is imperative that commanders and planners empathize with the target, seeing the world as the target does. Too often, we tend to ascribe our motivations, our way of looking at things, to those who see the world differently. For example, "acceptable losses" may mean one thing to U.S. infantry commanders but something quite different to Iranian clergy who influence revolutionary followers. Our intelligence community has been making significant progress in collecting, analyzing, and disseminating psychological parameters in recent years.

What story should we devise? Here, we must develop the pieces of information that the target must have so that the relevant psychological parameters arise. We must consider both denial and communication of information. The information package must fit together like a story or a script in the mind of the target.

Often, commanders and planners think that this story should be simple, clear, and identical with what they wish a target to think and feel. That is not necessarily the case. If we want an enemy commander to believe we are planning to attack at Point A, there may be many different stories to cause this belief. One such story might even be that we appear ready to attack at Point C. Another might have nothing to do with an attack. The only requirement is that the story should help establish the psychological parameters.

What are the techniques of surprise? Somehow we must convey the information making up our story. Commanders and planners are usually good at this—at working up coordinated sequences of actions, at setting up execution schedules—but often they underestimate bureaucratic inertia that may preclude an exact carrying out of orders. So too, they tend to intensify OPSEC procedures so much that the enemy knows "something is up."

How will we get feedback? We need indicators to tell us—once we have implemented our plan—whether the actions and reactions we outlined in our planning are tending to occur as we desire. (From historical accounts of military surprise, I have found it useful to classify indicators as either covert or overt, long-term or short-term, direct or indirect.) According to the dictates of our feedback, we may fine-tune, modify substantially, or abort an attempt at military surprise. We should also recognize that indicators or clear feedback may be unavailable sometimes. Here we might decide to press on nevertheless, well aware of our risks in going ahead blind.

FOR future considerations regarding techniques and tactics for military surprise, there are three main contributions that the psychological approach has to offer:

- A scientific foundation for inferring targets' psychological parameters. If we believe that military surprise is a means to victory, we need to understand and predict the mind and behavior of those controlling opposing forces.
- A scientific foundation for modifying psy-

chological parameters. If we have decided to attempt military surprise, we need to know what information or events that we can arrange will affect the enemy's mind and behavior, and we must manipulate these factors to our advantage.

• A scientific foundation for selecting and training specialists in military surprise. As I intimated previously, unlike many "generalist" skills of administration and communication, military surprise is not for everybody. A psychological approach will identify not only what individual, group, and organizational skills are needed, but how they can be measured and taught.

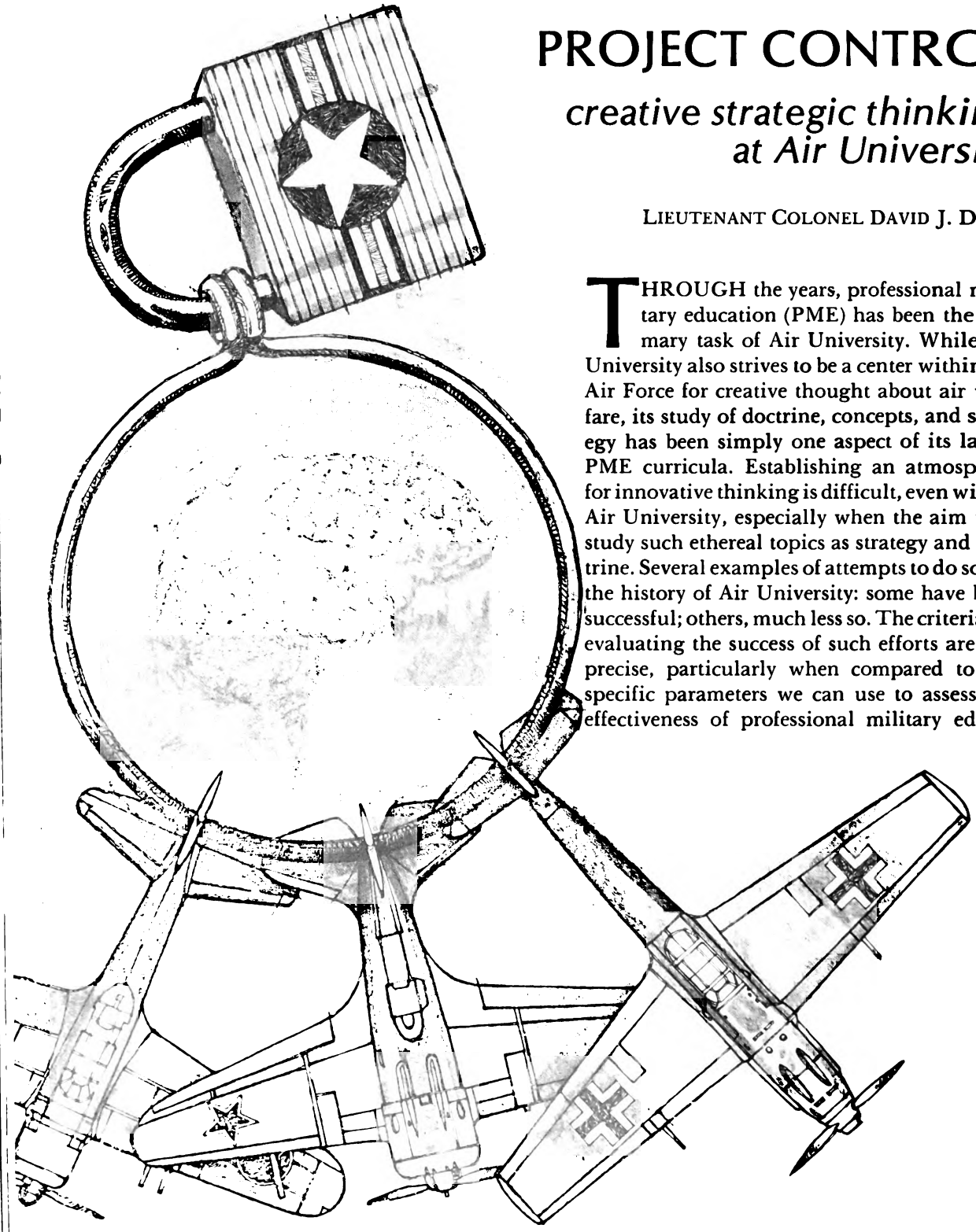
In our modern era, we have many implements to enhance the war-fighting skills of our armed forces. By applying psychology along with the other vital tools of the military profession, we can approach the ideal of having military surprise available when we need it for victory.

Armed Forces Medical Intelligence Center
Fort Detrick, Maryland

Eleventh Military History Symposium

The Department of History at the United States Air Force Academy will host its Eleventh Military History Symposium on 10-12 October 1984. The theme is "Military Planning in the Twentieth Century." Session topics include: the approach to planning before and during World War II, the effect of technology on planning in the United States Air Force, the impact of the cold war on military planning, and planning for limited warfare during the 1960s and 1970s.

For additional information, please contact: Captain Bernard E. Harvey, Executive Director, Eleventh Military History Symposium, Department of History, United States Air Force Academy, Colorado Springs, Colorado 80840. Telephone (303) 472-3230.



PROJECT CONTROL

creative strategic thinking at Air University

LIEUTENANT COLONEL DAVID J. DEAN

THROUGH the years, professional military education (PME) has been the primary task of Air University. While Air University also strives to be a center within the Air Force for creative thought about air warfare, its study of doctrine, concepts, and strategy has been simply one aspect of its larger PME curricula. Establishing an atmosphere for innovative thinking is difficult, even within Air University, especially when the aim is to study such ethereal topics as strategy and doctrine. Several examples of attempts to do so dot the history of Air University: some have been successful; others, much less so. The criteria for evaluating the success of such efforts are imprecise, particularly when compared to the specific parameters we can use to assess the effectiveness of professional military educa-

tion. Moreover, we must often overcome bureaucratic inertia, group think, and established ways of doing things. That is a situation that has always existed, as evidenced by the motto of the Air Corps Tactical School: *Proficimus More Irretenti* (We Progress Unhindered by Tradition). In some situations, a less formal effort may be more conducive to creativity. One individual (or even a small group) may generate enough interest in an idea that an ad hoc organization will form to analyze that concept in depth.

Air University's Project Control is a premier example of creative strategic thinking in the Air Force. It had its beginning as an informal, ad hoc effort to pursue the ideas of one man, Colonel Raymond S. Sleeper. While a member of the Air War College faculty, Sleeper was able to gather a group of people into an organization to study, test, and project his ideas on how a strategic concept of air power could be meshed with the political goals of the United States. He was most concerned with developing a strategy of using our air power to control or modify the behavior of a potential aggressor, especially the Soviet Union.

Inspiration for Project Control

Colonel Sleeper became interested initially in the concept of air control in 1948 when he attended an Air Force briefing on identifying strategic targets in the Soviet Union. This briefing, addressed to key officials in the State Department, stressed the importance of destroying large Soviet cities that were strategic military, industrial, and political centers. However, George Kennan and Charles Bohlen, two of the State Department's leading Sovietologists and two of the most influential foreign policy advisers in the Truman administration, expressed strong dissent about a strategy of atomic bomb attacks on Soviet population centers.[1]

The reaction of Kennan and Bohlen convinced Colonel Sleeper that a serious gap existed between U.S. military thinking and planning and the goals that were being set by political leaders. He began to consider how the Air Force could use the air power of the United States to protect and advance our national interests in ways other than by the atomic devastation of Soviet cities. Soon he was challenging the prevailing post-World War II Air Force doctrine that the chief value of U.S. air power was as a powerful retaliatory force that could crush the Communist monolith when, or if, the Soviet Union attacked Western Europe. Sleeper wanted to find new means of using the deterrence value of our overwhelming strategic air power in combination with economic, political, conventional military, and psychological warfare pressures to force the Soviet Union to acquiesce to strong U.S. policy initiatives and national interests. The rhetoric of Eisenhower's first presidential campaign--to roll back communism and to undertake bold new initiatives—provided added impetus to Colonel Sleeper's thinking.

Background of "Control by Air"

Colonel Sleeper first encountered the idea of control by air while studying the techniques used by the British to control obstreperous tribes in the Middle East during the 1920s and 1930s. The British found that the use of air power to enforce their will in colonial areas was cheaper, more effective, and more politically appealing than the use of land forces. Basically, the focus of British air control doctrine was coercion with minimum force. By the end of the 1930s, air control had become a recognized method of achieving political ends with the minimum use of force.[2]

Elements of Air Control

From his analysis of British air control doctrine, Sleeper identified five factors that were

critical to establishing effective air control. The United States would need to have air superiority; detailed military, economic, political, and psychological intelligence about the target population and nation; clearly stated and communicated objectives (which must be compatible with our military capabilities); and continuous overt and covert communications with the enemy's leaders. In addition, there would have to be an indigenous political structure or group in effective control that could be persuaded to accept our terms. It might be necessary to replace the group in power with another organization more amenable to U.S. terms. Under these conditions, air power could be used in incremental steps to serve as a tool of persuasion, to apply direct pressure or force, and to aid in administering or policing the target country if direct occupation became necessary.[3]

Building the Project Control Organization

After his arrival at Air War College, Sleeper's thoughts began to coalesce into his central thesis: control of the air, supported by all facets of national power, could enable the United States to modify the actions of a potential aggressor before a situation deteriorated and actual conflict or full-scale war became necessary. Colonel Sleeper dubbed his concept "control by air and other means." Others at Air University grew interested in his ideas and gradually an ad hoc group formed to analyze the concept of air control. Sleeper labeled this growing research effort "Project Control."

The goal of Project Control was to study, test, and plan ways to support U.S. political goals with a strategy based on air control. Then, as now, the main target of such a strategy was to be the Soviet Union. By examining the experiences of World War II in terms of the political, social, and military histories of Japan and Germany between 1930 and 1950, Colonel Sleeper hoped to determine whether the United States and its Western allies could have controlled the aggressiveness and prewar development of those two nations (or, failing that, shortened and made the war less costly) by applying a strategy of "control by air and other means." From these historical analyses, Sleeper expected that we could then develop a policy toward the Soviet Union for the mid-1950s and beyond that was based on a strategy of control by air.

Colonel Sleeper recognized that this project would require a large, dedicated team to do the necessary research and analysis. He also realized that Air University lacked the organizational resources to undertake such a large-scale effort. Thus, he turned to Headquarters USAF with hopes of obtaining the necessary resources and support from the Air Staff. After a 5 January 1953 meeting at the Pentagon, Brigadier General Hunter Harris, Air Force Director of War Plans, was quick to give his strong support to Project Control. In a letter to Sleeper, General Harris stated that a study on air control would prove worthwhile to the Air Force; he further stated that correspondence from the Air Staff to Air University requesting such a study would be forthcoming.[4]

On 10 June, Sleeper was back at the Pentagon to brief the Air Force operations staff on his progress on Project Control. He outlined the expected scope of the research: Project Control would consist of six major studies—the Concept of Air Control, the Air Control of Japan, the Air Control of Germany, and a three-volume work, The Persuasion, Pressure, and Administration of Russia by Air.

Colonel Sleeper's briefing brought quick results. Lieutenant General Thomas D. White, Deputy Chief of Staff for Operations, in a letter to Air University's commander, Lieutenant General Laurence S. Kuter, said that the Air Force considered Project Control as "unusually significant." General White directed that

> every practicable effort be made to expedite a full and complete development of the subject matter [and] that the study should be regarded as a high

> priority charge against the resources available to the Air University . . . . *Any assistance you may require from other agencies of the Air Force will be accorded high priority by this headquarters.*[5]

In July, Air War College was given the responsibility for Project Control and the initial operating requirements were set.

Initially, the Project Control team consisted of four officers from Air University, six officers on temporary duty from other Air Force commands, six professional civilian employees of Air University, and seven clerk-typists. In late July, Colonel Sleeper outlined requirements for additional staff to carry out the work of Project Control. He asked for ten more officers from Headquarters USAF, two more from Air University, and three from both the Army and Navy; thirty-seven professional civilians from Headquarters USAF, the Central Intelligence Agency, the Department of State, and civilian universities; and twenty-one additional typists from Air University. Sleeper's further request for funds to hire twenty university scholars as consultants pushed Project Control's estimated budget to nearly $220,000 and a projected staff of almost 100 people. His requests were ambitious and would have caused any manager to gasp in dismay. The Air Staff, in fact, did just that; in a 30 July 1953 message, the Air Force stated that the project was an "additional requirement" to be achieved within the current resources of Air University.[6]

The message seemed to spell a quick end to Colonel Sleeper's daring enterprise. Not even Major General Roscoe Wilson, Air War College commandant and a strong advocate of Project Control, could afford to support the effort at these levels without undercutting the ability of his school to fulfill its mission. Colonel Sleeper was faced with a serious challenge of finding ways of keeping Project Control alive. However, Major General Franklin O. Carroll, commander of the Human Resources Research Institute (HRRI), a tenant unit at Maxwell Air Force Base, came to the rescue; he offered $100,000 from the HRRI budget to hire the academic consultants. In the meantime, Colonel Sleeper had briefed Brigadier General Lloyd P. Hopwood, commandant of the Air Command and Staff School (ACSS), on the project. General Hopwood offered to provide eighteen officers from the Field Officers Course to work part-time on Project Control. The ACSS students were to be organized into special study groups and would fill gaps not filled by the Air Staff or Air University. The civilian scholars hired as consultants would critically review and guide the work done by these ACSS study groups, as well as contribute their own original material to the effort.[7] In time, more than 100 students became involved in the Project Control studies.

Project Control finally got off the ground in August 1953 with a staff of two officers from Air University, four civilians, and a stenographer. General Kuter authorized hiring three additional stenographers and promised to assign twelve military clerks. He also promised to have a building ready to house Project Control by 30 September. The Air Force directors of intelligence and strategic plans had provided specialists on temporary duty to help analyze Japanese, German, Soviet, and U.S. military capabilities. Nonetheless, it was clear that Project Control was to be an Air University effort. Colonel Sleeper would need to rely on imagination and dynamism to beg, borrow, and "steal" the personnel and resources to stay in business.

In December 1953, Project Control faced another crisis. It came just as the air control hypothesis was being analyzed and tested in detail against the German and Japanese experiences in World War II. Major General Donald N. Yates, director of research and development at Headquarters USAF, challenged the continued use of civilian scholars as consultants. Apparently, he was reacting to comments from a U.S. senator who had criticized the Air Force for doing social science research.[8]

On 21 December, Colonel Sleeper briefed General Yates and others on the objectives of

Project Control and the progress made to date.[9] Although he agreed that the project was important, General Yates did not relent on his decision to cancel the contracts of the consulting scholars. The critical input of high-quality scholarship seemed doomed. Colonel Sleeper engaged in desperate discussions with the Air Staff to try to find some way of continuing the contracts to hire academic consultants. But no immediate solution was forthcoming. Thus, the consultants' visits for early January 1954 had to be canceled.

The new year began with frantic attempts to keep Project Control viable. Finally, through his personal intervention, General Kuter was able to convince General Yates to extend the contracts for another thirty days.[10] Air University hired back fourteen of the consultants immediately. The consultants' critical reviews of the analyses done by Project Control added immeasurably to the quality of the final reports and ensured that the work could withstand the test of academic scrutiny.

At the end of January, Project Control had only six weeks left to complete the analytic substance of the project. These six weeks were a critical phase in the success of the effort. Colonel Sleeper now found that he had to juggle his time between working with the Project Control study groups and trying to obtain adequate professional editorial help. The latter task proved to be as difficult as getting money for the academic consultants. During this time, the remaining Project Control staff (four full-time officers from Air University, fifteen ACSS students who had stayed for ninety days' TDY after graduation, four full-time civilians, one full-time ACSS officer, one part-time employee, and nineteen clerical employees) worked at full speed to put the studies into final form before the end of March, when the last of the ACSS students would leave. The research and analysis phase of Project Control was completed on 10 March. Largely due to Sleeper's personal energy, Project Control was able to get both the continued consultant support and the professional editing that were necessary to the success of the project. But these administrative headaches required much perseverance and fortitude by everyone. A handful of remaining officers and civilians continued working to complete the editing and publishing of the study as the end of March 1954 approached. All involved in the project were relieved to see Project Control finally wind down. Or so they thought.

A Bombshell out of the Blue

On 31 March, a bombshell message (also sent to the commanders of the Far East Air Forces and the Tactical Air Command) from the Vice Chief of Staff, General Nathan F. Twining, was received at Air University. The Vice Chief was disturbed about the doubts being raised in the "New Look" debates regarding the capability of the Air Force to "do anything other than [take] massive retaliatory action in the event of a major war." General Twining noted that: "Most of the doubts expressed and many of the outright charges made concerning the limitations of [Air Force's role in the] 'New Look' contain a fundamental implication that surface forces are more capable of dealing with localized aggressions than are air forces." The Vice Chief did not believe that the Air Force had projected a capacity to combat local aggression. Therefore, the Air Force did not "appear capable of justifying increased air power to meet the military threats [of] anything short of major war." He wanted to know: "What can air forces do to resolve the military problem in Indochina?" General Twining tasked his commanders to explore possible solutions to the Indochina problem. One option he mentioned specifically was air control.[11]

Here was a new challenge for Air University: a real-world problem that touched on a weakness in Air Force doctrine and capability. The mention of air control made Sleeper the obvious choice to organize and direct the Air University effort to analyze the situation in Indochina and propose an Air Force role in arriving

at a military solution to that problem. Because of the high-level interest, support from all agencies at Air University abounded. The team concept used so successfully in the original Project Control was tailored for a high-intensity effort on Indochina. Again, Colonel Sleeper spearheaded the effort; he led a coordinating team that supervised the work of the eleven study teams that analyzed narrow segments of the overall problem in Indochina. Fifty-one officers from throughout Air University were tapped to participate in the Indochina Project Control. Only one day after receiving General Twining's message, Sleeper had the new project well under way. Six senior officers from Washington, D.C., Air Training Command headquarters, and Tactical Air Command arrived to assist the study teams.

By 3 April a rough draft of a proposal for action in Indochina was completed. The study was considered "hot" enough to send directly to Headquarters USAF without editorial refinement. It was received at the Pentagon on 11 April, just twelve days after the Vice Chief had issued his directive to Air University. Meanwhile, Air University had decided to initiate study on the air control of Communist China relative to the Indochina conflict. The team completed this aspect of the study on 21 April, and Sleeper briefed senior Air University officials on the findings.

The Indochina team crammed into its studies several proposals and observations about the ability of the United States to intervene in that conflict. In general terms, the Indochina studies concluded that:

- Before it intervened, the United States must get the French to agree to an independent Indochina and must dissociate itself from French colonialism.
- The best way to fight Communists is with native guerrilla forces that have helicopter mobility and are backed with both airlift and interdiction aircraft and a naval blockade.
- Any intervention force must have a command structure that integrates political, economic, and sociopsychological measures with military activities. Also, the force in the field must have the power of decision in all these areas.
- The Indochina conflict is primarily politico-military in nature; thus the employment of force must continually emphasize the political goal(s) desired.
- Because targets are transient in the Indochina War, weapons must be applied quickly; tactical intelligence and air control teams must be established in various areas to locate targets and control air strikes.
- China should be a target of persuasion and, perhaps, pressure because Chinese support of the Vietnamese Communists was crucial to their success in the south.[12]

The teams also provided specific recommendations on command structures, force structure requirements, logistics requirements, and related subjects. All in all, they produced impressive results for only a twelve-day effort. The studies showed clearly that intensive analyses done in small, specialized research groups modeled after the Project Control study could produce results quickly and efficiently. After the crash effort of the Indochina study, the air control team got back to its chief business: selling a new strategy to cope with the Soviet Union.

Impossible Dream?

Born as it was during the era when the new Eisenhower administration still talked of rolling back communism, Project Control had rather ambitious goals for a U.S. policy toward the Soviet Union. Project Control produced three major works on air control of the Soviet Union. The factors and concepts analyzed in these three works grew out of the research and analysis that the teams had done on Japan and Germany.

The first book presented a detailed analysis

of Russian history from early czarist days up to 1953 and concluded with essays on perceived U.S. national objectives toward the Soviet Union and perceived Soviet objectives toward the West and other areas of the world. The attempt to determine the primary goals of the Soviets generated much controversy. The view that Moscow's first priority was to perpetuate the Communist regime and internal security of Mother Russia won out over the belief that world conquest was the raison d'être of the Kremlin.

Book two was an in-depth examination of those factors that were critical to developing an air control plan for the Soviet Union. This volume analyzed such areas of central concern as the social structure of Russia and the communications capabilities and facilities between the West and the Soviet Union. The central hypothesis underlying the effort to develop the air control plan was:

> If the U.S. could adequately analyze the social structure of Russia, it would be possible through control of the air . . . to exploit the vulnerabilities of Soviet society, disintegrate the iron curtain and assist and develop a new government in Russia, and achieve a stable world peace through persuasive measures.[13]

An aspect of the Project Control analysis was to identify indigenous power groups that potentially could replace the ruling Communists. Thus, this second book analyzed the size, composition, psychological characteristics, and vulnerabilities of the major elements in Soviet society: the armed forces, the Communist party, the Soviet elite, internal security apparatus, bureaucracy, labor force, peasantry, and regional nationality groups. Studying these elements was a significant departure from the norm for Air Force officers more accustomed to examining straightforward military methods for dealing with the Soviet Union.

The third part of the Soviet study described in general terms the types of operations that the West might take against the Soviets during the persuasion, pressure, and administration phases of an air control plan. While stressing that the goal was to coerce the Soviet Union to change its actions and policies, Project Control officers nonetheless recommended some ambitious methods of persuasion: forward air patrols, an air reconnaissance offensive, dismantling of the iron curtain, and the unification of Germany. The key to the success of a strategy of persuasion stemmed from the underlying belief among the control teams that the superior atomic power of the United States gave it a decisive psychological edge over the Soviets. Thus, the United States should be able to use this advantage, along with diplomatic actions, to attain our national objectives, given that the United States also had a definite economic and moral superiority over its adversary. But this rationale assumed that the United States would maintain its superiority over the Soviet Union in both nuclear weapons and delivery vehicles until at least 1957. Once the Soviets achieved nuclear parity, then the ability of the United States to coerce the Soviet Union through control techniques would be ended.

Project Control suggested that through forward air patrols, the United States could defend against Soviet air attacks and provide intelligence on the northern air operations of the Soviet Union by extending U.S. air defenses across the Arctic Circle to the periphery of the Soviet Union. The control officers recommended that we use RC-121 aircraft for this mission—a primitive form of airborne warning and control for early warning only. (Later, this idea was adopted by the North American Defense Command; it represented a new direction in air defense thinking—putting the line of defense as close to the enemy as possible.)[14]

The air reconnaissance offensive proposed by Project Control involved our initiating a program of shallow and deep overflight penetrations of the Soviet Union. The control analysts argued that such flights would demonstrate to the Soviets that the United States had shifted from a purely defensive posture of striking back only if attacked to adopting a more

offensive posture of using U.S. air power in a dynamic role. Moreover, a reconnaissance offensive would give the United States intelligence about the location, disposition, and operations of Soviet air forces. To carry out such an offensive, the Air Force would need aircraft designed specifically for strategic reconnaissance rather than modified fighters and bombers.

Colonel Sleeper's briefing on this aspect of the air control concept to then-Colonel Bernard Schriever (later a full general) may have been the first step in developing the U-2 spy plane.[15] This briefing also may have had some impact on President Eisenhower's 1955 "Open Skies" speech, in which the President proposed that the United States and the Soviet Union voluntarily allow reconnaissance overflights of their territories to preclude any possibility of surprise attacks.[16] The proposal never received much acceptance, but that did not stop the United States from overflying the Soviet Union and China once the U-2 became available.

Project Control analysts also foresaw the advent of reconnaissance satellites that would fulfill the intelligence functions in later reconnaissance offensives. Should all such "persuasive" tactics fail, however, they believed that the United States could initiate a campaign of direct pressure to force the Soviets to submit to our will while we were still in a position of strategic superiority.

Several interesting concepts emerged from the Soviet phase of Project Control. First, Project Control analysts saw the use of strategic air power as clearly the cheapest way to achieve national objectives. Second, although a strategic atomic offensive was the main feature of the pressure phase, they advocated that it be directed primarily at military targets, especially the long-range elements of the Soviet air forces. Project Control proposed a dramatic shift away from city busting and massive retaliation to a concept of gradually increased pressure, which would lead to early negotiations that would be favorable to the United States. This proposal had much in common with the doctrine of graduated response of the early 1960s. Project Control also strongly recommended that an aggressive act be redefined as clear indications of aggressive preparations by the Soviets that would require a preemptive strike. Most of the operations proposed in Project Control were radically different from initiatives then contemplated by the military. Therefore, control analysts urged that their scenarios be war-gamed, that the intelligence needed to implement an air control plan be gathered and evaluated, and that the concept of control by air be studied further.

The Impact of Project Control: The Briefings

The research analyses developed during Project Control, even after careful editing, filled several thousand pages. Dumping this highly classified and monumental study on potential users would have ensured that it received little attention. Few people would have the time, inclination, and security clearance to read and digest it. To solve this problem, the control team prepared a summary volume. Colonel Sleeper recognized also that to get his ideas circulated widely at the top, he would have to synthesize the major findings and proposals of Project Control into a concise, polished oral briefing. Beginning in the spring of 1954, he was busied with a cycle of briefings.

After a series of briefings in Washington, Sleeper was called to brief the Air Force World Wide Commanders Conference at Eglin Air Force Base, Florida, on 24 May 1954. This meeting brought together the commanders of all Air Force major commands and key members of the Air Staff; the elite of the Air Force leadership was present—Generals LeMay, Norstadt, White, Partridge, Twining, and Weyland. In a memorandum to Sleeper, General Kuter reported that the Secretary of the Air Force wanted to get this briefing to the White House immediately. He also wrote that the conferees

were quite reassured to know "that the Air University is not planning to fight World War II½ . . ., but that it is apparently doing as well in planning for World War III as the Air Corps Tactical School for World War II.[17]

In June, Colonel Sleeper was assigned to temporary duty on the Air Staff, where he began an exhaustive briefing cycle to many of the nation's top leaders, including Secretary of Defense Charles E. Wilson, Robert Cutler (Executive Director of the National Security Council), Allen Dulles (Director of the Central Intelligence Agency), and Admiral Arthur W. Radford (Chairman of the Joint Chiefs of Staff). Many of the senior staff officers in the armed forces also attended the briefings.

The concept of control by air proved controversial; many argued against its feasibility, while others said that it had great potential. Admiral Radford believed that Project Control's proposals should be pushed all the way to the White House even though he was uncertain about the reception that they would receive in the top echelons of government or from our allies. He believed that only unanimous agreement with our allies would make control of the Soviet Union practical. Yet Admiral Radford himself felt that the United States had, at the time, the military capability to implement the concept of air control; and he was enthusiastic about the potential applications of Project Control.[18]

But control concepts were certainly not in the mainstream of the Air Force thought in 1953-54: this was a time when massive application of atomic weapons was considered to be the best deterrent against the Soviet Union. Such a radical departure from mainstream thinking would prove difficult to sell to the civilian leadership and established bureaucracies. Thus, in 1954, Colonel Sleeper returned to an operational bomb wing. Project Control had lost its prime spokesman, and the aggressive control proposals that the project had produced faded quickly from the scene.

So What?

Why dredge up an ancient research effort from the archives of Air University? The example of Project Control is worthwhile for many reasons. Project Control points up a critical role that Air University can play in the Air Force: to generate new ideas without being burdened by the special operational requirements of a major air command, the daily crises of staff work, or the fiscal constraints and joint agreement requirements that are inherent in Air Staff planning. The project also showed that it is difficult to obtain resources—to justify people and money—for an effort that does not have a clearly defined output at its inception. And without a dynamic, committed spokesman, a new concept will certainly fail to survive if faced with opposition and inertia within the bureaucracy.

Furthermore, Project Control was a valuable learning experience for the Air University students, officers, and civilian employees who took part. They were given the chance to analyze, test, and evaluate a concept in an attempt to influence current Air Force operational doctrine and current national policy. The "real-world" application of their work drove these participants to a level of effort rarely seen in a bureaucratic or academic setting.

Project Control was a richly satisfying experience but lacked a basic sense of political realities, at least in the eyes of Morris Janowitz.[19] He is perhaps correct; it is difficult to imagine such an aggressive, single-minded policy being adopted as a national strategy in our open and diverse society. The fundamental problem is one that Clausewitz identified: soldiers and policymakers must understand one another's basic capabilities if military power is to be used effectively for political ends.[20] Colonel Sleeper perceived that our military and political leaders were not communicating well with one another. On the one hand, top policymakers in 1948 were saying that the military's strategic war plan could not be implemented; on the other

hand, as the Eisenhower administration settled into office, it gradually embraced a policy of massive retaliation. Military planners were left with the apparent dilemma of developing a strategy that they could never employ. At least in Colonel Sleeper's eyes, this was a classic situation in which the policymaker did not understand the fundamentals of war in the atomic age, while the military commanders did not have a clear grasp of national policy.

Today, no less than in the early 1950s, the Air Force needs to recognize individuals with ideas worth pursuing and to encourage them to analyze, test, refine, and present their conclusions. Similarly today, the military must be able to articulate its capabilities, limitations, and potential to political leaders. In fact, bridging the gap between military and civilian perceptions may be a problem with which military leaders will have to contend more diligently than ever before. Developers of the concept of air control believed that it would be valid only as long as the United States retained its strategic air power advantage over the Soviets. Once the Soviet Union attained a credible strategic missile force, the possibility of applying Project Control's strategic plans evaporated. But what happens in the contemporary world if a technological breakthrough were to give the United States a significant, temporary strategic advantage? The possibility of space-based lasers capable of effectively countering the Soviet's strategic offensive force may be such a breakthrough. Who in the Air Force is considering ways to exploit this advantage if it occurs, and who can effectively communicate such ideas to the top echelons of government? Or, conversely, do our adversaries understand concepts such as Project Control, and are they willing to seek political advantages based on a strategy of superiority? These matters and questions certainly merit our serious consideration within the Air Force.

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Notes

1. Keenan: If you drop atomic bombs in Moscow, Leningrad, and the rest, you will simply convince the Russians you are barbarians trying to destroy their very society and they will rise up and wage an indeterminate war against the West.

Bohlen: The negative psychological results of such an atomic attack might endanger postwar peace for 100 years.

In *A History of Project Control, Vol. II, Supporting Documents*, Tab 1. Unpublished document in Air University Albert F. Simpson Historical Research Center (AFSHRC), Maxwell AFB, Alabama.

2. For specifics on how British air control worked, see Lieutenant Colonel David J. Dean, "Air Power in Small Wars: The British Air Control Experience," *Air University Review*, July-August 1983, and Colonel Kenneth J. Alnwick,"Perspectives on Air Power at the Low End of the Conflict Spectrum," *Air University Review*, March-April 1984.

3. *A History of Project Control, Vol. I, Narrative*, pp. xii-xiv, in the USAF Historical Collection, AFSHRC.

4. Brigadier General Hunter Harris (Chief War Plans Division, USAF) to Colonel Raymond Sleeper (AU/AWC), 6 February 1953.

5. Lieutenant General Thomas D. White (DCS/Operations, USAF) to Commander Air University, 22 June 1953. Emphasis added.

6. Chief of Staff USAF message, date time group 301351Z July 1953.

7. Dr. Clyde Kluckhohn, director of the Russian Research Center, Harvard University, began working on the project in September 1953. Other academicians who participated as consultants on Project Control included Professor Frederick Barghoorn of Yale, Dr. Robert Butow and Professor William Ebstein of Princeton, Drs. Merle Fainsod and Edwin Reischauer of Harvard, Dr. Morris Janowitz of Michigan, Dr. Walt Rostow of MIT, and Drs. Louis Nemzer, Harold Zink, and Kuzuo Kawai of Ohio State. The scholars were chosen for their expertise in relevant areas to ensure a critical evaluation of every aspect of the project. Other distinguished people who provided advice and assistance on the project included Dr. A. A. Berle, Assistant Secretary of State; Major General O. A. Anderson, USAF; Sir John Slessor, RAF; General Carl Spaatz, USAF; and Major Alexander de Seversky. In *A History of Project Control, Vol. I, Narrative*, AFSHRC, pp. xv, 94-95.

8. Ibid., pp. 82-85.

9. Ibid., p. 83.

10. Ibid., pp. 89-90.

11. Chief of Staff message date time group 302128Z March 1954

12. *Project Control Research Memorandum 4.5: Resolution of the Indo-China Conflict through Control by Air and Other Means*, AFSHRC.

13. *Project Control Report 4.2, Book 2, the Control of Russia by Air and Other Means*, AFSHRC, p. 354.

14. General Kuter told Colonel Sleeper years later that Air Defense Command had been very impressed with the control briefing, which stimulated thinking for forward air defense using the RC-121s.

15. As reported by Colonel Sleeper in a 17 June 1982 letter to Lieutenant Colonel Dean.

16. Dwight D. Eisenhower, *The White House Years: Mandate for Change, 1953-1956* (New York: Doubleday and Co., 1963), pp. 520-22. In addition, *Time*, in its 1 August 1955 issue (p. 17), reported that Open Skies "got its start a year ago among a group of young Air Force officers, who were bemoaning the thinness of US intelligence about Russia . . . ." Eisenhower's adopting it and forming it into a specific proposal, was a secret he shared with barely half a dozen men. The final "I-dotting and T-crossing," said one of them, "was done on the shores of Lake Geneva, with two Eisenhower military colleagues: NATO Supreme Allied Commander in Europe, General A. M. Gruenther, and CJCS Admiral Radford." The timing of the Air Force officers concerned with intelligence on the Soviet Union corresponds closely with the postproject briefings on Project Control, which so impressed Admiral Radford that he became one of the most enthusiastic supporters of Project Control. Many Air Force intelligence officers, including then-Major George Keegan, later USAF DCS/Intelligence, worked on Project Control.

17. Memorandum by Lieutenant General Kuter to Commandant, Air War College, 26 May 1954.

18. Memorandum for Record dated 13 September 1954 by Colonel G. V. Davis, DCS/Plans/USAF, on Presentation of Project Control to Chairman, JCS (25 August 1954).

19. Morris Janowitz, *The Professional Soldier* (New York: Glencoe Free Press, 1971), p. 284. Janowitz was one of the consultants hired for work on Project Control.

20. Carl von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), p. 607.

"Damn this day," he said. "A fool would know that Zeus had thrown his weight behind the Trojans. All their stones and javelins hit the mark, whoever flings them, good soldier or bad! As for ourselves, no luck at all, our shots are spent against the ground."

HOMER, *The Iliad*, p. 427
translated by Robert Fitzgerald

In 1914 the French regular officer and N.C.O. were inferior to the German not merely in military education but in leadership, in management of their men. Instead of the close sense of teamwork that united the officers and men of a German company, the flexible discipline of the German army, there was too often deep personal and professional gulfs between officers, N.C.O.'s and privates in the French army; there was a brutally stiff discipline that had survived from the Second Empire.

CORRELLI BARNETT, *The Swordbearers*, p. 227

IRA C. EAKER
THIRD-PRIZE WINNER

MARLBOROUGH'S GHOST

eighteenth-century warfare in the nuclear age

LIEUTENANT COLONEL DENNIS M. DREW

THE scarlet-clad soldiers stood shoulder to shoulder facing out across the open field. On command, they moved forward in precise lines with measured cadence, marching with the skill engendered by years of practice on the drill field. But on the far side of this field stood blue-clad soldiers in equally precise formation awaiting the advancing troops. On they came in their closely ordered drill, stopping on occasion so their brigadiers could realign the ranks. The fateful command rang out when less than forty yards separated red from blue. A thunderous roar erupted from the volley-fired muskets as fingers of flame and rolling clouds of smoke poured forth to obscure both lines of soldiers. This parade-ground image of eighteenth-century European warfare is etched on the American consciousness. Even grammar school textbooks in the United States portray derisively the linear tactics imported by the British army during the American Revolution and exult in the clever tactics of the American rebels who refused to fight in the stylized European fashion.

The peculiar strategies and tactics of eighteenth-century European warfare would be little more than interesting footnotes in military history were it not for the many parallels between the problems that created the style of war in that earlier era and the problems confronting the United States today. These parallel problems lead one to speculate about the role of the U.S. military in the pursuit of national objectives during the decades that lie ahead. However, before we can examine current parallels and raise questions about the future, we must address two questions. First, beyond the peculiar linear tactics already briefly described, what was the nature of eighteenth-century warfare? Second, what factors made warfare in that century so distinctive?

Military historians commonly refer to the

time period extending from the latter part of the seventeenth century to the dawn of the French Revolution as the age of limited warfare. The limitations so implied were neither in terms of the number of wars fought nor in terms of the number of years in which war occurred. Wars in that era were frequent and often prolonged. Nor was war limited in terms of combat casualties. Eighteenth-century battles often resulted in disastrous casualty rates. The limitations on war were instead much more fundamental. Wars during that period were generally fought for limited objectives, with limited resources, and with a very limited number of actual battles. Such circumstances seem difficult to imagine in the twentieth century, which has witnessed unlimited warfare fought for unlimited objectives.

The eighteenth century was the age of absolute monarchies in Europe (England being the obvious exception). The dynastic armies that supported these monarchs fought "foreign" wars for what can be classified only as dynastic objectives—a slice of land here, a city there, and succession to various thrones. Given such objectives, the common man had little to arouse his enthusiasm, little to fire his imagination, and little over which he would willingly risk his life. The passions raised by the religious wars of the seventeenth century were but a dim memory, and the ideological passions of popular revolutions had not yet appeared. The limited dynastic objectives of European monarchs spawned limited and relatively restrained warfare.

The limited size of dynastic armies also restrained warfare in the eighteenth century. Few volunteered to serve, and the primitive economic system of the time militated against conscription that could strip away the most productive members of society. As a result, mercenaries became valuable members of most western European armies, sometimes becoming the dominant faction. To fill out the ranks, monarchs often impressed nonmercenary soldiers into service from the dregs of European society. Another damper on the size of eighteenth-century armies was the limited taxation base of preindustrial economies. Limited tax revenues provided meager means with which to finance armies of any great size.

Generals in that era struggled to make the most effective use of the available technology. The standard infantry weapon was the muzzle-loading musket. Slow to reload and accurate only to about fifty yards against a man-sized target, these weapons dictated the tactics used on the battlefield. Rigid linear formations, maneuvered under the strictest discipline, made maximum use of short-range volley fire. But the exactions of linear tactics created significant problems. A new recruit required two years of drill and discipline to become a first-class infantryman. Such extensive training and the expense of mercenary soldiers made eighteenth-century armies expensive to train and maintain, particularly in relation to the limited financial base available to most monarchs. As a general result, monarchs hesitated to put their expensive and hard-to-replace armies at serious risk.

Linear tactics also made the general style of warfare less than intensive. Commanders in the field had to agree tacitly to battle. The slow maneuvers of clumsy linear formations meant that either side could quit the field of battle if the situation did not appear favorable. Consequently, maneuvering was much more common than battle itself. The acme of generalship was to maneuver across an enemy's lines of communication and force him to retreat or quit the area in question.

As strange as it may seem today, this stylized and restrained method of making war in the eighteenth century was a useful system for rulers to achieve limited objectives. All of the European monarchs faced essentially the same fundamental problems. Each army used the same basic technology, required the same training, and faced similar economic constraints. To a large extent, all of the European monarchs played the game of realpolitik us-

ing the same general set of rules. The system was upset at midcentury by Frederick the Great, a monarch who was much more aggressive and ready for battle. He believed that hard fighting, rather than maneuver, decided the issue in war. He also considered his position desperate enough to impose both crippling taxation and a form of conscription on his Prussian subjects. Frederick served as a precursor to the changes wrought by the French Revolution, which returned ideology to European warfare and introduced the concept of the nation in arms. Both of these developments led Europeans down the path toward modern total war.

THE objectives of wars fought in the nineteenth and twentieth centuries approached totality as nation-states often fought for their survival. The costs of achieving these objectives escalated as the tools of war became more efficient in their deadly purpose. This trend culminated in the Second World War, when the advent of nuclear weapons indicated that the costs of total war in the nuclear age could well exceed the value of any objective (which is, of course, the basis for the nuclear deterrence theory).

To a large extent, costs limited eighteenth-century warfare. In many respects, warfare since the dawn of the nuclear age has reentered the eighteenth century, at least from the U.S. perspective. The fear of a nuclear holocaust and its ultimate cost has limited not only U.S. objectives in war but also the means used to achieve those objectives. But there are many other uncanny parallels between eighteenth-century limited warfare and the American situation in the latter half of the twentieth century. In the 1980s, Marlborough's ghost would have a sense of déjà vu. These parallels suggest some disturbing prospects and raise some difficult questions that Americans must face if the military is to remain an effective instrument of national power. A few examples of the most obvious and important parallels will illustrate the point.

The objectives of warfare in the eighteenth century were dynastic rather than popular and ideological. Rarely did these objectives evoke the wholehearted and unflagging support of the common man. In the post-World War II era, the United States has cloaked its objectives with the ideological struggle against communism. But at the same time, these objectives have become difficult to articulate effectively and are thus "distant" from the common man. It is very difficult to infuse the bulk of the American citizenry with great enthusiasm to risk life and limb for the concept of "containment."

The lack of popular objectives was one (but certainly not the only) reason that mercenaries and the impressed dregs of society populated eighteenth-century armies. Some contemporary observers maintain that an analogous situation exists in the current U.S. military structure. They fear that the "all-volunteer force" is, in effect, a mercenary force. Rather than stressing patriotic duty, recruiting campaigns now emphasize pay, allowances, training, and experience applicable to civilian life. "A great way of life" seems a far cry from the stern visage of Uncle Sam saying, "I want you." Critics also point out that at times (generally dependent on domestic economic conditions), recruits in the all-volunteer era have had inadequate educational backgrounds and formed a less than representative racial mix.

Funding military forces continues to be a difficult task for modern governments. In the eighteenth century, the preindustrial taxation base severely limited the funding available for military forces. In the twentieth century, in contrast, the tax base is broad and deep in a mature American economy. However, the U.S. government has assumed an extraordinary number of expensive responsibilities to fulfill the perceived needs of society. Thus, despite the fact that revenues of the U.S. government dwarf those of eighteenth-century

monarchs, the fierce competition for available funds places severe limitations on the monies available for military purposes.

The heavy expense of building and maintaining eighteenth-century armies compounded the problem of limited funding. Monarchs had to recruit and pay mercenaries. Linear tactics required endless months of drill to instill both the requisite skills and discipline. In all, the European monarchs faced expensive problems. The twentieth-century parallels are painfully obvious. Recruiting the all-volunteer force becomes particularly expensive during robust economic periods. The training required to produce competent weapon system operators seems endless (note, for example, the time it takes to train a combat pilot—nearly two years in some cases—to attain minimum combat competence). One must also consider the costs of modern high-technology weapons, staggering costs not faced in the eighteenth century. The considerable costs of bronze cannons and soldiers' muskets pale to insignificance in comparison to the costs of modern aircraft, tanks, and ships. The modern American military is a very expensive undertaking.

Limited funding capabilities and the expense of operating armies were two of the factors that limited the size of eighteenth-century armies. The casual observer might believe that the parallels between the eighteenth and twentieth centuries would break down on this point. After all, even in peacetime the U.S. military is substantial, some two million strong. However, one must consider the scale of today's U.S. military commitment and the nature of modern warfare. Sophisticated weapon systems are critical in high-technology war. It is instructive to look at a few examples of these weapon systems when measuring the size of the U.S. Armed Forces in relation to their global commitment. When one considers that the United States has only a handful of aircraft carriers, seventy-odd of its largest transport aircraft, and plans to purchase only a hundred new heavy bombers, then the true size of the modern military begins to come into better perspective. Many of the critical elements of high-technology warfare are in short supply and nearly impossible to replace with any degree of celerity.

Knowing that the general result of the problems faced by eighteenth-century monarchs was a reluctance to place their expensive and hard-to-replace military forces at serious risk leads one to a troubling question about the utility of modern U.S. military forces. Over what issues will the government place these forces, or elements of these forces, at risk? For example, can the United States afford to wage "gunboat" diplomacy with modern aircraft carriers, knowing that if one is lost or badly damaged, nearly 10 percent of this particular form of power projection capability would be lost? Considering their cost and their limited numbers, can the United States afford to use B-1B bombers to drop iron bombs in some small conflict? How long would it take to replace a ship or aircraft lost in such an adventure? The replacement factor—the same problem faced by eighteenth-century monarchs—continues to plague modern military planners and may offer the most disturbing and limiting prospect.

One would suspect that given the nature of the U.S. Armed Forces, they would be placed at risk only in those situations of perceived paramount importance to the nation. But what utility will U.S. military forces have at lesser levels of realpolitik? If we fear to use our forces because we may lose them, will the U.S. military be an effective instrument of power when less than vital interests are at stake? Are we doomed to suffer death by a thousand cuts as we wait for that singular moment when the issue is great enough to risk the use of our forces?

These questions elicit interesting speculation and give a new perspective to the quality/quantity controversy. However, they form just one part of a much more fundamental

problem relating to the parallels between eighteenth- and twentieth-century limited warfare. Monarchs in the eighteenth century faced common problems and arrived at relatively common solutions. The military establishments of that era were effective instruments of power because everyone engaged in power politics with an accepted set of rules. The great upsets to the system came when someone broke the rules. The changes wrought by these upsets doomed the age of limited warfare and many European monarchies.

THE experience of the United States in the modern era of limited war has been quite different. Rather than facing our major adversary (both the United States and the Soviet Union have been very wary of even limited direct confrontations), the United States has engaged in limited warfare with minor powers on the periphery of its vital interests. Success has been limited, at best. The U.S. experience in Southeast Asia illustrated clearly the complex problems faced by a superpower attempting to wage limited war against a minor military power. Unlike the limited warfare of the eighteenth century, the problems faced and the solutions reached were different for each side. There were no accepted rules of the game.

The United States fought a truly limited war in Southeast Asia. Less than vital American interests led to limited, vaguely defined objectives. As a result, the military means used were both limited and tightly controlled. The U.S. government did not attempt to mobilize the home front. On the contrary, the government pursued a "guns and butter" philosophy, as it attempted to wage war overseas and effect social reform at home simultaneously. Finally, since it was a limited undertaking, the United States sought a negotiated settlement, believing that reason would prevail and that all the belligerents could reach mutually acceptable compromises.

America's adversaries orchestrated their efforts from a different sheet of music, however. They perceived that their vital interests were directly at stake. As a result, they fought not a limited war, but a total war. They mobilized their population and economy, fought with all the means at their disposal, and persevered despite awesome losses. Finally, they viewed the American willingness to negotiate and compromise as a weakness to be exploited.

In retrospect, the eventual outcome of the U.S. involvement in Vietnam should have been obvious from the beginning. The United States was unwilling to unleash all of the power at its disposal. In contrast, the North Vietnamese were willing to make any sacrifice to achieve their objectives. The war was a test of willpower rather than of firepower. In such a struggle of wills, a mobilized and motivated society with vital interests at stake has an incalculable advantage.

BUT, what of the future? Many believe the most likely kind of future U.S. participation in armed conflict will bear a striking resemblance to the war in Southeast Asia—a limited war against a minor power contesting less than vital U.S. interests. As the end of the twentieth century approaches, it becomes clear that if the United States is to be effective in protecting its interests throughout the world, it must learn to deal with the paradoxical situation of fighting limited wars against opponents who are fighting unlimited wars. Ironically, 200 years ago, as the end of the eighteenth century approached and the French Revolution began, the soldiers who marched shoulder to shoulder in the dynastic armies of Europe faced a similar predicament.

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in state-supported colleges. Before the end of his first term, he introduced numerous bills to "provide education for the working classes." All of them languished in committee or expired on the floor.[2] In 1857 his land-grant bill passed both the House and Senate, only to be vetoed by President Buchanan. But a few years later, in a country deeply divided and at war, the measure passed. Signed into law by President Lincoln on 2 July 1862, the brief, two-page Morrill Act would move the distinguished educator Andrew D. White to exclaim: "In all the annals of republics, there is no more significant utterance of confidence in national destiny out from the midst of national calamity."[3]

Citizen-Soldiers

The Morrill Act, or Land Grant College Act of 1862 as it became known, directed that public land be apportioned to state governments in blocks of 30,000 acres for each U.S. senator and representative.* The states were to use funds

After World War I, a lean defense budget and antimilitary sentiment combined to prune the size of Army ROTC. Air ROTC units were cut back severely, but the School of Military Aeronautics at Berkeley proved viable through the era.

*The Morrill Act owed a special debt to an act passed by the Congress of the Confederation in 1787— the Northwest Ordinance—which provided for the admission of territories as states. Under that ordinance, one-sixteenth parcel of land in the new state was to be allocated to education; hence, a precedent for the land-grant programs of the nineteenth century.

from the sale of these lands, a combined area greater in size than Rhode Island, for the "endowment, support, and maintenance of at least one agricultural and mechanical college offering military studies."[4] The state of Connecticut agreed immediately to the provisions of the Morrill Act and, based on the sale of script, established a permanent endowment of $135,000. The interest that accrued on this endowment by 1881 helped establish the University of Connecticut.[5] Two other states, Iowa and Vermont, also requested funds through their legislatures in 1862, leading to the expansion of Iowa State University and the University of Vermont. A year later, thirteen more states in the Union sponsored fourteen universities and colleges. After the Civil War, Arkansas and Mississippi applied for land-grant status; and by 1886, colleges in all eleven states of the old Confederacy were also funded under the act.[6]

Although establishing the foundation for student "military training," the Morrill Act contained no specific provisions for a military curriculum. Each university developed its own course of study. Following the Civil War, veterans, retired Army officers, and academic members of the faculty served as military instructors. Among land-grant schools, the number of hours invested in military class or drill varied greatly. More often than not, however, funding was inadequate, college military training was of poor quality, and the Reserve graduates, although entered in the Army Register, were not awarded commissions.[7] Among college faculty across the land, the training of Reserve officers received scant support; among students, the Officer Reserve Corps evoked little interest.

If the Civil War guaranteed that the United States would remain a single, undivided continental power, the four-month Spanish-American war in 1898 brought to the nation an overseas empire. The Philippines, Midway, Guam, and Puerto Rico ensured that the country would enter the twentieth century a world power. These new territories required, at least temporarily, troops of occupation. Meanwhile, the Western frontier had disappeared, troops had fought their last major battle with the Indians, and the Army concentrated its units into battalions and regiments. Garrison schools at every post taught military skills, while a service school established at Fort Leavenworth offered infantry and cavalry tactics. The Army conducted regimental troop maneuvers directed from Washington by the General Staff and the Army Chief of Staff.[8] But Americans, secure behind oceans on the east and west, preoccupied with expanding commercial opportunities and a flowering of industrial technology, remained little disposed toward supporting things military, Regular or Reserve.

A few years later, however, the Great War in Europe prompted Congress to pass the National Defense Act (NDA) of 1916. That act increased the General Staff from forty-five to fifty-five officers; authorized peacetime units of divisions, corps, and armies; and raised the manpower ceiling of the Regular Army. Building on the Morrill Act of 1862, it also created a formal Reserve Officer Training Corps (ROTC). The NDA authorized the President to establish ROTC units not only at land-grant colleges but at all accredited four-year institutions. Officers of the Regular Army would serve as the professors of military science and tactics, and each participating institution had to provide "at least 100 physically fit male students." The act instructed the Secretary of War to establish "standard courses of theoretical and practical military training" and provide "arms, uniforms, and equipment" to the units. Graduates who completed successfully the four-year course of military instruction* and signed under oath to serve the United States in the Officer Reserve Corps for ten years would be appointed Reserve officers by the President.[9] The Officer Reserve Corps and the fledgling

*The NDA gave to the participating institutions the option of making the course of military instruction elective or compulsory for the first two years.

ROTC program together furnished 30,000 of 200,000 officers during World War I. These reservists became an important component of the officer corps as the Army grew from 127,500 to 4,000,000 soldiers between 1917 and 1919.[10]

After the defeat of Germany and conclusion of the Treaty of Versailles, Congress amended the National Defense Act in 1920, reducing the period of inactive Reserve duty from ten to five years. That same year, the Army Air Service established separate Air ROTC units at four schools with strong engineering departments: the Universities of California (Berkeley) and Illinois, the Massachusetts Institute of Technology, and Texas A&M. The next year, the Air Service established units at the Georgia Institute of Technology and the University of Washington. New York University joined the group in 1923.[11]

In the face of postwar demobilization and a sharply reduced manpower ceiling, however, Army leaders in the 1920s struggled just to retain the best qualified Regular officers. Though rendering standard many aspects of ROTC instruction, they offered this program, which turned out still more officers, little active support. In the meantime, various civilian groups, appalled by the enormous destruction of the four-year "Great War," protested standing armies and military training and advocated abolishing all 223 Army and Air ROTC units across the country. Congress, little inclined in the 1920s toward spending for national security, slashed Reserve training funds; by 1925 only seven Regular officers and five enlisted men remained assigned to the Air ROTC units.[12] By 1935, further cuts in the Army budget eliminated all Air ROTC units,[13] and a committee of the American Association of Land Grant Colleges and State Universities charged: "No expense, explanation, or alibi can persuade anyone that the Army is not indifferent toward ROTC . . . ."[14]

By the end of the 1930s the order in Europe, struck at Versailles, collapsed. On 10 May 1940, Nazi Germany struck at France through the low countries; on 22 June, France surrendered. The threat of a widening war, tension between the United States and Japan in the Pacific, and an impending shortage of trained Army officers and other military resources, overcame isolationist sentiment among America's political leaders. On 27 August 1940, Congress passed a joint resolution that authorized the President to call the National Guard and Reserve components to active duty for twelve months. Secretary of War Henry Stimson called up 2700 Reserve officers immediately, and by June 1941 the number of Reserve officers on extended active duty had grown to 57,039 out of an available pool of 73,922.[15] Virtually all of these reservists were ROTC graduates. Reservists now outnumbered 14,477 Regular officers on active duty four to one. Acknowledging the importance of this Reserve cadre, Army Chief of Staff General George C. Marshall later confided to Secretary of the Army Frank Pace: "Just what we would have done in the first phases of our mobilization and training without . . . [the ROTC graduate], I do not know."[16]

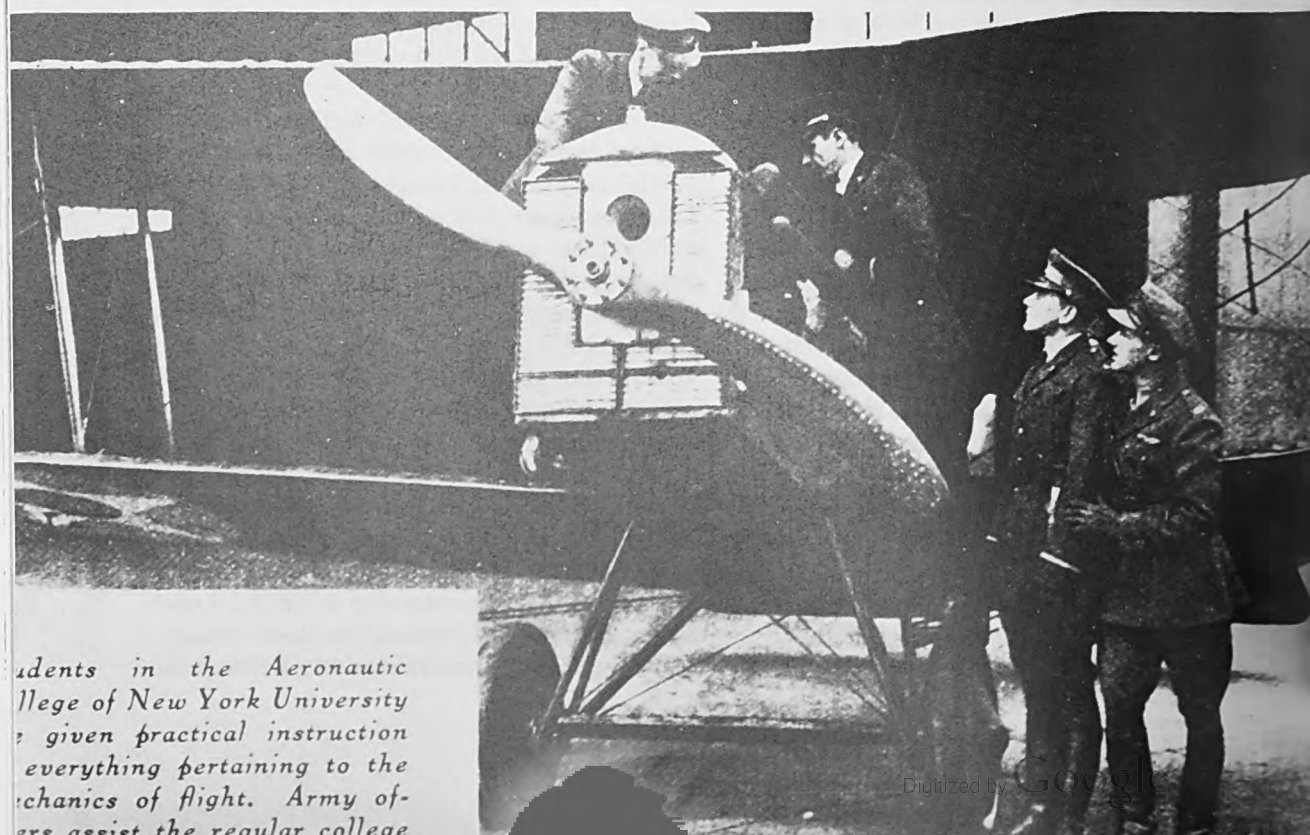
The 200 Army ROTC units that existed in December 1941 simply could not meet the enormous demand for trained officers that followed the U.S. declaration of war against Japan and Germany. The Navy and War departments abandoned their four-year college ROTC programs in favor of special ninety-day officer candidate schools. In spite of American ambivalence toward college military training in the interregnum between wars, ROTC cadets trained during the 1920s and 1930s served with distinction in the Army Air Forces during World War II. Ohio State University could claim Curtis E. LeMay, who pioneered strategic bombing tactics in Europe and became the first ROTC graduate to serve as a Chief of Staff. Texas A&M's cadet corps produced Bernard Schriever and O. P. Weyland. General Schriever served in the Southwest Pacific and retired in 1965 as commander of the Air Force Systems Command. General Weyland, who retired in 1959 as commander of the Tactical Air

Command, supported Lieutenant General George Patton's Third Army in its historic dash across France; Patton termed him "the best damn general in the Air Corps."[17]

From Khaki to Blue

U.S. military forces demobilized rapidly after World War II. Between June 1945 and May 1947, the Army Air Forces, an air force that had counted 2,300,000 men and 68,000 aircraft, nosedived to approximately 300,000 active-duty personnel and 25,000 aircraft.[18] While millions of American servicemen returned to civilian pursuits, how best to recruit and train officer candidates in the ROTC again presented the military a difficult challenge.

Instruction and course content varied in ROTC during the 1920s. At New York University, a cadet (left) peered through a primitive bombsight as a part of his aeronautical training.... Traditionally, cadets get acquainted with military aircraft during summer camp. In June 1927, cadets of New York University inspected a DH-4 at Mitchel Field (below).



udents in the Aeronautic llege of New York University given practical instruction everything pertaining to the chanics of flight. Army of-

Military leaders judged a pool of trained reservists to be essential in the postwar years, and on 22 August 1946 the Army Chief of Staff, General Dwight D. Eisenhower, signed General Order 124 establishing seventy-seven Air ROTC units under the Air Training Command (ATC). A few weeks later, on 15 November, Headquarters Army Air Forces transferred Air ROTC from ATC to the Air Defense Command (ADC).[19]

However essential the ultimate pool of trained Reserve officers might be, the initial, nationwide enrollment of 8700 cadets in the fall of 1946 fell far short of the 16,000-cadet goal set for the Army Air Forces. Worse to some military observers, the curriculum followed the format of the Army program closely. Basic air cadets attended an Army class three hours a week for thirty-two weeks in their khaki uniforms. Only the third and fourth years featured military courses with a specific aeronautical flavor. Eventually, the newly commissioned second lieutenant would accept a Reserve assignment in an occupational specialty, such as administration, aircraft maintenance, communications, meteorology, statistical services, supply, or transportation.[20] In keeping with Army policy of the interwar period, the five-year Reserve commitment did not include a mandatory active-duty tour. The Army Air Forces filled junior officer mobilization billets from the ranks of Air ROTC Distinguished Military Graduates. Resident professors of military science and tactics nominated candidates for a commission in the Regular Army from these distinguished graduates. Upon accepting a Regular commission, a new second lieutenant reported for a tour of extended active duty.[21]

Air ROTC professors of military science and tactics in 1946 needed to have field grade rank and a pilot's rating and be between twenty-

Cadets usually have attended summer camp between their third and fourth years of training. While the specifics change, the imposition of military discipline and order in relatively primitive conditions remains a traditional part of camp. A number of World War II leaders received their first real taste of military life at ROTC summer camps in the 1930s.

seven and forty-eight years old. They also needed three years of active commissioned service, twelve months overseas duty, a bachelor's degree, and above-average effectiveness ratings. Military instructors, on the other hand, could be nonrated and less than twenty-seven years old. Enlisted instructors were exempt from specific educational requirements but, according to regulations, had to exhibit an excellent military bearing and "an outgoing personality."[22] These requirements, established amidst organizational changes and an impending separation of the Army and Air Force, might have been adequate, had they not been largely ignored.

Transferring Air ROTC from the Air Training Command to the Air Defense Command in November 1946 hardly improved the quality of instruction. Most college units operated without training aids or texts. At the beginning of 1947, after observing the air detachments in New England schools, the Eleventh Air Force historian wrote: "The sum total of Air ROTC equipment on hand at each college could be contained in a cigar box and consisted of some 30 Kodachrome slides of cloud formations."[23] In April, Major General Thomas J. Hanley, Jr., commander of ADC's Eleventh Air Force, inspected Air ROTC units at Purdue, Ohio State, and Duquesne universities. In his report, Hanley not only confirmed his historian's contention about shortages of books and supplies but also declared ROTC instructors to be poorly trained.[24] But Lieutenant General George E. Stratemeyer, commanding general of Air Defense Command, immersed in organizing the country's air defense forces, did little more than acknowledge Hanley's report.[25] The Air ROTC program claimed a decidedly low priority at ADC.

In Washington on 18 September 1947, Chief Justice Fred M. Vinson administered the oath of office to the first Secretary of the Air Force, Stuart Symington. A few days later, President Truman formally appointed General Carl A. Spaatz the first Chief of Staff of the Air Force. A Department of Defense order on 26 September transferred all units and personnel of the Army Air Forces, including Air ROTC, to the United States Air Force. Headquarters United States Air Force (USAF) announced plans in December 1947 to merge the Air Defense Command and Tactical Air Command to form a super command—the Continental Air Command (ConAC). This reorganization, completed one year later in December 1948 and intended to strengthen the air defense and close air support missions, placed all tactical fighter resources, including all active, reserve, and guard personnel, under a single commander. Besides its "flying and fighting missions," ConAC also gained along with ADC the responsibility for what was now termed AFROTC.[26]

Although this consolidation appeared impressive on paper, the multiple missions and responsibilities created numerous management difficulties for the new command. ConAC leaders found themselves unable to solve all of them expeditiously, and within two years, Air Force Chief of Staff General Hoyt S. Vandenberg announced the separation of the air defense and tactical air missions. Headquarters USAF elevated Tactical Air Command from a subordinate to a major command on 1 December 1950; exactly one month later, Headquarters USAF returned ADC to major command status also. Within another year, both of these commands were led by four-star generals. ConAC, now charged primarily with the Reserve training programs, was reduced to a major general's billet.[27]

All the while, vivid memories of the Axis powers and public awareness of postwar Soviet actions in Berlin, Czechoslovakia, and China helped ensure widespread support for the Reserve program. ConAC officials sought to develop an effective program that met both public expectations and the needs of the Air Force. Between 1948 and 1952, Headquarters ConAC provided military teachers, course curriculum, summer encampment, manuals, and training aids to the AFROTC. The director of AFROTC,

a colonel or lieutenant colonel at Headquarters ConAC, attempted to guide the program. He presided over a decentralized AFROTC, with units grouped among the command's four numbered air forces: the First at Mitchel AFB, New York; the Fourth at Hamilton AFB, California; the Tenth at Selfridge AFB, Michigan; and the Fourteenth at Robins AFB, Georgia. The numbered air forces conducted the annual AFROTC inspections, established new AFROTC units, and provided logistical support. In AFROTC matters, the Air Force commanders, who outranked the colonel-director, devoted most of their attention to resolving or papering over the interservice friction that arose inevitably on campuses with two or more ROTC units. The Deputy for Personnel at each numbered air force actually managed the program through his own AFROTC director, usually another colonel or lieutenant colonel.[28] At the end of 1951, AFROTC units with an enrollment of approximately 145,000 cadets could be found on 205 campuses around the country.[29] Within the decentralized ConAC structure, command supervision was casual; standards of uniformity between and among the numbered air forces and AFROTC were nonexistent.

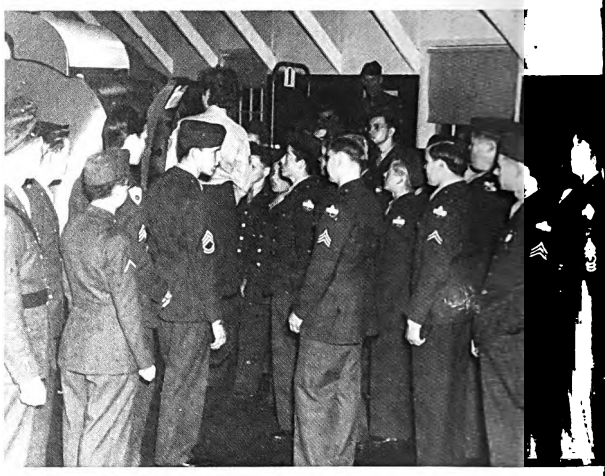
The AFROTC director at Headquarters ConAC supervised the teaching of the specialized curriculum. In many cases, ConAC assigned noncommissioned officers to teach AFROTC courses. These instructors, qualified only in their own career fields, tended to emphasize detail in specialty areas, such as supply, administration, transportation, and the like. The specialized curriculum, in turn, forced ConAC officials to project USAF junior officer manning in each career field four years in advance, because the Korean War prompted amendments in 1951 to the Universal Military Training and Service Act that required Reserve officers to serve two years of their five-year Reserve commitment on active duty.[30]

Air Force commanders at war in Korea, however, wanted more pilots and navigators—not nonrated specialists—for combat duty. Responding to that demand, Headquarters USAF prepared in 1952 a revised educational statement of objectives that directed ConAC to train cadets as officers in the Reserve *and* Regular components of the Air Force.[31] A new "general curriculum," introduced in September 1953, would allow all cadets to receive the same course of instruction. Only after he reported on active duty would a second lieutenant receive flight or specialty training. Where before the specialized curriculum had required about seventy-five different texts, the general curriculum required but thirty-one.[32] Subsequent evaluations showed that the general curriculum better met the needs of the Air Force.[33] It became a permanent part of AFROTC, as did a new uniform and emblem.

During and immediately after World War II, members of the Army Air Forces had worn the standard Army uniform; only the arm-of-service colors distinguished the airman from the soldier. This situation changed on 24 January 1949, when President Truman authorized Secretary of the Air Force Symington to replace the khaki uniform, hallmark of the Regular Army since 1903, with Air Force blue. On 18 February 1953, Headquarters USAF approved an AFROTC emblem designed by Captain Edward P. Winslow and Second Lieutenant Arthur C. Kane.[34] The circular emblem, containing a thundercloud overlaid with a winged torch of knowledge, completed the AFROTC transition to blue. But however much the AFROTC cadet might have taken pride in his own new uniform, Air Force leaders had yet to decide where control of the program should best reside.

Air University Assumes Control

Back in 1946, the Army Air Forces had established the Air University at Maxwell Field, Montgomery, Alabama, under the command of Major General Muir S. Fairchild. Air University offered professional, specialized education to prepare commissioned and noncommis-

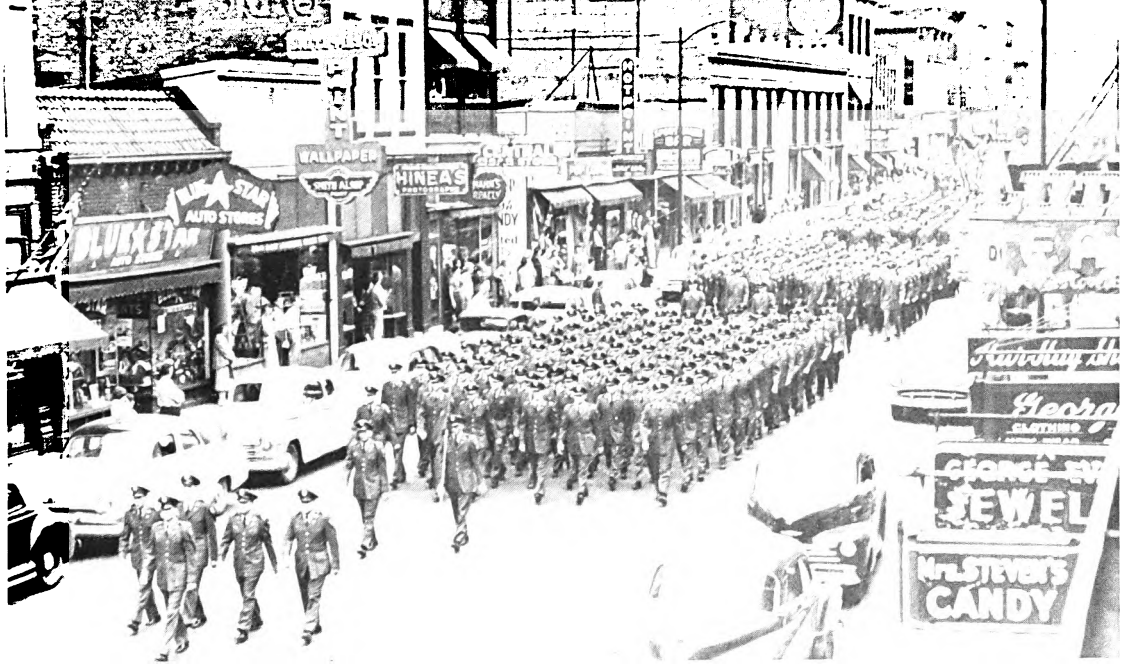


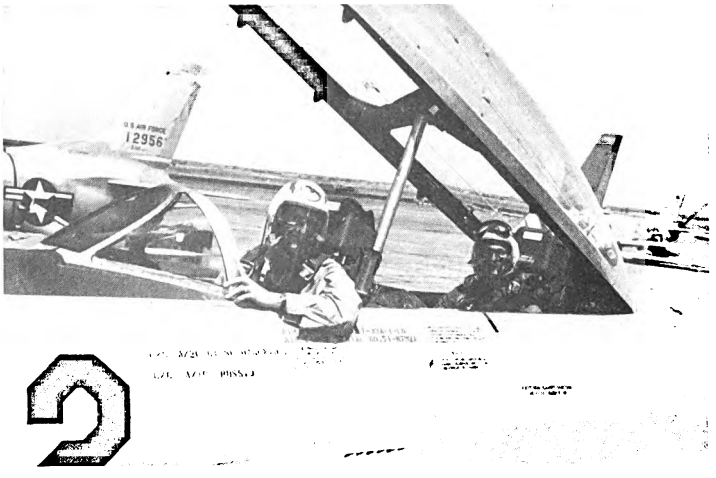
Because rapid mobilization of forces was required during World War II, four-year ROTC programs were scuttled and special ninety-day officer candidate schools were established. After the war, ROTC units were reestablished, the Air Force gained its independence, and Air Force ROTC became a major source of commissioning for the new service.

sioned officers for greater command and staff responsibilities. Between 1946 and 1951, Air University grew rapidly. The man responsible for much of this growth was General George C. Kenney, who on 29 October 1948 became Air University commander. During World War II, as General Douglas MacArthur's top air commander, Kenney had directed the successful air battle against the Japanese in the Southwest Pacific.[35] Now wearing four stars, he wrote to Headquarters USAF in mid-1951 that AFROTC should be removed from the jurisdiction of ConAC and added to Air University's professional education program. Kenney wanted a general officer in charge of a headquarters for AFROTC, reporting to Air University and responsible for the curriculum, comptroller, materiel, and operations. He also proposed ten intermediate headquarters (headed by colonels) to manage and control the detachments directly.[36] Kenney's recommendations triggered extended Air Staff studies and sharply worded ConAC rebuttals.

Another reduction in its mission unquestionably threatened ConAC as a major command. During September 1951, as the debate intensified in Washington, Major General Willis H. Hale, ConAC commander, wrote Headquarters USAF that ConAC's numbered air forces could best administer the AFROTC program and could do so with one-third fewer people than the number proposed by Air University. The Reserve program, he asserted, was "too large and geographically dispersed to be supervised from a central location."[37] But Air University had done its homework; its plan of organization, incorporating a single chain of command supported by a professional headquarters staff, appeared not only feasible but desirable when compared with ConAC's decentralized arrangement. Air Force Chief of Staff General Nathan F. Twining adopted Kenney's proposal, and on 1 August 1952, Air University gained responsibility for AFROTC.[38]

At Air University, Brigadier General Matthew K. Deichelmann, Deputy Commander for Education, had quarterbacked the efforts to secure AFROTC. Appointed as the first AFROTC





The Korean War shattered the last illusions of U.S. isolation, and the maintenance of a significant pool of trained Reservists took on greater importance. Air Force ROTC curriculum was revised to meet changing Air Force needs, and units acquired a new look. Wearing their Air Force-blue uniforms, cadets in a 1952 Memorial Day parade (above) marched proudly through a midwest town. . . . Orientation rides and flight instruction encouraged many cadets toward pilot and navigator training as active-duty commissioned officers.

commandant on 1 August 1952, he was authorized a headquarters and detachments, with an overall personnel strength of 1685 officers, 1555 airmen, and 29 civilians.[39] The new AFROTC headquarters opened a few weeks later in a commercial office building in downtown Montgomery, Alabama, about one-half mile from Maxwell Air Force Base. Two years later, on 2 July 1954, the headquarters moved to another downtown building. Finally, on 2 February 1956, AFROTC acquired its permanent headquarters at Maxwell Air Force Base. For AFROTC, a decade of turbulence that embraced major changes in curriculum, a change in uniform, four changes of command, and seven changes of headquarters location had come to an end.

Of all the changes, perhaps none was more profound than the increase in emphasis on the training of rated officers. Between 1946 and 1952, 25,072 cadets had pinned on gold bars;

During the Vietnam War, AFROTC produced many motivated, career-oriented officers. After college graduation and commissioning, flight training was often the next stop. This 1967 University of Alabama graduate received his set of wings in 1968.

however, only 2521 of these officers had entered pilot training.[40] Early in 1953, as the Korean War neared an end, AFROTC leaders made every effort to increase the pilot and navigator flying training programs. They invited Korean War veterans to speak to prospective cadets about the skills required for combat flying. They reduced the pilot and navigator active-duty commitment from four to three years, and they allowed the new lieutenants to schedule their flight training to coincide with that of their classmates. Finally, AFROTC leaders divided cadets among four broad categories: flying, engineering, administrative, and those with prior enlisted service.[41]

By the spring of 1953, the effort began to pay dividends when 2412 of the 11,259 AFROTC graduates entered flying training. In terms of rated officers, AFROTC now appeared to be more nearly in step with plans that called for an Air Force of 143 combat wings by 1955. But on 29 July 1953, President Eisenhower directed the Secretary of Defense to reduce that goal sharply and to aim instead for 120 combat wings by 1956.[42] Responding to this directive, Headquarters USAF reduced its Air Force officer requirements by 30,000.[43] The number of cadets entering the AFROTC junior class in 1953 was halved, from 15,000 to 7500. Only flying or engineering cadets remained in the most advanced programs. To establish a set annual rate of officers commissioned, Headquarters USAF directed AFROTC to establish a quota for flying, engineering, and administrative officers, in keeping with anticipated Air Force needs. Thereafter, no AFROTC detachment could exceed its quota without Headquarters AFROTC approval. The total quota for 1957, for example, included 4000 pilots, 1500 navigators, 960 engineers and meteorologists, and 225 administrative officers.[44] Like the general curriculum, the quota system and officer category designations became permanent features of AFROTC. Except for the period immediately following the Vietnam War, these features would allow the Air Force to meet educational cadet contracts and still tailor the production of officers to its needs.

On college campuses around the country in the mid-1950s, other changes improved the AFROTC program. The senior cadets assumed command of the cadet corps, replacing their Air Force instructors. They led the corps in drill, published orders, conducted promotion boards, recruited, and planned social activities. The Arnold Air Society, an honor society established at the University of Cincinnati in 1947 to recognize outstanding cadets, installed chapters at most colleges and universities. To further hone the selection of officers, Headquarters AFROTC began to administer a general aptitude test, later referred to as the Air Force Officers Qualifying Test, to all second-semester AFROTC sophomores. The test, developed by the Human Resources Research Center at Lackland Air Force Base, Texas, measured flying and technical aptitude and "officer potential." A passing grade kept the cadet selection process moving; a failing grade eliminated the cadet from further consideration. This test proved to

be an excellent indicator of leadership potential and remains a benchmark in the selection process.[45]

Another change helped attract cadets to flight school. Professors of air science and tactics began in the early 1950s to offer sophomore cadets introductory airplane rides. The C-45—a small, two-engine multipurpose aircraft designed to carry five to seven passengers and generally available at nearby air force bases—served as the primary orientation aircraft. An afternoon flight with fellow cadets, including a few minutes at the controls, encouraged many young men to become pilots. This voluntary activity became known eventually as the AFROTC Flying Orientation Program. In the mid-1950s, however, a shortage of C-45 aircraft and base closures made full participation at every AFROTC unit impractical. Seeking to expand flight opportunities, AFROTC leaders proposed a Flight Instruction Program (FIP). The proposal gained support in Congress; and on 1 August 1956, President Eisenhower signed Public Law 879, authorizing the Air Force to establish contracts with local flying schools for thirty-six and one-half hours of flying instruction for senior cadets, including sixteen and one-half hours of solo time. Pilots assigned to the detachments also provided thirty-five hours of ground school training in weather and navigation. The senior cadets who completed and passed the Federal Aviation Administration examination received their private pilot's licenses.[46]

Antimilitary sentiment on some college campuses, changes in defense needs, and other factors prompted some shifts and changes in AFROTC during the Vietnam years. Nevertheless, like these cadets in the early 1970s, thousands of students at universities and colleges across the country became cadets and continued to "pass in review!"

On 1 October 1956, a few months after President Eisenhower signed Public Law 879, Brigadier General Turner C. Rogers, a 1936 graduate of West Point, succeeded General Deichelmann as commandant of AFROTC. Rogers had piloted a P-51 Mustang for fifty combat missions in Korea and later served as commander of the 18th Fighter Bomber Wing. He knew the potential value of FIP and gave it his enthusiastic support. Headquarters AFROTC awarded forty-one flight instruction contracts during 1956-57, and about 1200 cadets enrolled.[47] By 1960, some 1550 cadets were enrolled in FIP in 162 universities across the country.[48] The higher graduation rate for FIP students justified continued funding, and nearly all pilot-qualified cadets participated. This program, too, would become a permanent feature of AFROTC.

As the 1950s drew to a close, the Air Force increasingly emphasized career service. This change in emphasis affected all officer commissioning programs, but it struck at the land grant roots of AFROTC. The Air Force met its officer manning requirements (particularly pilots and navigators) at great expense. The rated officer simply had become too valuable a resource to be returned as a reservist to civilian life after a brief three-year tour of active duty. Beginning with the entering AFROTC junior class in 1957, Headquarters USAF extended the tours from three to five years for rated personnel and from three to four years for nonrated personnel. That particular change, General Rogers declared emphatically, "indicates that the Air Force now views ROTC as a primary source of career officers."[49] The philosophy that sparked the Morrill Act of 1862 thus had turned sharply about: the career soldier had replaced the citizen-soldier, at least in the Air Force. Justin Morrill would have been hard pressed to recognize the program that he had set in motion nearly a century earlier.

WHATEVER the emphasis, career or Reserve, the officers that AFROTC prepared and brought to the Regular Air Force in the late 1950s would soon help meet America's military commitment to the Republic of Vietnam. The Vietnam War, in turn, would in the years to come markedly influence the course of AFROTC at various universities and colleges. But that is another story.

United States Air Force
Historical Research Center
Maxwell AFB, Alabama

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48. *History of AFROTC, January-June 1960*, p. 45.

49. Brigadier General Turner C. Rogers, Commandant, AFROTC, "Introduction" to *History of AFROTC, July-December 1957*, p. 2; see also pp. 3-5.

We are indebted for the photographs of Air ROTC in the 1920s to Major General Marvin C. Demler, USAF (Ret), and the estate of Robert G. Carr. General Demler completed Air ROTC at New York University and served on active duty until 1971. Carr completed Air ROTC at the University of California-Berkeley, and established the Robert and Nona Carr ROTC Endowment Fund at Angelo State University, San Angelo, Texas.

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ULTRA: SOME THOUGHTS ON ITS IMPACT ON THE SECOND WORLD WAR

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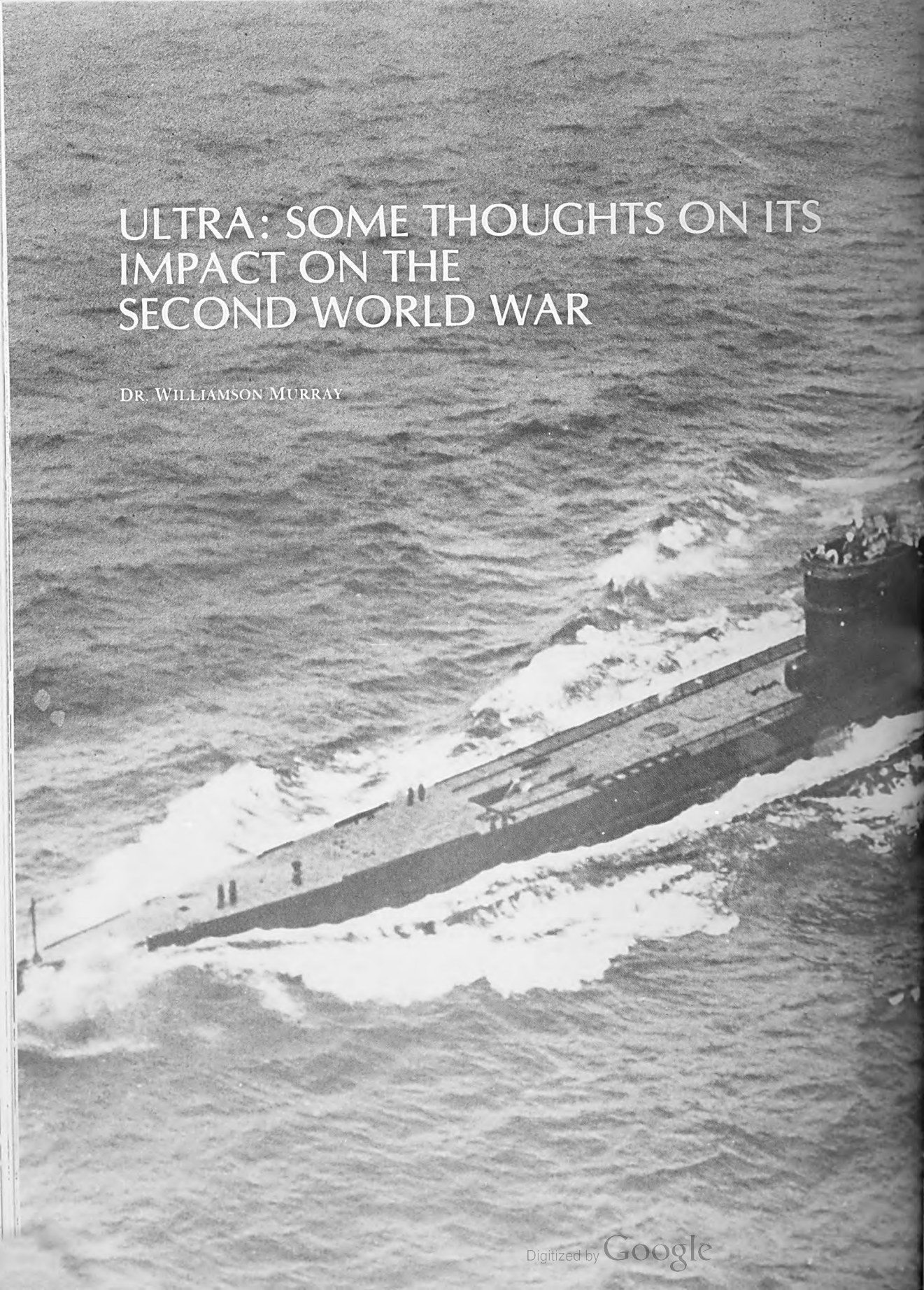
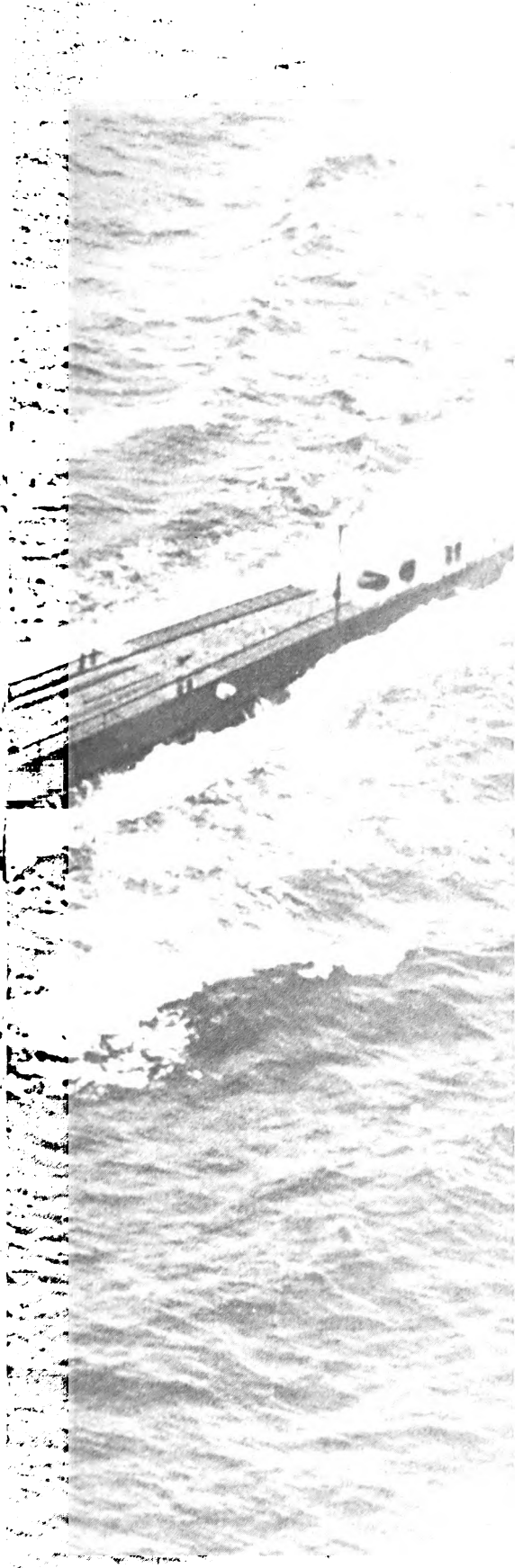




ONLY now, nearly forty years after the end of the Second World War, has the essential role and contribution of intelligence to the winning of that conflict become clear. Central to the new evaluation of that importance has been the discovery of the fact that throughout the war the intelligence services of the Western powers (particularly the British) were able to intercept, break, and read a significant portion of the top secret message traffic of the German military.[1] The dissemination of that cryptographic intelligence to Allied commanders under the code name Ultra played a substantial and critical role in fighting the Germans and achieving an Allied victory.

THE breaking of the German high-level codes began with the efforts of the Polish secret service in the interwar period. By creating a copy of the basic German enciphering machine, the Poles were able to read German signal traffic through the 1930s with varying degrees of success. However, shortly before the Munich Conference in September 1938, the Germans introduced additional rotors into their enciphering machine—the so-called enigma machine—and in approximately mid-September, darkness closed over the German message traffic.[2] The Poles continued their work nevertheless, and after the British guarantee in March 1939 to Poland, they passed along to Great Britain what they had thus far achieved. (Earlier, there had also been considerable cooperation between the Poles and the French.) Building on what they had learned from their continental allies, the British finally managed to break into some of the German codes in April 1940, just before the great German offensive against France and the Low Countries.[3]

This first success would soon be followed by others that would give Allied intelligence and commanders valuable insights into German intentions and capabilities. Nevertheless, these crytographic successes covered only a small

lem. Basically, the British and their American allies evolved a carefully segregated intelligence system that kept the flow of Ultra information down to a limited number of senior commanders. The entire Ultra dissemination process lay outside of normal intelligence channels. For example, the intelligence officers at Eighth Air Force would not even know of the existence of Ultra and would not know what the Ultra officer's duties were. He, in turn, would talk only to General Carl Spaatz, General James H. Doolittle, and the Ninth Air Force commander. The system worked, for the Germans never caught on to how extensively their ciphers were being compromised.

Unfortunately, there were drawbacks. Intelligence can be of use only if it is placed in the hands of those who understand its significance. Three specific incidents underline this point with great clarity. The first occurred in early September 1944 as Allied armies were pursuing the beaten Wehrmacht back to the frontiers of the Reich. On 5 September, Bletchley Park made the following information available to Allied commanders in Western Europe:

> For rest and refit of panzer formations, Heeresgruppe [army group] Baker ordered afternoon fourth [4 September] to remain in operation with battleworthy elements: two panzer, one arc six panzer, nine SS and one nought [ten] SS panzer divisions, elements not operating to be transferred by AOK five for rest and refit in area Venloo—Arnhem—Hertogenbosch.[5]

This intelligence (along with a second Ultra confirmation on 6 September)[6] indicated that at the very time when British plans for Operation Market Garden were to move forward, some of the best panzer divisions in the German armed forces would be refitting in the town selected as the goal of the British 1st Airborne Division and the final objective on the Rhine for the operation. Putting this message together with intelligence that soon began coming out of Holland from the Dutch underground that SS panzer units were refitting in the neighborhood of Arnhem, Allied commanders should have recognized that Operation Market Garden had little prospect of success. Unfortunately, they did not put these pieces together, and those at the highest level in Field Marshal Sir Bernard L. Montgomery's headquarters with access to Ultra refused to draw the correct conclusions.

A second example comes from a period three months after Operation Market Garden: December 1944. One of the unfortunate results of the rush to print after the Ultra secret was out has been the appearance of a number of legends with little basis in fact.[7] One of the most persistent is the legend that Ultra gave no advance warning to Allied commanders in December 1944 that the Germans were preparing to launch a major counterthrust through the Ardennes.[8] It is true that Hitler's sixth sense that German security measures had been compromised led him to undertake a series of unprecedented measures to veil the Ardennes attack.[9] Thus, there were no overt, operational indications as to what the Germans intended. However, a number of other indicators were uncovered by the decoding of enigma messages. These indicated that the Germans were moving supplies as well as large numbers of troops into the region behind the Ardennes.[10] Since the Germans were desperately low of supplies and troops, such allocations of resources could only portend major operations in the Ardennes. The Germans had no reason to expect that the Allies were planning to launch a major offensive in this area—especially since the Allies were so obviously trying to kick in the door to the Reich at so many other points. Unfortunately, the mood in higher Allied headquarters and in intelligence circles was close to a feeling that the war was virtually over and the Germans could not possibly launch an offensive.

The third case in which Ultra information was available but remained unused was in one instance during the Battle of the Atlantic. The Allies moved their convoys through the North Atlantic very much on the basis of Ultra information, when available, so that these great

formations of merchant shipping could avoid the patrol lines of German submarines established to pick up their movement and course. In this particular case, decoding of enigma transmissions had picked up a heavy concentration of German submarines to the north of the Azores. Thus, a major convoy of aviation gasoline tankers from the refineries at Trinidad to the Mediterranean was rerouted to the south of the Azores. Unfortunately, because his escorts needed refueling and the weather was better to the north of the islands, the convoy commander disregarded his instructions, sailed to the north of the Azores, and ran smack into the U-boats. Only two of the tankers reached port. What made the episode even more surprising was the fact that the convoy commander had just come from a term of duty in the Admiralty's convoy and routing section, where he surely must have had some awareness as to the Admiralty's reasons for rerouting convoys.[11]

If Ultra information was misused at times, it is clear that such instances were the exception rather than the rule. However, it is difficult to assess Ultra's full impact on the war. At times (particularly early in the war), no matter how much Ultra tipped the British off to German intentions, the overwhelming superiority of the Wehrmacht made any successful use of the information virtually impossible. For example, enigma decodes in the spring of 1941 forewarned the British about German intentions against the Balkan states, first against Greece and then, after the anti-German coup in Yugoslavia, against that country as well. Such intelligence was, of course, practically useless, due to the overwhelming power that the Reich was able to deploy in the region at that time.[12] On the other hand, from the intercepts and decodes during the summers of 1941 and 1942, the British government (particularly Churchill) was able to obtain an accurate picture of Rommel's tank strength and to determine that the British army had considerable superiority in numbers against the Afrika Korps in the North African theater.[13] What quantitative returns could not indicate were such factors as the technological superiority of some German tanks and particularly the qualitative superiority of German doctrine and training. The intercepts do help in explaining why Churchill kept such considerable pressure on Eighth Army commanders to attack Rommel.

In war, so many factors besides good intelligence impinge on the conduct of operations that it is difficult to single out any single battle or period in which Ultra was of decisive importance by itself.[14] Yet there is one instance where one can say that the intelligence achieved through the breaking of the German codes by itself played a decisive role in mitigating enemy capabilities. By the first half of 1941, as more and more submarines were coming on line, the German U-boat force was beginning to have a shattering impact on the trade routes on which the survival of Great Britain depended. The curve of sinkings of British, Allied, and neutral shipping was climbing upward ominously.[15]

	Number of ships sunk	Tonnage sunk
November 1940	12	146,613
December 1940	37	212,590
January 1941	21	126,782
February 1941	39	196,783
March 1941	41	243,020
April 1941	43	249,375
May 1941	58	325,492

Through the spring of 1941, the British had had virtually no luck in solving the German navy's codes. In mid-May 1941, however, the British captured not only a German weather trawler with considerable material detailing the settings for the naval codes but also a German submarine, the U-110, with its cipher machine and *all* accompanying material.[16] With these two captures, the British held the settings for the next two months for the German navy's enigma machines. Thus, the British were able to break into the U-boat traffic by the end of May. Also, because German U-boats were con-

trolled closely from shore and a massive amount of signaling went back and forth to coordinate the movement of the wolf packs, the British gained invaluable information, ranging from the number of U-boats available to tactical dispositions and patrol lines. Moreover, once they had a full two months' experience inside the German U-boat traffic, British cryptologists were able to continue breaking the submarine message traffic for the next five months.[17] The impact that this intelligence had on the Battle of the Atlantic was almost immediate.[18]

	Number of ships sunk	Tonnage sunk
June 1941	61	310,143
July 1941	22	94,209
August 1941	23	80,310
September 1941	53	202,820
October 1941	32	156,534
November 1941	13	62,196

The dramatic decline in sinkings (compared with those that had occurred during the first five months of the year) has no explanation other than that Ultra information enabled the British to gain a decisive edge over their undersea opponent. There was no introduction of new technology, no significant increase in the number of escorts available, and no extension of air coverage. Ultra alone made the difference.

Unfortunately for the Anglo-American powers, within two months of U.S. entrance into the war, the Germans introduced an entirely new cipher, Triton, which closed off the flow of Ultra decrypts for the remainder of 1942. Thus, at the very time that the vulnerable eastern and southern coasts of the United States opened up to German submarine operations, Ultra information on German intentions and operations ceased. Direction-finding intelligence was available, of course, but it remained of limited assistance.

When the Germans turned their full attention back to the Atlantic in early 1943, enormous convoy battles occurred with increasing frequency. German Admiral Karl Dönitz had available to him in the North Atlantic nearly one hundred submarines. In opposition, the Allies possessed far greater numbers of escort vessels, including escort carriers whose aircraft made U-boat shadowing of convoys almost impossible. Moreover, long-range aircraft from Newfoundland, Iceland, and Northern Ireland were reaching farther and farther into the Atlantic.

At the beginning of 1943, the Allied naval commanders enjoyed one further great advantage. Bletchley Park had succeeded once again in breaking the German naval ciphers.[19] That intelligence proved somewhat less useful than the Ultra intelligence in 1941 that had allowed the British to steer convoys around U-boat threats. The Allies were able to carry out similar evasive operations at times, but the large numbers of German submarines at sea at any given time made such maneuvers increasingly difficult and oftentimes impossible. Initially during the great three-month battle from March to May 1943, the Allies were badly battered. In May, however, the Allies smashed the U-boat threat so decisively that Dönitz was forced to end the battle. Ultra intelligence played a major role in the turnaround. However, because of additions to Allied escort strength and increases in long-range aircraft patrols, one must hesitate in identifying the Ultra contribution as decisive by itself. Yet, the leading German expert on the Battle of the Atlantic does note:

> I am sure that without the work of many unknown experts at Bletchley Park . . . the turning point of the Battle of the Atlantic would not have come as it did in May 1943, but months, perhaps many months, later. In that case the Allied invasion of Normandy would not have been possible in June 1944, and there would have ensued a chain of developments very different from the one which we have experienced.[20]

Meanwhile, Ultra affected the air war on both the tactical and on the strategic levels. British decoding capabilities were not sufficient during the Battle of Britain to provide major help to Fighter Command to defeat the German air threat.[21] Similarly, for the first

three years of Bomber Command's war over the continent, Ultra could provide little useful intelligence. On the other hand, throughout 1942 and 1943, Ultra information provided valuable insights into what the Germans and Italians were doing in the Mediterranean and supplied Allied naval and air commanders with detailed, specific knowledge of the movement of Axis convoys from the Italian mainland to the North African shores. By March 1943, Anglo-American air forces operating in the Mediterranean had virtually shut down seaborne convoys to the Tunisian bridgehead. Allied information was so good, in fact, that the German air corps located in Tunisia reported to its higher headquarters (in a message ironically intercepted and decoded):

> . . . the enemy activity today in the air and on the sea must in [the] view of Fliezerkorps Tunis, lead to the conclusion that the course envisaged for convoy D and C was betrayed to the enemy. At 0845 hours a comparatively strong four-engine aircraft formation was north of Bizerte. Also a warship formation consisting of light cruisers and destroyers lay north of Bizerte, although no enemy warships had been sighted in the sea area for weeks.[22]

As was to be the case throughout the war, the Germans drew the conclusion that traitors either in their High Command or elsewhere (in this case, in the *Commando Supremo*, the Italian High Command) had betrayed the course of the convoys.

In the battles with German fighters for control of the air over Sicily, Ultra proved equally beneficial to Allied air commanders. It enabled them to take advantage of German fuel and ammunition shortages and to spot Axis dispositions on the airfields of Sicily and southern Italy.[23] However, in regard to U.S. strategic bombing, Ultra may well have exerted a counterproductive influence in 1943. Intercepts from the Luftwaffe's message traffic indicated quite correctly how seriously Allied attacks in the air were affecting German air units, but these intercepts may have persuaded General Ira Eaker, Commander, Eighth Air Force in 1943, and his subordinate commanders to go to the well once too often. The second great attack on Schweinfurt in October 1943, as well as the other great raids of that month, proved to be disastrous for the Eighth Air Force crews who flew the missions. (Sixty bombers were lost in the Schweinfurt run.)[24]

Moreover, U.S.A.A.F. theories about the vulnerability of the German economy to precision bombing proved somewhat unrealistic. While bomber attacks did inflict heavy damage on the German aircraft industry, the industry was in no sense destroyed. Likewise, the attacks on ball-bearing plants failed to have a decisive impact. True, damage to Schweinfurt caused the Germans some difficulties, but the batterings that Eighth's bombers took in the August and October attacks were such that despite intelligence information that the Germans would be back in business quickly, the Eighth could not repeat the mission again.[25]

In 1944, however, the nature of Eighth's capabilities and target selection changed. Most important, the Eighth Air Force received the long-range fighter support to make deep penetration raids possible.[26] The initial emphasis in the strategic bombing attacks in late winter and early spring of 1944 was in hitting the German aircraft industry and then in preparing the way for the invasion of the European continent. In May 1944, however, General Carl Spaatz persuaded Eisenhower that he possessed sufficient bomber strength to support both the invasion and a major new offensive aimed at taking out Germany's oil industry. In attacking that industry, Spaatz, in fact, would hit the Germans at their most vulnerable economic point. Not only would attacks on the oil industry have an immediate impact on the mobility of the Wehrmacht's ground forces, but increasing fuel shortages would prevent the Germans from training a new generation of pilots to replace those lost in the terrible attrition battles of the spring.

On 12 May 1944, 935 B-17s and B-24s at-

tacked synthetic oil plants throughout Germany. Almost immediately, Eighth's commanders received confirmation through Ultra that these attacks threatened Germany's strategic position severely. On 16 May, Bletchley Park forwarded a message to Eighth canceling a general staff order that *Luftflotten* 1 and 6 (Air Fleets 1 and 6) surrender five heavy and four light or medium flak batteries each to *Luftflotte* 3 (assigned the task of defending France). Those flak batteries were to move instead to protect the hydrogenation plant at Troglitz, a crucial facility in Germany's synthetic fuel industry. In addition, four heavy flak batteries from Oschersleben, four from Wiener Neustadt, and two from Leipzig-Erla (defending aircraft factories) were ordered to move to defend other synthetic fuel plants.[27] This major reallocation of air defense resources were clear indications of German worries about Allied attacks on their oil industry. On 21 May, another Ultra decrypt (originating headquarters not identified) noted:

> Consumption of mineral oil in every form . . . [must] be substantially reduced . . . in view of effects of Allied action in Rumania and on German hydrogenation plants; extensive failures in mineral oil production and a considerable reduction in the June allocation of fuel, oil, etc., were to be expected.[28]

On 28 and 29 May 1944, Eighth returned to the skies over Germany to attack the oil industry again. These two attacks, combined with the raids that Fifteenth Air Force (in Italy) had launched against Ploesti, reduced German fuel production by 50 percent.[29] On 6 June, Bletchley Park passed along the following decrypt:

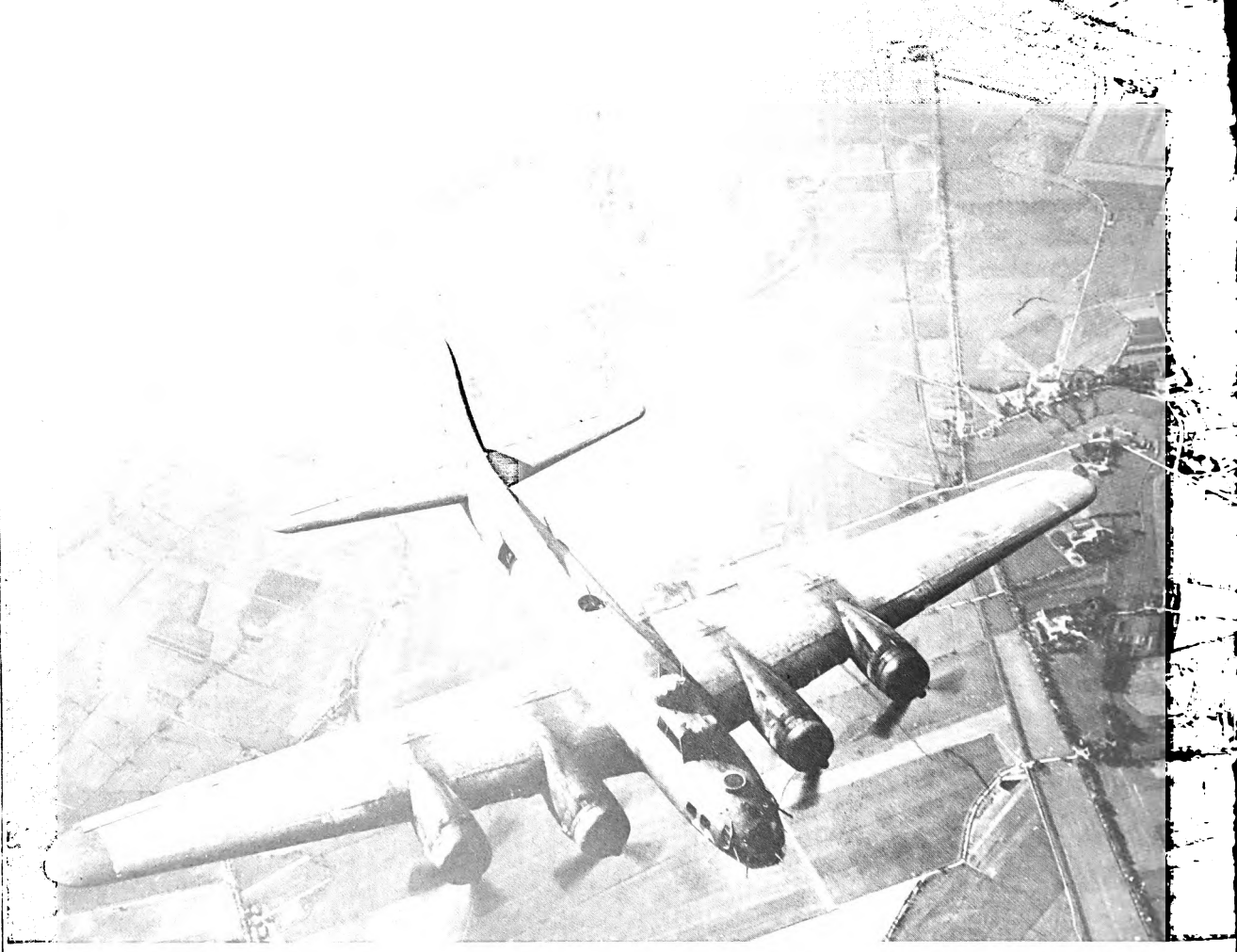
> Following according to *OKL* [German Air Force High Command] on Fifth. As a result of renewed interferences with production of aircraft fuel by Allied actions, most essential requirements for training and carrying out production plans can scarcely be covered by quantities of aircraft fuel available. Baker four allocations only possible to air officers for bombers, fighters and ground attack, and director general of supply. No other quota holders can be considered in June. To assure defense of *Reich* and to prevent gradual collapse of German air force in east, it has been necessary to break into *OKW* [German Armed Forces High Command] reserves. Extending, therefore, existing regulations ordered that all units to arrange operations so as to manage at least until the beginning of July with present stocks or small allocation which may be possible. Date of arrival and quantities of July quota still undecided. Only very small quantities available for adjustments, provided Allied situation remains unchanged. In no circumstances can greater allocations be made. Attention again drawn to existing orders for most extreme economy measures and strict supervision of consumption, especially for transport, personal and communications flights.[30]

Throughout the summer, Albert Speer's engineers and construction gangs scrambled to put Germany's oil plants back together. As fast as they succeeded, however, Allied bombers returned to undo their reconstruction efforts. Throughout the remainder of the year, Allied eyes, particularly of American bomber commanders, remained fixed on Germany's oil industry. The punishing, sustained bombing attacks prevented the Germans from ever making a lasting recovery in their production of synthetic fuel.

Clearly, Ultra played a major role in keeping the focus of the bombing effort on those fuel plants. Speer had warned Hitler after the first attack in May 1944:

> The enemy has struck us at one of our weakest points. If they persist at it this time, we will no longer have any fuel production worth mentioning. Our one hope is that the other side has an air force general staff as scatterbrained as ours![31]

Speer's hopes were not realized, largely because Ultra intelligence relayed to Allied air commanders both the size and successes of German reconstruction efforts, as well as the enormous damage and dislocations to Germany's military forces that the bombing of the plants was causing. The intelligence officer who handled Ultra messages at Eighth Air Force headquarters reported after the war that the intercepts and decrypts of enigma transmissions had in-



In May 1944, Ultra intelligence indicated that destruction of the German oil industry could prove potentially disastrous to the Luftwaffe. Eighth Air Force bombers responded by striking synthetic oil plants throughout the Reich.

dicated that shortages were general and not local. This fact, he indicated, convinced "all concerned that the air offensive had uncovered a weak spot in the German economy and led to [the] exploitation of this weakness to the fullest extent."[32]

On the level of tactical intelligence during the preparation and execution of Overlord, Ultra also was able to provide immensely useful information. Intercepts revealed a clear picture of German efforts and successes in attempting to repair damage that the Allied air campaign was causing to the railroad system of northern France.[33] A mid-May staff appreciation by Field Marshal Gerd von Rundstedt (Commander in Chief, Panzer Group West) warned that the Allies were aiming at the systematic destruction of the railway system and that the attacks had already hampered supply and troop movements.[34] Ultra intelligence made clear to Allied "tactical" air commanders how effective the attacks on the bridge network throughout the invasion area were and the difficulties that German motorized and mechanized units were having in picking their way past broken bridges at night.[35]

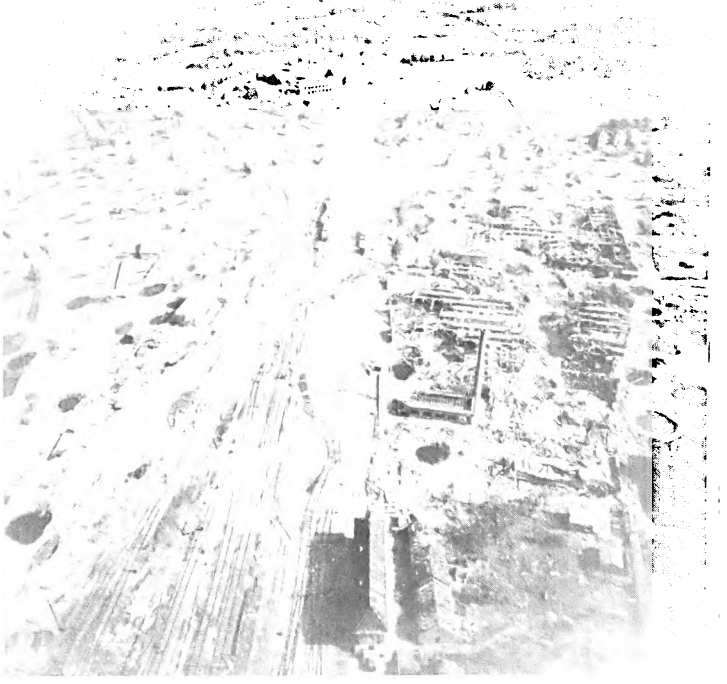
Ultra intercepts also gave Western intelligence a glimpse of the location and strength of German fighter units, as well as the effectiveness of attacks carried out by Allied tactical air on German air bases.[36] Furthermore, these intercepts indicated when the Germans had com-

pleted repairs on damaged fields or whether they had decided to abandon operations permanently at particular locations.[37] Armed with this information, the Allies pursued an intensive, well-orchestrated campaign that destroyed the German's base structure near the English Channel and invasion beaches. These attacks forced the Germans to abandon efforts to prepare bases close to the Channel and to select airfields far to the southeast, thereby disrupting German plans to reinforce *Luftflotte* 3 in response to the cross-channel invasion.[38]

When the Germans did begin a postinvasion buildup of *Luftflotte* 3, the destruction of forward operating bases forced them to select new and inadequately prepared sites for reinforcements arriving from the Reich. Ultra intercepts picked up information on a substantial portion of the move and indicated bases and arrival times for many of the reinforcing aircraft.[39]

Another substantial contribution of Ultra to Allied success was its use in conjunction with air-to-ground attacks. Ultra intercepts on 9 and 10 June gave Allied intelligence the exact location of Geyr von Schweppenburg's Panzer Group West headquarters. Obligingly, the Germans left their vehicles and radio equipment in the open.[40] The attack not only destroyed most of Panzer Group West's communications equipment but also killed seventeen officers, including the chief of staff.[41] The strike effectively removed Panzer Group West as an operating headquarters and robbed the Germans of the only army organization in the west capable of handling large numbers of mobile divisions.

IT is worth examining the reasons why the British were able to break some of the most important German codes with such great regularity and with such an important impact on the course of the war. The Germans seem to have realized midway through the war that the Allies were receiving highly accurate intelligence about their intentions and moves. Nevertheless, like postwar German historians,[42] the



Despite compromises in their security, the Germans surprised the Allies in their Ardennes offensive in December 1944. To restrict the flow of German supplies to front-line units, the Allies launched a heavy bombing campaign against German railways and bridges. This bomb-damaged railyard lay on the main line from Berlin and Hanover into Holland. Allied air attacks on such facilities severely inhibited Germany's ability to sustain the offensive .... Allied intelligence estimates indicated that destruction of the ball-bearing plants at Schweinfurt would have a significant impact on German war-making capability. However, despite bombing attacks on Schweinfurt like that shown below, Germany's ball-bearing industry was never wholly shut down. Ultra intelligence proved more valuable in other campaigns.

German military looked everywhere but at their own signals. Enthralled with the technological expertise that had gone into the construction of the enigma machine, the Germans excluded the possibility that the British could decrypt their signals.

After the sinking of the *Bismarck* and the rapid clearance from the high seas of the supply ships that the Germans had sent out ahead of her, the German navy did order an inquiry. Headed by a signal man (obviously with a vested interest in the results), the board of inquiry determined that the British could not possibly have compromised the enigma system. Rather, the board chose to blame the disaster on the machinations of the fiendishly clever British Secret Services.[43] By 1943, the success of British antisubmarine measures in the Battle of the Atlantic again aroused German suspicions that their ciphers had been compromised. In fact, the commander of U-boats suggested to German naval intelligence that the British Admiralty had broken the codes.

> B.d.U. [the commander of U-boats] was invariably informed [in reply] that the ciphers were absolutely secure. Decrypting, if possible at all, could only be achieved with such an expenditure of effort and after so long a period of time that the results would be valueless.[44]

One British officer serving at Bletchley Park records that German "cryptographic experts were asked to take a fresh look at the impregnability of the Enigma. I heard that the result of this 'fresh look' appeared in our decodes, and that it was an emphatic reassertion of impregnability."[45]

The Germans made a bad situation worse by failing to take even the most basic security measures to protect their ciphers. Indeed, a significant portion of Bletchley Park's success was due to silly, procedural mistakes that the Germans made in governing their message traffic. Among other basic errors, the Germans in midwar started to reuse the discriminate and key sheets from previous months rather than generate new random selection tables.[46] If that carelessness were not enough, the Germans (particularly the Luftwaffe) provided a constant source of cribs to enable the British to determine the engima settings for codes that had been broken. These cribs turned up in numerous, lengthy, and stereotyped official headings, usually in routine reports and orders all sent at a regular time of day.[47] Gordon Welchman, who served at Bletchley Park for most of the war, reports that "we developed a very friendly feeling for a German officer who sat in the Qattara Depression in North Africa for quite a long time reporting every day with the utmost regularity that he had nothing to report."[48]

The German navy proved no less susceptible to critical mistakes. Dönitz's close control of the U-boat war in the Atlantic rested on an enormous volume of radio traffic. The volume itself was of inestimable help to the cryptanalysts at Bletchley Park.[49] Although the Germans introduced a fourth rotor into the enigma machine in March 1943, thereby threatening once again to impose a blackout on their North Atlantic operations, the new machines employed only a small fraction of their technical possibilities. Unfortunately for the U-boats also, there was considerable overlapping between old and new machines. As a result of these and other technical errors, the British were back into the North Atlantic U-boat radio transmissions within ten days of the changeover.[50] Furthermore, at about the same time, Bletchley Park decrypted a signal to U-boat headquarters indicating that the Germans were breaking the Allied merchant code.[51]

One final incident should serve to underline the costliness of German carelessness where security discipline was concerned. The great German battleship *Bismarck* had broken out into the central Atlantic in May 1941 on a raiding expedition. After sinking the battle cruiser *Hood*, the *Bismarck* managed to slip away from shadowing British cruisers. The pursuing British admiral decided at 1810 hours on 25

May that the German battle ship was making for Brest. Within an hour, the Admiralty had confirmation through air force signals. Luftwaffe authorities had used their wireless transmissions to inform their chief of staff (then visiting Athens during the Crete operation) that the *Bismarck* was heading for Brest.[52]

OBVIOUSLY, there are important lessons that we in the West can learn from these German errors. To begin with, Patrick Beesly, who worked closely with the naval Ultra throughout the war, notes that "while each nation accepted the fact that its own cryptanalysts could read at least some of their enemy's ciphers, they were curiously blind to the fact that they themselves were being subjected to exactly the same form of eavesdropping."[53] Above all, the Germans seem to have been overly impressed with their presumed superiority in technology. Thus, not only did they make elemental mistakes in their communications discipline, but they arrogantly refused to believe that their enemies might have technological and intelligence capabilities comparable to their own.

In recent years, there has been considerable interest in German operational and tactical competence on the field of battle.[54] There is an important subheading to that competence: while historians and military analysts tell us that the Germans were extraordinarily good in the operational and tactical spheres, we should also recognize that the Germans were sloppy and careless in the fields of intelligence, communications, and logistics, consistently (and ironically) holding their opponents in contempt in those fields. Thus, we would be wise to examine the German example closely in all aspects of World War II. We can learn from the Germans' high level of competence in the tactical and operational fields; equally, we have much to learn from their failures in other areas. Above all, the German defeat in World War II suggests that to underestimate the capabilities and intelligence of one's opponents can have only very dangerous and damaging consequences for one's own forces.

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Notes

1. There are, of course, a host of major works that have appeared in recent years that have discussed the breaking and reading of the German enigma encoding and decoding system. The intelligence based on Allied decrypts of that message traffic was called Ultra. Some of the more useful and accurate books on the value of this intelligence contribution are: F. H. Hinsley et al., *British Intelligence in the Second World War*, Vols. I and II (London, 1979 and 1982); Gordon Welchman, *The Hut Six Story: Breaking the Enigma Codes* (New York, 1982); Patrick Beesly, *Very Special Intelligence* (Garden City, 1978); R.V. Jones, *The Wizard War* (New York, 1978); Ronald Lewin, *Ultra Goes to War* (New York, 1978); Ralph Bennett, *Ultra in the West: The Normandy Campaign 1944-45* (New York, 1979); and for the best German viewpoint available in English, Jürgen Rohwer, "Ultra and the Battle of the Atlantic: The German View," in *Changing Interpretations and New Sources in Naval History*, edited by Robert William Love, Jr. (New York, 1980).

2. Lewin, p. 39; Welchman's *The Hut Six Story* is particularly useful on how the enigma machines worked.

3. Lewin, p. 60.

4. Rohwer, pp. 441-42.

5. Public Record Office (PRO), DEFE 3/127/XL 9188, 5.9.44., 1152Z.

6. Ibid., DEFE 3/128/XL 9245,6.9.44., 0103Z.

7. The most egregious of these legends was the story in Anthony Cave-Brown's *Bodyguard of Lies* (New York, 1976), pp. 32-44, that Churchill and the British government had known of the great German bombing attack on the city of Coventry on 11 November but deliberately refused to take any special measures for fear of compromising Ultra. There is, however, no basis in fact for such a story. Readers who wish to know what happened at Coventry should consult Jones, pp. 146-52, and N. E. Evans, "Air Intelligence and the Coventry Raid," *Journal of the Royal United Services Institute* (September 1976).

8. In particular, Lewin, pp. 357-58.

9. Including unprecedented security measures; see Chester Wilmot, *The Struggle for Europe* (New York, 1952).

10. See Bennett, pp. 191-204. Bennett's book is particularly important, since it ties Ultra directly into the conduct of military operations in the West.

11. Kenneth A. Knowles, "Ultra and the Battle of the Atlantic: The American View," in *Changing Interpretations and New Sources in Naval History*, edited by Robert William Love, Jr. (New York, 1980), p. 442.

12. In particular, Hinsley et al., *British Intelligence in the Second World War*, Vol. I, Chapter 11.

13. See Hinsley et al., *British Intelligence in the Second World War*, Vol. II, Chapter 21.

14. I attended a lecture given by a leading historian from the Federal Republic of Germany who argued that never by itself was Ultra of decisive importance.

15. Captain Steven Roskill, *The War at Sea*, Vol. I (London, 1954), p. 616.

16. Beesly, pp. 73-75.

17. Ibid., p. 99; and Rohwer, p. 421.

18. Roskill, p. 616. The explanation for why June's figures remained so high is that it took the British more than a month to integrate the Ultra breakthrough gained by the U-110 coup into their convoy strategy. The rise that occurred in September and October resulted from the fact that U-boats were attacking Gibraltar convoys well within the range of long-range German reconnaissance aircraft. This aerial surveillance made it much more difficult for the Admiralty to hide their convoys. See Beesly, pp. 100-01.

19. Hinsley et al., *British Intelligence in the Second World War*, Vol. II, pp. 556-57.

20. Rohwer, pp. 442-43.

21. There is some dispute here. The British official historians argue that Ultra provided little direct support (see Hinsley et al., *British Intelligence in the Second World War*, Vol. I, pp. 176-77), while Harold Deutsch argues the opposite in "Ultra and the Air War in Europe and Africa," *Air Power and Warfare, Proceedings of the Eighth Military History Symposium*, USAF Academy, edited by Colonel Alfred F. Hurley and Major Robert C. Ehrhart (Washington, 1979), pp. 165-66.

22. U.S. Army Air Force, *Ultra: History of U.S. Strategic Air Forces in Europe vs. German Air Force* (Frederick, Maryland, 1980), p. 26. This is a reprint of a study completed at the end of the European conflict by Ultra intelligence officers assigned to U.S. Army Air Forces in Europe.

23. Ibid.

24. For a discussion of the air battle of attrition in 1943, see Williamson Murray, *Strategy for Defeat: The Luftwaffe 1933-1944* (Montgomery, Alabama, 1983), Chapters V and VI.

25. For the best study of the Schweinfurt raid, see Friedhelm Golücke, *Schweinfurt und der strategische Luftkrieg 1943* (Paderborn, 1980). For information on the vulnerability of the ball-bearings industry, see United States Strategic Bombing Survey Report, "The German Anti-Friction Bearings Industry," January 1947.

26. For a discussion of the fortuitous development of the long-range fighter escort, see Bernard Boylan, "The Development of the Long-Range Escort Fighter," unpublished manuscript, USAF Historical Research Center, Maxwell AFB, Alabama.

27. PRO DEFE 3/156, KV 4021, 16.5.44., 0558Z.

28. PRO DEFE 3/159, KV 4762, 21.5.44., 2054Z.

29. Albert Speer, *Inside the Third Reich* (New York, 1970), p. 348.

30. PRO DEFE 3/166, KV 6673, 6.6.44., 2356Z.

31. Speer, pp. 346-47.

32. PRO 31/20/16, "The Handling of Ultra Information at Headquarters Eighth Air Force," Ansel E. M. Talbert, Major, U.S. Army Air Force. For Ultra messages further confirming German fuel difficulties, see *Ultra: History of U.S. Strategic Air Forces in Europe vs. German Air Force*, pp. 217, 224-25, and 234.

33. Among many other messages, see PRO DEFE 3/47, KV 3015, 6.5.44., 1316Z; DEFE 3/153, KV 3300, 9.5.44., 2301Z and KV 3292, 9.5.44., 1659Z; DEFE 3/155, KV 3763, 14.5.44., 0412Z; DEFE 3/158, KV 4690, 21.5.44, 0534Z; DEFE 3/161, KV 5445, 27.5.44., 2131Z; DEFE 3.163, KV 5825, 31.5.44., 0039Z; DEFE 3/163, KV 5999, 1.6.44., 1516Z.

34. PRO DEFE 3/155, 14.5.44., 0412Z.

35. Among many others, see PRO DEFE 3/58, XL2299, 16.7.44.; DEFE 3/171, KV 7998, 14.6.44., 0753Z; DEFE 3/179, KV 9976, 28.6.44., 2135Z.

36. Among many messages, see PRO DEFE 3/154, KV 3/154, KV 3524, 11.5.44., 2032Z; DEFE 3/153, KV 3417, 10.5.44., 2033Z; DEFE 3/153, KV 3327, 9.5.44., 0845Z; DEFE 3/160, KV 5141, 25.5.44., 1020Z; DEFE 3/159, KV 4944, 23.5.44., 2054Z; and DEFE 3/168, KV 7135, 9.6.44., 1648Z.

37. Among others, see PRO DEFE 3/155, KV 3863, 14.5.44., 2020Z; and DEFE 3/153, KV 3430, 10.5.44., 2129Z.

38. PRO DEFE 3/163, KV 5762, 3.5.44., 1440Z.

39. Among others, see PRO DEFE 3/166, KV 6675, KV 6699, KV 6694, KV 6749, and KV 6735; see also *Ultra: History of U.S. Strategic Air Forces in Europe vs. German Air Force*, p. 196.

40. Bennett, p. 68. The messages on the location of Panzer Group West are in PRO DEFE 3/168, KV 7171, 9.6.44., 2040Z; and KV 7225, 10.6.44., 0439Z.

41. Major L. F. Ellis, *Victory in the West*, Vol. I, *The Battle of Normandy* (London, 1962), p. 258.

42. Paul Carell, *Scorched Earth: The Russian-German War, 1943-1944* (New York, 1971), pp. 93-116. In this unremarkable and thoroughly unreliable work, Carell suggests that Germany's troubles were entirely the result of vicious traitors in the Führer's headquarters. As an example of the unintended irony that so often appears in Carell's work, the following passage ranks high, "General Laux [in the Demyansk salient during winter 1942/1943] spoke to Sixteenth Army over the directional radio link and put his anxieties to the Commander in Chief. This useful and *secure* [my emphasis] wireless link had been set up by 1st Luftwaffe signals regiment in May 1942. It was an excellent link and, above all, saved the many casualties which used to be incurred . . . in repairing the long distance cables . . . . And the new link, moreover, was free from interference." (Ibid., pp. 299-300) The irony of course is that the laid cables were secure (from interception and decryption); the radio messages were not.

43. Beesly, p. 94.

44. Quoted in ibid., p. 169.

45. Welchman, p. 133.

46. Ibid., p. 130.

47. Ibid., p. 131.

48. Ibid., p. 132.

49. Knowles, p. 448.

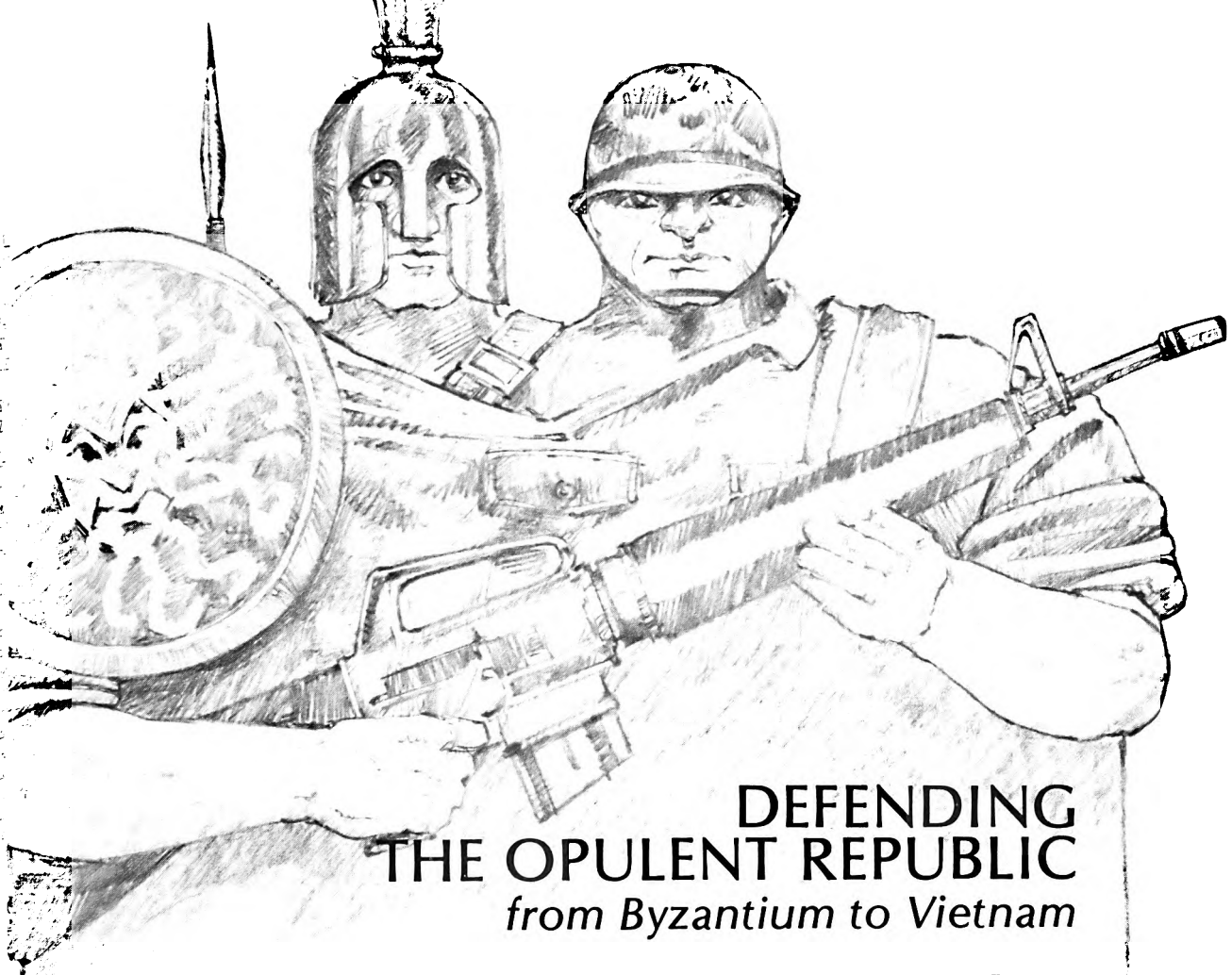
50. Rohwer, p. 441.

51. Ibid.

52. Hinsley, *British Intelligence in the Second World War*, Vol. I, p. 345. See also Beesly, p. 88, who speculates that this signal was occasioned because a high-ranking Luftwaffe officer had a close relative aboard the *Bismarck*.

53. Beesly, p. 69.

54. In particular, see Timothy T. Lupfer, *The Dynamics of Doctrine: The Changes in German Doctrine during the First World War* (Leavenworth, 1981).



DEFENDING THE OPULENT REPUBLIC

from Byzantium to Vietnam

DR. NICHOLAS J. PAPPAS

THE Vietnam War was the chance for many rare birds to come out of their academic cages. For several years thereafter, Americans were treated to the spectacle of some anguished moaning over the sins of the Republic. The Vietnam War was the archetype of war, one which surpassed all others in ferocity and cruelty. Only recently has a more dispassionate analysis begun to emerge. Guenther Lewy's *America in Vietnam* dispelled the mythology about unprecedented American violence.[1] Norman Podhoretz in *Why We Were in Vietnam* attacked the revisionist argument that U.S. involvement in Southeast Asia was inherently immoral.[2] And Colonel Harry G. Summers's analytical work *On Strategy: A Critical Analysis of the Vietnam War* destroyed the false impression that Vietnam was won by "insurgents,"[3] explaining how the guerrillas were a diversionary sideshow for the North Vietnamese Army that finally steamrolled the Republic of Vietnam forces in a conventional attack using four army corps. Summers's more profound conclusion, though, is

that U.S. strategists and their critics *both* failed to understand the war because they had lost touch with the fundamentals of strategy itself.

Viewing the Vietnam War from the perspective of the classical principles of *strategy* makes it a less than an end-of-the-world event. In much the same way, the American regime and its foreign policy are susceptible to analysis in terms of the classical notions of *political science.* The fundamental question of political science is presented in Books VIII and IX of Plato's *Republic* and takes the form of the query: "What is the nature of the regime?" *Regime* refers to the ordering (arrangement and filling) of public offices and the character of the men who rule.

Yet if we accept the Clausewitzian assertion that "war is the continuation of politics by other means," we cannot separate the analysis of war easily from that of politics. As Clausewitz himself writes:

> . . . if we reflect that war has its roots in a political object, then naturally this original motive which called it into existence should also continue the first and highest consideration in its conduct.[4]

The prudent strategist or statesman thus will consider the nature of the means at his disposal but always with the primacy of policy in mind. "Policy therefore is interwoven with the whole action of war and must exercise a continuous influence upon it, as far as the nature of the forces liberated by it will permit."[5]

The implication of this interweaving for the strategist is profound. For him, *the* question of strategy turns out to be *the* question of political science: What kind of regime are we defending? A regime saver must be a regime knower.

To grapple with the nature of the U.S. regime is like wrestling with that mythological river-god who kept changing his shape and form. Its size, diversity, and newness remind us that the "human mind invents things more easily than words . . . . Hence a form of government has been found which is neither precisely national nor federal [and] the new word to express this new thing does not yet exist."[6] This political creation, neither wholly classical nor entirely modern, is revealed in all its enormity and ambiguity by a trip on the interstate system. Along the highway lie small and large farms, husbanded by industrious lovers of thrift and wealth. Small shops and sprawling factories hide the labors and dreams of deft mechanics and energetic entrepreneurs. Periodically, the spires of a metropolis signal the restless desires of the multitudes in a feverish city where every type of character can be found, from the lotus-eater to the steel maker.

Let us simply call this kaleidoscope of occupations, aspirations, and desires an *extended opulent republic.* The task of strategy is to defend it. The problem in one sense is not new; it was present at the founding of the nation.

The Founding Fathers' first answer to the security problems of the new nation was provided by geography and fortuity. The vast expanse of the Atlantic Ocean separated the American continent from the rivalries of Europe. The immensity of the American wilderness made a foreign invasion and occupation very unlikely events. Furthermore, Britain's interest in keeping European power politics out of the New World served America's purpose as well as Britain's during much of the nineteenth century.

With security guaranteed by distance, trackless wastes, and intra-European squabbles, America focused her energy on the debate over the organization and operation of the nation's government. What came out of the formative years was a regime characterized by the division of power, checks and balances, and frequent elections. Such a republic, it was argued, would be inherently peaceful because it emphasized commerce and domestic affairs. There would be little need for international intrigue, standing armies, and menacing fleets. The art and science of strategy could thus be ignored or at least relegated to the obscure province of a few military men.

For a long time, it went unnoticed that the argument over the nature of the regime and its

security dilemma was "solved" by a form of geographical isolation rather than by philosophy. War and peace, or strategy and diplomacy, became separate categories of thought in the minds of the Americans.

After a century of attacking trees, wild beasts, and bottomlands, Americans found themselves thrown by technology and fortune into what Raymond Aron has called the worldwide "unity of the diplomatic field."[7] The high-water mark of this involvement may have been World War II and its immediate aftermath. For our purpose, what is interesting about this era is the *kind* of Americans who planned and implemented U.S. foreign policy. The type is portrayed dramatically in the final pages of William Manchester's *Goodbye, Darkness*[8] and seems to be a combination of the democratic (freedom-loving) and timocratic (honor-loving) men found in Books VIII and IX of Plato's *Republic*. A paradoxical man emerges: the American who loves freedom, license, even anarchy, yet has a powerful sense of honor, duty, and patriotism. His natural spiritedness, indignation, and righteous anger had been turned into a creative energy that upheld the safety and the principles of the regime.[9]

Many of our friends who returned from the Vietnam War remarked that something *fundamental* about the American regime had changed, something unlike the rapid changes in transportation, manufacturing, and housing that all generations of Americans had witnessed. Instead, the change seemed to involve the character of citizens themselves. It was as if the democratic tendency in American life had finally broken through its wall of coexistence with the parallel republican (or timocratic) tendency and overwhelmed its companion.

If this change is real—as real as the regime change in the 1830s, for example—the strategist in the 1980s is faced with this problem: How does one defend an opulent nation inhabited primarily by democratic men who favor self-gratification over the public good?

Human nature is unchanging in its essence but takes on many shapes and colors, like snowshoe hares or stoats. Might we not profit by examining men as they appear in other regimes in history? While history herself is a mute oracle, philosophy must encounter men as they appear against her scenery. Edward Luttwak has performed a similar task in *Grand Strategy of the Roman Empire*,[10] which looks at the empire from the perspective of defense systems and subsystems. This study illuminates U.S. foreign policy by viewing it from a different angle; the same sort of activity might shed light on the problems of an opulent regime.

Look at the Romans. "Destined for war, and regarding it as the only art, the Romans put their whole spirit and all their thoughts into perfecting it," wrote Montesquieu.[11] Does this picture of Roman manhood during the days of the Republic provide us with a paradigm for today's America? Probably not, since the formative centuries of the two regimes are so different. The Romans, "always exposed to the most frightful acts of vengeance,"[12] developed the "virtues of constancy and valor,"[13] and, in order "that they could handle heavier arms than other men, had to make themselves more than men."[14] As Montesquieu dryly observed, "In short, no nation ever prepared for war with so much prudence or waged it with so much audacity."[15] This sanguinary baptism of a nation suggests the image of a wrestler, "who has been thrown off balance by the sudden yielding of a taxing counterforce"[16] but who rebounds to a fighting position, for "a body politic that has overcome a mortal threat will rush forward to regain its lost equilibrium—within an enlarged habitat."[17] Frightful and continual wars, plus a certain genius for organization, strategy, and tactics, made the Romans into a people suited to the task of defending a republic and building an empire.

The first formative century of the United States suggests another image. One might use the "metaphor of the advancing current," which gets its impetus from secondary streams

of immigrants who "effortlessly flatten minor natural obstacles."[18] The resulting national character was precisely that which most of the Founding Fathers envisioned, and the regime became focused on liberty, commerce, and, especially, domestic affairs, while remaining unsuited to the patient and demanding work of perpetual defense in a world characterized by the Hobbesian phrase "state of warre." This unsuitability, in turn, was doubled by opulence, for, as Machiavelli wrote "it is of the greatest advantage in a republic to have laws that keep its citizens poor," as long as poverty is never allowed "to stand in the way of the achievement of any rank or honor."[19] Montesquieu's writing supports this conclusion in his comments on the Punic Wars: "Carthage, which made war against Roman poverty with its opulence, was at a disadvantage by that very fact. Gold and silver are exhausted, but virtue, constancy, strength and poverty never are."[20]

Our look at the Roman Republic causes us to reflect on our own republic. What things are similar? What different? Our thinking must now be directed toward another regime, one so different from the virtuous Roman Republic as to seem inhabited by a different species of beings.

For approximately a thousand years after the Roman state at last became opulent, corrupt, and vulnerable to foreign invaders, the Byzantine empire in the East survived in one form or another. From the transfer of the capital of Rome to Byzantium in A.D. 330 to the defeat of Byzantine arms by the Turks in 1071 at Manzikert, the Byzantine empire stood the shocks and blows of numerically superior enemies. And even after this stupendous defeat, Byzantium lived on in diminished power and wealth until the final Turkish conquest in 1461.[21]

This empire sounds magnificent; its reality seems to have been sordid. "The history of the Greek empire," wrote Montesquieu, "is nothing more than a tissue of revolts, seditions, and perfidies."[22] Divided into factions, devoid of justice, wracked with superstition, ruled by fools for the most part, the empire was characterized by continuous internal troubles. "Once small-mindedness succeeded in forming the nation's character, wisdom took leave of its enterprises, and disorders without cause, as well as revolutions without motive, appeared."[23] And still, as we have seen, the empire continued to stand for almost a millenium, opulent almost to the end.

Behind the political convolutions and mystical incantations of the empire stood the Byzantine army, "in its day the most efficient military body in the world."[24] What was the secret of Byzantine military prowess in a society whose name is a "synonym for effete incapacity alike in peace and war?"[25]

The answers are contained in the military doctrine of the Byzantines and the records of such great captains as Belisarius and Narses. Raising the art of war to the level of the psychological and, as B. H. Liddell Hart suggests, the *indirect*,[26] "the *Strategicon* of the Emperor Maurice and the *Tactica* of Leo . . . [provided a] structure . . . strong enough to withstand many-sided barbarian pressure, and even the tidal wave of Mohammedan conquest which submerged the Persian Empire."[27]

As masters of the art of war, Byzantine military leaders stressed expertness in the employment of weapons and tactics, exact knowledge of the enemy, psychological preparation for battle, ruses and strategems, and the relationship of war to the political end of saving the empire.[28]

But these are more symptoms than cause of Byzantine military greatness. There are two revealing passages in Sir Charles Oman's classic *The Art of War in the Middle Ages* about the armies of the Greek empire. The first is a summary of the military treatises of the day and concerns the ranks: "Unless the general is incompetent or the surrounding circumstances are unusually adverse, the authors always assume that victory will follow the banner of the empire. The troops can be trusted, like Wellington's Peninsular veterans, 'to go anywhere

and do anything.' "[29] The second portrays the military spirit of certain families who provided the army its officer corps:

> A true military spirit existed among the noble families of the eastern empire; houses like those of Skleros and Phocas of Byrennius, Kerkauas, and Comnenus are found furnishing generation after generation of officers to the national army. *The patrician left luxury and intrigue behind him when he passed through the gates of Constantinople, and became in the field a keen professional soldier.*[30]

Taken together, these pictures of the Byzantine army present the spectacle of a society within a society, a small band dedicated to the military virtues, the art of war, and the defense of an opulent regime. This is the ultimate source of the victories of Byzantine arms and the security of the Byzantine state.

THIS brief study of two regimes should cause us to reflect on our own opulent republic. It seems clear that the defense of the republic and its liberal ethos ultimately will rest on the shoulders of men who must reject opulence and that ethos for the classical virtues. To make the armed forces of the republic the mirror image of that republic means the end of physical security *and* the values that make the American regime unique among the nations of the world.

Our visit to the Roman Republic revealed a republic in which citizen participation reached a level approaching the ideal. Barring unforeseen shocks and blows, it is unlikely that the American regime will ever again enjoy the energy and vigor of such participation. But our voyage to Byzantium uncovered a military establishment that protected its opulent society by rejecting the values of that society. Instead, the Byzantine army chose to retain the values that are always pure gold: fortitude, expertness, and loyalty to duty, honor, and country.

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Notes

1. Guenther Lewy, *America in Vietnam* (New York: Oxford, 1978).
2. Norman Podhoretz, *Why We Were in Vietnam* (New York: Simon and Schuster, 1982).
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4. Carl von Clausewitz, *On War*, Vol. I, translated by Colonel J. J. Graham (New York: Barnes and Noble, 1956), pp. 22-23.
5. Ibid., p. 23.
6. Alexis de Tocqueville. *Democracy in America*, Vol. I, translated by George Lawrence, edited by J. P. Mayer (New York: Doubleday, 1969), p. 157.
7. Raymond Aron, *On War* (New York: Norton, 1968), p. 57.
8. William Manchester. *Goodbye, Darkness* (New York: Dell, 1982).
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10. Edward N. Luttwak, *Grand Strategy of the Roman Empire* (Baltimore: Johns Hopkins, 1976).
11. Montesquieu, *The Greatness of the Romans and Their Decline*, translated by David Lowenthal (Ithaca, New York: Cornell University Press, 1968), p. 33.
12. Ibid., p. 28.
13. Ibid.
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16. George Liska, *Career of Empire: America and Imperial Expansion over Land and Sea* (Baltimore: Johns Hopkins, 1978), p. 8.
17. Ibid.
18. Ibid., p. 110.
19. Nicholo Machiavelli, *The Discourses*, in *The Prince and The Discourses* (New York: Modern Library, 1951), p. 486.
20. Montesquieu, p. 45.
21. R. Ernest Dupuy and Trevor N. Dupuy, *The Encyclopedia of Military History: From 3500 B.C. to the Present* (New York: Harper and Row, 1970), p. 437.
22. Montesquieu, p. 196.
23. Ibid., p. 203.
24. C. W. Oman, *The Art of War in the Middle Ages* (Ithaca, New York: Cornell University Press, 1953, 1968), p. 31.
25. Ibid., p. 32.
26. B. H. Liddell Hart, *Strategy* (New York: Praeger, 1967), p. 72.
27. Ibid., p. 73.
28. Oman, Chapter III, *passim*.
29. Ibid., p. 32.
30. Ibid., p. 51. Emphasis added.

air force review

ORIGINS OF THE ORDER OF DAEDALIANS

LIEUTENANT GENERAL HAROLD L. GEORGE, USAF (RET)

I HAVE participated in many of the key events in U.S. Air Force history, including the bombing tests that led to the sinking of the German battleship *Ostfriesland* by Army Air Service bombers on 21 July 1921. These tests were designed to settle a debate between the U.S. Navy and the nation's fledgling air arm over whether an aircraft could sink battleships.

The feat was accomplished under the leadership of General William "Billy" Mitchell. To carry out the test, Mitchell created the First Provisional Air Brigade at Langley Field, Virginia. I was one of the 125 officers (most of them first lieutenants) in this unit, which brought together at Langley the entire bombardment strength of the Air Service: two Handley Page and eighteen Martin bombers. Many of us in the brigade had earned our wings during World War I and had flown in that war.

Naturally, we were all elated at our success in sinking the *Ostfriesland*. So was General Mitchell; and before leaving for Washington the next day, he congratulated us for the wonderful job we had done and stated that he was proud of us.

Then he said we must follow the example of the officers of the Continental Army who (six years after they had defeated General Cornwallis at Yorktown) assembled in New York and created the Society of the Cincinnati. This organization took its name from the legendary Roman farmer Cincinnatus who left his plow when Rome was in danger, armed himself, and fought bravely in defense of his country until Rome defeated her enemy; then he returned to his plow. The Society of the Cincinnati elected General George Washington as its first president. Today, the Society of the Cincinnati is the most exclusive military organization in our country. General Mitchell said that we who were the first Americans to fly our country's airplanes in time of war should create a similar organization that would cause our achievements to be remembered forever.

During the next week, we all returned to our various stations. We tried to establish a system of communications but doing so was difficult. We exchanged letters, but there was no location to serve as a focal point about which an organization might coalesce. Then, in 1931, the Air Corps Tactical School was moved from Langley to Maxwell Field, Alabama, and the number of students in the school was increased significantly. Many of the students who passed through the school during the 1930s had been commissioned pilots during World War I.

In the fall of 1933, eleven of us World War I veterans organized an ad hoc committee at Maxwell and pledged that we would draw up a constitution and establish a framework for the kind of organization we had been dreaming of since Billy Mitchell had mentioned the Society of the Cincinnati in 1921. This ad hoc committee held eleven meetings in my quarters because I was the senior instructor in air tactics and strategy, while the other ten were students.

One of our problems was to select a suitable name. One member of the committee had an uncle who was an instructor of history at a large eastern college. He called him via phone and told him of our efforts to select a name for our organization. We thought that somewhere in history there would be a legend about flying that would suggest an appropriate name. His uncle considered the matter a challenge and said that he would discuss it with his colleagues. A week later he called back and described the ancient Greek legend of Daedalus who supposedly was the first man to fly. He and his colleagues suggested the "Order of Daedalians." The name satisfied the ad hoc committee completely. In the meantime, we had drafted the preamble and almost completed the constitution for the organization.

There was no problem in determining the basic requirement for membership. It was "those officers who first flew their country's airplanes in time of war." However, when had World War I ended? With the armistice of 11 November 1918? With the signing of the peace treaty? Or with the ratification of the treaty by the Senate?

There was only one date when World War I ended insofar as the ad hoc committee was concerned, and that was when the shooting ceased—the eleventh hour of the eleventh day of the eleventh month in 1918. Four years had elapsed between the armistice and the ratification of the peace treaty by the U.S. Senate. During those four years, many officers had transferred into the Air Service from other branches of the Army. And many ground officers who had been assigned to the Air Service during the war were given pilot training after the armistice. None of these officers had flown their country's airplanes in time of war. After much discussion, the armistice date was accepted as part of the criteria for membership in the organization we were creating.

Thus, the ad hoc committee unanimously agreed on the name, the Order of Daedalians; that the war had ended on Armistice Day, 1918; and that eligibility for membership required a rating of heavier-than-air pilot and a commission in the regular Army not later than 11 November 1918. Having decided on these precepts, the ad hoc committee voted to invite all

The thirty-year military career of Lieutenant General Harold George spanned both World Wars I and II. Between the wars, as an Army Air Corps captain, he helped organize the Order of Daedalians and served as its first commander.

officers at Maxwell Field who met the eligibility requirements to gather in the forum of the Air Corps Tactical School to finalize plans for an Order of Daedalians.

The meeting took place at 7:00 in the evening on 26 March 1934. Thirty-five officers were present, including the ad hoc committee members. As the chairman of the ad hoc committee and the Director of the Department of Tactics and Strategy, I chaired the meeting.

I began by reviewing the eleven meetings that had been held at my quarters. I also recalled for them the sinking of the *Ostfriesland* and told of General Mitchell's strong recommendation that we create an organization of fliers patterned after the Society of the Cincinnati. Then I told them how we had chosen the name "Order of Daedalians" and most particularly what we had decided with regard to the end of World War I.

I went over everything in detail so that all thirty-five of us present would understand what we were trying to do. I then said: "If anyone here in this room does not wish to

become a Daedalian, he is privileged to leave." I waited a full minute but no one left.

Then Lieutenant Roland Birnn, the secretary of the ad hoc committee, said: "Captain George, hold up your right hand." He then had me recite the promise of a Daedalian. Then I asked the remaining thirty-four officers to stand and raise their right hand, and I administered the promise of a Daedalian to them en masse. This ceremony was followed by the election of officers. They were: Captain Harold L. George (Wing Commander), Captain Odas Moon (Vice Wing Commander), Captain Charles Y. Banfill (Secretary), and Captain Charles T. Skow (Treasurer).

Thus, the Order of Daedalians was formally organized at that meeting at Maxwell Field in the spring of 1934. It had been thirteen years since General Mitchell had earnestly recommended that we follow the example of the officers of the Continental Army and organize a society of those officers who "first flew their country's airplanes in time of war." The criteria established for membership made the Daedalians a very exclusive organization, for at the time of its creation there were only 346 heavier-than-air pilots who had received their pilot rating not later than the Armistice of 1918. Two years after the founding of the order, all except two of these pilots had become members.

That was the situation until after the end of World War II when General Ira C. Eaker, General Claude A. Duncan, and I were named to make recommendations concerning changes in the constitution that would prevent the order from becoming a last-member organization. We recommended that eligibility for membership be changed so as to open the Daedalian society to anyone with a commission in any of the military forces of the United States who held a rating of heavier-than-air pilot. Further, membership was opened to those officers who had received their commissions and pilot ratings before the World War I armistice but who had never become officers in the regular Army.

While these new membership criteria modified the original concept of the order, they made possible an increase in the membership from less than 400 to its present size of 14,000. Thus we now have a national fraternity of commissioned military pilots.

Laguna Hills, California

This memoir is based on my own recollection, information obtained from the Report of Chief of Air Service for 1921, certain documents and other reports relating to the bombing exercises furnished by the Chief of Staff, USAF, and the minutes of the Order of Daedalians.

H.L.G.

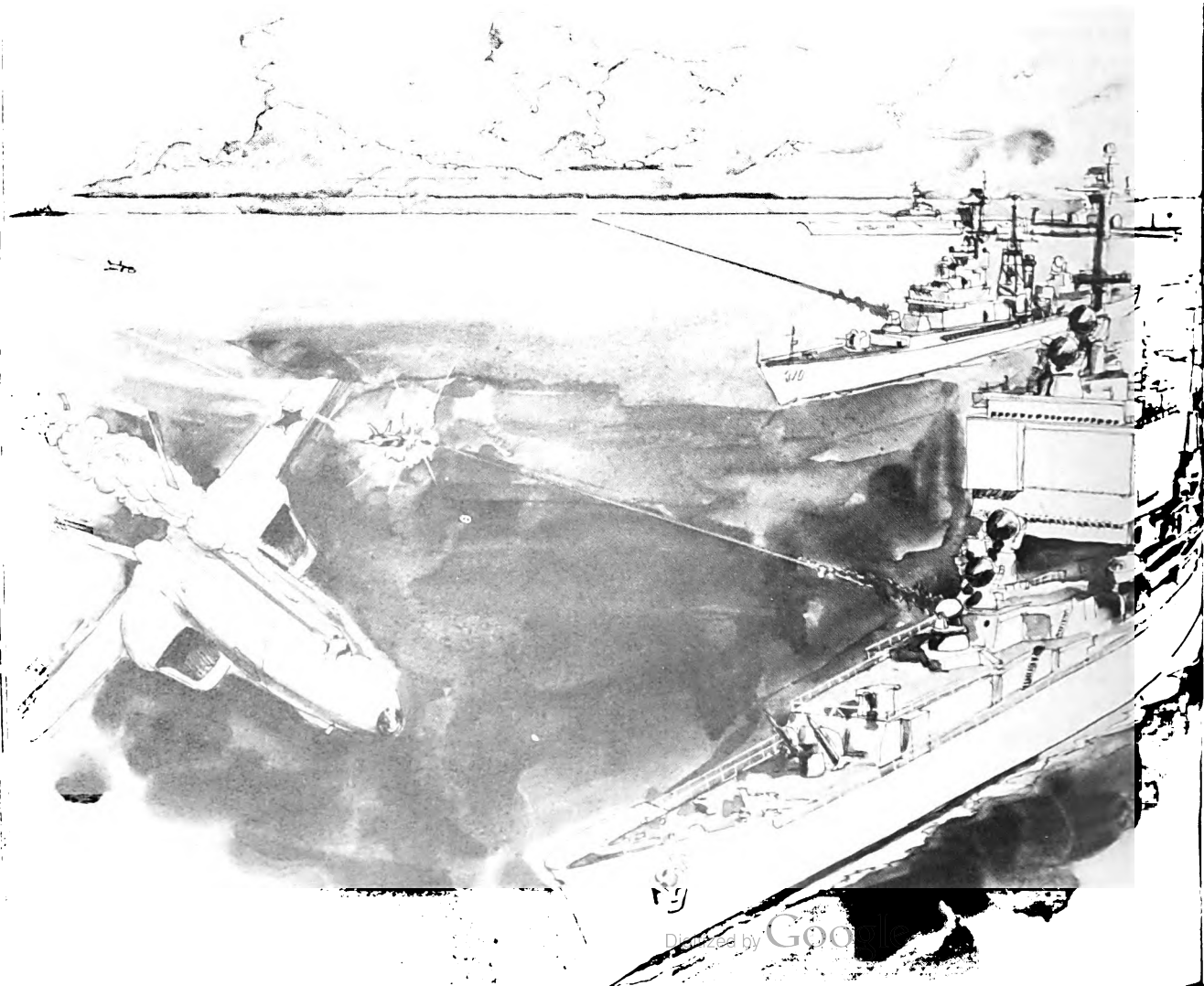
science and technology perspectives

INTRODUCING THE PARTICLE-BEAM WEAPON

DR. RICHARD M. ROBERDS

It is not that the generals and admirals are incompetent, but that the task has passed beyond their competence. Their limitations are due not to a congenital stupidity—as a disillusioned public is so apt to assume—but to the growth of science.

Captain B. H. Liddell Hart, speaking on weapon-development decisions, 1935



CONSIDERABLE debate has been stirred by President Reagan's recent suggestion that the United States embark on a program that would use advanced-technology weaponry to produce an effective defense against Soviet ICBMs. On the one hand, critics argue that the idea of a defensive system that would neutralize the ICBM threat is naïve and, at best, would require large expenditures in the development of a very "high-risk" technology. Furthermore, they suggest, even if such a system could be developed, it would be too costly and would also be vulnerable to simple and cheap countermeasures. On the other hand, others argue that we *must* continue to explore such high-technology options until they have been either proved scientifically unachievable or developed into effective systems. If it were possible to build and effectively deploy such weapons, the payoff in terms of national security would be tremendous. And certainly, if this weaponry is achievable, it must be the United States, not the Soviet Union, that first develops it.

The advanced technology that has raised the possibility of defeating an ICBM attack is referred to collectively as directed-energy weapons, which gain their unprecedented lethality from several fundamental characteristics. Among their more important features are their ability to fire their "bullets" at or near the speed of light (186,000 miles a second), which would effectively freeze even high-speed targets in their motion; their ability to redirect their fire toward multiple targets very rapidly; their very long range (thousands of kilometers in space); and their ability to transmit lethal doses of energy in seconds or even a fraction of a second. No conventional ammunition is required; only fuel for the power generator is needed.

There are three principal forms of directed-energy weapons: the directed microwave-energy weapon, the high-energy laser, and the particle-beam. Only the last two types have received substantial government support.

Much has been written on the high-energy laser (HEL), and this category of directed-energy weapon appears to be well understood by members of the defense community. Laser weapons have been under active development for twenty years and easily constitute the most advanced of the directed-energy devices.

In contrast, the particle-beam weapon (PBW) has been the "sleeper" among directed-energy weapons until very recently. Enshrouded in secrecy, it began as a project sponsored by the Advanced Research Projects Agency (now called Defense Advanced Research Projects Agency, better known as DARPA) as early as 1958, two years before the first scientific laser demonstration in 1960. Code-named Seesaw, the project was designed to study the possible use of particle beams for ballistic missile defense. Today, while its development lags that of the high-energy laser, the particle-beam weapon is viewed by some military technicians as the follow-on weapon to the laser, because of its higher potential lethality.

The successful development of a particle-beam weapon would require significant technology gains across several difficult areas. But even though the technical understanding to support the full-scale development of a PBW will not be available for several years, the technology issues that pace its development are not difficult to understand. The purpose of this article is to provide a basis for understanding the fundamental technology connected with a particle-beam weapon, with the hope of assisting DOD leaders and other members of the defense community in making sound decisions about the development and possible deployment of PBWs in the days ahead.

What Is a Particle-Beam Weapon?

The characteristic that distinguishes the particle-beam weapon from other directed-energy weapons is the form of energy it propagates. While there are several operating concepts for particle-beam weapons, all such devices generate their destructive power by accel-

erating sufficient quantities of subatomic particles or atoms to velocities near the speed of light and focusing these particles into a very high-energy beam. The total energy within the beam is the aggregate energy of the rapidly moving particles, each particle having kinetic energy due to its own mass and motion.

Currently, the particles being used to form the beam are electrons, protons, or hydrogen atoms. Each of these particles can be illustrated through a schematic of the hydrogen atom, the smallest and simplest of all atoms. (See Figure 1.) The nucleus of the hydrogen atom is a proton, which weighs some 2000 times as much as the electron that orbits the single-proton nucleus. Each proton has an electric charge of a positive one, while each electron carries a charge of a negative one. In the case of hydrogen, the single electron and proton combine to form a neutrally charged atom.

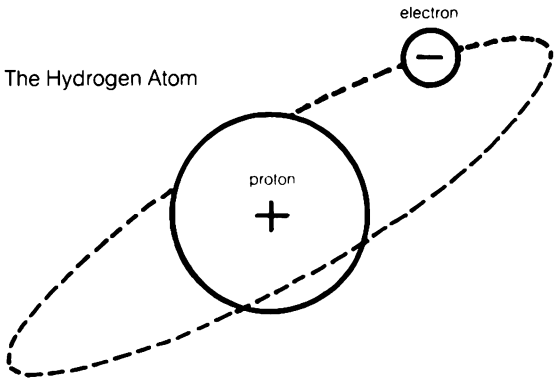


Figure 1. The hydrogen atom consists of a proton or positive charge, orbited by an electron of equal but opposite (negative) charge. Together, they form a neutrally charged atom, which can serve as the "bullet" of a particle-beam weapon in space. Also, the proton and the electron themselves are both viable candidates as the ammunition for an endoatmospheric weapon.

The particle beam itself is analogous to a natural phenomenon with which we are all familiar—the lightning bolt. The analogy is so close that particle-beam pulses are referred to as "bolts." The particles in a lightning bolt are electrons (an electric current) flowing from a negatively charged cloud to a positively charged cloud or section of the earth. While the electric field in lightning that accelerates the electrons is typically 500,000 volts per meter, these electron velocities are still less than that desired in a particle-beam weapon. But the number of electrons (electric current) in the lightning bolt is nominally much greater. In any case, the phenomenon and its destructive results are very much the same.

Neither the proton nor the electron show any conclusive advantage over the other in their use as the appropriate "ammunition" of a PBW. The determining factor of whether to use electrons or protons so far has been simply the specific particle *accelerator* concept planned for use in a beam weapon. Some accelerating schemes call for the acceleration of electrons, while others use protons.

The use of a hydrogen-atom beam, however, is not based on the choice of a particular acceleration scheme. Because it is neutrally charged, the hydrogen atom has been selected specifically as the likely particle to be used in the initial space weapon. Neutral atoms would not be susceptible to bending by the earth's magnetic field as would a charged-particle beam. Neither would the beam tend to spread due to the mutually repulsive force between particles of like-charge in the beam. (In the atmosphere, a charged-particle beam will neutralize itself by colliding with air molecules, effectively creating enough ions of the opposite charge to neutralize the beam.)

The mechanism by which a particle beam destroys a target is a depositing of beam energy into the material of the target, which might be any material object. As the particles of the beam collide with the atoms, protons, and electrons of the material composing the target, the energy of the particles in the beam is passed on to the atoms of the target much like a cue ball breaks apart a racked group of billiard balls. The result is that the target is heated rapidly to very high temperatures—which is exactly the

effect that one observes in an explosion. Thus, a particle beam of sufficient energy can destroy a target by exploding it (although that is not the only means of destruction).

In describing a particle beam, it is conventional to speak of the energy of the beam (in electron-volts), the beam current (in amperes), and the power of the beam (in watts). (See Figure 2.) The specific meaning of these terms as they pertain to a particle beam is derived from the close analogy between a particle beam and an electric current.

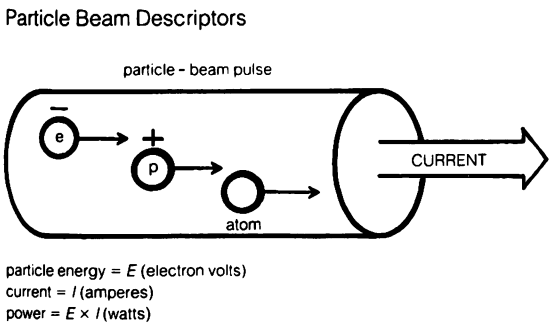


Figure 2. A particle beam consists of a stream of electrons, protons, or neutral atoms flowing with a real or imagined electric current. The particle energies are expressed in electron-volts, while the current is stated in amperes. The product of the two yields the power of the beam in watts.

The electron-volt is a unit of measure for energy. It is the kinetic energy of an electron that has been accelerated by one volt of electric potential. Nominally, all the particles in a beam will have been accelerated to the same velocity, or energy, so it is possible to characterize the energy of a particle beam in terms of the energy of a typical particle of the beam, usually millions of electron-volts (MeV). Hence, a 20-MeV particle beam would be a beam of particles, each with a nominal energy of 20 million electron-volts.

A measure of the number of particles in the beam (beam intensity) may be made from the magnitude of the electric current (amperes) in the beam. To be able to assign a current to the beam, it is necessary to assume that each particle has an amount of electric charge equivalent to an electron (even if it is a neutral atom). This assumption enables an electric current to be ascribed to the particle beam, and an indication of the number of particles in the beam is inferred by the current magnitude expressed in amperes.

The power of a particle beam is the rate at which it transports its energy, which is also an indication of the rate at which it can deposit energy into a target. Again, the analogy with an electric circuit serves us well. The power developed in an electric circuit is the mathematical product of the voltage (E) and the current (I); its unit of measure is the watt. Since the unit of energy for a particle in a beam is the electron-volt (E), and the beam has an electric current (I) ascribed to it, the power of the particle beam in watts is simply the energy in electron-volts multiplied by the beam current in amperes.

Types of Particle-Beam Weapons

There are two broad types of particle-beam weapons: the charged-particle beam weapon and the neutral-particle beam weapon. The charged-particle variety would be developed for use within the atmosphere (endoatmospheric) and has a set of technological characteristics that are entirely different from the neutral-particle beam weapon that would be used in space (exoatmospheric). Primarily, the extremely high power and precisely defined beam characteristics required for a particle beam to propagate through the atmosphere distinguish an endoatmospheric device from a beam weapon designed to operate in space. The development of a power supply and particle accelerator with sufficient power and appropriately shaped pulses for endoatmospheric weapons depends on very "high-risk" technology and is likely years away.[1]

The technological problems associated with exoatmospheric weapons are considerable also, but they are not as difficult as those associated with endoatmospheric weapons. Here, the great-

est challenge is in the area of directing the beam: the weapon must be able to focus its energy to strike a target that may be thousands of kilometers away. There are two aspects to this challenge. First, the weapon must create a high-intensity, neutral beam with negligible divergence as it leaves the accelerator. Second, the weapon must have a system for aiming its beam at the target. This system must be able to detect pointing errors in a beam (which is itself very difficult to detect because of its lack of an electric charge) and, when necessary, redirect a missed "shot" toward the target.

Because of these two different sets of demands, the endo- and exoatmospheric devices represent two different types of weapon systems in appearance and operation. Nevertheless, there are certain fundamental areas of development that are common to both types of PBWs.

Development Areas for PBWs

The realization of an effective particle-beam weapon depends upon technology developments in five areas. Three of these concern hardware developments, while two others are related to advances in the understanding of beam weapon phenomena. (See Figure 3.)

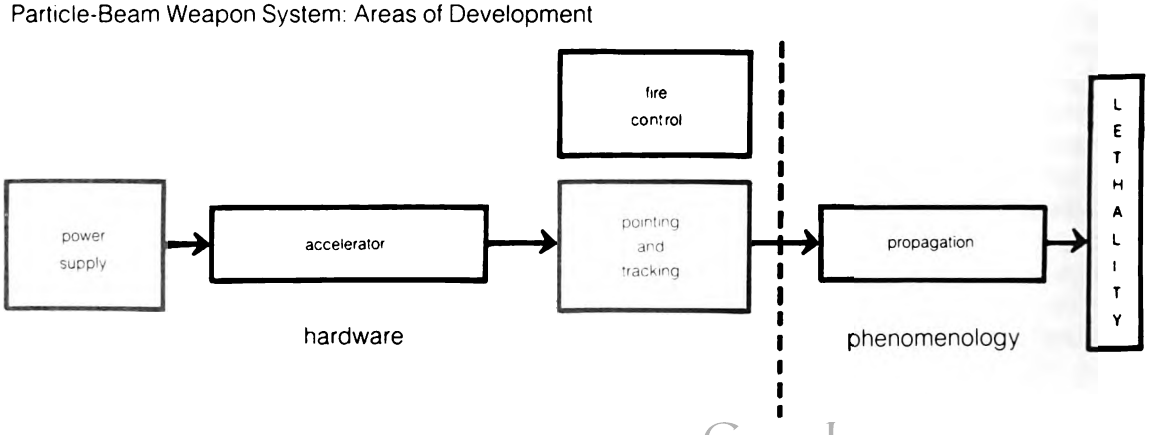
lethality

One of the phenomenological aspects under study is lethality. Lethality refers to the general effectiveness of a weapon in engaging and destroying a target. There is no doubt that a particle beam is capable of destroying a military target. However, a knowledge is needed of the precise effect that a particle beam would have when it impinges upon various-type targets composed of different materials and components. The problem is made more difficult from the fact that the particle beam can vary according to particle type, particle energy, and beam power. To gain such an understanding, beam/target interaction is the subject of continuing technological investigations and studies.

In assessing the unique value of a particle beam as a potential weapon system, it is important to consider six characteristics that would give the beam weapon a high degree of lethality.

Beam velocity. The particles "fired" by a PBW will travel at nearly the speed of light (186,000 miles per second). The advantage of such a high-velocity beam is that computing the aim point for a moving target is greatly simplified. The effect of this extremely high velocity is essentially to fix a target, even if the target attempts evasive action. For example, if

Figure 3. Any particle-beam weapon system may be broken into five major areas. Three of these areas are hardware-related, and two concern the understanding of the associated phenomena. The current DOD particle-beam program aims to develop each area sufficiently to determine the feasibility of a particle-beam weapon.



n were required to shoot at a reentry V) some 50 kilometers distant and t the high speed of 20,000 feet per e RV would travel only about 5 feet time the weapon fired until it was struck by the beam. It is this aspect of PBWs that makes feasible the task of "shooting a bullet with a bullet," as the ABM targeting problem is sometimes characterized.

Beam dwell time. Beam dwell time refers to the time that a beam remains fixed on a target. In an endoatmospheric weapon, the power of the beam would be sufficient to destroy the target instantaneously (in millionths of a second) upon impact, and no beam dwell time would be required. In space, where the required power of the beam is considerably less, some very short beam dwell time may be necessary.[2]

Rapid-aim capability. The particle beam may be redirected very rapidly from one target to another by means of a magnetic field. This field would itself be generated by an electric current. Varying the current would change the magnetic field intensity, which would deflect the charged particles in the desired direction. Within certain limits, no physical motion of the weapon would be required as it engages enemy targets. This capability to very rapidly aim and redirect the beam would enhance significantly the weapon's capability to engage multiple targets.

Beam penetration. The subatomic particles that constitute a beam have great penetrating power. Thus, interaction with the target is not restricted to surface effects, as it is with a laser. When impinging upon a target, a laser creates a blow-off of target material that tends to enshroud the target and shield it from the laser beam. Such beam/target interaction problems would not exist for the particle beam with its penetrating nature. Particle beams would be quite effective in damaging internal components or might even explode a target by transferring a massive amount of energy into it (the catastrophic kill mechanism). Furthermore, there would be no realistic means of defending a target against the beam; target hardening through shielding or materials selection would be impractical or ineffective.

Ancillary kill mechanisms. In addition to the direct kill mechanism of the beam, ancillary kill mechanisms would be available. Within the atmosphere, a secondary cone of radiation, symmetrical about the beam, would be created by the beam particles as they collide with the atoms of the air. This cone would be comprised of practically every type of ionizing radiation known (i.e., x-rays, neutrons, alpha and beta particles, and so on). A tertiary effect from the beam would be the generation of an electromagnetic pulse (EMP) by the electric current pulse of the beam. This EMP would be very disruptive to any electronic components of a target. Thus, even if the main beam missed, the radiation cone and accompanying EMP could kill a target. While the EMP and the radiation cone would not be present in an exoatmospheric use of the weapon, there are other possible options in space that are not available in the atmosphere. Many intriguing possibilities come to mind. For example, using lower levels of beam power, the particle beam could expose photographic film in any satellite carrying photographic equipment, or it could damage sensitive electronic components in a satellite.

All-weather capability. Another advantage of a particle beam over the high-energy laser in an endoatmospheric application would be an all-weather capability. While a laser can be thwarted completely by such weather effects as clouds, fog, and rain, these atmospheric phenomena would have little effect on the penetrating power of a particle-beam weapon.

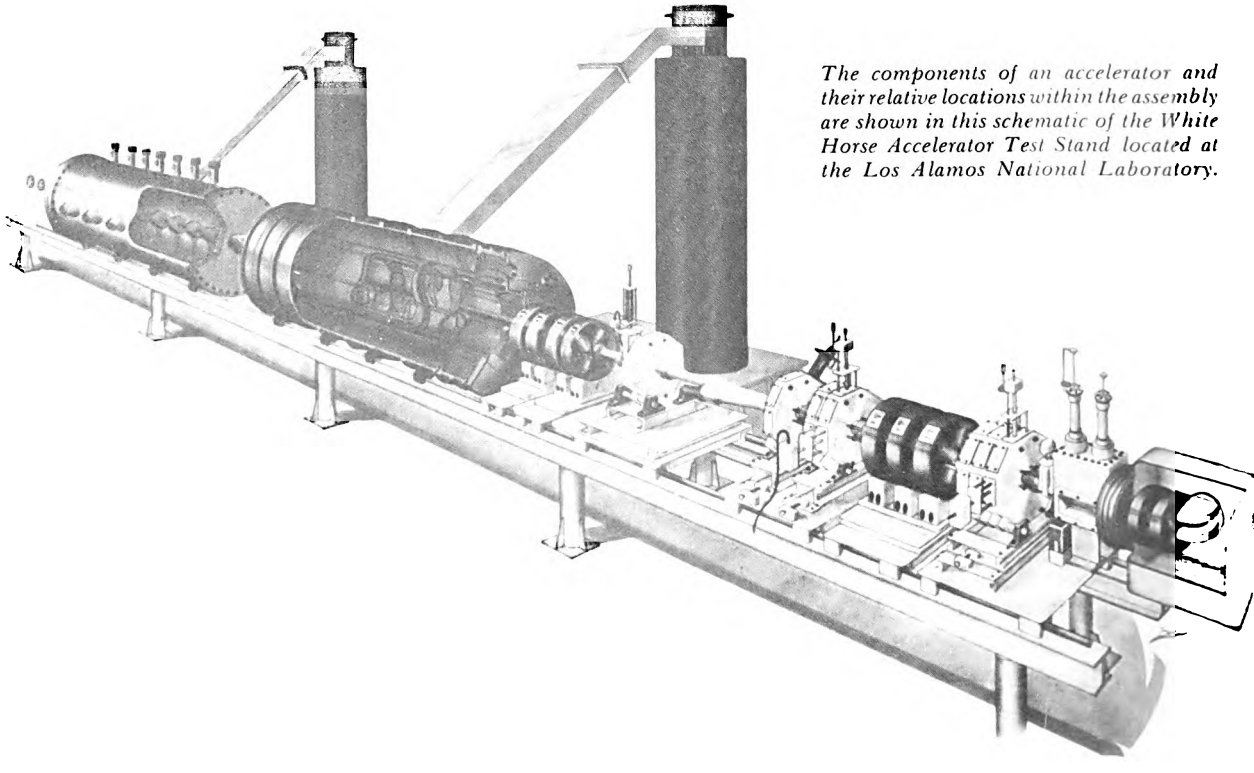
propagation of the beam

The successful development of a PBW depends on the ability of the beam to propagate directly and accurately to the target. As we ponder its similarity to lightning, we might consider the jagged, irregular path of a lightning bolt as it

darts unpredictably through the sky. Such indeterminacy would never do for the particle beam of a weapon, which must have an extremely precise path of propagation as it traverses the kilometers to the enemy vehicle. This aspect, in fact, may be the Achilles' heel of the endoatmospheric weapon. However, the space weapon, which at this time is envisaged to be a neutral stream of hydrogen atoms, would not suffer from the beam instability problems that may possibly plague a beam of charged particles traveling through the air.

Another problem of propagation is possible beam spreading. An increase in beam diameter would result in a decrease of the energy density (intensity) of the beam as it travels toward the target. Over short ranges, a slight beam divergence can be tolerated, but the very long ranges that would be required of the space weapon place a tremendous restriction on the amount of beam divergence that is acceptable.

Use of a neutral beam in space would ensure that the beam would not spread due to mutual repulsion of the beam particles. Divergence would come strictly from that imparted by the accelerator. In the atmosphere, however, even if the beam particles were neutral, air molecules would strip the surrounding electrons quickly from the beam's neutral atoms, turning the beam into a charged-particle beam. The charged particles within the beam would then tend to repel one another, producing undesirable beam divergence. But as the beam propagates through the air, it would also strip electrons from the surrounding air molecules, creating a region of charged particles (ions) intermingling with the beam. The result of this phenomenon is to neutralize the overall charge of the beam, thereby reducing the undesired effect of mutual repulsion among the charged particles in the beam that is a cause of beam spreading. Another force that tends to prevent



The components of an accelerator and their relative locations within the assembly are shown in this schematic of the White Horse Accelerator Test Stand located at the Los Alamos National Laboratory.

beam spreading is a surrounding magnetic field, created by the current of the charged-particle beam. This field wraps itself around the beam and produces a conduit that inhibits beam divergence. (See Figure 4.)

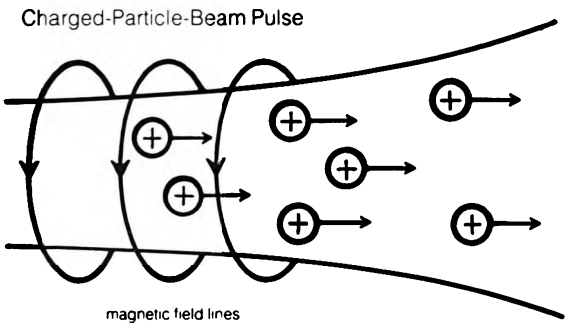


Figure 4. A charged-particle beam will tend naturally to spread apart, due to the mutually repulsive forces between the like-charged particles constituting the beam. The electric current created by the moving charges will generate a surrounding magnetic field, which will tend to bind the beam together. However, unless there is some neutralization of the charge, the mutually repulsive force will always be the stronger force and the beam will blow itself apart.

The propagation of a charged-particle beam through the atmosphere is, in fact, the pacing issue for the endoatmospheric weapon. It has been theoretically calculated that specific threshold values of the beam parameters (beam current, particle energy, beam pulse length, etc.) are required for a beam to propagate through air with reliability. While the values of these parameters are classified, no particle-beam accelerator is currently capable of creating a beam with the required parameters.

Two crucially important experimental programs are exploring the phenomena of atmospheric beam propagation. The first program, under way at the Lawrence Livermore National Laboratory, involves experiments with an accelerator called the Advanced Test Accelerator (ATA), the construction of which was completed in the fall of 1982. The second program, a joint Air Force/Sandia National Laboratories program, similarly is aimed at investigating beam propagation through the use of a radial-pulse-line accelerator (RADLAC). Continuation of the U.S. program to explore the development of an endoatmospheric weapon will depend on a positive prognosis from these two experimental studies of atmospheric beam propagation.

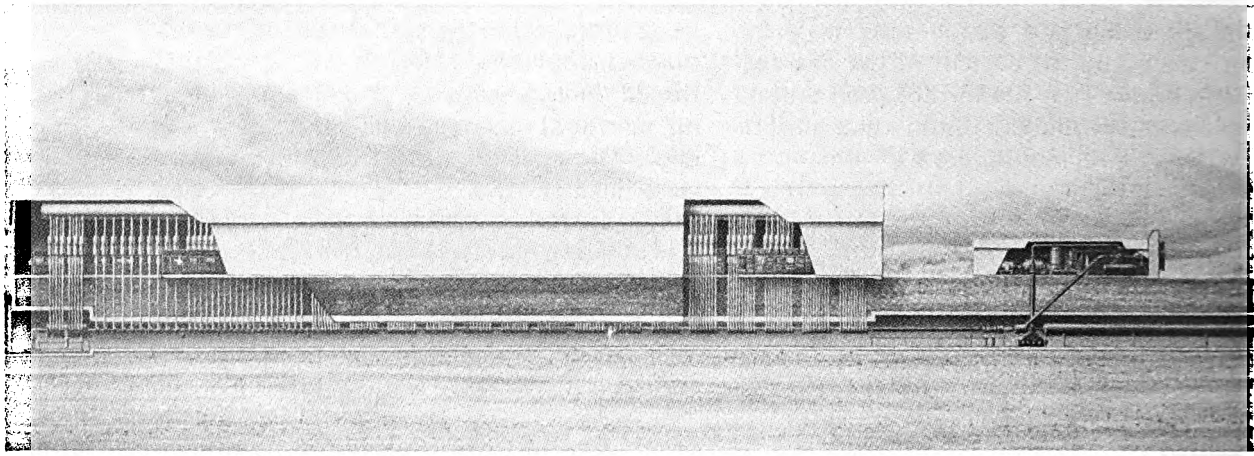
fire-control/pointing-and-tracking technology

The fire-control/pointing-and-tracking system of a PBW must acquire and track the target, point the weapon at the target, fire the beam at the proper time, and assess target damage. If the beam misses the target, the system must sense the error, repoint the weapon, and fire again. Much of the technology for this part of the weapon is not unique to a PBW, and its development has benefited considerably from the HEL weapon program, which has involved study of this problem for several years. Moreover, recent advances in radar technology and electro-optics, combined with projected developments in next-generation computers, portend a heretofore unimagined capability in this area of technology.

This is not to say that serious development problems do not remain in the area of the fire-control system. Many of the pointing and tracking problems will be entirely unique to a particle-beam weapon and cannot be solved by a transfer of technology from the laser program. Nevertheless, none of these problems are such that they will demand exploration of basic issues in physics and the advancement of the state of the art, as will some other aspects of the beam weapon's development.

accelerator technology

The accelerator is the part of the weapon system that creates the high-energy particle beam. It is composed of a source of ions (electrons, protons, or charged atoms), a device for injecting the particles into the accelerating section, and the accelerating section itself. The acceler-



Advanced Test Accelerator (schematic)

ating section of all conventional linear accelerators is made up of a series of segments (modules) that sequentially apply an accelerating electric field to the charged particles. While the voltage in each segment may be relatively low, the repeated application of an accelerating voltage by the large number of modules ultimately produces very high particle energies.

The first subatomic particle accelerators were constructed in the 1930s for scientific investigations in the field of elementary-particle physics. The accelerators used for the first-generation PBW system will be embellished variations of the present-day, linear accelerators (linacs), such as the two-mile-long Stanford Linear Accelerator Center (SLAC), which is a state-of-the-art device capable of producing electrons with an energy of 30 GeV (30 billion electron-volts).

The SLAC represents a class of accelerators known as radio frequency (rf) linear accelerators. The great majority of linacs in operation today are rf linacs. Although such devices can accelerate particles to energies high enough for use as a weapon, they are limited severely in their current-carrying capability and would not be candidates for the endoatmospheric weapon system, since beam power is a product of current and voltage.

The space weapon, however, does not call for the tremendously high beam power required for the endoatmospheric weapon. Its accelerator could be based on the design of a state-of-the-art rf linac.[3] The major demand for a space weapon is to create a high-intensity (high "brightness") beam of neutral atoms with very precise collimation as it exits the accelerator. It is in this area of divergence that the greatest technical problems exist. If the beam were to diverge from a pencil point to only the diameter of a penny after twelve miles of travel, this would represent a divergence of one part in a million (one meter for each 1000 kilometers traveled). A divergence much greater than this would not be acceptable for a space weapon that is to have a range of thousands of kilometers.

A second type of linear accelerator is called the induction linac. The world's first induction linac, the Astron I accelerator, was built at the Lawrence Livermore Laboratory in 1963. It was designed to produce high electron-beam currents that could be used in a magnetic-confinement scheme for controlled thermonuclear fusion. The Advanced Test Accelerator is an induction linac that grew out of this early accelerator technology. The ATA is designed to generate a 50-MeV beam with 10,000 amperes of current in pulses of 50 nanosecond (50 billionths of a second) duration.[4]

The fundamental principle of operation (applying successively high voltage across a series of accelerating segments) is the same for both the rf and induction linacs. However, the mechanism for generating the electric voltage within the segments of the two types of linacs is quite different. Compared to the rf linac, the induction linac does not impart as much instability to the beam when a modest current limit is exceeded. Therefore, of the two types of accelerators, the induction linac is the more likely candidate for an endoatmospheric beam weapon (which will require very high beam currents).

In examining the Air Force charged-particle-beam technology program, we find that its main thrust is the exploration of nonconventional acceleration techniques (neither rf nor induction linacs), with two main purposes in mind. The first is to develop a means of producing a particle beam with parameters closely resembling those that would be required for successful propagation through the atmosphere, so that beam propagation can be studied in depth and propagation theory refined. To date, a RADLAC I accelerator that has been developed has produced a 10-MeV beam of electrons with a 30,000-ampere current.[5] A more powerful RADLAC II is under construction.

The second purpose is to develop an accelerator with higher accelerating fields that would permit the building of a shorter device. The nominal accelerating gradient in conventional accelerators is about 5 to 10 MeV per meter of accelerator length. Thus, to produce a 1-GeV beam, a linear accelerator would need to be 100 to 500 meters in length—far too long and cumbersome, particularly if the device were to be carried aboard an aircraft. The Air Force hopes to build a device eventually that will generate a very powerful particle beam with an accelerator of more reasonable length.

power supply technology

Possibly the most difficult technical problem in developing an atmospheric particle-beam weapon is the development of its electrical power supply. To operate an endoatmospheric PBW requires that a tremendous amount of electrical energy be supplied over very short periods of time. Since power is energy divided by time, large amounts of energy over short spans of time translate into extremely high power levels. Building a power supply to produce high power in short bursts involves a very advanced field of technology known as pulsed-power technology.

Basically, a pulsed-power device can be divided into three component areas: the primary power source that provides electrical energy over the full operating time of the weapon (prime power source), the intermediate storage of the electrical energy as it is generated (energy storage), and the "conditioning" of the electrical power bursts or pulses of suitable intensity and duration (pulse-forming network) to fire the weapon. Each of these three areas represents a technological challenge.

Any electricity-producing device, such as a battery or generator, is a primary power source. The requirement of the particle-beam weapon, however, is for a prime power source that can produce millions to billions of watts of electrical power, yet be as lightweight and compact as possible. A conventional power station could provide the needed power levels, but it would be neither small nor lightweight. There is also a need for mobility in many of the envisaged applications; a power station would not meet this requirement. Some typical prime-power candidates are advanced-technology batteries, turbine-powered generators, or an advanced magnetohydrodynamic (MHD) generator using superconducting circuitry. Whatever the primary source might be, a sizable advance in the present power-generating state of the art will be required, particularly for the endoatmospheric weapon.

Once electrical energy is generated for the weapon, it will likely have to be stored in some fashion. A typical storage method involves charging a series of large capacitors (often

called a capacitor bank). Other more exotic methods are possible, e.g., spinning a huge mechanical flywheel or simply storing the energy in the form of a high-energy explosive that is released in a contained explosion. Actually, there are numerous schemes for storing and releasing the required energy; their advantages and disadvantages depend on their particular application (i.e., the type of accelerator that is used and whether the weapon is endo- or exoatmospheric).

The pulse-forming network would be designed to release the stored energy in the desired form. In the atmospheric weapon, a single shot or "bolt" would most likely be comprised of a very short-duration pulse, repeated thousands of times per second. Hopefully, the prime power source would be able to generate energy at least at the same rate as energy was dispatched. If not, the weapon would be required to remain quiescent while its generator rebuilt a charge for another series of bolts.

THE development of a particle-beam weapon by the United States is a logical follow-on to the current high-energy laser development program. The weapon's potential lethality against high-speed, multiple targets, coupled with its capacity for selective destruction, would make the PBW particularly suitable for the space defense role. While some of the technological and operational issues to be resolved appear formidable at this time, it is far too early to discount the eventual operational effectiveness of such a weapon. Several scientists have argued that the PBW cannot be built or effectively deployed, creating or exacerbating doubts in other individuals. Yet those so concerned might do well to recall that in 1949, Vannevar Bush—a highly respected national leader with a Ph.D. in electrical engineering who had served as head of the U.S. Office of Scientific Research and Development during World War II—argued that technical problems made the development of an effective ICBM virtually impossible without astronomical costs.[6] Nine years later, in 1958, the United States had its first operational ICBM, the Atlas.

The PBW offers a possibility for defending effectively against a launched ICBM, and even a glimmer of hope toward this end is worthy of pursuit. Should the United States terminate its exploration of particle-beam technology, we would be opening the door for the Soviets to proceed at their own pace toward building such a weapon. We can ill afford technological surprise in an area as crucial as beam weapons.

The current pace of the U.S. program in PBW development is both logical and orderly. Funding levels remain relatively low, as DARPA and the three services continue to focus on the pacing technologies that must be understood if such a weapon is to be built. Since the potential payoff of such activity is tremendous, it seems imperative that the United States continue to pursue the development of PBWs at least at the present level of funding.

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Notes

1. The major technological problems of the endoatmospheric weapon are twofold: to understand and demonstrate the propagation of the particle beam through the air and to create an electrical pulsed-power source capable of generating billions of watts of power in extremely short, repetitive pulses.

2. For a different reason, all high-energy lasers (with the exception of the envisioned x-ray laser) require beam dwell time also. A laser needs such time to burn through the surface of the target.

3. The question of how a beam of neutral atoms might be accelerated in a conventional rf linac may arise in the mind of the perceptive reader. A present approach is to attach an extra electron to a hydrogen atom, accelerate the charged atom in conventional fashion, and then strip off the extra electron by passing the beam through a tenuous gas as it exits the accelerator. This stripping causes the beam to spread slightly and must be controlled if the divergence specifications of a space weapon are to be met.

4. B. M. Schwarzschild, "ATA: 10-kA Pulses of 50 MeV Electrons," *Physics Today*, February 1982, p. 20.

5. Private communication, Lieutenant Colonel James H. Head, High-Energy Physics Technology Program Manager, Air Force Weapons Laboratory, 6 February 1984.

6. Vannevar Bush, *Modern Arms and Free Men: A Discussion of the Role of Science in Preserving Democracy* (New York, 1949), pp. 84-87.

To encourage reflection and debate on articles appearing in the *Review*, the Editor welcomes replies offering timely, cogent comment to be presented in this department from time to time. Although content will tend to affect length and format of responses, they should be kept as brief as possible, ideally within a maximum 500 words. The *Review* reserves the prerogative to edit or reject all submissions and to extend to the author the opportunity to respond.

SEEKING A FORUM FOR THE MITCHELLS

MAJOR DENNY R. NELSON

AS I READ the quotations in last issue's "The Review Invites Comments," I was reminded of Lieutenant Colonel Timothy E. Kline's article titled "Where Have All the Mitchells Gone?" in the May-June 1982 *Air University Review* and was prompted to reread it. The article induced sadness—and frustration approaching despair—because Colonel Kline felt it necessary to implore our service to seek self-criticism and visionary thinking from within its own ranks. Regrettably, the informed and constructive dissent that created U.S. air power is rarely tolerated today. Obviously, disagreements can create problems and produce discord; but, as Kline alludes, without the great dissenters ("Billy" Mitchell, "Hap" Arnold, Ira Eaker, "Tooey" Spaatz, and others), there well might not be an independent Air Force today.

What possessed these men to dissent and to adhere to their convictions? And what allowed them to "get away with it"? They were possessed by a vision of air power and its potential, and they were frustrated by those who did not share their vision. Most of all, they were willing to risk their careers for what they believed.

Not all of them "got away with it" free of hassles and ordeals. Mitchell was court-martialed. Only later was he placed on a pedestal as one who was willing to sacrifice his career for what he believed. Fortunately, Arnold, Spaatz, and Eaker survived in military service despite their testimonies on Mitchell's behalf. Others manifested dissent in other ways. Frank Andrews, "Hal" George, and "Possum" Hansell placed their careers on the line as they developed and taught a doctrine contrary to U.S. Army policy at the old Air Corps Tactical School. These men too hold honored positions in our history. Without their visions and their willingness to speak out for what they believed, air power might not have turned the skies of World War II into a medium for the enemy's destruction. At the very least, America's progress in air power would have been greatly delayed.

When Kline asks where all the Mitchells have gone, he is actually querying, "Where are the men who are willing to speak out on controversial issues?" He answers his own question when he indicates that they will not speak out today because they learned the wrong lesson from the Mitchell saga: the lesson of court-

martial or damaged career. Thus, a great many potential "Mitchells" in today's Air Force are silenced by fear of retribution. Others are mute in anticipation of frustration and failure. New or controversial ideas about policy, strategies, tactics, or weapons are rarely welcomed; more often, they are stonewalled or ignored.

Why should a service that reveres leaders who openly defied the establishment of their time stifle such "defiance" (i.e., innovative thinking) today? Have we forgotten that without contrary thought, many of the great advances in military art and science would not have come to fruition? Does one not shiver ever so slightly to think that the armored warfare ideas of Fuller and Liddell Hart, the air power theories of Mitchell and the other Air Corps rebels, and Rickover's concept of a nuclear Navy could all have ended up in the dustbin of history? Has today's Air Force bureaucracy replaced the "villainous" Army of Mitchell's era in seeking to eliminate controversy? I think not—not knowingly, anyway.

But perhaps we have unknowingly allowed ourselves to bank slightly in the direction of unwarranted censorship. And if so, why?

One reason for reluctance to examine ourselves critically and to suggest corrective approaches and innovative actions may be the impact that the media have on our psyche in the contemporary world. Have we fallen into the "Ozzie and Harriet" syndrome, where family relations are mostly peaches and cream? Heated arguments can present untidy scenes to our public. Such scenes might require both explanation and resolution, which require time, a commodity in short supply on senior staffs. Unfortunately, the tyranny of the "in basket" leaves little time for reflection, study, and debate. Hence, an article that could stir up debate tends to prompt publication denial, and the new idea that might demand time for examination and analysis (or even for a sound rebuttal) tends to invite quick rejection.

This criticism is not meant to castigate the system but to serve simply as a reminder. Had controversial ideas, concepts, tactics, doctrine, and policies been swept under the carpet in the past, not only might we not now have a United States Air Force, we might not have a United States to serve. George Washington, Thomas Jefferson, Patrick Henry, Benjamin Franklin, and Samuel Adams were all classified as revolutionaries, radicals, and even traitors by one source or another. Have we forgotten our proud history?

We cannot deny our heritage—we dare not suppress informed debate, lest we place both the Air Force and the nation in jeopardy some day in the future. Restriction on informed public debate should never be exercised lightly or without genuine cause. We must keep in mind that bureaucratic malaise in the Air Force could become the sharpest arrow that our nation's future enemies find in their quiver. To Colonel Kline, I would say that the "Mitchells" are still here—they lack only a free forum for their ideas.

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ANOTHER PERSPECTIVE ON AIR POWER AT THE LOW END OF THE CONFLICT SPECTRUM

Lieutenant Colonel David C. Schlachter

COLONEL Kenneth Alnwick in his article in the March-April 1984 issue pointedly showed the difference between the conceptual and the actual.* He noted a shift in Air Force emphasis away from "classic special operations . . . toward a special operations force with a much more narrow focus" but came to a wrong conclusion when he implied that this "evolution" lessens the Air Force's war-fighting capability within the spectrum of conflict. As I see it, the historical examples used to support the article's premise really demonstrate that "classic" air power applied in support of past special operations was no more or less than it is today (or should be in the future)—i.e., *adaptable* to the needs of the employing commander.

In developing his premise that the future Air Force, unless restructured, might not be able to execute successfully "time-honored" missions in low-level conflict, Colonel Alnwick overlooked a simple but essential point. The Air Force as a military department and service provides forces for assignment to unified commands. It does not field forces or develop capabilities in isolation. Theater commands are responsible for identifying requirements; the respective services subsequently establish the priority and fund-supporting initiatives. In basic terms, the Air Force "gives them what they want."

The Air Force recently developed its first Air Force Special Operations Forces (AFSOF) Master Plan to chart the course for increasing USAF capability to conduct and support future special operations. The plan, unlike some others, is a significant document because it provides the Air Force with a fiscally responsible, time-phased plan to increase and then maintain the quality and quantity of special operations forces through the end of the century.

The concept of operations in the master plan is derived from projected strategies of the unified commands. Simply stated, unified commanders want Air Force combat capability to conduct "quick" or limited engagement military special operations in hostile or denied areas. Most air missions would involve undetected, long-range, low-level penetration into hostile airspace to reach target areas. Therefore, aircraft and aircrews tasked for special operations must have unique capabilities. For survivability and operational security, they must be able to operate at low altitudes under conditions of darkness or adverse weather, while navigating precisely either around or through known air defense threat areas to arrive at obscure drop zones, landing zones, infiltration points, or targets. These, then, are the outside parameters of needed Air Force special operations air support.

The degree of technological sophistication necessary to execute successfully special operations air missions moves the Air Force away from aircraft that are comparable to those in the Third World's air forces. Today's special operations aircraft are typically modified with terrain following/terrain avoidance radar, have defensive electronic countermeasures, have internal/external night vision capability, and are air refuelable. Future Air Force special operations aircraft like the JVX may need even more capable equipment. (Because of the JVX's fixed-wing and vertical-lift properties, the Air Force will no longer need long-range special operations helicopters when it is fielded.) Air Force aircraft available to foreign air forces for

*Colonel Kenneth J. Alnwick, "Perspectives on Air Power at the Low End of the Conflict Spectrum," *Air University Review*, March-April 1984, pp. 17-28.

security assistance are tactical fighters, for the most part, such as the F-5, F-15 or F-16, and unmodified C-130 tactical transports—forces that are not significantly tasked for U.S. special operations support. While the corporate Air Force must maintain a capability to field mobile training teams to support military assistance advisory groups and liaison officers, Air Force special operations forces are not the prime players they were during the 1960s and early 1970s, nor can they be because of the equipment they fly.

The point that Colonel Alnwick missed is that air power in a special operations environment must be developed and refined to provide what it has always provided—flexible strategic and tactical capability against the war-fighting potential of a hostile force in line with unified command strategy. In this context, special operations forces are no different from other Air Force forces. Such combat capability can be focused for support of *either* U.S. unilateral or host-nation combat operations. Colonel Alnwick correctly called the shift away from Vietnam era special operations support, but the shift is part of the evolutionary process to keep air support responsive to the stated military requirements of unified commanders who fight the force—i.e., toward enhanced air support that is not hindered by threat, weather, terrain, target distance, employment location, or payload. Fortunately, the old commando motto "Any Time, Any Place" is just as applicable now as it ever was—maybe more so, and the Air Force must actively keep it that way.

Washington, D.C.

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ON MODERN WARFARE: PARADIGM CRISIS?

Colonel William R. O'Rourke, Jr.

I ENJOYED your editorial about a paradigm crisis (March-April 1984) and would like to offer a few other thoughts on the matter.

To begin with, there is so little new in human phenomena. What appears new is really a better understanding of what has always been. Professor Daniel J. Boorstin, Librarian of Congress and a leading American historian, outlined it beautifully when he pointed out that each new discovery discloses hitherto unimagined realms of ignorance. He goes on to make the point that the great obstacle to progress is not ignorance but the illusion of knowledge.

Our increasing reverence for a world view with the United States as the centroid leads us to unwarranted illusions of knowledge. As a result, we tend to undervalue the strength of lesser enemies, and therefore it is not difficult for them to surprise us. Iran and Lebanon are but recent examples of our myopia.

I would suggest that many of our recent military tragedies have been mainly the result of an irrational atmosphere brought on by heightened tensions. How else can one explain the *Mayaguez* incident? The "enemy" in these encounters with the United States is astonished with our preponderance but encouraged by our lack of direction. That's why our elephants are always stepping on thorns!

We must also not ignore the fact that mass political, ethnic, or spiritual movements breed

fanaticism, fervor, and hatred. As such, they produce irrational people who tend to do irrational (from our point of view) things. It is very difficult to defend against a saboteur who plans to give up life to carry out an attack. In this kind of atmosphere, each enemy soldier becomes a personification of our best precision munition. Our unsophisticated enemy becomes sophisticated by an act of will. This is not a new phenomenon. However, it is one the American paradigm was not previously willing to accept. It must be remembered that all paradigms leave out a great deal in the interest of neatness, so we should not be too critical of this error. After all, when one is contemplating the consequences of nuclear war, it is hard to keep the full continuum of conflict in focus.

Sad to say, I don't see us getting smarter and don't know that we can. There is a certain vulnerability that comes with world power roles. Unfortunately, the more powerless we feel, the more we tend to question our processes. Our best course is to keep the faith and sustain an open attitude of inquiry.

Hickam AFB, Hawaii

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In war the moral is to the material as three is to one.

NAPOLEON BONAPARTE (1769-1821)

History provides the strongest proof of the importance of moral factors and their often incredible effect: this is the noblest and most solid nourishment that the mind of a general may draw from a study of the past.

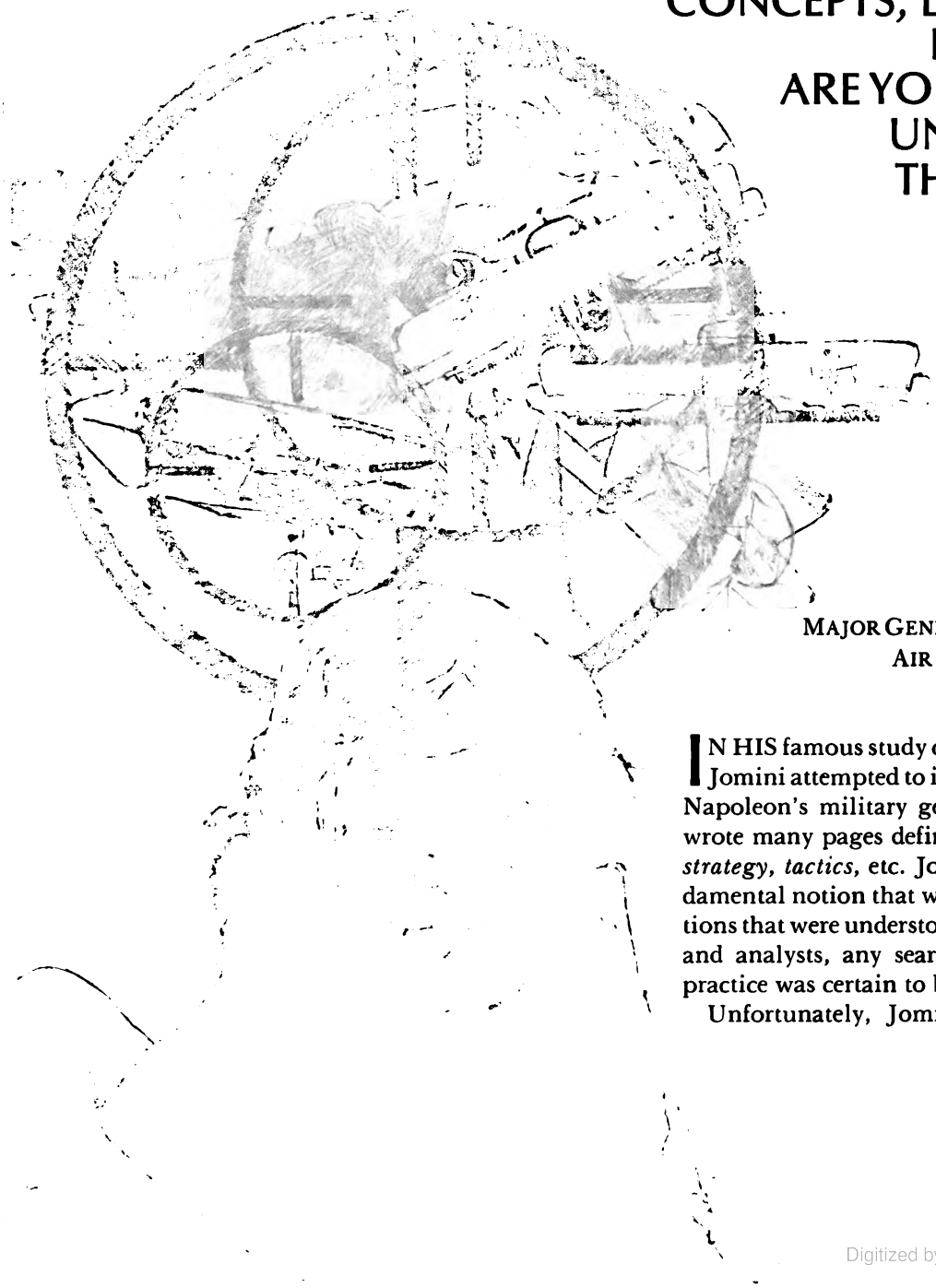
CARL VON CLAUSEWITZ, *On War*, Book III, Chapter 3

The combat value of a unit is determined in great measure by the soldierly qualities of its leaders and members and its will to fight. Outward marks of this combat value will be found in the set up and appearance of the men, in equipment and in the readiness of the unit for action. Superior combat value will offset numerical inferiority. Superior leadership combined with superior combat value of troops constitutes a reliable basis for success in battle.

U.S. Army Field Manual 100-5, 1941 edition, quoted in MARTIN VAN CREVELD, *Fighting Power: German Military Performance, 1914-1945*, p. 35

R books, images, and ideas

CONCEPTS, DOCTRINES, PRINCIPLES: ARE YOU SURE YOU UNDERSTAND THESE TERMS?



MAJOR GENERAL I. B. HOLLEY, JR.
AIR FORCE RESERVE (RET)

IN HIS famous study on the art of war, Baron Jomini attempted to identify the essentials of Napoleon's military genius. In so doing, he wrote many pages defining such key terms as *strategy*, *tactics*, etc. Jomini grasped the fundamental notion that without uniform definitions that were understood clearly by all readers and analysts, any search for sound military practice was certain to be flawed seriously.[1]

Unfortunately, Jomini's good advice has

been ignored all too frequently in recent years by military writers. Thus, some articles today equate doctrine with "the philosophy of war," while others refer to doctrine as "concepts and principles"—as if all three terms were interchangeable. This confusion extends to even such official promulgations as JCS Pub. 1, *Dictionary of U.S. Military Terms for Joint Usage*, which has, at one time or another, identified doctrine as "a combination of principles and policies" or as "fundamental principles."[2] At the very least, such definitions are confusing, if not downright erroneous. Much might be gained from a concerted effort to achieve precision and uniformity in employing key military terminology.

WHAT is a concept? To conceive an idea is to formulate it in words in the mind. In the mind, it is notional; it exists only as a theory, an idea yet unproved. To conceptualize is to devise a mental construct, a picture in the brain that can be expressed in words eventually. Whether it resides in the mind or is revealed verbally, it is speculative, tentative, and usually malleable.

To illustrate the notion of a concept, let us look back to World War I. In the earliest days of that war, pilots from opposing sides mostly ignored one another on chance encounters in the air. Later, they armed their airplanes with machine guns, but soon they discovered that it was very difficult to hit a high-speed target from a moving platform. We can readily visualize one of the more creative individuals among them reflecting on the problem: "If I were to attack from dead astern, the enemy pilot would be far less liable to see me approach and there would be no deflection, no relative motion of the target in my sights, so it ought to be easier to make a kill with fewer shots." This mental image or concept in the reflective pilot's mind is a hypothesis—a conjectural conception to be proved true or false by trial and error.

In contrast to a concept, what is doctrine? Doctrine is what is being taught, i.e., rules or procedures drawn by competent authority. Doctrines are precepts, guides to action, and suggested methods for solving problems or attaining desired results.

Clearly, there is a marked difference between concepts and doctrines. Concepts spring from creative imagination. A perceptive observer draws an inference from one or more observed facts. An individual observes the springiness in a bent bough and infers that the thrust might be capable of projecting a missile; eventually, this initial conception, this tentative idea, leads to the bow and arrow—a major advance in the weaponry of mankind. So, too, the World War I pilot who first thought of attacking from dead astern came up with an innovative idea, a hypothesis. In each instance, the concept or hypothesis had to be tried in practice to confirm or confute the inference drawn by the reflective observer.

Doctrine, on the other hand, is an officially approved teaching based on accumulated experience. Numerous recorded instances have led to a generalization. To generalize is to infer inductively a common pattern from repeated experiences that have produced the same or similar results. In World War I, as more and more pilots tried attacking from above, astern, and out of the sun, they found the probability of making a kill tended to rise rapidly. On the basis of such experiences, reinforced by repetition, those who instructed neophyte pilots generalized this common pattern of attack into informal doctrine. Eventually, this informal doctrine appeared in manuals bearing the official imprimatur as formal doctrine.

Whereas a concept is a hypothesis or an inference which suggests that a proposed pattern of behavior *may possibly* lead to a desired result, a doctrine is a generalization based on sufficient evidence to suggest that a given pattern of behavior *will probably* lead to the desired result. While a concept is tentative and speculative, a doctrine is more assured. Doc-

	Concept	Doctrine	Principle
Definition	Hypothesis; an innovative idea; a tentative conceptualization; a debatable proposal	Precept; an authoritative rule; a method officially taught; a maxim for action	Axiom; an epitome or essence
Colloquial Definition	Trial and error	Tried and true	Self-evident truth
Derivation	By inference from individual observation	By generalization through study of recorded accumulated experience	By abstraction through heuristic analysis of individual instances
End Sought	To propose an innovation or to modify existing practice	To establish procedures for optimum performance	To inform for better understanding (never directive, only illuminating)
Authorship	Any perceptive observer who formulates and publishes his conceptualization	Designated staff officers at the behest of command	Military scholars
Authority	Unofficial; on individual initiative; informal	Official; by the weight of the evidence systematically studied; authenticated by fiat and imprimatur	Validated only by long use and widespread acceptance
Style	Argumentative, persuasive	Prescriptive, didactic, affirmative	Declaratory, expositive
Characteristic Format	Journal article or staff study	Regulation or manual	Word or phrase
Measure of Effectiveness	Extent to which it stimulates thought	Extent to which promulgated doctrine is applied with success in actual practice	Extent to which it facilitates and illuminates the decision-making process

trines are akin to rules, precepts or maxims, or a set of operations or moves reduced to more or less uniform procedures for meeting specific types of problems. Of course, in actual military practice, no hard and fast rules or maxims can be followed slavishly and mechanically in every instance with complete assurance that the anticipated and desired result will ineluctably follow. Because there are so many variables and imponderables in any military situation, doctrines must never be regarded as absolutes. Perhaps the best definition holds doctrine as that mode of approach which repeated experience has shown *usually* works best.

Just as concepts are not to be confused with doctrines, so, too, doctrines must be distinguished from principles. Principles, as Aristotle pointed out long ago, are truths that are evident and general. One can lay down a rule somewhat arbitrarily, based on observed experience: "When attacking, come out of the sun." On the other hand, one cannot lay down a principle arbitrarily; one can only declare it. Rules, and hence doctrines, are within the power of properly constituted military authority; principles are not.

Whereas doctrines are derived by generalization (taking many cases and finding the common pattern), principles are derived by abstraction. Abstraction involves taking a single instance and distilling out its essence. The essence or epitome is that part which typically

represents the whole. For this reason, principles are commonly expressed as axioms. Axioms are universally accepted self-evident truths.

The principles of war, or more accurately, the principles of battle, rest on close study of individual engagements. The process of abstraction has been carried to the point where such single words or brief phrases as *surprise, concentration, initiative,* or *economy of force* epitomize the principles discerned in the mass of detail. With doctrine, the thrust is on "how to do it." With principle, on the other hand, the thrust is to explain the underlying idea.

What, one may ask, is the principle of battle involved in the doctrinal injunction to attack from high astern and out of the sun? From astern, one's approach not only avoids a deflection shot but is less likely to be observed because of the limitations that human anatomy imposes on the craning neck of a pilot scanning the sky for potential enemies. Approaching from out of the sun further reduces the probability of being detected. By approaching from high above, the attacker acquires added acceleration from his dive, giving a margin of advantage by shortening the time of closing. But all of these factors are but means to an end. The essential principle involved is surprise. The attacker seeks to catch his prey unawares. Modern electronic means may alter the doctrine and suggest new patterns of attack, but the principle will remain unchanged. More than one principle could be involved in any single situation, but for purposes of illustration we need consider here only the principle of surprise.

BECAUSE *concepts, doctrines,* and *principles* are very different terms, they should not be used interchangeably. To simplify the task of mastering these words, the ideas explicated are presented in synoptic fashion in the chart.

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Notes

1. Brigadier General J. D. Hittle, USMC, *Jomini and His Summary of the Art of War* (Harrisburg, Pennsylvania: Military Service Publishing Company, 1958), p. 10.
2. Editions of 1949 and 1979.

PROBLEMS OF THE THINKING MAN IN UNIFORM

DR. RUSSELL F. WEIGLEY

APPROACHING the task of reviewing I. B. Holley's fine biography of Brigadier General John M. Palmer, I first contemplated tying my reflections to the general's association with a future Air Force chief of staff. (Thomas D. White, then a lieutenant of infantry, was Palmer's aide for a time in the 1920s.) Later, I considered emphasizing the Air Force credentials of the author of the biography (I. B. Holley, Jr., retired from the Air Force Reserve in 1981 as a major general, in addition to having earned distinction as a military historian at Duke University). The reason for my groping in search of a theme lay in the difficulty of

finding current relevance in General Palmer's main ideas, together with my reluctance to inject even a hint of negative note about the biography of so admirable a soldier as Palmer, written by so able a historian as Holley.†

General Palmer graduated from West Point in 1892, served in China and the Philippines, gradually became involved in the pre-World War I movement to reform the Army, served on General John J. Pershing's staff and as a brigade commander in combat in World War I, and then emerged between the world wars as the leading advocate of universal military training to provide the foundation for a democratic army of citizen-soldiers. He was a principal architect of the National Defense Act of 1920; and recalled from retirement by Chief of Staff General George C. Marshall in World War II, he wrote War Department Circular 347, the basic statement of the 1940s campaign for universal military training. And in all these activities and achievements, Palmer was an admirable soldier in every way—in dedication, energy, concern for the welfare of those who served under him, concern for the improvement of the Army, and loyalty to his country and its ideals.

In his principal role as a reform-minded military intellectual, Palmer well merited Professor Holley's judgment that he was "more profound and more important than Emory Upton, though less visible than Alfred Thayer Mahan." (p. 721) Palmer's military thought began with the proposition that the army of a democracy must be an army imbued with democratic values. With that principle in mind, Palmer became the inveterate military opponent of Emory Upton's contentions that democracy and effective mobilization of military power are incompatible, and that, accordingly, democracy must be diluted in whatever measure is necessary to generate adequate military power. (Unhappily, however profound and important Palmer's basic convictions and principal ideas may have been, his ideas seem attuned and proper for his own time, but not for ours.)

Palmer's method of forming the army of a democracy was to start with universal military training. He emphasized the word *training*, not service. All young men (except those obviously physically or mentally unfit) were to receive military training; but in peacetime, they were not to serve in the military forces, where they might become indoctrinated into the attitudes and values of Uptonian military professionals. Instead, the trainees were to remain civilian citizens. By implication, therefore, as many as possible of those who administered the training were also to be nonprofessionals, i.e., part-time soldiers who remained essentially citizens. In fact, Palmer insisted that advancement to the highest ranks in the military services was to be open to any citizen of appropriate ability who was willing to devote whatever extra time was required for the study and experience necessary for such advancement—always, however, remaining essentially citizens rather than soldiers. If the armed forces, even to their highest ranks, were filled mainly by citizens, Palmer believed, the dividing line between the civilian and the military would blur and fade. Thus, problems of civil-military relations would fade also and the armed forces would reflect the true character of our nation. The army of a democracy should be almost completely an army of citizen-soldiers.

The trouble with this plan, as Palmer's astute citizen-soldier biographer recognizes, is that it did not pay much attention to the growing complexity of twentieth-century military activities and especially of modern, increasingly sophisticated military technology. Palmer

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†**I. B. Holley, Jr., *General John M. Palmer, Citizen Soldiers, and the Army of a Democracy* (Westport, Connecticut, and London, England: Greenwood Press, 1982, $35.00), 726 pages.**

flew in an airplane across enemy lines while visiting the Italian front in World War I, yet his military thought included no attention to developing and maintaining aviators' skills. That neglect might be partially excused if we remember that he was a ground soldier—but he paid no attention to the tank either. All through World War II and all through his post-World War II leadership in advocating universal military training, Palmer's conception of the Army remained that of the World War I Army. He thought in terms of a force composed primarily of infantry that did not change over time. Sadly, his unwillingness and inability to adapt to changes underminded his credibility eventually, despite his admirable personal qualities and his admirable dedication to democratic values.

It was characteristic of General Palmer that although he found the model for his citizen-soldier system in Switzerland, his preoccupation with general principles (rather than practical details) was such that he never visited Switzerland to observe its army firsthand. If he had, said Colonel Henri Le Comte, a Swiss officer who attended West Point with him, he would have been less enthusiastic about his model.

However, the value of Holley's biography does not depend on the practicality of Palmer's ideas. The book is a life-and-times kind of biography, and it offers much about the larger history of the Army during Palmer's long service. Holley's account of Palmer's campaign for a single promotion list throughout the Army, one of his early reform efforts, offers insights into military politics and military conservatism that are still pertinent today.

Another major issue of controversy that Holley explores (beyond Palmer's plan for a citizens' army) is that of the responsibilities of an officer who dissents from the official policies of his military and civilian superiors. How can such an officer appropriately express what his conscience demands while still adhering to the essentials of both military discipline and civilian control? Palmer had to face this latter issue most pointedly during the debates over post-World War I military legislation that led eventually to the Defense Act of 1920. Chief of Staff General Peyton C. March expected his subordinates to adhere rigidly to the plan that he himself was proposing to Congress. Supported by the Secretary of War, March favored an Uptonian scheme for an expansible regular army large enough in peacetime that its cadres could absorb and dominate any wartime expansion through conscription. In March's view, any system of peacetime training must be wholly under the control of the professionals. Having spent at least a decade thinking about the problems of an army in a democracy, Palmer was set against General March's plan for a variety of reasons. These ranged from matters simply of expediency (e.g., Congress was altogether unlikely to approve a peacetime army large enough to form the complete skeleton of a war army) to matters of fundamental principle (i.e., Palmer's conviction that in a democracy the division between citizen and soldier must be erased, and that accordingly, professional soldiers must never monopolize command and control either of citizen trainees or of the nation's military policy).

Awareness that General Palmer's convictions differed from those of General March seeped out of the private circle of Palmer's friends into the halls of Congress. This awareness soon made it inevitable that congressmen dissatisfied with March's Uptonian ideas would call Palmer to testify before Congress on the military issues of the day. When the summons from Congress came, what was Palmer to do? Should he refuse to state his dissent publicly? Should he resign his commission rather than suppress his own convictions (the most frequently recommended course of action when similar issues arose during the Vietnam War)? If he did not resign but nevertheless gave voice to his dissent, what were the implications for military discipline? For civilian control (since the War Department supported March)? For Palmer's

own career? Palmer considered all the aspects of his problem carefully before he decided that his duty lay in public dissent. Biographer Holley considers the difficulties carefully also. Any conscientious officer will profit from pondering Palmer's thoughts and example.

In addition to carrying his convictions to Congress, Palmer decided to campaign for his idea of a democratic army also in writings addressed to both soldiers and the public, particularly through a series of books that remain his principal monument. These books include *Washington, Lincoln, Wilson: Three War Statesmen* (1930), *General Von Steuben* (1937), and most notably, *America in Arms: The Experience of the United States with Military Organization* (1941). In addition, Palmer hoped to complete an autobiography that would be, in large part, yet another call for a citizens' army. The first twenty-four chapters of Holley's biography (relating Palmer's story through his arrival in Paris in 1917 as a member of General Pershing's staff) are essentially Palmer's own work—the completed portion of the autobiography—although Holley had to rework all but the first ten chapters to some extent. When it became apparent that he might not finish his memoirs, Palmer arranged for his literary executor to transfer the manuscript and working materials to an appropriate writer who would complete his life's story. Holley became that writer.

Holley has been skillful in knitting the different parts of the book together. Palmer's chapters retain the clear, direct, if somewhat old-fashioned, prose style that made his polemical works persuasive. Holley's chapters are documented (while Palmer's reminiscences are not) and are also critically analytical, yet somehow they maintain much of the tone of the early chapters, continuing to reflect Palmer's personality much as the general himself had expressed it. If the details of Palmer's efforts to influence legislation sometimes grow tedious in Holley's recounting, the personal notes provide a lighter touch and hasten the narrative along. Thus, we glimpse Palmer as a flesh-and-blood man in his move during retirement to an old New Hampshire farm, his incorrigibly inept struggles to improve his personal finances, his minor and playful evasions of his wife's ban on alcoholic beverages, and other aspects of his life.

THIS BOOK is important to those concerned with the history of the Army and U.S. military policy, yet it is also a pleasure to read. Modern-day disillusionment with the practicability of Palmer's citizen-army ideas should not obscure the book's importance. As Holley concludes: "Gen. John McAuley Palmer's great contribution was a challenge to posterity. However much the particulars might change over time, he knew that one constant would remain: if the nation wished to stay free, it must contrive military institutions suited to the genius of a democratic people." (p. 721)

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JOHNNY REB AND BILLY YANK: CULTURE AND TACTICS IN THE CIVIL WAR

DR. JOHN F. GUILMARTIN
TECHNICAL SERGEANT KLAUS J. SCHIFFLER, USAFR

THE American Civil War has been played and replayed many times during the nearly 120 years since its final battles were fought. Biographies of Civil War generals, accounts of the battles, and analyses of causes and effects would fill many a bookshelf, offering military historians much food for thought.

Nor has scholarly interest in the Civil War waned in recent years. *Attack and Die,* by Grady McWhiney and Perry D. Jamieson, is a recent and noteworthy example.† An innovative thesis, coupled with the authors' remarkably comprehensive research effort, marks *Attack and Die* as an important work worth reading. The thesis—that the tactics of the Confederate armies in the American Civil War were self-defeating, sacrificial in nature, and linked to the South's Celtic cultural heritage—will be (indeed, is being) hotly disputed. Many Southern historians will question the soundness of the authors' cultural arguments, contending instead that the presumed link between Scottish and Irish culture and that of the antebellum South is far from proved and, in fact, of dubious significance. Many military historians, these reviewers included, will take issue with the authors' unflattering assessment of Confederate tactics. Nevertheless, *Attack and Die* is a searching and penetrating historical analyses of military tactics. Regardless of their opinions about the authors' conclusions, thoughtful military historians must concede that in taking a fresh approach to a number of issues that lie at the heart of the study of mili-

†GradyMcWhiney and Perry D. Jamieson, *Attack and Die: Civil War Military Tactics and the Southern Heritage* (Tuscaloosa: University of Alabama Press, 1982, $17.95), 209 pages.

tary history, McWhiney and Jamieson force the rethinking of many standard assumptions.

Attack and Die consists of three interconnected parts. First, and of great value in its own right, is an impressive analysis of Civil War tactical theory and practice—so thorough, in fact, that it is unlikely to be supplanted for many years to come. Making extensive use of letters and other contemporary memoir material as well as published sources, the authors delineate the doctrinal background clearly and explain the relationship between tactics and the weapons and human resources called on to execute them. They argue convincingly for the importance of the Mexican War experience in shaping the tactical ideas of key leaders on both the Northern and Southern sides. Covering contemporary tactical literature exhaustively, McWhiney and Jamieson offer a supporting bibliography for this section that is worth the price of the book in itself.

In the second section, the authors use an extensive, battle-by-battle, statistical analysis to buttress their argument that the South's tactics were self-defeating. Here, their case is less firm. While the exhaustive tabular breakdown of losses by side, commander, and battle is valuable in its own right, the conclusion that the proportionately higher Confederate losses are indicative of serious tactical deficiencies seems debatable at best. McWhiney and Jamieson contend, in sum, that the casualty imbalance was the product of a Confederate predisposition to bayonet charges given the slightest excuse: the book's title is a neat encapsulation of the argument.

While not questioning the innate aggressiveness of most Confederate units, one could argue, with considerable factual support, that the imbalance was primarily an unavoidable consequence of being outnumbered. Since Confederate armies ordinarily fought at a numerical disadvantage, a higher proportion of Confederate troops tended to come into contact with the enemy. This was partly the result of deliberate Southern calculation but was also due to the simple geometry and arithmetic of the thing. Weapons on the two sides were more or less equal, and the outnumbered Southern troops *had* to fight more often and in more places.

Close analysis of the Chancellorsville campaign—as described in John Bigelow's *The Campaign of Chancellorsville* (New Haven, 1910) and Vincent Esposito's *The West Point Atlas of the American Wars* (New York, 1959)—confirms this hypothesis for at least one pivotal battle. Robert E. Lee, whose Army of Northern Virginia was outnumbered more than two to one by Joseph Hooker's Army of the Potomac, was consistently successful in bringing a higher proportion of his force into contact than his Union opponent. As Jackson's counterattack on Hooker's right flank struck home—the crucial point of the battle—no less than 84 percent of Lee's army was in contact, as opposed to only 53 percent of the Union force. The resultant Confederate numerical superiority at the decisive time and place decided the battle and the campaign. Hooker was never able to bring more than some 67 percent of his force into contact, at which time the Confederate figure was 77 percent.

Viewed from this perspective, proportionately higher Confederate losses were an unavoidable by-product of the tactical skill and aggressiveness needed to fight outnumbered and win. At Chancellorsville as elsewhere, the alternative of waiting passively for the Union forces to deploy their full strength was plainly unacceptable. To endure strategically, the South had to be victorious tactically; to triumph tactically against a more numerous and better supplied opponent, the Confederate forces had to be tactically aggressive. Lee's victory at Chancellorsville bought the Confederacy precious time; the fact that he lost 18.7 percent of his force while Hooker lost 11.7 percent tells us little about Confederate generalship or tactics.

The South's manpower pool was eventually bled white, and the persistent aggressiveness of Confederate soldiers no doubt played a role in

the bleeding. However, the South ultimately lost the war due at least as much to logistical inadequacies as to the exhaustion of its fighting manpower.

The final section of *Attack and Die* is an analysis of the presumed cultural determinants of Southern tactics. In many ways, it is the most provocative and least satisfying of the three parts. It is provocative because common sense and the historical record suggest that there is an important kernel of truth in the authors' thesis, which, if fully developed and tested, might tell us something of value about troop morale and motivation under fire. It is unsatisfying because the thesis is not fully developed.

AS REVIEWERS, we are not competent to assess the adequacy of the evidence that McWhiney and Jamieson muster to support their claim of cultural continuity between the Celtic nations of Europe and the Old South. However, it does seem apparent that the mechanics of primary military group morale and motivation in the Confederate forces had a distinctive style. That style, whatever its cultural origins, was quite different from that of the Union forces and, at least in general terms, fits McWhiney and Jamieson's typology.

Indeed, in tracing the difference between Union and Confederate attitudes in this area, one finds a pattern that has repeated itself in other times and places. The Southerner possessed a code of military honor that emphasized individual daring; his battle cry was a high yipping sound; and his military music was light and often humorous—typically a solo tenor voice with musical accompaniment. In contrast, the Northerner's code emphasized steadiness and loyalty to the group; his battle cry was a low grumbling sound that rose, not so much from individual throats, as from whole companies and regiments; and his music was baritone, serious, and choral. The contrast between "The Battle Hymn of the Republic" and "John Brown's Body," on the one hand, and "Dixie" and "The Yellow Rose of Texas," on the other, makes the point. The Confederate soldier drank whiskey as the military beverage of preference; the Union soldier drank beer.

In this, there is an idea that should be pursued. Though the point could be easily pushed too far, it is intriguing to observe similar patterns elsewhere. The whiskey-drinking Scottish Highlander, for instance, fits the former pattern with surprising accuracy; so does the tequila-drinking soldiery of the Mexican Revolution, right down to the humorous, self-deprecating content of the music. German soldiers of whatever period, from the sixteenth-century Landsknecht to the troops of today's Bundeswehr, would seem to fit the latter pattern; so would the Welsh regiments of the British Army and the French Foreign Legion.

Comparative exercises of this sort can produce interesting hypotheses, yet our current knowledge of the culture-specific mechanisms of primary military group cohesion is simply too scant and too disorganized to support them. Further study is indeed warranted. It *is* clear, however, that the mechanisms in question are culture-specific and that they are a crucial determinant of effectiveness in battle. Whether or not we agree with the thesis of *Attack and Die* in whole or in part, we are indebted to McWhiney and Jamieson for focusing our attention on the issues in question.

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Caveat: Realism, Reagan, and Foreign Policy by Alexander M. Haig, Jr. New York: Macmillan, 1984, 367 pages, $17.95.

"As Secretary of State, I was mortally handicapped by lack of access to President Reagan." So concludes Alexander Haig's fascinating chronicle of his eighteen-month quest as Secretary of State to centralize the formulation and execution of Reagan administration foreign policy under his leadership. It is difficult to read this book, or to have met Mr. Haig, and not come away impressed with the man. He was, after all, one of the few foreign policy professionals to populate the top ranks of the Reagan foreign policy and national security policy apparatus. Not a man known for his humility, Haig nevertheless had a well-deserved reputation based on experience and service in foreign affairs and as a military commander. Even his detractors acknowledged Haig's capacity.

The acidic, junior senator from Massachusetts, Paul E. Tsongas, told the retired general at his confirmation hearings: "You will dominate this administration." Haig did not dominate the administration, nor did he get the centralization of foreign policy which, he argues, the President promised him. Haig says that although he had a "compact" with Reagan even before the administration took office, it was sabotaged by Reagan's troika of powerful White House aides (none of whom had foreign policy experience): Edwin Meese, then Counselor to the President; James Baker, White House Chief of Staff; and Baker's deputy and media manipulator, Michael Deaver. It went so far, in Haig's words, that "Ed Meese and his colleagues perceived their rank in the administration as being superior to that of any member of the cabinet."

Of course, there were (and continue to be) serious substantive disagreements on foreign policy within the Reagan administration. In these debates, Haig was one of many competing voices, with President Reagan usually taking a "wait and see" attitude as the debates rolled back and forth. For example, Haig wanted a very hard line on Cuban and Soviet activities in Central America. However, Secretary of Defense Caspar Weinberger was more dovish, wanting first to arrest the overall deterioration in U.S. defenses that he believed had resulted from the Carter years. In regard to U.S. policy toward China, Haig wanted a strategic consensus with the PRC. But Reagan was more sympathetic to Taiwan—a country with less than 2 percent of the mainland's population. Writes Haig: "The President was slow if not unable to see merit in my views . . . . More than any other thing that happened in the eighteen months that I was Secretary of State, the China question convinced me that Reagan's world view was different from my own, and that I could not serve him and my convictions at the same time." Other issues and disagreements are detailed: the AWACs sale to Saudi Arabia, the squabbles within NATO over the trans-Siberian pipeline, and others. However, the most compelling chapter covers the Falklands/Malvinas War and Haig's gruelling shuttle between London and Buenos Aires—a difficult challenge that ultimately would prove politically fatal for Haig. At the onset, Haig predicted to his wife that if his mission failed, his enemies in the administration would make him the scapegoat. He believes that they succeeded.

Finally, despite Mr. Haig's repeated and effusive praise for President Reagan, *Caveat* is a clear indictment of Reagan's decision-making style and his inexperience in foreign affairs. Open to our view is an absorbing account of a President who would not manage his own foreign policy, of aggressive White House aides who filled the vacuum, and of a Secretary of State who lost his struggle to recreate in the Reagan administration something comparable to the disciplined and elitist Nixon-Kissinger foreign policy structure. Haig's final verdict on Reagan is both kind and revealing of his disappointment: "All Presidents learn as they serve; the office itself, unique and mysterious, is the only possible teacher . . . . Like all good Presidents, [Reagan] has learned much, and he has learned it before it is too late to apply the lessons." But, concludes Haig, "especially in the conduct of foreign policy, President Reagan has accepted flawed results. This did not have to be."

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Dead Ends: American Foreign Policy in the New Cold War by Stanley Hoffmann. Cambridge, Massachusetts: Ballinger, 1983, 312 pages, $24.50.

Stanley Hoffmann's latest book on the contemporary international political system and U.S. foreign policy reconfirms his reputation as one of America's leading political analysts. This lucid and well-written collection of essays offers an especially trenchant critique of our foreign policy during the Nixon, Carter, and Reagan administrations (curiously omitting the Ford administration).

Harvard scholar Hoffmann sees a mounting crisis developing from current U.S. foreign policies. He attacks Reaganism as reflecting a simplistic fundamentalism, out of step with the new complexities of international relations. In a world dominated by nationalism, revolution, unlimited Soviet-American competition, and brutal actions by self-interested states. Reagan's stress on military power ignores its limited utility in international politics and discounts America's great economic and technical powers and diplomatic possibilities. Excessive fear of communism nails the United States to the status quo in a changing world.

While acknowledging a relentless Soviet attempt at achieving equality with the United States, Hoffmann also astutely perceives Soviet weaknesses in control of Eastern Europe, lack of permanent control over distant clients, and

serious internal political and economic rigidities. He stresses the Soviets' fear of encirclement and their lack of a master plan for political action. He calls for a complex, mixed strategy of competition in the military arena accompanied by cooperation in arms control, trade, and definition of the rules of the game in various areas of the contest.

Dead Ends does suffer from some serious faults. Consisting of a series of essays on current topics written over a period of four years, the book lacks an integrated core and tends to repeat certain themes incessantly. There is a dated quality to essays that speak of the excessive power of OPEC or wonder what Reagan will do when he becomes President. One yearns for Hoffmann to have used these essays as a basis for an entirely new book.

Also, Hoffmann is stronger on analysis than prescription. His idealist remedies and strong praise for the Carter administration sound like a call for "Carterism" without Carter. His proposals for a redistribution of resources from North to South, elimination of land-based ICBMs, an informal Western directorate, dissociation from repressive regimes, and a mental revolution in U.S. foreign policy thinking sound dated and unrealistic in the current climate of international relations.

Furthermore, his eclectic idealism is matched by obsessions about both Henry Kissinger and Israel (at one point, he even links the two). Why are two whole chapters necessary on the Kissinger era, and more than fifty references to Israel (more than for NATO)? Why this endless berating of Kissinger, who, after all, did have some strong foreign policy accomplishments (SALT I, opening to China, leading Egypt out of the Soviet camp), and Israel, which still remains America's strongest ally in the Middle East?

Overall, though, the virtues of this work far outweigh its idiosyncratic failings. *Dead Ends* is highly recommended.

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The Future of Conflict in the 1980s edited by William J. Taylor, Jr., and Steven A. Maaranen. Lexington, Massachusetts: Lexington Books, 1982, 504 pages, $39.95.

Conflict in this decade will consist of low-intensity, limited struggles in the Third World—all of which will affect U.S. interests, and most of which will involve U.S.-Soviet competition. Or so the editors and the twenty-seven contributors to this rather breathtaking collection of articles conclude. As David Abshire points out in the Foreword, the rationale for *The Future of Conflict* is the assumption that through the recognition of problems facing the United States in this decade, solutions may be formulated. Disregarding the fact that not all policy analysts would agree that such optimism is warranted, such an enterprise is a worthy one that hopefully will stretch the perspectives of policymakers and defense professionals sufficiently so that planning might begin for the forecasts and scenarios the authors provide.

The book grew out of the 1981 Future of Conflict Conference held by Georgetown University's Center for Strategic and International Studies. It consists of four parts, twenty-one chapters, ten related scenarios, and a conclusion by the editors. In Part I, James R. Schlesinger and Robert W. Komer suggest the broad security and organizational challenges that lie ahead for U.S. policymakers. Part II addresses issues likely to exacerbate conflict, and Part III considers various forms of military operations used in low-intensity struggles. These three parts are uneven, with only some of the contributors providing reasonably complete and imaginative assessments. Among the better chapters is Michael Moodie's excellent piece on arms transfers, which not only recognizes the complexity that policymakers face in deciding on arms sales but also offers them several guidelines for determining U.S. policy. Equally worthwhile are Rodney W. Jones's chapter on nuclear-weapons proliferation and Michael C. Ryan's imaginative effort to distill lessons from failed U.S. rescue operations in the 1970s.

In Part IV (clearly the best part of the book), six chapters survey regional trends in the developing world and the prospects for conflict. After M. Thomas Davis reviews developments and forecasts tensions in the Middle East, three separate chapters focus on Asia: Jones considers Southwest Asia, W. Scott Thompson addresses Southeast Asia, and Gerrit W. Gong contemplates Northeast Asia. Robert S. Leiken and Jack Child look at Central America, and Bruce S. Arlinghaus and David S. Albright discuss Africa.

In the final chapter, editors Taylor and Maaranen conclude that small, special-purpose forces are of greater utility to contend with low-intensity conflict than existing general-purpose forces. They also recommend developing a corps of political-military technicians with language skills and area expertise to assist these forces in their missions. The authors propose three strategies for employing such forces: deterrence, preemption, and reaction. Deterrence through propaganda and threats to proxy states is preferred. Preemption includes psychological operations, economic and military assistance, and, finally, commitment of U.S. forces. The least preferred strategy is reaction to proxy- or indigenous-force initiatives.

The scenarios accompanying many of the assessments in Parts III and IV vary widely in breadth and quality. Some are very specific, such as psychological operations used by NATO forces to deceive Soviet forces that have attacked through the Fulda Gap. Others, such as the scenarios covering Caribbean Basin conflicts and the Nordic states during the 1980s, include developments in entire regions over a period of several years. Still others include space mines, magic beams, and bombs that squeak. As much as one might wish to dismiss some of these scenarios as outlandish, developments in the postwar world seem at least as bizarre—particularly if one could look at these developments through the eyes of even a sophisticated American in the 1930s.

The realists who contributed to this book share a conviction that Soviet involvements in the less-developed regions of the world have promoted, exacerbated, and, in some cases, created regional instability. Furthermore, these realists see conflict everywhere, as perhaps well they should. Their pessimism reflects the continued inability of political and policy scientists to forecast the prospects for conflict or cooperation in international affairs. However much

one might wish for a companion piece titled "The Future of Cooperation in the 1980s," forecasting from the extended list of small wars and conflicts in the last two decades would make such a volume a slim one indeed.

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The New High Ground: Strategies and Weapons of Space-Age War by Thomas Karas. New York: Simon and Schuster, 1983, 224 pages, $14.95.

In *The New High Ground,* Dr. Thomas Karas examines existing military efforts in space, describes emerging space systems, and attempts to assess what he sees as an extension of the arms race and military conflict into the medium of space. Specifically, it is his thesis that "although it is indeed time that we recognize the military usefulness of space technology, we need also to understand that space power is not going to provide us with a military superiority that will solve all of our problems—any more than airpower did before it."

Background material is provided in the introduction and the first two chapters. Karas describes the view of numerous Air Force officers about space (prompting him to classify the officers as "spacemen"), explains how the Air Force is organized for its role in space, and assesses the involvement of the aerospace industry in existing and projected space efforts. The first serious shortcoming of the book begins in this section, as Karas presents a Rockwell International proposal for a U.S. national space policy that potentially could give "the United States military superiority over the Soviet Union." Later, Karas attacks this straw man as if it were already U.S. governmental policy.

In the central chapters of the book, Karas nicely brings together most of the space systems used for reconnaissance and surveillance, C^3, navigation, and weather forecasting. The systems descriptions and the explanations of system functions provided present the reader with a comprehensive overview of these important space systems. This section, however, is marred by Karas's unproven assertions that improvements in secure C^3, warning sensors, and other systems make conflict more, rather than less, likely. Gross distortions also are evident. For example, the author's description of 1955 disarmament negotiations (pp. 92-98) is considerably at odds with other generally accepted accounts (see, for comparison, Glenn T. Seaborg, *Kennedy, Khrushchev, and the Test Ban,* pp. 5-6).

In the final chapters, Karas outlines the risks associated with increased military involvement in space and makes persuasive arguments for arms control. But after providing us with good descriptions of U.S. and Soviet antisatellite (ASAT) systems, Karas laments their existence by arguing that "there is not much point in building up our own anti-satellite forces *unless* we are planning to strike first. The reason is that most or all of the earth-based men and equipment we would need to carry out anti-satellite weapon attacks will be lost to enemy nuclear missile attacks in the first fifteen minutes or half hour of the war." So much for his understanding of war and military strategy! By applying his thinking to an earlier time, one would conclude that the British were stupid to build radars and Spitfires because of the widely accepted belief that "the bombers will get through."

Perhaps the greatest strength of the book is that it cautions us about the extent to which the United States relies on new technology for space systems. The issue is important for two reasons. First, all too often military officers function under the illusion that technology and military strategy are simply reverse sides of the same coin—a misconception that is far from the truth. Second, the new space systems would be added to an already vast array of combat supporting systems that have not been tested in actual conflict, and thus combat reliability would remain a matter of speculation. Given their potential war-fighting role, however, one needs to ask at what point we should undertake a comprehensive reassessment of our technological reliance on space systems.

In the epilogue, Karas offers several theses that he believes should form the basis for a national debate on U.S. space policy. His theses raise tremendously important issues that require our serious attention, but it is unfortunate that he did not offer persuasive arguments to support them.

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Waiting For an Army to Die: The Tragedy of Agent Orange by Fred A. Wilcox. New York: Random House, 1983, 222 pages, $6.95 paper.

A growing body of current literature probes the problems faced by Vietnam veterans who were exposed to Agent Orange and other herbicides. Former antiwar activist Fred A. Wilcox presents a compelling and disturbing account of the long-term side effects caused by these chemicals and the lack of adequate government response. Wilcox calls attention to serious problems and raises legitimate concerns, but his scholarship is questionable.

Between 1965 and 1971, the Air Force's Operation Ranch Hand sprayed 12 million gallons of Agent Orange over approximately 4.5 million acres of South Vietnam. An undetermined number of U.S. military personnel were exposed to the chemical. Although the manufacturers assured the government that the herbicide was safe, it was actually highly contaminated with dioxin, an extremely toxic compound that can be stored in the body's fatty tissue. Wilcox charges that many of the men who came into contact with Agent Orange have developed serious physical complications from their exposure. Their symptoms include depression, severe gastritis, acute liver disease, skin rashes, headaches, memory loss, and high rates of bladder and testicular cancer. Their wives experience frequent miscarriages, and many of their children suffer multiple birth defects. Yet the Veterans Administration has denigrated these problems or labeled them psychosomatic, rejected disability claims, and failed (despite congressional mandate) to initiate necessary research.

Wilcox supports his allegations by interviewing: (1) a select group of U.S. and Australian veterans; (2) Victor Yannaconne, the lawyer representing veterans in a class action suit against the suppliers of the controversial herbicides; (3) Dr. Ronald A. Codario, a physician who has worked extensively with veterans exposed to herbicides; and (4) Dr. Wilbur McNulty, an expert on the effects of dioxin on rhesus monkeys. On the surface, *Waiting For an Army to Die* makes a damning argument; but the reader must remember that much of the evidence is anecdotal. Only seldom does Wilcox provide medical substantiation for his conclusions.

The author rejects the preliminary results of an Air Force study of 1269 former Ranch Hand personnel, which found no long-term effects from the exposure. Wilcox argues that the study was invalid because Ranch Hand personnel, no matter how much herbicide they contacted daily, washed thoroughly at the end of the day. Troops in the field, in contrast, were unable to wash during long-term exposure, and often they injested contaminated food and water.

This is a moving book. No one can fail to be touched by the plight of the men Wilcox interviewed. But the exacting scientific research needed to substantiate his claims is just beginning. While his indictment of unresponsive bureaucratic inertia appears to be justified, one must also acknowledge that Congress is beginning to recognize some of the most severe herbicide cases and to order compensation. *Waiting For an Army to Die* is worth reading, but the reader should approach it with caution.

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Crossroads of Modern Warfare by Drew Middleton. Garden City, New York: Doubleday & Company, 1983, 320 pages, $17.95.

Evidently intended for the general reader, *Crossroads of Modern Warfare* provides sixteen essays about such often-discussed battles as Tsushima, Midway, and Dien Bien Phu. Despite the title, Drew Middleton does not really explain what accounts for decisiveness, what constitutes modernity, or even precisely what one means by *crossroads*. Middleton refers to these last as either "turning points . . . which thus altered the course of history" or battles that "introduced or exploited a new technology in warfare and, consequently, changed the nature of war." (p. v) Raising a straw man, he alleges that historians typically "consider a battle decisive because of the number of men involved," citing interest in Gettysburg as an example. Thus, Middleton seems to equate romantic curiosity about a battle and the possible mythic importance of the encounter with a presumption of the battle's specific significance for military art and science. Moreover, in using an alteration in the course of history in general (rather than military history in particular) as the test of "turning points," the author fails to clarify the comparative role of new technology and tactics versus enduring human factors, such as initiative.

In the various chapters, diverse meanings for *decisive* are suggested or implied. The treatment of Jutland suggests that battle losses do not necessarily reveal the decision produced by an engagement and that tactical advantage gained can coexist with strategic defeat. Focused on the dawn of mechanization and motorization in ground warfare, the account of Cambrai reveals that a battle can have significant implications even when it lacks intrinsic importance in determining the outcome of a war. The decisiveness imputed to the Battle of Britain, on the other hand, rests on Hitler's indefinite suspension of plans to invade Britain, while its special distinctiveness lies in being "the first decisive battle of history to be fought in the air." (p. 84) The complexity of decisiveness makes the use of the term a somewhat evasive convenience.

Still, *Crossroads* is not without worth and usefulness. For the general reader, it offers readable, accessible, and potentially thought-provoking stories about some absorbing events. What thoughts are provoked will vary according to the reader's expertise on each subject. Middleton's ambivalent assessment of MacArthur in Korea may trouble the general's idolaters, while his dismissal of "Professor Knowitall from Whatzis Agricultural College" (p. 239) as a person with no authority to discuss the Tet offensive of 1968 slips somewhat below temperate treatment. Some essays remind the reader that the human dimensions of warfare remain crucial to all eras. French underestimation of the Vietminh before Dien Bien Phu, Hitler's overreaction to raids on Berlin during the Battle of Britain, and the tenacity of Stalingrad's defenders exemplify how aspects of character persist in affecting the outcome of battles. And Midway recalls the enduring role of dumb luck. That one or another of these facets may be overemphasized to simplify complex battles does not negate the essays' worth. Although they would not qualify as comprehensive summaries of the events described, they stand useful as introductory encounters.

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NATO Arms Cooperation: A Study in Economics and Politics by Keith Hartley. Winchester, Massachusetts: George Allen & Unwin, 1983, 240 pages, $35.00.

Substantial savings in defense budgets are possible through NATO standardization, but thorough standardization is not very probable, according to Keith Hartley in *NATO Arms Cooperation.*

Hartley is an economist of some standing. He has taught at a number of universities in the United States and the United Kingdom and is author of several other works. This study is divided into two parts: a detailed economic and political analysis of the standardization process, followed by a type of case study on the aerospace dimensions of the larger problem. It is written in an understandable style and amply supported by well-chosen graphs. The economic content of his analysis, of course, is very substantial.

In *NATO Arms Cooperation,* Hartley argues that money savings are theoretically possible through standardization, coproduction, and joint development. Up to a point, this

result could be achieved because of the advantages arising from the economies of scale and comparative advantage through specialization. Some real savings have already been attained through that coproduction and joint development which have proved possible. Still, argues Hartley, the potential benefits have sometimes been exaggerated and a simple economic analysis is not enough. Very often, decisions are made not for economic advantage but rather for hoped-for political outcomes. Although he is an economist, the author does not condemn this practice as an automatic evil. Sometimes those outcomes are legitimate objectives, notwithstanding the inefficiencies entailed.

The main thrust of Hartley's book is to analyze the economic and domestic political dimensions of NATO arms procurement. Hartley writes little about the strategic and tactical advantages that might be gained through greater standardization. In the end, Hartley gives a prescription for policy measures that would be advisable were true free trade in arms possible. However, he readily grants that nationalistic political and economic considerations make such free trade a very unlikely development. Accordingly, he also prescribes a set of policy recommendations that would gain some very limited advantages, given the nationalistic constraints under which the NATO allies operate.

NATO Arms Cooperation is a sensible and understandable book on a timely subject. However, the study is so specialized that only those officers who are involved in procurement work or the logistical side of the NATO alliance should place it on their required reading lists.

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Arms Transfers under Nixon: A Policy Analysis by Lewis Sorley. Lexington: University Press of Kentucky, 1983, 231 pages, $22.00.

It is not easy to think usefully or to write instructively about arms transfer policy, but Lewis Sorley—scholar, soldier, and distinguished civil servant—does so in *Arms Transfers under Nixon.*

The essence of the Nixon (and Ford) administration's arms transfer policy is found in the Middle East. Arms transfers were the principal instrument for achieving a number of U.S. goals; chief among them were to attain Arab-Israeli balance, facilitate negotiations to peace, entice Egypt from the Soviet Union, establish Iran and Saudi Arabia as military powers, maintain access to oil, preempt any Soviet attempt to take advantage of the U.K. withdrawal, and avoid directly assuming the U.K. role. In its entirety, the Nixon arms transfer policy was undeniably effective, Sorley believes, demonstrating clearly that introducing sophisticated arms in large quantities can serve the cause of both peace and justice (paradoxical as that may seem).

While the major part of the book is concerned with the Middle East, Sorley gives proper attention to NATO, Latin America, Asia, Africa, and the Persian Gulf area also. Not afraid to voice judgments, he faults the Nixon administration for not devising means to assist European nations in maintaining shares in the arms export market; greater NATO standardization might have been possible by providing risk-free outlets for European defense material. With respect to the Persian Gulf, and especially Iran, Sorley gives high marks to Nixon; he calls Carter's failure to maintain the stabilizing influence of Iran "an irretrievable blunder of immense proportions" in both strategic and economic terms. (p. 125)

It may be, as Sorley suggests, that the arms transfer phenomenon has peaked because the initial demands of many new states in the 1900s have been satisfied, indigenous arms production facilities have proliferated, higher costs of new systems may discourage trade-ups, and nations' debt service costs continue to grow. At the same time, arms transfers satisfy important political interests of both buyers and sellers. Given the lack of unanimity in favor of restraint, arms transfers will continue to be a potent instrument of diplomacy. The issue for the United States is whether to impose on itself greater unilateral restraint.

Arms Transfers under Nixon offers a worthwhile analysis of U.S. arms transfer policy during the 1970s.

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The Longest War: Israel in Lebanon by Jacobo Timerman. New York: Vintage Books, 1982, 167 pages, $2.95 paper.

Jacobo Timerman arrived in Israel shortly after denouncing in print the repressive and sadistic regime of his native Argentina in the late 1970s. *The Longest War* is his latest indictment, this time of Israel's 1982 incursion into Lebanon and of her alleged loss of innocence (indeed, her moral debasement) that he perceives followed. Labeling the action "Sharon's War," he condemns the general (Ariel Sharon, who was Defense Minister) and his boss, Menachem Begin (who was then Prime Minister), for launching an essentially unprovoked campaign in quest of a self-vindicating *Pax Hebraica.* Unfortunately, like much of the media coverage during the war, Timerman's diatribe is colored by personal bias and replete with misinformation and questionable judgment.

The author asserts that the Palestine Liberation Organization (PLO), hopelessly at a military disadvantage, constituted no viable threat to Israel's security. Israelis, having manufactured pretexts for Operation Peace for Galilee, waged the campaign mercilessly, their general disregard for civilian lives culminating, as he sees it, in the negligence and errors of judgment in the refugee camp massacres. Indeed, Timerman castigates Sharon as the personification of Israeli military élan gone bad and casts a pall over Israel's ethicality, which he regards as the most lamentable casualty of this needless war.

By now the counterarguments to such facile criticisms have been clearly articulated and can be summarized here. Though not formidable in the strictest military sense, the PLO was nonetheless an all-too-effective terrorist organization with an arsenal capable of claiming many more Israeli lives. The organization posed a serious threat to

Israeli security in the long run, not militarily but as a symbolic rallying-point for disenchanted Palestinians, especially for militant Arabs living within Israel's boundaries whose opposition tactics could assist Arafat in accomplishing from within the state what his guns could not achieve from without.

No one, after all, has heard the PLO renounce the clause in their covenant dedicated to the liquidation of Israel, and the Israelis had no cause for apology in launching a strike to eradicate this threat. In retrospect, they should have decisively indicated that this was their primary objective from the outset, rather than the establishment of a cordon sanitaire, but the legitimacy of the eventual campaign cannot be questioned.

Similarly, Israel's moral climate is much clearer and brighter than Timerman's jeremiad would have us believe. Few nations would have long tolerated the life-threatening situation confronting Israel; the demand that Israel act on a higher ethical plane under the circumstances is a fundamentally unfair double standard, particularly in light of the general worldwide silence that greeted years of PLO terrorist activities, including their taking hostage much of Lebanon throughout the late 1970s.

To be sure, the Sabra and Shatila killings were moral reverses for Israel. But the severe recommendations of Israel's official inquiry into the massacres restored her moral course by ensuring that no whitewash would cover up the stains left in Beirut.

Israel is not, as Timerman suggests, becoming the "Prussia of the Middle East." She eliminated a dangerous external threat and in the process created new opportunities for achieving a lasting peace in this troubled region.

Eric J. Vernon
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The Arab-Israeli Wars: War and Peace in the Middle East from the War of Independence through Lebanon by Chaim Herzog. New York: Random House, 1982, 392 pages, $20.00.

Israel's successful 1948 War of Independence elevated differences between Arabs and Jews to the forefront of Middle East issues. The resulting deluge of printed material on the subject made it especially difficult for military historians to understand these events without laboring through a multitude of books. Now, in a single volume, Chaim Herzog successfully presents the military side of the conflict from the creation of the Israeli state through the 1982 invasion of Lebanon.

Herzog's account reads like a *Reader's Digest* compendium of Israel's wars for national survival, even explaining the Yom Kippur War in a more efficient manner than in one of his earlier works on the same subject. Yet, by including cameos of various commanders in the early chapters of *The Arab-Israeli Wars*, Herzog resists the tendency to lapse into a mere account of who did what and when. The author makes no attempt to hide his pro-Israeli sentiments, but neither does he shrink from pointing out Israel's blunders and Arab military and political successes. Such objectivity is conspicuously rare in many, if not most, pro-Israeli publications. Among the successes of Israel's adversaries that Herzog singles out are Arab tenacity in defensive operations, the oil weapon, Egypt's military reforms during the early seventies, and Sadat's success in tying superpower politics more closely to Middle Eastern affairs.

Scholars of Middle East studies will find little that is new in *The Arab-Israeli Wars*, except perhaps the chapter on "Operation Peace for Galilee," one of the first authoritative accounts of "Sharon's War" against the last significant Palestinian threat in the Levant. It is here, however, that Herzog leaves himself most vulnerable to criticism, jeopardizing the impartiality that he could claim for earlier sections of his book. Presented to the publisher before the smoke cleared, this section appears to be nothing more than an attempt to justify the most recent Israeli invasion of Lebanon. We are left not only with the judgment that the invasion was necessary for Israeli security but also with the impression that the expulsion of the PLO opens a new window in the search for a Middle East peace. It is interesting to note that Herzog offers no suggestions on what to do with the displaced guerrilla forces. I don't think he really cares. He feels that ultimately the Palestinian issue will be settled through accommodation with the more moderate leaders in the West Bank and Gaza.

Despite the author's obvious bias, *The Arab-Israeli Wars* will benefit the specialist and the curious alike. For the former, the book will serve both as a quick reference and as a refresher text. For the latter, the military history of the Israelis and the hottest campaigns of the modern Middle East can be at his fingertips in a single volume.

Captain Walter J. Cooner, Jr., USAF
Department of History
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The Autumn of Fury: The Assassination of Sadat by Mohamed Heikal. New York: Random House, 1983, 290 pages, $17.95.

Anwar Sadat, "the peacemaker," died on 6 October 1981 during a ceremony celebrating war. In the West, the reaction was one of dismay, outrage, and great distress. In sharp contrast, in Egypt itself, there was little evidence of grief: forty-three million people went on with the celebration of *Id al-Adha*, the Feast of the Sacrifice, as if nothing had happened. This indifference of Egyptians toward the death of Sadat (i.e., no black banners, shop window portraits of the slain president, or public demonstrations of grief) was in sharp contrast to the emotional outpouring that Egyptians showed at the death of Nasser. Even on the day of Sadat's funeral, the streets of Cairo were unusually empty.

In this devastating account of Sadat, Egypt's influential journalist, Mohamed Heikal, offers his own answer as to why Egyptians seemed so apathetic toward Sadat's assassination. Heikal argues that the public reaction can be explained by perceptions of Sadat's infatuation with himself as a "superstar." By "superstar," Heikal means a politician adept at projecting a flattering public image through the modern mass media: "His measure of success or failure is

not the number of votes cast for him in an election, but the number of times his face is shown on the cover of *Time* or *Newsweek* magazine."

Heikal is hardly an unbiased critic. In 1981, Sadat had jailed him, along with 1500 other dissidents. Heikal is an astute polemicist and an exceedingly knowledgeable observer, however. For seventeen years, he was the editor of *Al Ahram*, Egypt's leading newspaper. A Minister of Information under Nasser, Heikal served also as campaign manager for Sadat in 1970. After breaking with Sadat because of the president's 1977 journey to Jerusalem and subsequent peace treaty with Israel, Heikal wrote such increasingly strident criticism during Sadat's last years that it led to his imprisonment.

Accurately capturing the mood of frustration, despair, and discontent that grips much of the Middle East today, Heikal points to the policies long pursued by governments of that troubled region—policies that seem only to exacerbate this feeling of desperation. At times, however, Heikal exaggerates Sadat's responsibility for Egyptian and Arab problems. Assuredly in the aftermath of the 1973 war, Egypt and the Arab world seemed to have made an auspicious new beginning toward a just and viable reckoning of Palestinian and territorial problems, as well as a start toward economic, social, and political development. These hopes were dashed through a combination of many factors: policy mistakes, gambles, disagreements among the Arabs, superpower intervention and attempts at manipulation, and social upheavals and disparities. Yet above and beyond these factors, Heikal pinpoints the overriding *hubris* of Sadat as the chief cause for the tragic outcome of a decade that had promised so much and delivered so little: "Under Nasser the three circles of which he saw Egypt as the centre—Arab, Islamic, and African—had a reality; Sadat made Egypt the centre of nowhere. Worse than that, he divided Egypt against itself."

Heikal's classic portrayal of Sadat as a man who, step by step, alienated himself from his people, who became intoxicated with an overblown image of himself, and who sowed the seeds of his own destruction, is masterful. For an American public enthralled with the media image of Sadat as a superstatesman, this portrayal of Sadat as a god with feet of clay is a necessary counterweight.

Captain M. Payrow-Olia, USAF
Captain Edna Tennenbaum, USAF
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The War Magician: How Jasper Maskelyne and His Magic Gang Altered the Course of World War II by David Fisher. New York: Coward, McCann & Geoghegan, 1983, 315 pages, $16.95.

Camouflage and deception played a vital role in the conduct of the North African desert campaign in World War II. Both sides disguised armored vehicles, artillery, and supply locations to deceive their opponent regarding actual strengths and locations. It is fitting that the British camouflage effort fell into the deft hands of one of Europe's best known stage magicians, who operated with his "Magic Gang" in a "magic valley" near Cairo.

In prewar Europe, the Maskelyne family name represented several generations of skillful magicians known for their innovation and flawless technical presentation. The Maskelynes are credited with originating several illusions now considered standard fare in a magician's repertoire. At the outbreak of World War II, however, Jasper Maskelyne was determined to turn his magical skills and knowledge of deception against the Axis powers. Even allowing for his age (late thirties), few military people were ready to take him seriously. Those who did had in mind an entertainer's billet rather than a combat role.

A combination of the threat of a German invasion plus Maskelyne's persistence resulted in his commissioning and assignment to a newly formed unit—the Royal Engineers Camouflage Training and Development Center. Maskelyne maintained that many stage magic techniques could be applied successfully to battlefield camouflage and took every opportunity to demonstrate his convictions in his classroom assignments. Many of the industrial and prime target camouflage efforts during the "pretend war" were designed under his supervision.

After graduation, Maskelyne headed a new unit, the Camouflage Experimental Section. Operating from a site on the outskirts of Cairo, dubbed the "magic valley," Maskelyne's unit (referred to as the Magic Gang) set about creating some of the most unique and effective battlefield illusions of the war. Some of the more notable contributions were developing a collapsible, lightweight frame for disguising a tank to look like a truck, and conversely, devising a lightweight tank shell to transform a truck into a tank; "moving" the city and harbor of Alexandria so that at night they appeared to be several miles from their actual location, confusing German bomber crews; hiding the Suez Canal behind a curtain of blinding lights; creating a dummy battleship and several dummy submarines to confuse German intelligence estimates; and developing a protective salve for aircrews to survive the flames of air crashes.

By far the most impressive and successful illusion was the major battle of the desert war at El Alamein (Operation Lightfoot). Maskelyne referred to the British plan as his "Grand Illusion," consisting of the concealment of 150,000 troops, thousands of tanks, artillery, and supplies right in front of the Germans. The British buildup occurred on two fronts simultaneously—one real and one obviously dummy (or so it seemed). At the last minute, the dummy force and real force were switched, with attacks begun on both fronts. German records attest to the effectiveness of the plan; it was three days into the battle before the Germans were sure on which front the actual attack was taking place.

Rather than a sterile history of Maskelyne and his Magic Gang, this book reads like a novel, embellished by characterizations yet retaining a historical perspective. Providing a mix of careful battlefield detail and personal insight into the major characters, *The War Magician* should satisfy either the technical or casual reader's interest in "magical" escape and evasion in a war zone.

Richard G. Naruthoff
Monroeville, Pennsylvania

Rommel's Last Battle: The Desert Fox and the Normandy Campaign by Samuel W. Mitcham, Jr. Briarcliff Manor, New York: Stein and Day, 1983, 212 pages, $18.95.

Having recently completed a book on Rommel's exploits in North Africa, Samuel Mitcham has now turned to Rommel's final campaign, the Normandy operation. In *Rommel's Last Battle,* Mitcham covers all the familiar aspects of the story, from Rommel's inspection and assumption of command of the critical Atlantic Wall sector to his forced suicide after having been linked with the assassination plot against Hitler. Nevertheless, a distorted picture of the great field captain emerges, for the all-seeing, all-knowing (though politically naïve) Rommel that Mitcham presents apparently possesses no blemishes—at least in the military sphere. Not only is he shown as the master tactician, he is always portrayed as the master strategist as well. According to the author, for example, little was done to build up the Atlantic Wall before Rommel arrived in late 1943. (In contrast, other accounts reveal that although Rommel was the driving force in accelerating the 1944 buildup, a great amount of planning and progress had been accomplished before that time.) In addition, Mitcham indicates, Rommel "knew" that the Allied invasion probably would come in Normandy. (However, the war diary of Army Group B, which Rommel commanded, indicates that he did not know; and other sources reveal that the real impetus for strengthening the Normandy area in May came from Hitler and the Armed Forces High Command.) Furthermore, Rommel seems to be everywhere during the fighting, and other commanders, whose troops actually bore the brunt of the Allied air, land, and sea onslaught, are seldom given proper credit.

Mitcham's major problem is that he has used his mainly secondary sources uncritically. Selectively, he has chosen from them what fits his preconceived notions about Rommel and discarded whatever, in his view, does not fit. This method allows him to avoid some of the arguments set forth in his sources. He accepts, for instance, the version of Rommel's then-chief of staff, Hans Speidel, concerning Rommel's increasing disenchantment with Hitler. At the same time, Mitcham includes parts of David Irving's version, even though Speidel's and Irving's interpretations are generally at odds with one another.

These examples of author bias should not convey the idea that Rommel was an ineffective commander. Rather, they may demonstrate that Mitcham's attempt to depict Rommel as "bigger than life" has done the latter a great disservice. Rommel was an outstanding field commander, one of the best the Germans had during World War II. His role in the Normandy campaign deserves a more accurate, balanced, analytical treatment, so that his genuine stature and accomplishments can be recognized.

Dr. Alan F. Wilt
Iowa State University

The Spitfire Story by Alfred Price. London: Jane's, 1982, 256 pages, $29.95.

Spitfire legends abound, and the number of books about Reginald Mitchell's masterpiece are equally numerous. Thus, when author Alfred Price approached Mitchell's son to write something appropriate for this study, the response of Dr. Gordon Mitchell was perhaps understandable: "Oh hell, not another Spitfire saga!" (p. 7)

Since Dr. Mitchell himself recounts this anecdote in the preface, it is obvious that he changed his mind after reading the manuscript. He cites, among other reasons, the book's detail and depth, as well as a good bit of material thought to be lost and now appearing for the first time. The details and depth he alludes to are provided not in combat narratives but in the technical evolution of a remarkable aerial weapon. Readers who long for dramatic scenarios of screaming dives, chattering guns, and gut-wrenching turns will not find them here. Rather, Price has presented the technical origins and evolution of the aircraft itself—the humdrum but essential stuff that gave Spitfire pilots the capability to create all those legends in the first place.

The lineage begins with the Supermarine racers equipped with floats and proceeds to early studies of monoplane fighters that led directly to the Air Ministry's specification F.37 34, the prototype Spitfire. Author Price effectively uses recollections of many Mitchell collaborators, and a telling memoir by the team's aerodynamicist, Beverley Shenstone, quickly dispels hoary tales of the influence of the Schneider Trophy seaplanes. Although Reginald Mitchell learned much about high-speed flight from them, Shenstone emphasized that, "in fact there was not a single component of any significance in the new fighter that bore any close resemblance with its counterpart in a racing seaplane." (p. 20) He also dismisses the story that the Spitfire's elliptically shaped wing and tail surfaces were copied from the Heinkel 70, a trendsetter of the early 1930s.

The author gives due credit to Royal Air Force officers who argued to increase the Spitfire's armament to eight guns in view of modern, metal warplanes with high rates of closure in combat. He also assesses the difficulties in reaching production, since there were few subcontractors (let alone the Supermarine works) capable of the quantity demanded on the eve of the war. After Luftwaffe attacks in 1940, the dispersed production scheme in garages, bus stations, and laundries is a remarkable story. Field modifications, pressurized cockpits, the outstanding service of reconnaissance variants, and the integration of improved engines are all discussed. Postwar marks and variants are summarized also.

The generous format of this volume translates into excellent detail in the carefully chosen photos, drawings, and color plates. The text is formatted in two columns per page, yielding a thorough narrative as well as numerous technical appendixes and comparisons of performance. World War II buffs will find *The Spitfire Story* fascinating; aerospace professionals will find its technical assessments of production, operational models, and other topics instructive.

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Target Ploesti: View from a Bombsight by Leroy W. Newby. Novato, California: Presidio Press, 1983, 253 pages, $15.95.

Between November 1943 and August 1944, Lieutenant Leroy W. Newby participated in fifty missions, mostly as a bombardier, with the Fifteenth Air Force's 460th Bombardment Group. Many of these missions were directed at the Ploesti oil fields in Romania—a vital source of German oil production. Because of Ploesti's importance, it became a major target for American bombers based in Italy and was fiercely and innovatively defended by the Germans.

While *Target Ploesti* offers a fine account of Lieutenant Newby's part in the Ploesti raids, as well as an adequate summary of the offensive and defensive tactics employed by the opposing forces, the book's title is somewhat misleading. The author participated in numerous other missions aimed at important German war production facilities, such as the Wiener-Neustadt aircraft factories in Austria, which he writes about in this book. It was, in fact, on many of these "secondary" missions that Newby experienced the most danger. On his fiftieth and final mission (supposedly a "milk run" to southern France), Newby's B-24 crashed into the sea, and the author was fortunate to escape with his life. His moving account of this experience is certainly one of the highlights of an exciting book.

While *Target Ploesti* offers an engrossing view of World War II air combat, its main value perhaps lies (as the title implies) in offering the reader a "View from a Bombsight." There are countless bomber and fighter pilot reminiscences available, but few worthwhile memoirs had been written by crew members with less glamorous occupations than flying the plane. Newby fills this gap, in part, by carefully explaining the technical complexities of the bombardier's role. He does so in a concise, lucid manner that helps make *Target Ploesti* both a valuable historical work and a fascinating description of men in air combat.

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Escort Carrier: HMS Vindex at War by Kenneth Poolman. North Pomfret, Vermont: David and Charles, 1983, 265 pages, $24.50.

Escort Carrier is a reference work for World War II action buffs thoroughly familiar with Britain's Second World War military jargon. It is a detailed chronicle of the British-built HMS *Vindex*, a ship originally intended as a refrigerated cargo/passenger liner but converted into an escort carrier to protect Britain's merchant shipping. The narrative begins with selection of the ship's name on 12 December 1942 and ends with the scrapping of the vessel on 23 August 1971. Nearly 90 percent of the text proper describes the two years of action in European waters that the HMS *Vindex* saw between its launching on 4 May 1943 and V-E Day on 8 May 1945.

The book is printed on very high-quality paper, and for visual appeal it features nearly 100 black-and-white photographs. Also included are a useful index and a glossary containing less than 200 technical terms, which is distinctly inadequate, omitting hundreds of other technical terms scattered throughout the text.

The account is a detached, even-paced one, almost entirely in the third person. Despite the inevitable anxieties, fears, despairs, excitements, and triumphs surrounding many of the wartime actions recorded in *Escort Carrier*, there are no emotional "ups" or "downs" for the reader. Kenneth Poolman, although recognized as a distinguished writer on naval affairs, piles details on details in seemingly endless succession, with little or no attempt to present or analyze strategy or tactics. A comparison of any two pages of text, selected at random, shows that they sound about the same. The book is useful primarily as a reference for those interested in what happened to the HMS *Vindex*, its crew, and its planes during World War II.

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George S. Brown, General, U.S. Air Force: Destined for Stars by Edgar F. Puryear, Jr. Novato, California: Presidio Press, 1983, 306 pages, $16.95.

One deficient area of military history is that of biographies and autobiographies of American airmen. There are few books on World War II air leaders, and even fewer on those who have served more recently. Edgar Puryear attempts to rectify this situation with a biography of General George S. Brown, who served as Chief of Staff of the Air Force (1973-74) and then as Chairman of the Joint Chiefs of Staff (1974-78).

Puryear, who earlier wrote *Nineteen Stars: A Study in Military Character and Leadership* (1973) and *Stars in Flight: A Study in Air Force Character and Leadership* (1981), certainly has the credentials to write such a book. Yet despite his qualifications and obvious efforts, he fails to write a satisfactory biography. Instead, his book illustrates the problems and difficulties of recording biographies and oral history.

One of the pitfalls of biographies is the tendency to overidentify with the subject. This may explain, for example, why Puryear fails to mention that Brown graduated toward the bottom of his West Point class. As a result, this book appears as nothing more than a 300-page laudatory hymn. The problem of the vehicle is compounded by the data: the author relies almost entirely on interviews, along with some effectiveness reports and speeches. Clearly, oral history has a place in the writing of history, but it is overworked here. Puryear's uncritical use of these interviews and the fact that only two of the many interviews were conducted before Brown's death make the situation worse. Generals speak kindly of other generals most of the time, and one wonders whether anyone would speak ill of the dead, especially a hero who had risen to the top of the U.S. military profession.

There are other weaknesses in the book. Puryear inadequately treats some areas that are critical to Brown's life story and would be interesting as well. For example, the

author mentions two of Brown's setbacks but does not explain either one. The first, Brown's failure to get the position as Commandant of Cadets at the Air Force Academy, lacks comment by the man who made the decision, General Curtis LeMay. The other incident involved Brown's alleged anti- Semitic remarks at Duke University. While Puryear mentions both of these incidents, he does not indicate either their cause or their significance. In addition, I believe that Brown's World War II service deserves more than the nine pages that the author gave it. In view of Brown's spectacular rise to the rank of full colonel at age twenty-six and the impact that combat service must have had on him, more detail is merited. Most of all, the author does not detail his subject's contributions. General Brown certainly was a great success, and the author claims that he "was one of the most outstanding leaders in Air Force history" (p. 284); but how and why are not explained. Specifically, what difference did he make to the Air Force, and what were his lasting contributions?

That is not to say that *George S. Brown, General, U.S. Air Force* lacks value. Puryear does a decent job of relating Brown's story of success. He tells why Brown made it, concentrating on the varied positions that Brown held after World War II. Puryear highlights how well Brown performed his duties and how his abilities and leadership traits enabled him to get the job done and gain advances to the top.

For those seeking the elements of leadership or career advancement, this book will be valuable. However, for most readers, the book's faults will dwarf its virtues. Based almost entirely on interviews, it is nothing more than a narrow narrative, with little or no analysis. The book covers what others thought of Brown and how he operated, but not really what he did. Even the dedicated reader, I think, will be overwhelmed (or worse) by the 300 pages of redundant praise and will be disappointed with what is presented. Both George Brown and the reader deserve better.

Dr. Kenneth P. Werrell
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A General's Life: An Autobiography by General of the Army Omar N. Bradley and Clay Blair. New York: Simon and Schuster, 1983, 752 pages, $19.95.

This autobiography is actually a biography of General Omar N. Bradley written by Clay Blair. Blair's description of the work as Bradley's autobiography is based essentially on his claim that he could read Bradley's mind. "By that time my own mind was so deeply immersed in Bradley's that I *thought* like Bradley . . . I could reconstruct the war virtually in his words." (p. 11) Although Blair's assertion in his Foreword is at best dubious, he proceeded to write an excellent book.

In Chapter 1, Blair relates that Bradley idolized his father. Bradley described his father as a mixture of "frontiersman, sportsman, farmer, and intellectual." (p. 17) John Bradley entered school at age nineteen and two years later became a teacher. He taught Omar a love of mathematics and history, discussed at home such topics as the Sherman Anti-Trust Act, had a passion for baseball, and often took Omar hunting. When Omar Bradley was fifteen year old, his father died. Bradley described this loss as a "shattering blow." (p. 22)

Although Blair does not use the terminology of psychoanalysis, he spends the rest of the book showing how Omar Bradley so strongly identified with his lost father that during various periods in his life he became a teacher, baseball player, hunter, and intellectual (an intellectual in its best sense—a person who constantly learns for the enjoyment of learning).

As a young man, Omar Bradley played baseball both in high school and at West Point on the varsity team. After World War I, in which he tried unsuccessfully to get European duty, he became a mathematics instructor at West Point. Later he became an instructor at Fort Benning, Georgia, and still later, in 1934, a tactics teacher at West Point. He was a hunter for most of his life. Like his father, Bradley spent a lifetime learning new tasks and enjoying these endeavors.

When Bradley began the campaign in North Africa in 1942 as a tactician, his grasp of strategy was weak. For example, he then supported General Marshall's contention that American forces should have been committed to an early invasion of France and that the North African invasion was an unfortunate diversion. By 1943, he had gained the strategic insight to realize that American soldiers had been too "green" in 1942 to invade fortress Europe. By December 1944, he had mastered strategy to the extent that he could not only criticize General Montgomery's plans with forcefulness and clarity but also present his own strategic alternative.

After World War II, Bradley headed the Veterans Administration. He was able to learn the intricacies of this sprawling agency and to develop veterans' programs significantly. Under his leadership, the GI education program and loans were instituted, VA hospitals were upgraded, and the entire system was decentralized to reduce drastically the mammoth confusion characteristic of the VA after the war.

In 1948, General Bradley became Army Chief of Staff. Here, like his father, he was on a frontier, a frontier of military creativity. In this position, he helped establish NATO and its various levels of command. He also participated in the formulation of the first U.S. nuclear strategy—that of massive retaliation. By the time he became Chairman of the Joint Chiefs in August 1949, he had learned to think in terms of grand strategy. Consequently, he resisted bitterly MacArthur's attempts to expand the war in Korea, consistently stressing to Congress the necessity of sending American forces to Europe (rather than Korea) to meet a potential Soviet attack. Whereas MacArthur spoke out as a theater commander, Bradley was able to see the whole of U.S. interests.

Blair has shown General Bradley to be a "chronic learner," a man who constantly grew intellectually as he moved to positions of increased responsibility. Both General Bradley and his father were lifelong learners, frontiersmen, baseball enthusiasts, and hunters, Edgar F. Puryear, Jr., in *Nineteen Stars* (1981), quoted Bradley as saying

that he had remained in the armed forces because ". . . I liked to teach . . . I liked the outdoors . . . There was always something to learn."

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Excess Profits: The Rise of United Technologies by Ronald Fernandez. Reading, Massachusetts: Addison-Wesley, 1983, 320 pages, $16.95.

Any company that is a major contractor to the U.S. defense establishment is subject to analysis and scrutiny. The late President Dwight D. Eisenhower brought forth this fact when he voiced concern about the "military-industrial complex." *Excess Profits,* by Ronald Fernandez, puts under scrutiny United Technologies Corporation, whose subsidiaries include Pratt & Whitney Aircraft and Sikorsky Aircraft, among others.

Admittedly, Fernandez's views are colored somewhat by the premise presented in the title—excess profits. But even with this shortcoming, what emerges is a fascinating look at one of the U.S.'s premier defense contractors and an account of commercial and military aviation as a bonus.

United Technologies has had a long history of controversy, dating back to its beginnings as Pratt & Whitney Aircraft, maker of the engines for Boeing Airplane Company. The original company, founded in 1865 to manufacture weapons, continued its armament business until it came under the control of Dr. George J. Mead, Colonel Edward A. Deeds, and Frederick B. Rentschler. Mead, whose primary business was the Mead Paper Company of Dayton, Ohio, had invented an aircraft engine that needed a factory to produce it. Colonel Edward A. Deeds had gone from the National Cash Register Company (NCR) in Dayton to become aircraft procurement officer during World War I. He later served as board chairman of NCR, and he had substantial stockholdings in General Motors Corporation. To this duo, the Hartford, Connecticut-based Pratt & Whitney firm was ideal because of its large pool of machine-tool laborers. They bought the company and brought in Rentschler to run it.

In time, United Technologies was to own United Airlines, Boeing Aircraft Company, Boeing Air Transport Company, Boeing Airplane Company, Vought-Sikorsky (merger of Chance Vought and Sikorsky Aviation), and Northrop Aircraft Company, before being forced by public pressure and congressional threats to divest. Much of this pressure developed not so much out of concern about the company's size but, as Fernandez reveals, because of problems with government contracts—much like more recent controversies.

The most significant recent controversy centers on Pratt & Whitney's F-100 engines for the U.S. Air Force's F-15 and F-16 aircraft. One of Fernandez's premises is that the F-100 engine (on which at least $500 million in public funds have been spent to correct "a design deficiency," while General Electric's F-110 engine offered greater thrust and better all-around capabilities) is only one example of United Technologies' past habit of prevailing through the political and bureaucratic process.

Excess Profits is not wholly critical of United Technologies, however, for, indeed, this formidable company is essential to our national security. Perhaps if the firm's officials had permitted cooperation with the book project, more of the company's perspective could have been presented. This point should not be lost among defense contractors, who must learn to give their "side" in such cases or suffer the possibly adverse judgment of the public.

Frederick M. Finney
Dayton, Ohio

AWARD

The Air University Review Awards Committee has selected "The Nuclear Weapons Debate and American Society: A Review of Recent Literature," by David MacIsaac, Senior Research Fellow, Center for Aerospace Doctrine, Research, and Education, Air University, as the outstanding article in the May-June 1984 issue of the *Review.*

the contributors

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Roger A. Beaumont (B.S., M.S., University of Wisconsin; Ph.D., Kansas State University) is a Professor of History at Texas A&M University. Formerly Associate Professor of Organization Science, University of Wisconsin-Milwaukee, and Associate Director of the Center for Advanced Study in Organization Science, he is author of *Military Elites and Sword of the Raj: The British Army in India, 1747-1947* and coeditor of *War in the Next Decade.* Dr. Beaumont's articles have appeared in numerous publications, including the *Review.*

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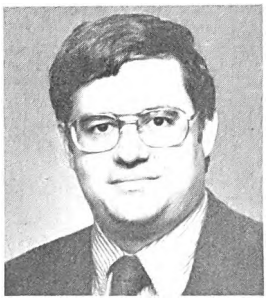

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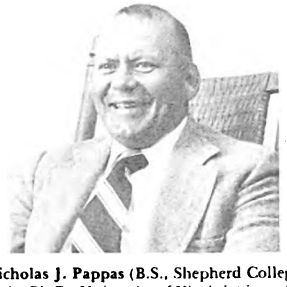

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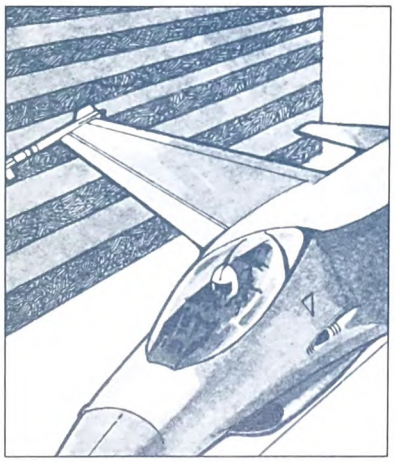
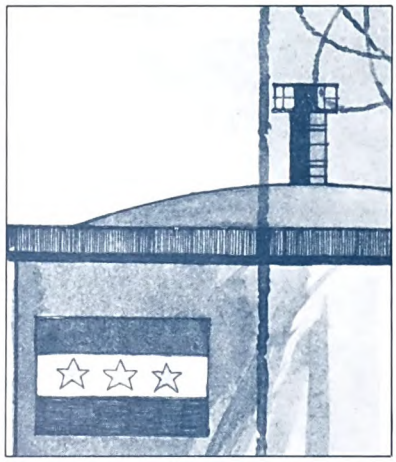
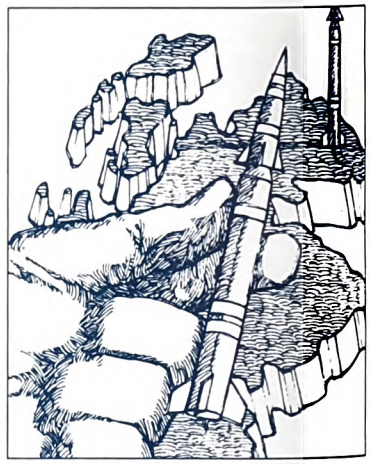


If the United States stands for peace, why must it build new missiles and bombers?—*page 26*



A brilliant tactical success of 1981 may prove troublesome in Israel's future.—*page 35*



Will our search for war-fighting deterrence hurt our allies more than our opponents?—*page 69*

Attention

Since modern warfare is continuously changing, Air Force leaders must be constantly alert for new ideas that might be the key to the successful application of aerospace power in the future. The *Air University Review* is the professional journal of the United States Air Force and is designed to serve as an open forum for exploratory discussion of professional issues and the presentation of new ideas. As an open forum, the *Review* aims to present new ideas and stimulate innovative thinking on military doctrine, strategy, tactics, professionalism, and related national defense matters. The views and opinions expressed or implied in this journal are those of the individual authors and are not to be construed as carrying the official sanction of the Department of Defense, the Air Force, Air University, or other agencies and departments of the U.S. government. Thoughtful and informed contributions are always welcomed.

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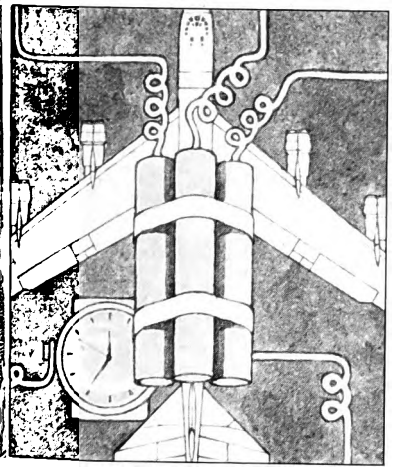
September-October 1984 Vol. XXXV No. 6



"We are ready to blow up this base. We want a B-52." Is your base prepared to respond?—*page 80*

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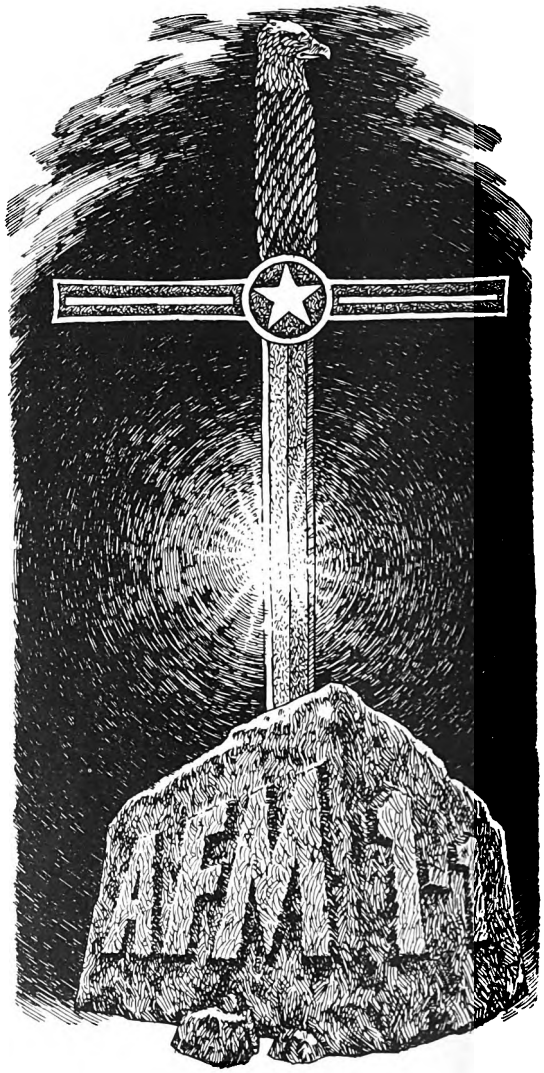
EDITORIAL

UNFINISHED BUSINESS

The Air Force continuously refines aerospace doctrine to make it relevant to present operations and viable for future contingencies.

AFM 1-1, 5 January 1984, p. vii



FOR the past thirty years Air Force officers have benefited from I. B. Holley's research and teaching on doctrine. Many of his ideas have shaped the framework of military doctrinal debates in the United States and have become part of the mainstream of Air Force doctrinal thinking. From his classic study *Ideas and Weapons* (1953), we learned that it is essential to institutionalize the rigorous analysis of experience and to use the results of the analysis process as the basis of our doctrine. His 1974 Harmon Memorial Lecture reminded us that developing sound doctrine is an "Enduring Challenge," a task never finished. Both of these ideas can be found in the latest edition of AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force.*

The new manual is a marked improvement over the 1979 version, which had several flaws. The earlier edition apparently attempted to include something for every constituency in the Air Force. As a result, it lacked the focus one expects in a manual purporting to explain how aerospace power is used in war. Basic doctrine was buried among extraneous image-building and irrelevant discussions of the Triad, the total force, education and training, and personnel management. Additionally, the number and types of illustrations accompanying the text tended to discredit any claim the manual might have had to being a rigorous treatment of a complex, fundamental, life-or-death matter—basic doctrine. The overall result was a manual that pointed to an organization apparently more concerned with training, organization, and equipment than with warfighting—an emphasis that is exactly what military professionals must guard against in a peacetime environment.

Reflecting the spirit of the Warrior Program, the latest edition of 1-1 gets down to serious business immediately and focuses throughout on the role of aerospace power in war. Doubtless, there will be ideas in the manual that will elicit disagreement. But of this, there can be no doubt—the manual

clearly lays out a basic military doctrine, a body of beliefs about how best to employ aerospace power in war.

Gone is the puffery of the 1979 edition. There are few quotations in the new manual, and those that appear obviously belong, coming from the likes of LeMay, Douhet, and Clausewitz. Gone also are the numerous illustrations that led some to speak of "cartoon doctrine" when the 1979 manual was published. Another refreshing aspect of the 1984 version is that it speaks candidly of war and victory. Passages like this one remind us all that we are in a military organization that is part of the cutting edge of the sword of the Republic.

> The conduct of war is the art and science of using military force with other instruments of national power to achieve victory. Military victory is normally the decisive defeat of an enemy which breaks his will to wage war and forces him to sue for peace. In a broader sense, the attainment of stated objectives, limited or total, defines victory. (p. 1-1)

These changes alone are enough to alter the tone of the manual radically and give this edition much greater credibility than its predecessor.

A more elaborate review of the new 1-1 is contained in the second article in this issue, by Colonel Clifford R. Krieger. This article not only reviews the new manual but emphasizes the historical underpinning of Air Force doctrine. In one of his more important observations, an observation that echoes the ideas of Professor Holley, Krieger notes that Air Force doctrine is never finalized. Even as the new edition of 1-1 hits the streets, there are unresolved questions that will eventually make their mark on doctrine. Krieger maintains that professional officers throughout the Air Force have a responsibility to contribute to the effort to clear up such matters and help refine *our* Air Force doctrine.

The lead article in this issue may be considered an effort to help in the refinement of the January 1984 AFM 1-1, which, like all doctrine manuals, will need to be revised some time in the future. In this article, Lieutenant Colonel Barry Watts and Major James O. Hale fault air power leaders for developing doctrine that tends to be composed principally of abstract definitions of roles and missions and fails to give sufficient consideration to combat experience. Moreover, the nature of this doctrine bespeaks a perception of war that does not give adequate recognition to the unknowns that are produced by war's fog and friction and the enemy (i.e., an animate object that reacts). The result, the authors believe, is a rigidity in the Air Force way of war that tends to inhibit appropriate modifications of doctrine in response to the everchanging circumstances of war.

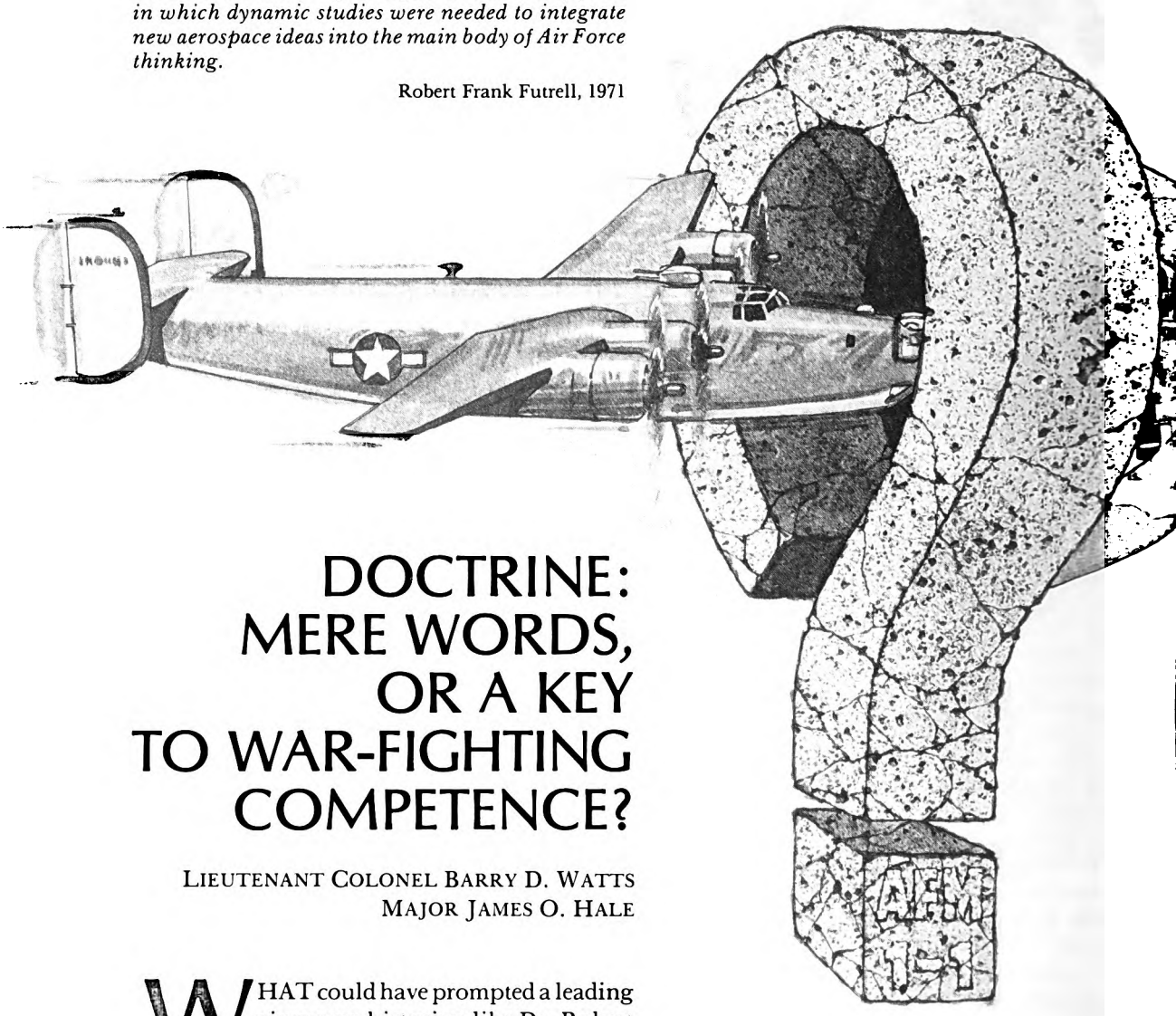
The publication of these two articles on doctrine, coming hard on the heels of the appearance of the new 1-1, illustrates well some fundamental characteristics of doctrine itself—it is indeed an enduring challenge. We at the *Review* hope that the two articles on doctrine in this issue will make a significant, perhaps lasting contribution to the process of rigorous analysis that must be a part of the enduring challenge.

As we work to refine our doctrine, we would do well to keep in mind Colonel Krieger's observation that there is no *best* doctrine, only a better one.

D.R.B.

Somewhere, somehow in the late 1950s, the quest for Air Force doctrine began to go stale in the very years in which dynamic studies were needed to integrate new aerospace ideas into the main body of Air Force thinking.

Robert Frank Futrell, 1971

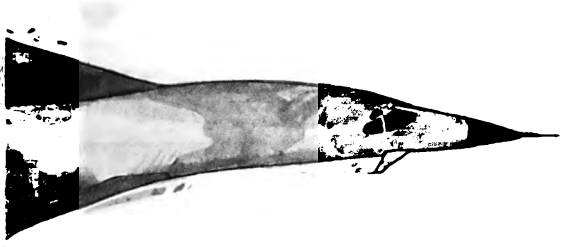


DOCTRINE: MERE WORDS, OR A KEY TO WAR-FIGHTING COMPETENCE?

LIEUTENANT COLONEL BARRY D. WATTS
MAJOR JAMES O. HALE

WHAT could have prompted a leading air power historian like Dr. Robert Futrell to conclude that the Air Force's doctrinal quest went stale during the 1950s and, worse, that even by the early 1970s, the young service had failed to perfect "semantic thought patterns" encompassing the totality of its rationale?[1] Insofar as Dr. Futrell's 1971 assessment remains valid today, part of the answer seems to lie in his awareness that the Air Force's basic doctrinal beliefs have remained essentially unchanged since World War II (and can trace strong roots back even further). All too often since 1947, the keepers of U.S. air power doctrine have viewed their inheritance as holy writ more in need of protection than of evolution or change.

Of course, this lack of change in our basic doctrine is not, in itself, proof that the doctri-



nal quest has gone stale. Those who defend this lack of evolution tend to argue that by 1943, if not earlier, American army aviators had developed a good idea of what usually worked best and thereafter wisely stuck with that.[2]

On reflection, though, this explanation raises more questions than it answers. First, is it self-evident that what did the job in World War II (or in Southeast Asia) will do so today? One of the most fundamental air power ideas developed at the Air Corps Tactical School[3] during the 1930s was that precision bombardment alone could swiftly destroy the means or will of an enemy society to wage war.[4] But today, against a nuclear-armed adversary like the Soviet Union, is a conventional bombardment campaign of the sort envisaged by Tactical School theorists feasible at all? How, in particular, could we prevent such an operation from simply provoking the very thing we dread most, an all-out nuclear exchange?

Equally important questions can be asked about documents like Air Force Manual 1-1. Are the basic concepts and principles in the more recent versions of this manual discussed or debated by those in operational units? Do Air Force professionals genuinely believe that officially sanctioned doctrine would promote, rather than hinder, successful combat performance in a future conflict? Indeed, is there even much consensus within the Air Force about what our core war-fighting principles are or our basic doctrinal concepts mean?

At the heart of the present authors' misgivings about the health of Air Force doctrine is the suspicion that our service's doctrinal quest has become entangled in abstract questions of definition that lead nowhere, while the practical problems of actual warfighting have been neglected. Is doctrine preeminently a peacetime tool for developing force structure? Or does it also have an important, perhaps even crucial role to play in battle? These are questions that every generation of American aviators has raised. But truly final answers have not been forthcoming.

Consider the problem of defining doctrine's essence. In his pioneering 1955 book *U.S. Military Doctrine*, Brigadier General Dale O. Smith accepted the proposition that Air Force thought progresses from the nebulous ideas of individuals, to unofficial concepts (or hypotheses), to doctrines taught at service schools and sanctioned at the highest military staff levels, to enduring principles.[5] And while General Smith admitted that the exact point at which an idea becomes a concept (or a concept, a doctrine) may not always be clear, his formulation of basic doctrine as the fundamental beliefs of Air Force people about "the development, deployment, and employment of aerospace power in peace or war" seemed at the time to settle once and for all what doctrine is.[6] But as the title of General I. B. Holley's recent article "Concepts, Doctrines, Principles: Are You Sure You Understand These Terms?" implies, serious definitional problems persist.[7] General Holley insists that the official definition of doctrine long promulgated by the Joint Chiefs of Staff is confusing, if not erroneous. Evidently, despite three decades of effort, we have still not pro-

gressed beyond the definition of basic terms. And if so, then one cannot help but wonder whether we have been working on the right questions.

Yet if we have been asking the wrong questions about doctrine, what questions should we be raising? Perhaps it would be helpful at this stage to stand the problem on its head and consider what doctrine is not. If we could first ascertain some of the things that doctrine cannot be, we might have a better basis for making some sense of this elusive concept.

The Problems of Defining Doctrine

How can a man understand the name of anything, when he does not know the nature of it?

Plato, Theaetetus

The truth lurks *in the metaphor.*

Anthony Athos, quoted in In Search of Excellence, *1982*

One thing that doctrine *is not* is a concept that can be exactly defined in a natural human language such as English or German. While it is customary to assume that a notion like doctrine must be unambiguously defined before it can be intelligently discussed, no general theory of definition capable of providing unassailable answers to a question like "What is basic doctrine?" exists. Consequently, efforts to ground doctrinal development on an exact account of what doctrine *is* are doomed from the start.

(*Authors' Warning*: The next half dozen paragraphs or so contain a rigorous substantiation of our skepticism about the utility of precise definitions as the point of departure for doctrine. Those readers who do not need further convincing, who regularly fly warplanes for a living, or whose eyes glaze over at the mere mention of JCS Publication 1, *Dictionary of Military and Associated Terms,* may wish to skip ahead.)

The problems encountered in trying to define general concepts have been with us since Plato's early dialogues.[8] The structure and outcome of these early works are monotonously similar. First, the participants begin to discuss some broad ethical question, such as "What is the nature of courage?"[9] Next, they make a number of attempts to define (in the abstract, not in particular cases) the idea or concept at issue. But after intense Socratic questioning, the participants find that the proposed definitions always turn out to be faulty.[10] Hence, the upshot of Plato's early dialogues is that the abstract essence of courage, piety, virtue, and other general concepts is never explicitly determined.[11]

It has been some centuries since Plato walked the streets of Athens, and the reader may be inclined to assume that these problems of definition were solved long ago. Indeed, as a practical matter, need we look any farther than a good dictionary?

But dictionaries, disappointingly, offer less help than might be supposed. The problem is that dictionary definitions are circular in that, sooner or later, they define every word in terms of itself. This circularity holds even for concepts drawn from that most rigorous of all branches of human knowledge, mathematics. Take the intuitive notion of a set as it has been used in mathematics since Georg Cantor originally characterized it, around 1895, as "any collection into a whole (*Zusammenfassung zu einem Ganzen*) *M* of definite and separate objects *m* of our intuition or our thought."[12] *Webster's Third New International Dictionary* defines this particular sense of "set" as "a collection of things and esp[ecially] mathematical elements (as numbers or points)."[13] But in this context the explicit synonym for "collection" turns out to be "aggregate," and when we look up "aggregate" we find it defined, in turn, as "a *set* of mathematical elements."[14] So all the dictionary can ultimately do is lead us around closed loops of synonymous terms and phrases.

Regardless of how vicious or benign we deem this sort of circularity, cannot mathematicians themselves specify unambiguously what a set is—at least for mathematical purposes? Certainly Cantor's notion of a set as any collec-

tion into a whole of definite and separate elements of our thought or intuition *seems* straightforward enough. However, as Bertrand Russell discovered in 1901, Cantor's definition of "set" is not merely unclear but permits outright contradiction. The difficulty, now known as Russell's paradox, arises from noticing that many sets do not contain themselves. Then, when we ask whether the set of all sets not containing themselves contains itself, the answer that logically follows is that it both *does* and *does not*.[15]

What this paradox demonstrates is that the general problems of pinning down in words the precise meanings of abstract concepts were not discernibly closer to solution in 1901-02 than they had been at the time of Plato's early dialogues. Moreover, we see no signs of major progress toward their solution in the decades since the discovery of syntactic paradoxes like Russell's. As the philosopher Raziel Abelson summarized the situation in 1967:

> The problems of definition are constantly recurring in philosophical discussions, although there is a widespread tendency to assume that they have been solved. Practically every book on logic has a section on definitions in which rules are set down and exercises prescribed for applying the rules, as if the problems were all settled. And yet, paradoxically, no problems of knowledge are less settled than those of definition, and no subject is more in need of a fresh approach.[16]

Lastly, note that the successful development ince 1901 of formal or axiomatic approaches o set theory that avoid the known paradoxes einforce, rather than undercut, Abelson's conlusion that a general solution to the problems f definition continues to elude us.[17]

For those who may feel inclined to dismiss his entire problem as only of relevance to vory-tower academicians, we would offer two ases that strike somewhat closer to home. Consider, first, the notion of battlefield air interdiction (BAI). As a term, *BAI* seems to have een introduced in an attempt to explain better ir power's contribution to the ground battle, specially in what had come to be seen as an ill-defined gray area between close air support (CAS) and air interdiction (AI). But despite literally years of effort to nail down a notion introduced to explain two others, we see little evidence of a definition of BAI's abstract essence that the various interested parties in this country and among our allies could all unequivocably accept.[18]

More substantive disagreement about the essence of *doctrine* can be seen in the fundamental difference between American and Soviet usages of the term. Since 1947, the notion of military doctrine generally accepted within the Department of Defense has centered around the allocation of roles and missions among the various services. Air Force basic doctrine, in particular, has focused on defining Air Force missions, describing air power's special characteristics, and explaining the need for an independent air force.[19] The view of military doctrine *(voyennaya doktrina)* that has held sway in the Soviet Union since the 1960s, by contrast, deals with a level of military thought far above the missions or characteristics of individual services. As reiterated in 1982 by then-Chief of the General Staff Marshal Nikolay Ogarkov, Soviet military doctrine is "a system of guiding principles and scientifically substantiated views of the CPSU [Communist Party of the Soviet Union] and the Soviet government on the essence, character and mode of fighting a war which may be forced by the imperialists on the Soviet Union."[20] Superficial differences in nomenclature notwithstanding, there is very little common ground between American and Soviet views of military doctrine's essence. Among other reasons, the highest echelon at which the Soviets do permit service-specific doctrine, the operational level of fronts and armies *(operativnoye iskusstvo)*, has not been seriously discussed by U.S. airmen.[21] Indeed, we have yet to recognize it as militarily important.

Returning to what doctrine *is not*, should Air Force doctrinal discussions begin by trying to define in the abstract what doctrine *is*? Our

answer must be: definitely not! General Holley has written that the search for sound military practice is *certain* to be seriously flawed without uniform, clearly understood definitions of terms like *doctrine*.[22] But in the absence of a solution to the long-standing problems of definition, we would answer that the only outcome this insistence seems certain to ensure is that the Air Force's quest for sound military practice will continue to flounder. At the outset of any doctrinal foray, our best efforts at formal, abstract definitions are seldom much more than hunches; and even after long study, no one has been able to offer much more than metaphors. Thus, to insist that doctrinal thinking begin with formal, once-and-for-all definitions seems roughly akin to demanding that mathematics proceed from the solution to problems, such as exactly trisecting an angle with straightedge and compass alone, that are known to be impossible.

Yet if we cannot explicitly nail down the abstract essence of concepts like BAI and doctrine, how can doctrinal development ever be given an adequate foundation? How, indeed, can we even communicate? The dilemma is not insoluble. Combat experience appears to offer a practical way out that is "good enough" for purposes of warfighting.

Combat Experience

We have identified danger, physical exertion, intelligence, and friction as the elements that coalesce to form the atmosphere of war, and turn it into a medium that impedes activity. In their restrictive effects they can be grouped into a single concept of general friction. Is there any lubricant that will reduce this abrasion? Only one . . . combat experience.

Carl von Clausewitz, *On War*

. . . with increasing frequency, I'm seeing combat needs being contaminated by a lot of theoretical hogwash.

Brigadier General Eugene Lynch, USA (Ret), 1983

The second thing that doctrine *is not* is something that can be safely cut off from the uncompromising evidence of the battlefield. Any attempt to develop concepts, doctrines, or principles for the actual practice of war that fails to ground itself squarely in concrete battle experience risks outright disaster.

To insist that there is little to be gained from trying to nail down a notion like doctrine in words does not mean that one is unable either to produce obvious examples of doctrinal statements or to subject these statements to the test of experience. For example, consider Brigadier General Kenneth N. Walker's famous maxim that a well-planned and well-conducted bombardment attack, once launched, cannot be stopped.[23] In the hands of Air Corps Tactical School bombardment advocates, this assertion was eventually construed to mean that bombers like the B-17 Flying Fortress could be sufficiently self-defending to penetrate enemy defenses and bomb the target without unacceptable or uneconomic losses.[24]

What we would emphasize here is the historical lack of support in actual combat experience for this bomber penetration doctrine. The first missions of the American daylight bomber offensive from the United Kingdom were flown in August 1942. By October of that year, the senior leaders of the U.S. Eighth Air Force were "absolutely convinced," based on the command's experiences against targets in France and the Low Countries, that a force of 300 or more unescorted heavy bombers could "attack any target in Germany with less than 4 percent losses."[25]

It took time, though, to build up the force structure in England necessary to raise Eighth's dispatchable bomber strength to the 300-plus level. For a variety of reasons, it was not until the summer of 1943 that Eighth Air Force's Commander, General Ira C. Eaker, managed to accumulate enough B-24s and B-17s to begin putting the idea of self-defending bomber formations to the test.

The bitter dénouement of this grand doctrinal experiment in early October 1943 is well known. Without fighter protection all the way

to the target, the bombers proved far more vulnerable than had been calculated. Over the period 8-14 October 1943, Eighth Air Force mounted four all-out efforts to break through the German fighter defenses unescorted. Since a total of 1410 heavy bombers were dispatched, losses should not have exceeded fifty-six B-17s and B-24s, according to doctrine.[26] However, Eighth lost 148 bombers and crews outright, mostly as a result of determined opposition from Luftwaffe fighters.[27] Adding in the fifteen additional heavies that returned damaged beyond economical repair, these four missions cost Eighth Air Force 21 percent of bombers on hand in its tactical units and at least 31 percent of its heavy-bomber crews.[28] As General Holley justifiably said in his 1974 Harmon Memorial Lecture, "The vigor with which *Luftwaffe* pilots subsequently pressed . . . attacks on 8th ... formations over *Festung Europa* provides all the commentary that is necessary for this particular bit of doctrinal myopia."[29] Although Eighth's bombers had not been turned away from their targets, General Walker's penetration doctrine had failed the test of World War II battle experience in the specific sense that German fighter defenses had shown themselves able to impose unsupportable losses on the American bomber formations.[30]

Even more significantly, the Army Air Corps' prewar penetration doctrine also lacked justification in *prior* combat experience from World War I. During the early years of the Air Officers School at Langley Field, Virginia, when the experience of the Great War was still heavily relied on, the prevailing view among the instructors had been that pursuit (fighter) aviation dedicated to gaining and holding control of the air was a necessary prerequisite for successful bombardment operations. The school's texts up to 1927 made this point clear:

> Pursuit in its relationship to the Air Service . . . may be compared to the infantry in its relationship to the other branches of the Army. Without Pursuit, the successful employment of the other branches is impossible. Pursuit aviation will provide the main protection for Bombardment aircraft.[31]

So to suggest that the main reason for the doctrinal myopia regarding bomber penetration that came to dominate Air Corps Tactical School thinking during the 1930s was insufficient experience seems dubious history at best. Admittedly, from the standpoint of tactical detail, bombardment enthusiasts such as General Walker (and later, General Eaker himself) did make their theoretical extrapolations from "a virtually clean slate."[32] Also, in the context of their heartfelt desire for autonomy from the U.S. Army, it is easy to understand why these same air power crusaders tended to be overly optimistic where the emerging technology of the B-17 was concerned.[33] But in a more fundamental sense, *they* were the ones who chose to erase the slate of experience.

This conclusion may seem harsh. Certainly, the various American airmen who advocated daylight, precision bombardment during the 1930s and early 1940s would be on firm ground in pointing out that World War I produced precious little empirical data on large-scale, sustained bombardment operations against the industrial heart of an enemy nation. Yet to accept this explanation as an adequate defense of bomber invincibility is to interpret the word *experience* in a dangerously narrow way. The seminal flaw in the doctrine of bomber invincibility was not a lack of empirical data either about large-scale bombardment operations or the aircraft technologies that had emerged by the outset of World War II. Rather, it was the refusal of American airmen, *as a matter of basic doctrine,* to recognize that in real war, as opposed to war on paper, one must interact with an animate adversary who is motivated, literally on pain of death, to respond in surprising and unpredictable ways.[34] In their headlong rush to prove that strategic bombardment could be decisive, Eighth's bomber leaders were tempted to act as if, contrary to all past experience, they had forged an offensive weapon

against which no enemy could defend successfully.[35]

Is it reasonable to suggest that American bomber enthusiasts might have read the record of past wars less narrowly, less parochially? All we can say is that during the 1920s and 1930s there were those who clearly did. As a case in point, we would offer the following excerpt from a 1936 U.S. Army translation of the introduction of the German army's field service regulations (or *Truppenfuehrung)* of 1933:

> Situations in war are of unlimited variety. They change often and suddenly and only rarely are from the first discernible. Incalculable elements are often of great influence. The independent will of the enemy is pitted against ours. Friction and mistakes are of everyday occurrence.[36]

It is difficult to overstate the profound difference between the Clausewitzian image of war so vividly articulated in this brief passage from the 1933 German *Truppenfuehrung* and a notion like the Army Air Corps' dictum about bomber invincibility.

In any event, the lesson concerning doctrine's intimate relationship with combat experience should, by now, be apparent. As episodes like Eighth Air Force's costly failure in October 1943 to penetrate German air defenses unescorted demonstrate, flawed doctrine can cost lives. And the shortest road to flawed doctrine is to develop it in the abstract, that is, without sufficient attention to the uncompromising realities of battle.

Doctrine as *Fingerspitzengefuehl*

To win, you've got to take risks. How does a commander tell which risks are worth taking? He has a lot of conflicting inputs. But computers don't give the answer. Nor does intelligence. None of them gives the answer. In Israel, it's the combat experienced commander who's qualified to tell which risks are worth taking.

General Ben-Nun, Israeli Air Force, 1984

Those who start in the company's mainline jobs, the making or selling parts of the business, are unlikely to be subsequently fooled by the abstractions of planning, market research, or management systems as they are promoted. Moreover, their instincts for the business develop. They learn to manage not only by the numbers but also, and perhaps more importantly, by a real feel *for the business. They have been there. Their* instincts *are good.* [Emphasis added.]

Thomas J. Peters and Robert H. Waterman
In Search of Excellence, 1982

To this point we have concentrated on what doctrine *is not,* arguing that it can be neither exactly defined nor safely cut off from battle experience. Having done so, are we finally in a position to say something useful about what doctrine *might be?*

By making the abstract definition of roles and missions the touchstone of their thinking, U.S. airmen have turned the doctrinal enterprise into a sterile scholasticism too little related to the concrete activities of war itself. Presumably, then, what we need to do in the future is to tie doctrine more directly to combat experience.

How does combat experience provide a practical alternative to first trying to nail down in words exactly what doctrine *is?* Michael Polanyi, physical chemist turned philosopher, has argued that human beings have a capacity to know more than they can tell.[37] Skillful feats, like air combat maneuvering or manual dive bombing, illustrate this sort of tacit knowledge (or implicit understanding[38]). Such acts are *tacit* (or *implicit),* according to Polanyi, because the dissection of a skill into its constituent parts is always incomplete. But skills also represent *knowledge* (or *understanding)* insofar as they can be mastered and reliably repeated on demand.

To be stressed is Polanyi's realization that if the constituents of a given skill cannot be exhaustively and explicitly specified, then each individual must discover for himself "the right feel" for any particular skill.[39] A striking illustration is provided by the George Air Force Base F-4 instructor pilot who, in the early 1970s, developed such a flair for dive bombing that he could turn off his gunsight and still, more often than not, drop the best bombs in the flight. Asked how he did it, he would reply: "I pickle when it feels

right."[40] If common experience about skillful feats is any guide, no other reply is possible (although one presumes that the pilot in question must have dropped quite a few bombs before he was able to function this well without the aid of a gunsight).

It may seem a long step from particular tactical skills like dive bombing to warfighting in general. In reality, however, the two have more in common than what first meets the eye. The stresses of actual war may not always test the bodily strength, intellect, and character of a high commander in precisely the same ways as they test those of a young pilot, but test them they do. And the nub of that test, as the World War II fighter ace Donald S. Gentile (19.83 victories air-to-air) so poignantly stated, is the life or death imperative to act. Air-to-air combat, Gentile recounted while still flying missions with the Eighth Air Force's 4th Fighter Group in 1944,

> goes in a series of whooshes. There is no time to think. If you take time to think you will not have time to act. There are a number of things your mind is doing while you are fighting—seeing, measuring, guessing, remembering, adding up this and that and worrying about one thing and another and taking this into account and that into account and rejecting this notion and accepting that notion .... But while the fight is on, your mind feels empty . . . as if the flesh of it is sitting in your head, bunched up like muscle and quivering there.[41]

What is Gentile saying? For the most part, he is describing the implicit but interactive cross-referencing process by which combatants continually orient and reorient themselves in the unfolding circumstances of battle.[42] Only his final sentence in the cited passage—where Gentile ostensibly says that in the heat of battle his mind feels empty—requires explanation. Those of us who have been exposed to combat would suggest that he really means something other than what his words literally say. If the mind is constantly seeing, measuring, guessing, and weighing this or that during battle, then it cannot be literally empty of activity. But it may be empty in a less obvious sense: namely, that while directly engaged in fighting, combatants are seldom fully conscious of their mental processes. In other words, thinking during battle is mostly a matter of skilled responses so deeply internalized or nearly autonomous that the combatants themselves are no more than partially aware of all that they are doing.[43]

The point is that in real war there is almost never enough time, unambiguous information, or relief from the dreadful pressures of combat to think though any situation in the step-by-step, fully conscious manner possible at home, in the office, or in the classroom. For better or worse, war compels combatants of every rank to lean heavily upon whatever *Fingerspitzengefuehl* (or implicit feel for battle) they may possess.[44] Yes, everyone who engages in combat strives to plan in advance as systematically as he can, to use every available scrap of information, and to leave as little to chance as possible. But despite one's best efforts, real war has a ruthless way of forcing combatants to respond first and foremost on the basis of their implicit appreciation for what is likely to work in specific combat situations.[45]

A Warfighter's View of Doctrine

As warfighters, what can we ultimately say about what doctrine *is*? Clausewitz stated, early in *On War*, that theory can never fully define the general concept of friction.[46] But realizing that useful metaphors could be given, he variously characterized friction as (a) "the only concept that more or less corresponds to the factors that distinguish real war from war on paper," (b) "the force that makes the apparently easy [in war] so difficult," and (c) "the elements that coalesce to form the atmosphere of war."[47] Following Clausewitz's lead, we would insist that a formal definition of doctrine that explicitly captures all its particulars and nothing more cannot be given. But, we would likewise go on to characterize doctrine—

at least in the sense of offering a baseline metaphor—as *the implicit orientation with which a military culture collectively responds to the unfolding circumstances of war.*

What is this metaphor intended to convey? It implies first of all that doctrine can be an overriding determinant of combat outcomes. In *Attack and Die,* Grady McWhiney and Perry Jamieson have argued that in the first three years of the American Civil War, the Confederacy "simply bled itself to death . . . by taking the tactical offensive in nearly 70 percent of the major actions"—even though, by 1861, advances in infantry weapon technology had begun to give the upper hand to the defense.[48] While McWhiney and Jamieson undoubtedly rely overmuch on crude statistical comparisons, they are right to draw attention to the pivotal role of doctrinal orientation in the South's eventual defeat. The plain fact seems to be that the Confederates were never able to transcend a tactical mindset that saw offensive action as the only honorable approach to war.

Second, doctrine-as-implicit-orientation highlights the tacit nature of the assumptions and beliefs by which combatants fail or succeed. Regardless of how much we do or do not write down in our doctrine manuals, the precepts that count most in te heat of battle are those that have become more or less second nature. This reality obviously places a heavy burden on everyone in military uniform to master the craft of warfighting. But if we are to go by the evidence, the shoulders of warriors and "operators" are precisely where this burden should lie. As one veteran Israeli pilot said after the June 1982 air campaign over Lebanon in response to American questions about how much doctrine the Israeli Air Force had written down, "Yes, we have books. But they are very thin."[49] Or, to offer a more concrete metaphor, the doctrine that really wins or loses wars is the collection of internalized values, rules of thumb, and elemental images of war on which a military group instinctively relies in battle.

The foremost observation that we would make about our metaphorical characterizations of doctrine is that they do appear more likely to be useful to combatants than the abstract definitions of terms so typical of mainstream Air Force doctrine to date. After all, construed as the implicit orientation or collective instincts of battle-wise veterans, doctrine can be seen as a *working synthesis* of the *Fingerspitzengefuehl* of successful warfighters. And because the mature *Fingerspitzengefuehl* of a George Patton, a Heinz Guderian, or an Erich Hartmann has so often produced amazing battle results, doctrine then boils down to what is known to work where it counts—in combat.[50]

Why might this view of doctrine work better than an approach grounded on definitional abstractions? Consider the sorts of insights that skilled practitioners of military art have distilled from battle experience in the past:

- "Survive first, kill bogies second."[51]
- "The battle will never go as you planned it. Improvise. Surprise is your most important weapon. Risk, risk, risk."[52]
- Knowledge is important: efficiency even more so. But character and personality are the most important. Knowledge can easily fail and can, in fact, be the cause of failure. Not intelligence but character is the unfailing factor. Only character is reliable in tough situations, and . . . in combat.[53]
- It is better to render a partly faulty decision at the right time than to ponder for hours over various changes in the situation and finally evolve a perfect decision, but too late for execution.[54]
- Wars are only won by risking the impossible.[55]
- Develop intuitive judgment and understanding for everything.[56]
- Keep it simple, stupid![57]

To those skilled in war, these statements are concrete and easily understood. They reflect the face of battle as it is, not as pure theoreticians and force planners so often wish or as-

sume it to be. Above all else, they provide a clear basis for action. It is the down-to-earth, battle-tested *Fingerspitzengefuehl* embodied in propositions like these that should be the warp and weave of Air Force doctrine.

This last thought suggests another observation regarding doctrine-as-implicit-orientation. The pressures of the annual Pentagon budget process neither excuse nor justify the historical concentration of Air Force doctrinal thought on abstract definitions. Admittedly, budgets cannot be ignored, and careful definitions may even have a certain utility vis-à-vis allocations within and between the various services. We would suggest, however, that for the most part the Air Force at large would be better advised to concentrate more on questions like: Does war remain fundamentally a contest between independent wills dominated by friction? For not only has there been ample-to-overwhelming evidence in favor of this essentially Clausewitzian view of war's nature for decades (if not centuries), but an implicit orientation that is shared, unifying, and easy to implement has also been one of the keys to overcoming friction.

FINALLY, however one elects to think about basic air power doctrine, it must be firmly grounded on hard evidence. To view Air Force doctrine primarily in terms of abstract roles and missions requiring zealous protection tends to equate past success with historical validity. True, the United States and its allies won World War II; and after that war, American airmen won service autonomy. But neither of these victories can be said to have validated the Air Force's basic doctrine to any great degree. The unpleasant reality is that, beyond clearly foreseeing the future importance of air power at a time when most men did not, the majority of American air commanders, as late as the fall of 1943, "failed completely to grasp the essential meaning of air superiority," and every salient prewar belief of American air strategists "was either overthrown or drastically modified by the experience of war."[58] Our air doctrine, in short, has not always enjoyed the firmest basis in empirical fact. And if we hope to do better in the future, then we must never forget that the ultimate arbiter of doctrinal beliefs is whether they help us to prevail in the air. "Anything else," as Baron Manfred von Richthofen once said, "is absurd."[59]

Washington, D.C.

Notes

1. Robert Frank Futrell, *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964* (Maxwell AFB, Alabama: Air University Press, 1971), pp. 6-7.

2. Air Force Manual 1-1: *Basic Aerospace Doctrine of the United States Air Force* (Washington: Headquarters U.S. Air Force, 5 January 1984), pp. v, A-1, A-2, and A-4.

3. The Air Service Field Officers School that began at Langley Field, Virginia, in October 1920 changed its name to the Air Service Tactical School in 1922. In the wake of the 1926 Air Corps Act, the school became the Air Corps Tactical School, and in 1931 it moved to Maxwell Field outside Montgomery, Alabama. See I. B. Holley, Jr., *An Enduring Challenge: The Problem of Air Force Doctrine* (Colorado Springs: U.S. Air Force Academy, 1974), Harmon Memorial Lectures in Military History, Number Sixteen, pp. 3 and 15.

4. David MacIsaac, *Strategic Bombing in World War II: The Story of the United States Strategic Bombing Survey* (New York: Garland, 1976), p. 7; Haywood S. Hansell, Jr., *The Air Plan That Defeated Hitler* (Atlanta, Georgia: Higgins-McArthur/Longino and Porter, 1972), pp. 4, 8, and 75-76; Thomas A. Fabyanic, "The Development of Airpower between the Wars," video taped lecture at the Air Command and Staff College, Maxwell AFB, Alabama, 3 February 1983, transcription by Barry D. Watts, pp. 16-18.

5. Futrell, p. 5; also see Brigadier General Dale O. Smith, *U.S. Military Doctrine: A Study and Appraisal* (New York: Duell, Sloan, and Pearce, 1955), pp. 4-6.

6. Futrell, pp. 5 and 7.

7. I. B. Holley, Jr., "Concepts, Doctrines, Principles: Are You Sure You Understand These Terms?" *Air University Review*, July-August 1984, pp. 90-98.

8. The dialectical dialogues of Plato's earliest period are considered to include, among other works, the *Laches, Protagoras, Euthyphro*, and *Meno*. See Gilbert Ryle, "Plato," *The Encyclopedia of Philosophy*, edited by Paul Edwards (New York: Macmillan and the Free Press, 1967), Vol. 6, p. 319.

9. Plato, *Laches*, translated by Benjamin Jowett in *The Great Books of the Western World*, edited by Robert M. Hutchins (Chicago: Encyclopaedia Britannica, 1952), Vol. 7, p. 32.

10. Illustrative of the substantive difficulties that arise is the objection in the *Euthyphro* that to define piety as being what is loved by the gods merely gives an attribute of piety, not its essence. Plato, *Euthyphro*, in *Great Books*, p. 196.

11. At the end of the *Euthyphro*, for example, the most positive statement that the participants can make is that they "must begin again and ask, What is piety?" Ibid., p. 198.

12. Georg Cantor, *Contributions to the Founding of the Theory*

of Transfinite Numbers, translated by Philip E. B. Jourdain (New York: Dover, 1955), p. 85.

13. *Webster's Third New International Dictionary of the English Language: Unabridged*, definition 44b, p. 2078.

14. Ibid., definition 6, and definition 5. Emphasis added.

15. In full, Russell's paradox goes as follows. "One notes that many sets do not contain themselves. Examples are the set of all books (which is not itself a book), the set of all primes less than ten, the set of all things which are not themselves sets, etc. We may call such sets *normal*. *Abnormal* sets are those sets which do contain themselves. Examples are the set of all sets, the set of all sets describable in fewer than 20 English words, the set of all sets which contain more than three members, etc. Now consider the set of all normal sets and ask whether it is normal or abnormal. If it is normal, then it doesn't contain itself, by definition of *normal*. However, if it doesn't contain itself, it does contain itself, since it is the set of all normal sets. If, on the other hand, it is abnormal, then it contains itself, by definition of *abnormal*. However, if it contains itself, it is excluded from itself, since it is the set of only normal sets. In short, we again have a contradiction." See Howard DeLong, *A Profile of Mathematical Logic* (Menlo Park, California: Addison-Wesley, 1970), p. 82.

16. Raziel Abelson, "Definition," *The Encyclopedia of Philosophy*, Vol. 2, p. 314.

17. There are at least two reasons why formulations of set theory that avoid the known paradoxes do not undercut Abelson's view that no general theory of definition exists.

First, even though formal axiomatizations of set theory, such as that associated with the work of Ernst Zermelo, Abraham Fraenkel, and Thoralf Skolem, equate the word "set" with the primitive variables (or terms) occurring in the Zermelo-Fraenkel-Skolem axioms, the mathematical system deduced from them is formally "independent of any meanings which may be associated with the primitive terms" employed in those axioms. See Howard Eves and Carroll V. Newson, *An Introduction to the Foundations and Fundamental Concepts of Mathematics*, rev. ed. (New York: Holt, Rinehart and Winston, 1965), p. 117.

Second, the fact that two of the Zermelo-Fraenkel-Skolem axioms (the axiom of choice and the continuum hypothesis) are now known to be independent of the others demonstrates "the intuitive incompleteness of the standard axioms of set theory—incompleteness to a degree hardly expected. To a certain extent the situation is comparable to that in geometry after the independence of the parallel postulate was established. We now have many geometries and presumably we may expect many set theories." See Patrick Suppes, *Axiomatic Set Theory*, rev. ed. (New York: Dover, 1972), pp. 252-53. In other words, because alternative set theories would, like non-Euclidean geometries, be based on embracing at least one axiom that is logically inconsistent with the "standard" ones, existing means of avoiding the known set-theoretic paradoxes fail to furnish a unique understanding of what a set is.

18. The definitional difficulties that have been encountered by various NATO agencies and groups dealing with BAI have led the Tactical Air Command (TAC) staff recently to recommend that BAI be subsumed into air interdiction. TAC's view is that BAI and AI are so functionally similar that they would be best directed and controlled as a single "mission area." We would note, however, that working definitions of BAI adequate for practical purposes are less troublesome. In the Israeli Air Force (IAF), for example, a sortie or mission either participates in the ground battle or not. If it does participate in the ground battle, then the sortie or mission is either coordinated (i.e., targets are generated by the ground forces or else decided on jointly) or not coordinated (i.e., targets are specified by the IAF alone and do not require army support, input, or control).

19. Air Force Manual 1-1, *Functions and Basic Doctrine of the United States Air Force* (Washington: Headquarters U.S. Air Force, 14 February 1979), p. vii; Air Force Manual 1-1, *Basic Aerospace Doctrine of the United States Air Force*, pp. v and vii.

20. Marshal of the Soviet Union Nikolay Vasil'yevich Ogarkov, *Always in Readiness to Defend the Homeland*, translated by Foreign Broadcast Information Service (JPRS L/10412) (Moscow: Voenizdat, 1982), p. 41. This characterization of Soviet military doctrine was revived in the 1960s and can be traced back to Mikhail V. Frunze. See, for example, A. A. Grechko, *The Armed Forces of the Soviet Union*, translated by Yuri Sviridov (Moscow: Progress, 1977), p. 270; V. D. Sokolovskiy, *Soviet Military Strategy*, edited and translated by Harriet Fast Scott (New York: Crane, Russak and Company, 1968), pp. 38-40; and *The Soviet Art of War: Doctrine, Strategy, and Tactics*, edited by Harriet Fast Scott and William F. Scott (Boulder, Colorado: Westview, 1982), pp. 27-30.

21. Stephen M. Meyer, *Soviet Theater Nuclear Forces (Part I: Development of Doctrine and Objectives)*, Adelphi Papers Number 187 (London: International Institute for Strategic Studies, Winter 1983/4), pp. 3-5; John Hemsley, *Soviet Troop Control: The Role of Command Technology in the Soviet Military System* (New York: Brassey's, 1982), p. 261; Harriet Fast Scott and William F. Scott, pp. 92-93 and 140.

22. Holley, "Concepts, Doctrines, Principles," p. 90.

23. Hansell, p. 15.

24. Fabyanic, pp. 11 and 16.

25. Williamson Murray, *Strategy for Defeat: The Luftwaffe 1933-1945* (Maxwell Air Force Base, Alabama: Air University Press, 1983), p. 170.

26. Roger A. Freeman with Alan Crouchman and Vic Maslen, *Mighty Eighth War Diary* (London: Jane's, 1981), pp. 123-26.

27. Alfred B. Ferguson, "POINTBLANK" in *The Army Air Forces in World War II*, edited by Wesley F. Craven and James L. Cate, Vol. 2, *Europe: TORCH to POINTBLANK, August 1942 to December 1943* (Chicago: University of Chicago Press, 1949), p. 705.

28. Murray, Tables XXXIII and XXXIV on pp. 175-76; Freeman, pp. 123-26.

29. Holley, *An Enduring Challenge*, p. 5.

30. William R. Emerson, *OPERATION POINTBLANK: A Tale of Bombers and Fighters* (Colorado Springs: U.S. Air Force Academy, 1962), Harmon Memorial Lectures in Military History, Number Four, p. 24. During World War II, Emerson flew a combat tour in the P-47 in the Mediterranean theater of operations.

31. Fabyanic, p. 2. The statements cited were taken from Air Corps Tactical School documents.

32. Holley, *An Enduring Challenge*, p. 7.

33. Fabyanic, p. 13.

34. Von Clausewitz, pp. 139 and 149. As Williamson Murray has recently observed, the unpardonable aspect of Eighth Air Force's staggering bomber losses in October 1943 stemmed from the refusal of American airmen to alter their prewar doctrine in the face of battle experience. Thus, while the sixty bombers lost on the Schweinfurt/Regensburg raid of 17 August 1943 can be defended, "the second great disaster over Schweinfurt in October 1943 (where another sixty bombers were lost) raises the most serious doubts about the willingness of Eighth's leadership to adapt doctrine to reality." See Williamson Murray, "A Tale of Two Doctrines: The *Luftwaffe's* 'Conduct of the Air War' and the USAF's Manual 1-1," *Journal of Strategic Studies*, December 1983, p. 85.

35. Elmer Bendiner, who flew as a B-17 navigator on both the 17 August and 14 October 1943 missions to Schweinfurt, has concluded that on both occasions Eighth's crews "were sent on a hazardous mission to destroy in a single day an objective that was vulnerable only to repeated assaults for which we [Eighth's bomber groups] had not the strength. Those objectives could not wait for the arrival of more bombers, of the promised Mustangs, of belly tanks and wing tanks, because *we had to dramatize the importance of air power in the European Theater for the benefit of the public and the Navy.*" Emphasis added. See Elmer Bendiner, *The Fall of Fortresses: A Personal Account of the Most Daring—and Deadly—American Air Battles of World War II* (New York: G. P. Putnam's Son, 1980), p. 234. Eaker, as Bendiner notes, largely confirmed this assessment in 1977 during an interview with Albert Speer. See Ira C. Eaker and Arthur G. B. Metcalf, "Conversations with Albert

Speer," *Air Force Magazine*, April 1977, p. 56.

36. German Field Service Regulations, *Truppenfuehrung (Troop Leading)*, Part I, translated by U.S. Army, Report No. 14,507, 18 March 1936, p. 1. For a fuller discussion of traditional German versus recent American air doctrine, see Murray, "A Tale of Two Doctrines."

37. Michael Polanyi, *Knowing and Being: Essays by Michael Polanyi*, edited by Marjorie Grene (Chicago: University of Chicago Press, 1969), p. 133.

38. John R. Boyd, *Organic Design for Command and Control* Washington: Xerox reproduction of briefing slides, March 1984), p. 8.

39. Polanyi, p. 126.

40. The pilot who could "bomb everybody's eyes out" with his sight reticle turned off was Bobby G. Williams. When then-Lieutenant James Hale encountered him in 1971 at George Air Force Base, California, Williams was a major instructing in the F-4 replacement training unit. Williams's story is not unique. After the Korean War, Captain Cal Davey, while flying F-86s at Nellis AFB, Nevada, developed the same kind of eye-watering proficiency at live bombing. Davey too explained his talent in terms of feel, often briefing other pilots that he simply pickled "when that guy taps me on the back of the shoulder."

41. Captain Don S. Gentile, as told to Ira Wolfert, *One-Man Air Force* (New York: American Book-Stratford Press, 1944), pp. 8-9.

42. Boyd, p. 15. "Orientation," Boyd says, *"is an interactive process of many-sided implicit cross-referencing projections, empathies, correlations, and rejections* that is *shaped by* and *shapes* the interplay of *genetic heritage, cultural tradition, previous experiences,* and *unfolding circumstances."*

43. As G. M. Stratton's work in the 1890s with vision-inverting glasses revealed, even perceptual feats as seemingly transparent as vision involve extensive information processing that is not accessible to the consciousness of the perceiver. See Polanyi, pp. 198-99.

More generally, large organizations and higher organisms exist effectively because of their ability to manage complexity through such techniques as delegating various subtasks to near-autonomous subsystems that are allowed "to go their own way and work on their own problems most of the time." See Paul K. Davis, "Rand's Experience in Applying Artificial Intelligence Techniques to Strategic-Level Military-Political War Gaming," Rand Corporation Paper P-6977, April 1984, p. 11.

44. *Fingerspitzengefuehl* literally means fingertip feel but is more often translated as instinct, intuition, or flair. Like many German figures of speech, it tends to have metaphorical connotations that are difficult to capture in literal English translations.

45. Boyd, pp. 24-25 and 28.

46. Clausewitz, p. 120.

47. Clausewitz, pp. 119, 121, and 122.

48. Grady McWhiney and Perry D. Jamieson, *Attack and Die: Civil War Military Tactics and the Southern Heritage* (Tuscaloosa: University of Alabama Press, 1982), pp. 7, 40, 57, and 146.

49. The American to whom this reply was addressed was Major Hale, who was part of an Air Force team that visited Israel in May 1983.

50. The military achievements of General Patton are fairly well known to American readers. *Generaloberst* Heinz Wilhelm Guderian created the *Panzertruppe* that proved so pivotal to Germany's swift conquest of Poland and France in 1939 and 1940. See Kenneth Macksey, *Guderian: Creator of the Blitzkrieg* (New York: Stein and Day, 1976), p. 63. Erich Hartmann is credited with 352 aerial victories on the eastern front during World War II, including seven against American-flown P-51s. See Edward H. Sims, *The Aces Talk*, formerly *Fighter Tactics and Strategy 1914-1970* (New York: Ballantine, 1972), p. 232.

51. Lieutenant Colonel Watts first encountered the maxim "Survive first, kill bogies second" at the Navy 's Topgun Fighter Weapons School in 1975. The occasion was a syllabus lecture on "two-versus-many" by Alex Rucker.

52. S. L. A. Marshall, *Swift Sword: The Historical Record of Israel's Victory, June 1967* (New York: American Heritage, 1967), p. 133.

53. *General die Infantrie* Guenther Blumentritt, as quoted by C. A. Leader, "The Kriegsakadamie: Synthesizer of Clausewitzian Theory and Practice," unpublished paper, 30 July 1982, p. 42.

54. Captain Albert C. Wedemeyer, *The German General Staff School*, Report Number 15,999 from the U.S. Military Attaché, Berlin, 11 July 1938, National Archives Record Group 407, p. 139.

55. George S. Patton, Jr., quoted in Martin Blumenson, *The Patton Papers: 1940-1945* (Boston: Houghton Mifflin, 1974), p. 86.

56. Miyamoto Musashi, *A Book of Five Rings: The Classic Guide to Strategy*, translated by Victor Harris (Woodstock, New York: Overlook Press, 1974), p. 49. Musashi, known to his fellow Japanese as *Kensei* (Sword Saint), was a Kendo master who lived from 1584 to 1645.

57. Thomas J. Peters and Robert H. Waterman, Jr., *In Search of Excellence: Lessons from America's Best-Run Companies* (New York: Warner Books, 1982), pp. 63-67. As Peters and Waterman note, "Keep it simple, stupid!" is rooted in the psychological fact that humans are not good at processing large streams of new data and information; instead, they "reason with simple decision rules, which is a fancy way of saying that, in this complex world, they trust their gut."

58. Emerson, p. 40.

59. Manfred Freiheer von Richthofen, translated by Peter Kilduff, *The Red Baron* (Garden City, New York: Doubleday, 1969), p. 116. The quotation is part of the longer quotation: "The fighter pilots should have an allotted area to cruise around in as it suits them, but when they see an opponent they must attack and shoot him down. Anything else is absurd . . . . The mastery of the air in war is won through nothing other than battle, that is, shooting down the enemy."

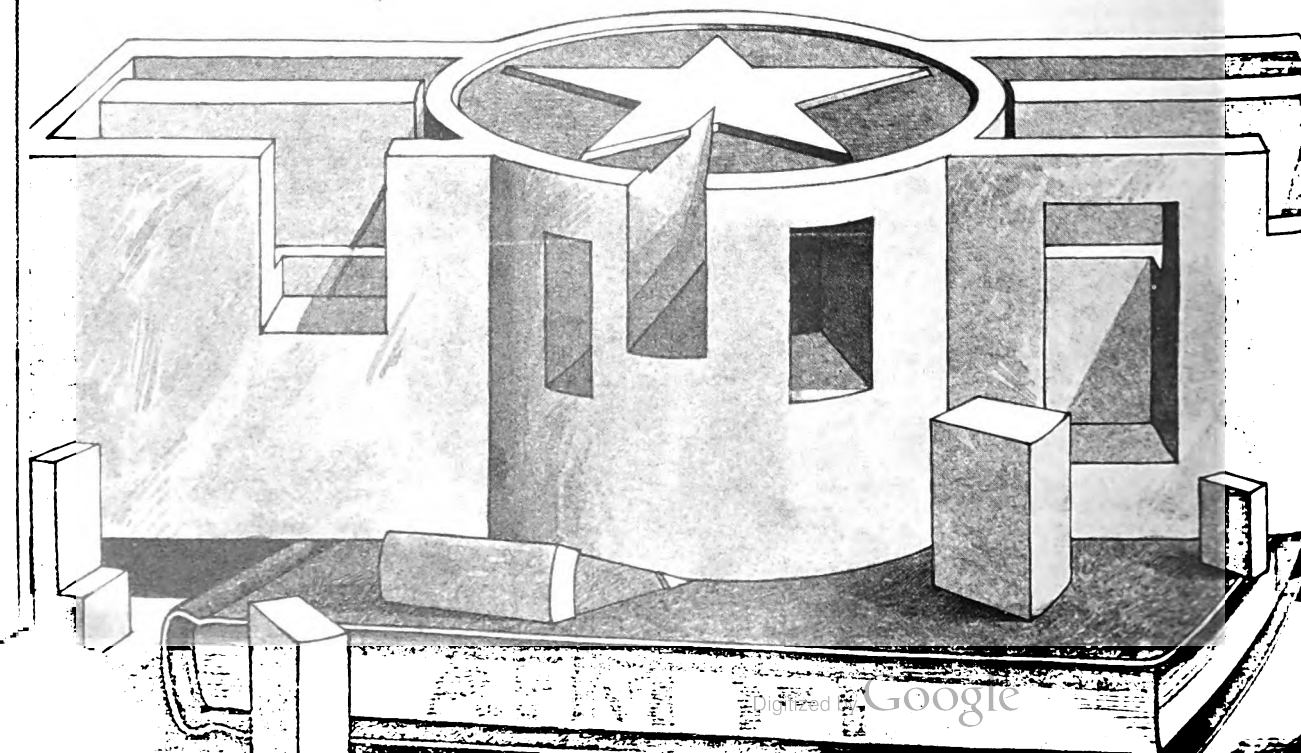
USAF DOCTRINE: AN ENDURING CHALLENGE

COLONEL CLIFFORD R. KRIEGER

THIS year the U.S. Air Force published two very important documents: Air Force Manual 1-1, *Basic Aerospace Doctrine of the United States Air Force*,[1] and a reissue of *The Condensed Analysis of Ninth Air Force Operations in the European Theater of Operations* (hereafter referred to as the *Condensed Analysis*).[2] Study of these two documents by professional Air Force officers should both confirm their understanding of air power doctrine and lead to a better comprehension of how to employ air power.

The New Air Force Manual 1-1

In four short chapters, the new Air Force Manual (AFM) 1-1 addresses the employment of military forces, the specific employment of aerospace forces, the missions and specialized tasks of the Air Force, and the preparation of aerospace forces for war (organizing, training, equipping, and sustaining). Going beyond describing the classic missions and specialized tasks of air forces and their organization, training, equipment, and sustainment, this edition



.scusses the employment of aerospace forces
; part of a unified military organization to
in in war. This emphasis on aerospace power
; part of a holistic approach to war represents
new level of conceptualization not previously
:hieved. It also presents an overall concept for
ıe proper employment of air power, calling for
ıe air commander to have a broad plan of
nployment and encompassing ideas delineated
ı World War II's FM 100-20.[3] The command-
's broad plan of employment provides a key
) air power often missing in recent discus-
ons. Our AFM 1-1 is, in many ways, the equiv-
ent of the Army's FM 100-1, *The Army*[4] and
ıe Navy's NWP-1, *Strategic Concepts for the*
.S. *Navy (Rev A)*.[5] However, the Air Force's
FM 1-1 delves deeper into warfighting than
ther the Army's FM 100-1 or the Navy's
WP-1.

The new edition of AFM 1-1, while covering
ıe same ground as the previous edition (and
ıore), takes a different approach. The manual
egins with a chapter that emphasizes both the
lationship of the military to the nation and
ıe interrelationship among the military servi-
s. Aerospace forces are seen as having certain
ıtrinsic capabilities. To exploit these capabil-
ies fully, aerospace forces must be integrated
ıd coordinated with land and naval forces.
hus, unity of command, the appointment of a
ngle commander to achieve unity of effort in
rrying out an assigned task, is critically
nportant.

The second chapter examines the employ-
ent of aerospace forces. An important addi-
on here is the concept of a broad plan of
nployment and, in particular, recognition of
ıe importance of employing aerospace power
an indivisible entity, based on objectives,
reats, and opportunities. The chapter em-
ıasizes that the commander has a broad plan
employment and conducts simultaneous
rategic and tactical actions utilizing all avail-
)le forces. The importance of employing both
fensive and defensive action, as well as em-
oying aerospace operations for psychologi-
cal impact, is amply discussed. The basics of warfighting are covered in this chapter: that is, not only the principles of war (which now include both logistics and cohesion) but such important fundamentals as the need to gain control of the aerospace environment and to attack the enemy's war-fighting potential, to develop a coherent pattern for employing forces, and to take advantage of the wide array of unique capabilities that aerospace forces possess.

The third chapter focuses on missions and specialized tasks of aerospace forces. The long discussion of DOD Directive 5100.1, which addresses functions of the Air Force, is much reduced from the previous edition. (The material in the DOD directive is covered elsewhere.)[6] Rather than providing only a list of missions and a description of each, as in the previous AFM 1-1, the new manual covers each mission in terms of how it contributes to the achievement of the air component commander's objectives. For example, the discussion of air interdiction (AI), recognizing the fact that AI is normally flown "as part of a systematic and persistent campaign," stresses the need for the air component commander to consult with the surface force commanders in developing an AI campaign.[7]

The manual no longer includes space operations as an Air Force mission. Discussion of these operations was dropped based on the realization, expressed in AFM 1-6, *Military Space Doctrine*, that space is a place wherein the Air Force simply performs its classic missions in new and improved ways.[8] On the other hand, aerospace maritime operations was added as a mission in recognition of the fact that maritime operations are "made unique primarily by the character of its objectives, the threat, and the forces involved."[9] In addition, the specialized tasks of the Air Force have been updated and expanded in description.

The fourth chapter deals with organizing, training, equipping, and sustaining aerospace forces. Increased emphasis is placed on the ser-

vices as providers of forces, while the unified and specified commanders and their functional (land, naval, and air) component commanders are viewed as the employers of forces. This distinction is critical to the proper employment of military power and of aerospace power in particular. Confusing the two responsibilities results in disrupting the effective functional employment of forces in order to maintain service command lines.

Finally, the historical discussion of air and aerospace doctrine that was an integral part of the previous manual has been moved to Annex A, and the bibliography (Annex B) has been updated. The bibliography now covers U.S. involvement in Vietnam, including books by Bernard B. Fall and Leslie H. Gelb.[10] It also includes important works on World War II, such as those of Marshal of the Royal Air Force Lord Tedder and coauthors Wesley F. Craven and James L. Cate.[11] Some important books are still missing, such as Colonel Harry G. Summers's *On Strategy,* which examines our involvement in Vietnam from a Clausewitzian perspective.[12]

Notwithstanding the improvements in AFM 1-1, the manual is not complete in and of itself. It is a slender volume of only forty-seven pages, and it must be read within the context of other Air Force manuals on basic and operational doctrine (one- and two-series manuals) and against the backdrop of the history of air power. Including the historical background of air power in AFM 1-1 was not possible for two reasons. First, it would have run the volume to approximately 250 pages. Second, the detailed historical basis for its concepts is not of much interest to a large number of airmen, who are looking for the distilled doctrine. This exclusion of the historical background for Air Force doctrine should not be considered as a weakness in the product. Ours is a technical business, and many in our service must devote themselves almost exclusively to their areas of specialization, which are as important as doctrine in conducting successful air warfare. While historical experience and modern capabilities must be woven together to formulate doctrine, distilled doctrine helps those involved in the technical end keep a focus on how we will fight.

The Reissued *Condensed Analysis*

Because AFM 1-1 does not include all of the historical basis for aerospace doctrine, the recent reissuing of the *Condensed Analysis* by the Air Force Office of History is an event worth noting. The *Condensed Analysis* discusses the employment of U.S. air power in France and Germany during 1944 and 1945. By coincidence, it is being published near the fortieth anniversary of the D-day invasion, the opening battle for Ninth Air Force's greatest campaigns. The historical account does not exist in isolation, however, but is linked to the early lessons of World War II—in particular, to the lessons learned by the Allies in North Africa. The historical chapters do not represent the definitive history of air operations in the European Theater, but they do present the official opinions of the American airmen who fought and helped to win the war there.

Printed as part of the Air Force Office of History's Project Warrior Series, this reissue is not expected to be a runaway best seller. However, it should find a receptive audience among Air Force officers attempting to learn more about how air power alters land (and naval) operations in war and why our doctrine is what it is. The reprinting of the *Condensed Analysis* is a faithful reproduction of the original issue, even to the very detailed maps and organizational charts that fold out of the book. It is not a popular history: it does not describe heroic events or technical points of particular aircraft. Instead, the book is an examination of World War II warfighting through the eyes of the commanders and staffs at the air component commander level and just below. This is a view often neglected, but one that we must study and

nderstand if we are to be successful in a future ar.

An important feature of the *Condensed nalysis* is its discussion of the large-scale, ef- ctive cooperation between air and land forces. was in the campaigns across France and ermany that U.S. and British air forces were ole to support their land forces effectively on a assive scale. Their accomplishments, while mited by the aircraft and ordnance of the day, ere a major factor in helping Allied land for- s overcome German resistance.

The book contains fifty pages of conclusions nd recommendations. Especially interesting o today's operations personnel are those re- ted to the issue of control of air power. merging clearly in these pages is the rationale pporting today's Air Force concept of cen- alized control and decentralized execution, of ie air war under the command of a single air mponent commander. Also of interest to op- rations personnel are a conclusion and rec- mmendation concerning the training of re- lacement aircrews: noting that tactics in the heater were often ahead of what was being ught in Training Command, the book con- ibutors recommend proper liaison between ie groups involved, plus an in-theater "top- ff" course. Similarly, comments about the actical Air Command-Army team make im- ortant, relevant points concerning collocation, ound-the-clock operations, joint planning, nd exchange of personnel that still apply day.

Other conclusions and recommendations are f interest to Air Force logisticians. Although ie Allies could not have won World War II ithout the excellent work of the logisticians, here were some problems, particularly as a sult of a less than adequate understanding etween combat and support elements. As the *ondensed Analysis* puts it: "Service and com- at commanders were, in general, not fully ac- uainted with one another's specific mission nd functions.[13]

The *Condensed Analysis* even contains some recommendations in the public affairs area. For example:

> It is recommended that the air force policy on the availability of information to the PRO [public relations officer] section be as liberal as possible without compromising the security of planning or disposition of forces. It is further recommended that the PRO or his delegated representative be required to attend such operational meetings as are necessary to enable him to maintain a continuous picture of the immediate situation and future operations plans to the same extent as a wing commander or group commander.[14]

In good wings and groups today, the above practice is followed day in and day out.

This reissued version of the *Condensed Analysis*, along with other publications being reissued or updated by Air Force organizations, should be read by anyone hoping to understand the doctrine of the U.S. Air Force today. Among the important publications are two works by Dr. Robert Frank Futrell: *The United States Air Force in Korea, 1950-1953* (a reissue) and *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964* (an updated revision).[15] Dr. Michael Gorn and Dr. Charles J. Gross, two air power historians, have referred to the first of these studies as perhaps the best history written on air power in the Korean War, while naming the latter book as the best official history of the development of the U.S. Air Force.[16] Certainly, both books merit our attention, in particular because they consider the problems of developing and employing air power not only at the tactical level but at the strategic and operational levels of war as well.

Air Power History and Lessons Learned

Certain threads run through the history of air power. Thus, someone reading the wartime diary of RAF Wing Commander Maurice Baring (who served as principal staff officer to General Hugh Trenchard, combat leader of the Royal Air Force in France during World War I)

would notice the same general categories of Air Force missions that we list today.[17] Reconnaissance and surveillance, counterair, close air support, air interdiction, and strategic offensive and defensive missions were all conducted in World War I. In fact, it was the importance of the Royal Flying Corps mission of strategic defense, in opposition to a German strategic air offense, that led Jan Christiaan Smuts, a member of the Imperial War Cabinet and head of a parliamentary commission on home defense, to recommend a separate and coequal air force for Great Britain. All of the missions and specialized tasks of today can be found in World War II also, including the use of space as a combat environment (i.e., the German employment of V-2 strategic missiles).

In history we can also find some of the arguments that continue today. For example, some who read the most recent U.S. Army FM 100-5, *Operations*, believe that the manual says that air power should be made available to the corps commander for *his* synchronization as a part of *his* battle.[18] This matter is a key issue for officers in all of the services, suggesting a tension between responsive support to individual land and naval force units and the need to employ air forces effectively to meet the overall needs of the theater CINC. In the past, efforts to meet the needs of every unit have resulted in such fragmentation of the air effort (i.e., breaking of air assets into penny packets) that air actions were not effective and our aircraft were, in fact, vulnerable to attack and destruction themselves. Only as professional airmen understand both their doctrine and their history will they be able to handle the tensions properly and make the best use of limited air assets.

Lessons learned in both our distant and our recent past are reflected in our new AFM 1-1. One of the first points that the manual makes is that it is of paramount importance to have the support of the American people when employing U.S. Armed Forces and committing them to a war. This is a lesson learned in our early history and relearned, at great expense, during our involvement in Vietnam. Agreement among, and support from, three distinct groups is required to sustain a successful military policy: the government, the people, and the military. In Vietnam, enemy leaders realized that the American people were deeply divided by the war, and they played upon this division in their war effort. Additionally, it has been said that terrorism was used to undermine congressional support for our policy in Lebanon.

Another of the key points in the first chapter of the new AFM 1-1 is the importance of employing the military forces of the United States with the various services working as coequal members of an interdependent team. No one member of that team can win the war by itself; rather, all must work together. One of the lessons learned in World War II was that our military forces must be employed as an interdependent team of land, naval, and air forces commanded by one commander. This is a lesson that has been often forgotten in military action since 1945. Because of its speed, range, and flexibility, aerospace power in particular (more than land and naval power) must be employed as part of a unified command if it is to achieve its full effectiveness. This principle was not always followed in Korea or in Vietnam. It is a point often missed in many popular and acclaimed histories of World War II. For instance, Russell F. Weigley's *Eisenhower's Lieutenants*, despite the title, fails to address the majority of Eisenhower's lieutenants.[19] Weigley takes the complex combined command structure of the Allies and slices it both horizontally and vertically. With one cut, he separates the land and air wars; with the other, he separates the British and American efforts. However, these cuts are not clean: although Dr. Weigley attempts to push the air effort and British participation into the background, both of these contributions had major effects on the American ground effort in France and Germany.

The concept of a coequal, interdependent relationship among air, land, and naval forces was a lesson learned in the Mediterranean

Theater during World War II. In a theater where land and naval forces had equally important but competing demands for air power, the proper control and employment of that air power had to be worked out. The solution was centralized control of air power under a coequal air component commander. Although it was later ignored, this solution was initially applied in Europe also, as the *Condensed Analysis* describes:

> In the campaign in western Europe, where the precision teamwork of the Allied air, ground, and naval forces accomplished battle miracles, the basic military conception that air, land, and sea power are coequal and interdependent was confirmed beyond all reasonable doubt. Interdependence being both strategic and tactical, any arrangement of our armed forces which might prejudice the equality of the three arms would similarly prejudice our success in war.[20]

Based on this idea, the *Condensed Analysis* calls for coequal component commanders under a single supreme commander.

> There existed a need at theater level for separate, coequal air and ground headquarters, which could closely coordinate their operations but remain independently responsible to the theater commander or the Supreme Commander, as the case might be.
>
> If such operationally coordinated but independent air and ground theater headquarters had been maintained in the ETO [European Theater of Operations], the resultant gain in flexibility of decision and promptness of action by the theater level or air command would have materially aided the Ninth Air Force in the execution of its administrative and operational commitments.[21]

In both the Korean and Vietnamese wars, we had to relearn these lessons. In Korea, we fought with three separate air forces for a major part of the war. Because of good will, good luck, and air superiority, we did not have any major problems. In Vietnam, not only was control of air power divided between the Vietnamese Air Force and the U.S. forces (Air Force, Navy, and Marine Corps), but the U.S. Air Force itself was divided between Vietnamese-based air and Thailand-based fighter air and Strategic Air Command air. Thus, there were six different air forces fighting in Vietnam. Even among U.S. forces, there were not just three components for the theater commander to coordinate but a number of disparate commands, each engaged in its own war. If the air war had started to go against us, this arrangement would have caused us major difficulties.

The problem is further complicated when the theater commander believes that he is in a position to act as one of the component commanders. This happened in the early days of the Korean War when General Douglas MacArthur elected to run the land war from his own headquarters. Only later, when General Mathew Bunker Ridgway became the United Nations Commander, was a separate land component organized. Writing about the responsibilities of command, Lieutenant General John H. Cushman, USA (Ret), says: "The primary interest of each such [senior] commander is, and must be, his mission."[22] He then states:

> The above proposition is of surpassing truth for the senior *multiservice/multinational* commander, who as will be addressed later, must use to its fullest the moral authority which stems from his complete mission orientation. The proposition however becomes difficult to assess when a multiservice or multinational commander is at the same time the commander of a single-Service or national command (known as "double hatting"). In peacetime, single-Service or national concerns may take up most of the commander's attention, to the detriment of his multiservice/multinational mission.[23]

Today, there is dual hatting in several locations. In each case, it could be detrimental to our war-fighting capability. One area with dual hatting is Korea, where the senior U.S. commander is the Commander, Combined Forces Command (CFC), the land component commander, and the U.S. theater commander. This is the same arrangement that existed during the beginning days of the Korean War. In Korea today, the problem is complicated by the lack of coequal components: the current peacetime air component commander is a U.S. Air

Force three-star general (dual-hatted as Chief of Staff, CFC), while his land component commander equivalent is a U.S. Army four-star general. Military services being what they are, rank speaks—especially when previous assignments have not built up a bond of friendship and understanding. The *Condensed Analysis* refers to this specific issue in one of its recommendations, "Comparative Rank—Air Forces and Ground Forces," stating:

> The air force and its components were at a disadvantage in the European Theater of Operations, because the commanders of air components were of lower rank than the commanders of their associated ground components. Three of the four tactical air commands were commanded (originally) by brigadier generals, while their three associated armies were commanded by lieutenant generals. This disparity extended throughout the TAC-Army staffs as well. Frequently air commanders and their staffs were required to deal with ground officers two grades higher but occupying comparable command and staff positions. This is not intended to imply that air-ground relations were not generally very amiable or that problems were not equitably worked out. However, differences in grade imposed considerable disadvantages on air components dealing with the ground forces.[24]

The situation in NATO today is similar to that in Korea. The opposite situation exists in Alaska, where the theater commander is also the air component commander and outranks the land component commander by one or two grades. The issue of how many flag-rank officers the military should have is one often raised by those seeking to keep down costs or to return to the grade ratios of earlier years.[25] What is not often recognized is the danger of too much emphasis on economy and not enough on the effectiveness of one's command structure.

Even a casual reading shows that certain threads run through air power history. For professional Air Force officers, the problem is the lack of thorough histories that will allow us to learn more about those threads. Increased knowledge would translate into increased fighting effectiveness should war come. Gorn and Gross, in their previously cited article, state: "Despite its enormous importance and popularity, military aviation has largely been ignored by most American historians."[26] The historical basis for study by higher-level commanders and their staffs is sadly deficient. Further, much of what is written as military or aviation history fails to examine the seam between air and land forces. Much writing is service-oriented, examining only the merits of one service. Most of us lack the academic credentials and the available free time to correct this situation, but we must be aware of it when we read history. We must constantly read with a critical eye—to avoid learning the wrong lesson. But we must continue to read.

Doctrinal Development: A Continuous Process

Air Force doctrine aims to integrate the lessons of air power history with ideas about how to employ the advances in technology not yet tried in battle. We study history to develop a context for doctrine development, we explore the capabilities of new technology, we conduct exercises, and we evaluate the way our units perform. What we learn from these activities must feed into our doctrinal development.

Since there is no *best* doctrine (only a *better* one), Air Force doctrine will never be complete or finished. Even though a new AFM 1-1 is on the street, we still have work to do. Some questions of interest to all of us remain unaddressed or unresolved. In a recent article in *Air Force Magazine*, General Bennie L. Davis stated that we should begin to think in terms of indivisible air power (the same idea is contained in the new AFM 1-1 statement that air power must be employed as an indivisible entity).[27] This is an area where our understanding of our doctrine must be refined. Another broad issue for airmen to examine is theater air warfare. For example, we must consider the problem of apportioning air effort in order to meet the competing requirements of land and naval commanders. In some theaters, such as the Central

Region of Allied Command Europe, maritime support requirements are quite minor. However, in the Northern and Southern Regions, demands for maritime support could be substantial, and the issue may well loom large for the theater CINC and the air component commander. As airmen, we need to be thinking through these and other issues not yet resolved.

Professional Air Force officers who hope to command operational units or expect to be on operational staffs should be particularly aware of such matters and should be thinking about the directions that our doctrinal development must take. Air Force officers should not expect Headquarters USAF and major command personnel to do their thinking for them. Neither we on the Air Staff nor we in the Air Force as a whole have a *final* doctrine—one that we can simply memorize and then apply without judgment and modification. Continuously, commanders and staffs work on issues that could have far-reaching impact upon how we fight and whether or not we win the next war.

One such issue is whether aerospace power will truly be employed as an entity (as "indivisible air power," in the words of General Davis). To some extent, this issue revolves around the authority of the theater air component commander. If, for instance, SAC bombers are introduced into a theater where responsibility for integration into the overall air campaign is given to someone besides the air component commander, that basic unifying concept of aerospace power as an indivisible entity will be lost. If parceling out air power becomes commonplace, it will allow an enemy to defeat our air forces in detail.

Another such issue concerns Marine tactical aviation. The U.S. Marine Corps has worked out and articulated its doctrine for the employment of the Marine Air Ground Task Force (MAGTF) as a uniservice force in support of naval objectives. The MAGTF can make a major contribution operating on its own to protect the flank of a major land operation. The Air Force accepts and supports the employment of the MAGTF in such a manner. Where the Air Force differs with the Marine Corps is on the matter of how to handle Marine Tac Air in the unusual circumstance where Marines are fighting as one of several divisions, on line, in sustained operations ashore. This issue has been around since the end of World War II and is often discussed, but resolution is not in sight. Air Force officers must know and understand both the Marine Corps and the Air Force positions on employment of the MAGTF, so that they can act knowledgeably and responsibly when in a position to deal with this question.

Another doctrinal debate, which has surfaced only recently, is about the term *operational level of war*—a relatively new term in this country. Up until now, it has been used to describe Army operations and, in fact, has been adopted by the U.S. Army. However, there is much confusion as to what the term means. As used in FM 100-5, it appears to represent a level of war between the theater strategic and the tactical levels. Thus, division operations and below would be considered tactical; corps, field army, and army group would represent the operational level of war; and actions guided by the theater commander and land component commander would represent the theater strategic level. This view is not universally accepted. Some would argue that there is no strategic level within a theater.[28] In another view, military analyst Edward N. Luttwak states that the operational level is optional and is used when a military force is numerically outnumbered. He sees the operational level as a creative action that involves taking risks in order to win. He suggests that within the European Theater in World War II the Allies operated only at the strategic and tactical levels. However, he would credit General MacArthur with fighting at all three levels of war in the Southwest Pacific, as well as in Korea.[29] We in the Air Force need to ask ourselves if the operational level of war has any meaning for us. If it does, we need to begin thinking about it and

incorporating it in our doctrine.

An additional area where doctrine needs more attention is the space environment. The present AFM 1-6, which is currently under revision, states that all air force missions can be performed or supported from space.[30] It also notes that government policies preclude the conduct of some air force missions in space. Furthermore, other missions may not even be considered in the context of space, since, at this time, they can be performed effectively without going into space. An example is close air support (although even this type of mission may receive some support from space, such as that provided by space-based navigation or communications systems).

EFFECTIVE doctrine should be neither as solid as granite nor as shifting as the sands of the desert. Rather, it must be reflective of past lessons learned, yet open to refinement and growth. Professional Air Force officers throughout our service should be contributing to the process of refinement and growth through their study, discussion, and writing. The ideas of Air Force officers should be surfacing in discussions at work, around the bar, and in the pages of our professional journals. Furthermore, the Hq Air Force Doctrine and Concepts Division welcomes any suggestions.[31] Not every new idea is adopted, but each one is welcomed and considered carefully.

Air Force doctrine belongs to all of us. We must study to understand it thoroughly, but we must do more than that. As professional Air Force officers, we must help to shape and enhance it to meet the challenges of tomorrow.

Headquarters USAF

Notes

1. Air Force Manual 1-1, *Basic Aerospace Doctrine of the United States Air Force* (Washington: Department of the Air Force, 1984).

2. The *Condensed Analysis* was originally published in March 1946 by the Office of Assistant Chief of Air Staff, A-2, Washington, D.C. In 1984, it was reissued by the Chief of Air Force History, Bolling AFB, D.C.

3. FM 100-20, *Command and Employment of Air Power* (Washington: War Department, 21 July 1943). This short Field Manual is reprinted in *Air Superiority in World War II and Korea*, edited by Dr. Richard H. Kohn and Joseph P. Harahan and published by the Office of Air Force History, Washington, D.C., in 1983 as part of its Project Warrior Studies.

4. FM 100-1, *The Army*, is currently under revision. It is expected that lessons learned about the relationship between the Army and the nation and the concept of three levels of war (strategic, operational, and tactical) will be incorporated in the new edition.

5. NWP 1, *Strategic Concepts for the U.S. Navy (Rev A)*, May 1978. Because of the way the U.S. Navy organizes, trains, and equips, its doctrinal development is quite different from that of the U.S. Army or the U.S. Air Force. Considerable authority is given to both CINCLANTFLT and CINCPACFLT in the development of doctrine and, in fact, much doctrinal development is assigned to one or the other or to commanders reporting to one or the other.

6. Currently, DOD Directive 5100.1 is addressed in AFR 55-18, *Functions of the DOD and Its Major Components*. This AFR will be superseded by AFM 1-4, *Missions and Functions of the U.S. Air Force*, which addresses the functions of the Air Force, both primary and collateral, and their relationship to Air Force missions. The new manual should be distributed by the end of 1984.

7. AFM 1-1, p. 3-3.

8. AFM 1-6, *Military Space Doctrine* (Washington, D.C.: Department of the Air Force, 15 October 1982), p. 8.

9. AFM 1-1, p. 3-6.

10. Bernard B. Fall, *Street without Joy* (Harrisburg, Pennsylvania: Stackpole, 1964); and Leslie H. Gelb and Richard K. Betts, *The Irony of Vietnam: The System Worked* (Washington, D.C.: Brookings Institution, 1979).

11. Arthur William Tedder, *With Prejudice: The War Memoirs of Marshal of the Royal Air Force, Lord Tedder* (Boston: Little, Brown, 1967); and Wesley F. Craven and James L. Cate, editors, *The Army Air Forces in World War II*, 7 volumes (Chicago: University of Chicago Press, 1948-1958).

12. Colonel Harry G. Summers, Jr., USA, *On Strategy: A Critical Analysis of the Vietnam War* (Novato, California: Presidio Press, 1982).

13. *Condensed Analysis*, p. 130.

14. Ibid., p. 141.

15. Dr. Robert F. Futrell's *The United States Air Force in Korea 1950-1953* (Washington: Office of Air Force History, United States Air Force, 1983) was originally published in New York by Duell, Sloan and Pearce in 1961. His *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964* (Maxwell AFB, Alabama: Air University Press, 1984) was originally published by Air University in 1971.

16. Dr. Michael Gorn and Dr. Charles J. Gross, "Published Air Force History: Still on the Runway," *Aerospace Historian*, March 1984, pp. 30-37.

17. Wing Commander Maurice Baring, RAF, *Flying Corps Headquarters 1914-1918* (London: William Blackwood and Sons, 1968). First published in 1920 by G. Bell and Sons.

18. Field Manual 100-5, *Operations*, Headquarters Department of the Army, 20 August 1982.

19. Russell F. Weigley, *Eisenhower's Lieutenants: The Campaign of France and Germany, 1944-1945* (Bloomington, Indiana: Indiana University Press, 1981).

20. *Condensed Analysis*, p. 1.

21. Ibid., p. 96.
22. Lieutenant General John H. Cushman, USA (Ret), *Organization and Operational Employment of Air/Land Forces* (Carlisle Barracks, Pennsylvania: U.S. Army War College, 1984), p. 2-2.
23. Ibid.
24. *Condensed Analysis*, p. 98.
25. Thomas Lawson, *Officer Inflation: Its Cost to the Taxpayer and Military Effectiveness* (Washington, D.C.: Project on Military Procurement, June 1982, pp. 10-11.
26. Gorn, p. 30.
27. General Bennie L. Davis, "Indivisible Airpower," *Air Force Magazine*, March 1984, p. 46.
28. See, for example, *AirLand Battle 2000 (1982 Version with Functional Areas)* (Fort Monroe, Virginia: Headquarters TRADOC, 10 August 1982), pp. 9-10.
29. Edward N. Luttwak. Interview with author et al., Spring 1984.
30. AFM 1-6, p. 8.
31. The mailing address of Hq Air Force Doctrine and Concepts Division is: Hq USAF/XOXID, Washington, D.C. 20330.

Defense James R. Schlesinger:

> The authorization of the MX missile goes to the heart of the foreign policy objectives of the United States . . . It goes to the heart of arms control, it goes to the heart of our alliance relations.[1]

Schlesinger was alluding to the long-standing fact that U.S. strategic nuclear forces are not designed solely to deter massive attack on the American homeland. They are also charged with providing a credible nuclear umbrella over distant allies in contexts where the forces deployed locally are known to be inadequate to withstand a Soviet assault. Strategic forces for extended deterrence must be capable of being employed flexibly against Soviet military targets.[2]

The same point can (and should) be applied more broadly. The quantity and quality of U.S. nuclear forces, as well as conventional and special forces, make sense only in terms of the security commitments with which U.S. foreign policy burdens U.S. defense policy. If one favors a great reduction in the scale of the U.S. defense effort, then one should favor a dramatic reduction also in the scale of U.S. overseas security commitments.

In principle, the United States does have a choice in foreign policy, therefore in the required character of its defense policy, and—by extrapolation—in the number and variety of weapons that it buys.[3] At the present, the United States is the principal and essential organizer or guardian of Western security. That role emerged from the collapse of the European balance-of-power system in the first half of the twentieth century.

An important distinction that often is neglected is that between survival interests and vital interests.[4] A survival interest is an interest that *must* be supported (fought for, if need be) if one's nation is to survive. A vital interest is an interest *worth* fighting for but not one that must be fought for to preserve the nation itself.

The United States has a survival interest in avoiding nuclear war. But many people fail to notice that the immediate danger of nuclear war lurks not in the defense strategy chosen, mix of weapon systems acquired, and quality of arms control policy but rather in our adherence to security commitments overseas that bring the United States directly into conflict with the Soviet Union and its clients. If avoidance of nuclear war is the *overriding* priority (which, of course, it is not), there is something to be said for the United States' removing itself from those security entanglements that could lead to nuclear confrontation. The United States cannot perform in what amounts to a global guardianship role on the cheap. Anyone who proposes drastic cuts in the defense effort without, simultaneously, proposing a drastic reduction in foreign policy commitments in Europe, the Middle East, the Gulf, and East Asia is encouraging the United States to accept greater risks than it does today.

Soviet Power

It is essential that the character of Soviet power be addressed very explicitly. Regardless of what one thinks U.S. defense policy should be, the following points about the Soviet Union need to be understood. First, the Soviet Union is an imperial power that feels threatened by everything that it does not control. Soviet definition of its security needs is incompatible with the security of others.

Second, the Soviet reading of history, as well as Soviet state ideology, mandates relentless struggle against enemies within and without. The political legitimacy of the domestic authority of the Communist Party of the Soviet Union rests substantially, though not exclusively, on its claim to be the interpreter of the correct theory of historical change.[5] By Soviet definition, the Soviet Union cannot wage an unjust war, while its weapons—again by definition—are stabilizing instruments and forces for peace; U.S. weapons, on the other hand, are destabilizing (the latter is a political view, not a technical one). A general settlement of differences is not feasible with the Soviet

state. The Soviet Union does not have finite security objectives that it can be allowed—after which it will settle back as a satisfied power.

Third, the basic fuel for Soviet antipathy toward the United States does not lie in objections to particular policies or weapons, although particular U.S. initiatives have triggered unusually forceful Soviet reactions. Rather, the Soviet quarrel with the United States is a quarrel with the existence of the United States as an independent security-organizing power in world politics.

Fourth, in worst imperial fashion, everything in Soviet security reasoning is connected to everything else. The Soviet Union is a multinational state in which the loyalty of a large fraction of non-Russian Soviet citizens to Moscow is questionable. The tranquillity of the Soviet territorial empire is threatened by movements for independence in the hegemonic empire in Eastern Europe.[6] In their turn, the imperial "holdings" in Eastern Europe are imperiled by the social, economic, and political attractions of Western Europe; and the political independence of Western Europe is underwritten by the United States.

Fifth, Soviet leaders are careful opportunists, not "gangsters in a hurry" like the leaders of Nazi Germany. In geopolitical terms, Soviet long-range goals may usefully be appreciated in terms of two phases: first, to expel U.S. influence and security organization from the Eurasian periphery (i.e., to deny access); second, having confined the United States very largely to the Western Hemisphere and thereby achieved a revolution in the global correlation of forces, to outcompete with an isolated United States in all the crucial categories of power.[7]

This argument may be presented in terms of realpolitik, ideology, or some judicious mix of the two. Similarly, one may cast the Soviet Union in offensive or defensive character—it really does not matter very much. The point is that the Soviet Union does not, and really cannot, accept the idea that what it defines as nonprogressive elements in the world have legitimate interests. Thus, Soviet defense efforts must not be interpreted solely or even largely as responsive reactions to the U.S. (or any other) threat.

The name of the game in Eurasia is political intimidation in the shadow of military power. Of course, the Soviet Union does not want nuclear war; but one should recognize that the Soviet state has been at war with the Western democracies since 1917, in the sense of conducting what can be understood as a "war in peace."[8] In Soviet eyes, as Lenin made abundantly clear, any tactical accommodation is acceptable, provided it serves longer-run Soviet interests.[9] The arms control process between the superpowers is, on the Soviet side, one among many instruments of political struggle. Yet this circumstance does not mean that the United States cannot do business with the Soviet Union. Soviet leaders are realists and will endorse tactical agreements for pragmatic reasons of near-term advantage or risk management.

Principles for U.S.-Soviet Relations

The United States plays the key role in organizing essential countervailing power to the Soviet Union. If the United States should cease to perform this role, no one else will (or can) substitute. There is no replacement candidate with sufficient power to perform the erstwhile U.S. global guardian mission. The Soviet Union would like nothing better than for the United States to withdraw its forces and its security commitments from around the littoral of Eurasia. In that happy event, in Soviet perspective, Soviet security relations with the states of peninsular Europe, the Middle East, the Gulf, and East Asia could be conducted on a one-to-one basis, where the disproportion in diplomatic weight would ensure very one-sided relationships indeed. The Soviet Union would like to see its relations with every country currently beyond the borders of its empire conducted al-

er the model of its relationship with Finland. The Soviet Union, for certain, does not want to ccupy Western Europe, but it does want the ind of respect that would allow it veto authorty over the security policies of Western Euroeans.

Several summary points are relevant here. irst, one should recall the Golden Rule of listory, that is, those with the weapons make he rules. Unlike Great Britain and the United tates, Russia/the Soviet Union has not enoyed a geographically based security that nabled it to neglect the Golden Rule. Furhermore, the Soviet Union is not interested in esting its security on goodwill. Soviet leaders equire the respect and obedience that comes nore reliably from fear. While it is true that othing remains unchanged forever and that he Soviet Union of fifty or a hundred years rom now may be considerably different from hat of yesterday or today, one cannot foresee he future. U.S. policy must be designed to cope vith the world as it is.

No one can guarantee that his preferred polies will ensure peace and security. But the istory of statecraft in general and the record of American relations with the Soviet Union in articular suggest some thoughts that should elp guide the design and execution of U.S. oreign policy.[10]

First, an authoritarian state that is seeking otal security will not respond benignly to gesures of goodwill, measures of unilateral disrmament, or the dismantling of rival military lliances.

Second, American behavior today feeds exectations for tomorrow. The greatest barrier o miscalculations that could produce war is a eadiness in U.S. policy and responses. A deiocracy that does not resist encroachment on s interests on four or five occasions can misad an authoritarian state easily into not execting a military reaction on a fifth or sixth ccasion. The unpredictable drawing of lines, s the British did over Poland's frontiers in 939 and as the United States did over Korea in 1950, is the stuff of which war by miscalculation is made.

Third, Soviet and Soviet-allied power flows wherever it is not opposed. It is almost always difficult to rationalize resistance in any particular instance. In and of itself, in American terms, U.S. territory aside, probably no piece of real estate is worth the serious risk of nuclear war. But a United States committed to the global containment of Soviet power and influence has to regard each of its overseas interests not only in the light of their intrinsic value for U.S. security but also in the context of their symbolic value. The U.S. reputation as a reliable provider of security is the greater part of the U.S. interest in most of the individual cases where American clients might be threatened by the Soviet Union or its clients.

The Soviet Union is an imperial power that feels threatened by everything that it does not control.

Fourth, if the United States were to choose to behave on the basis of an overriding (and, in many ways, sensible) fear of nuclear war, it could be intimidated out of fulfilling any overseas foreign-policy commitment by a Soviet Union that seems less intimidated by nuclear dangers.

Fifth, in a nuclear age, it is not controversial to say that the United States must have a nuclear strategy.[11] Nuclear weapons cannot be disinvented, and nuclear threats are very important as a backstop to U.S. diplomacy because of the geography of East-West conflict (the United States and its allies have major and apparently enduring deficiencies in nonnuclear forces in Europe). Anyone who would do away with nuclear threat and the nuclear arms competition has to explain how the political structure of competition that sustains the arms

race is first to be transformed.

A 1982 bestseller by Jonathan Schell painted a truly gothic picture of the risks that are endemic in a security system that rests on reciprocated nuclear threats, but the author failed in that work to explain how the necessary political transformation in human security arrangements might be effected.[12] Despite this nontrivial weakness in his analysis, Schell at least recognized that there can be no comprehensive escape for the human race from nuclear danger unless the political millenium can be made to happen. Subsequently, however, in replying to his many critics, Schell has attempted to design a proposal for nuclear safety that would not require the prior pooling of national sovereignties in a single global authority.[13] Schell now seeks to persuade his readers that deterrence, including nuclear deterrence, would continue to function in a world of nuclear-disarmed states (there would be a fear of rearmament). It would be a gross understatement to say that the plausibility and rigor of his more recent argument leaves a very great deal to be desired.

Much of the more orthodox arms control literature suggests that the road to safety lies through better management of the arms competition. There is no prospect that START agreements could effect sufficient reductions in superpower nuclear arsenals to preclude the possibility that a nuclear war would trigger a so-called nuclear winter. For radical measures of nuclear disarmament to be even remotely feasible politically and strategically, the superpowers would need to deploy competent ballistic missiles and air defenses to "police" their officially disarmed counterparts.[14]

Implications for U.S. Policy

Even if the United States were to change its foreign policy drastically away from global containment and intervention, security travail and danger for Americans would not vanish as a consequence. The Soviet client-state system in Eurasia would expand, and the geopolitical terms of the Soviet-American competition would be altered greatly to the disadvantage of the United States. Just as the Bolsheviks discovered early in 1918 vis-à-vis Imperial Germany, one cannot simply declare "no war, no peace," go home, and expect an adversary who has very strong incentives to continue the struggle to abide by one's unilateral preference for a quieter life.[15] As noted earlier, truly irresponsible people would cut U.S. military forces but seek to leave U.S. foreign policy intact. In other words, there would be far fewer means to protect U.S. overseas interests. Already, military limitations are a severe problem. U.S. foreign security commitments have grown since the early 1950s, as the United States inherited security duties on behalf of former colonies and clients of the European powers. But while the U.S. foreign policy burden has increased, the Soviet Union has transformed the military balance since the 1950s, neutralizing previously clear U.S. military advantages, particularly in the realms of strategic nuclear and naval forces.

Soviet and Soviet-allied power flows wherever it is not opposed.

If the United States were to step back from what, pejoratively, is called its "global policeman" role, peace would not break out (either for the United States or for others). Instead, local powers would have to find substitute policies for their previous American security connection. In some cases, the result would be nuclear proliferation; in many others, a prudential drift toward acceptance of a more or less tacit Soviet hegemony (a client-state relationship). The United States would find itself more and more isolated in the world—moreover, it would be so in a world that still contained a Soviet empire both committed to the downfall

f its only first-class adversary and encouraged o press its claims by the plain evidence of merican retreat.

A good argument can be turned into a bad rgument if it is translated without finesse or iscrimination into policy recommendations. t is important that the United States be a steadast friend and ally, but that steadfastness must e understood to be of a contingent character. he United States should not write blank seurity checks for anybody (regardless of their egional behavior or domestic practices). If loal clients persist in pursuing their local interts in ways that have the effect of transforming nem into net security liabilities to the United tates, then they should be abandoned to find neir own salvation.

It should be clearly understood that a securitylient relationship with the United States does ot come cost-free. Clients cannot enjoy the enefit of U.S. protection and at the same time e at liberty to pursue military adventures among other sins) of which the United States isapproves very strongly. From time to time, uite properly, the United States may choose to onfine its disapproval to private remonstrance nly. Such will be the case in circumstances here a net assessment of the costs and benefits to .S. security of continuing the formal security onnection proves to be positive. Needless to say erhaps, abandonment and "support as usual" omprise only the poles on the range of policy ossibilities. More often than not, the foreign olicy choice is not one of either/or.

A good example of just how difficult the role f security provider can be is the case of U.S. elations with Greece and Turkey. In geostragic terms, Greece is important to the United tates, but Turkey is essential. The Turkish invaon of Cyprus in 1974 posed a most undesirable noice between allies for U.S. policymakers. ometimes choice cannot be avoided (as between ritain and Argentina in 1982), but often, clear noice can be evaded (as between Greece and urkey)—though at a price. The general conseuence of the evasion of clear choice is that all local parties to the dispute come to view the United States as an insufficiently steadfast ally.

The United States must be willing to back its diplomacy with force where necessary. Certainly, it should be slow to anger and should remember that military power often is most effective when it is not expended in action.[16] Nonetheless, a reputation for meaning what one says is essential. There are rare occasions when there is no substitute for military deterrence and, if need be, for the use of force (for example, in a British case, over the Falklands). Timely demonstration of a willingness to defend a vital interest can preclude very dangerous misperceptions.

It should be clearly understood that a security-client relationship with the United States does not come cost-free.

Soviet and Cuban policies will, of course, seek to exploit whatever opportunities for mischief local conditions permit. It is important that international perceptions to the effect that there is a "tide of history" favoring Soviet-assisted elements be corrected and reversed, and those perceptions can be corrected and reversed only as a consequence of actions, not by words alone (which is why the Grenada operation in October 1983 was so significant). People who contemplate asking assistance of Cuba or the Soviet Union should understand that major risks for them will accompany such assistance.

I do not favor a trigger-happy United States, glorying in an international "bully" role and simplemindedly defining any and every local conflict in terms of the East-West competition. Just as nobody wants nuclear war, nobody desires indiscriminate military intervention overseas.

The contemporary architecture of American foreign policy is both necessary and honorable. It is necessary for the preservation of U.S. national

security and for the maintenance of the global balance of power and such international order as we enjoy. It is honorable in that it is intended, insofar as real-world conditions permit, to sustain and encourage the values that are central to decent human existence.

FINALLY, it is necessary to address directly the question of risk to Americans implied thus far. There can be no ignoring the fact that the survival of the United States and its people is threatened most immediately by Soviet military power as a consequence of the security guarantees that the U.S. government has extended to countries around the periphery of Eurasia. The first-strike requirement with which U.S. long-range theater and strategic nuclear forces are burdened reflects not U.S. choice in nuclear strategy but, rather, the logical necessity of providing a deterrent continuum against the contingency of unfolding regional defeat on the ground.

The United States must be willing to back its diplomacy with force where necessary.

It is likely that the United States could secure some considerable near-term relief from the danger of nuclear war if it were to decide to contract its defense perimeter back to the Western Hemisphere (and perhaps selectively even there) and to abandon, unambiguously, the grand strategy of global containment that it has pursued since the late 1940s. The occasions for superpower confrontation, so the argument proceeds, would have to shrink dramatically if the United States ceased to act as the supportive keystone in the arch of anti-Soviet alliances around littoral Eurasia.

However, apparently commonsense logic that holds that security guarantees are simply too dangerous to the guarantor in a nuclear-armed world neglects some inescapable facts of our age.[17] First, the United States is not at liberty to decide to cultivate its garden inoffensively in North America—leaving the Old World to settle its security dilemmas as best it can. As I have argued earlier, Soviet-American competition is inescapable.

Second, the nuclear age is irreversible. The most crucial atomic secret was revealed in 1945 at Alamagordo, New Mexico: the atomic bomb worked. There are no alternatives to the nuclear age. Just as the United States cannot find security through choosing once again to retire from world politics, so it cannot remove definitively the nuclear threat to its existence by any measure of unilateral or even negotiated bilateral (or multilateral) nuclear disarmament. If nuclear disarmament should ever be feasible, so would nuclear rearmament if the political incentive were present.

Third, nuclear dangers may be alleviated to some modest degree by strengthening conventional deterrence, but both history and logic suggest that the United States cannot escape the worst of nuclear dangers by emphasizing nonnuclear defense preparation. Deterrence may be enhanced were Soviet military planners and political leaders to be decreasingly confident that they could achieve rapid success in a conventional blitzkrieg in Europe.[18] However, it is prudent to reason that Soviet leaders could never be wholly confident that they could control the type of weaponry that would be employed in a massive attack against a heavily nuclear-armed NATO. Moreover, it is reasonable to assume that conservative Soviet leaders would attach more importance to the war/peace threshold than to the conventional (chemical?)/nuclear one. A Soviet Union sufficiently motivated politically to choose to invade NATO-Europe would be, one should presume, a Soviet Union sufficiently determined and prepared to employ whatever kind and quantity of weapons might be required for the securing of victory in the theater. It

should be noted that NATO-European governments have been scarcely more enthusiastic about providing the means for the strengthening of conventional deterrence than they have been about designing a theater nuclear warfighting doctrine and posture for the restoration of deterrence.[19]

If nuclear disarmament should ever be feasible, so would nuclear rearmament if the political incentive were present.

Given that the nuclear age cannot be rescinded and that fundamental Soviet enmity toward a United States that is beyond Soviet control is inescapable, it follows that the United States has no choice other than to seek to manage the threat posed by Soviet power to an international order that is compatible with the security of important American interests. No deus ex machina is going to rescue the United States from nuclear insecurity. However, nuclear-age dangers can be alleviated, though certainly not resolved, by steadiness in providing military deterrent muscle of all kinds and through energetic exploration of the technological possibilities for strategic defense of the United States and its allies. Active defenses against ballistic missiles, aircraft, and cruise missiles can do little to promote political peace, but they may be able to have a very marked, benign impact on the scale of danger to which the U.S. homeland is exposed as a result of the inalienable political struggle with the Soviet imperium.

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Notes

1. Testimony in U.S. Congress, Senate Committee on Foreign Relations, *President's Commission on Strategic Forces, Hearing*, 98th Cong., 1st sess. (Washington: U.S. Government Printing Office, 11 May 1983), p. 6.

2. The relationship between foreign policy commitments and nuclear strategy and forces is explored in Colin S. Gray and Keith B. Payne, "Nuclear Strategy: Is There a Future?" *Washington Quarterly*, Summer 1983, pp. 55-66; and Earl C. Ravenal, "Counterforce and Alliance: The Ultimate Connection," *International Security*, Spring 1982, pp. 26-43.

3. For a detailed examination of some alternative conceptions for U.S. national security policy, see Colin S. Gray, *Basic U.S. Choices, 1982-2000* (Fairfax, Virginia: National Institute for Public Policy, March 1983), particularly chapters 10-12.

4. This distinction is made and applied rigorously in Donald E. Nuechterlein, "National Interests and National Strategy: The Need for Priority," in Terry L. Heyns, editor, *Understanding U.S. Strategy: A Reader* (Washington: National Defense University Press, 1983), pp. 61-63.

5. Other sources of legitimacy include the longevity of Soviet rule; the Party's role, real and fabricated, as organizer of victory in the Great Patriotic War; and the ability of the regime to satisfy the economic expectations, if not aspirations, of the Soviet peoples. A useful discussion of the issue of political legitimacy is Seweryn Bialer, *Stalin's Successors: Leadership, Stability, and Change in the Soviet Union* (Cambridge: Cambridge University Press, 1980), Chapter 9.

6. See Edward N. Luttwak, *The Grand Strategy of the Soviet Union* (London: Weidenfeld and Nicolson, 1983); Helene C. d'Encausse, *The Decline of an Empire: The Soviet Socialist Republics in Revolt* (New York: Newsweek, 1979); and Gary L. Guertner, "Strategic Vulnerability of a Multinational State: Deterring the Soviet Union," *Political Science Quarterly*, Summer 1981, pp. 209-23.

7. On the geopolitics of Soviet-American competition, see Colin S. Gray, *The Geopolitics of the Nuclear Era: Heartland, Rimlands, and the Technological Revolution* (New York: Crane, Russak, 1977).

8. See Robert Bathurst, "Two Languages of War," in Derek Leebaert, editor, *Soviet Military Thinking* (London: Allen and Unwin, 1981), Chapter 2.

9. Several examples in Soviet history illustrate short-term accommodation to achieve long-term gains. In March 1918, the Soviet Republic accepted a humiliating peace treaty with Imperial Germany at Brest-Litovsk; while in August 1939, Stalin signed a nonaggression with Nazi Germany (the Molotov-Ribbentrop Pact), which, de facto, bought time for the Soviet Union at the price of giving Hitler a free hand in the West. Lenin's rationale for accepting Brest-Litovsk may be found in V. I. Lenin, "Theses on the Question of the Immediate Conclusion of a Separate and Annexationist Peace," 20 January 1918, in Alvin Z. Rubinstein, editor, *The Foreign Policy of the Soviet Union*, third edition (New York: Random House, 1972), pp. 53-58. Both the Molotov-Ribbentrop Pact and Molotov's official explanation of the rationale for the treaty can be found in the same work, pp. 136-44.

10. An excellent review of the history of Soviet-American negotiations is U.S. Congress, House of Representatives, Committee on Foreign Affairs, *Soviet Diplomacy and Negotiating Behavior: Emerging New Context for U.S. Diplomacy*, Special Studies Series on Foreign Affairs Issues, Vol. 1 (Washington: U.S. Government Printing Office, 1979).

11. See Colin S. Gray, "Nuclear Strategy: A Regrettable Necessity," *SAIS Review*, Winter-Spring 1983, pp. 13-28.

12. Jonathan Schell, *The Fate of the Earth* (New York: Knopf, 1982).

13. Jonathan Schell, *The Abolition* (New York: Knopf, 1984).

14. I have explored this question in some depth in *Strategic Defense and National Security: The Policy Challenge*, Information Series No. 159 (Fairfax, Virginia: National Institute for Public Policy, November 1983), and "In Defense of Disarmament," *Bulletin of the Atomic Scientists*, July 1984, pp. 46-47. For discussion of the issues of transi-

tion, see Keith B. Payne and Colin S. Gray, "Nuclear Policy and the Defensive Transition," *Foreign Affairs*, Spring 1984, pp. 820-42.

15. See Adam Ulam, *Expansion and Coexistence: The History of Soviet Foreign Policy from 1917-1967* (London: Secker and Warburg, 1968), p. 67. On 10 February 1918, Leon Trotsky "read to the dumbfounded enemy delegates a declaration that Russia was proclaiming the end of the war *without* signing a peace." (Emphasis in the original.)

16. A powerful exposition of this view is Edward N. Luttwak, *The Grand Strategy of the Roman Empire: From the First Century A.D. to the Third* (Baltimore: Johns Hopkins University Press, 1976), particularly pp. 195-200.

17. The formal rationale for the development of France's *force de frappe* has always been that no country, no matter how honorable its intentions, can be trusted, or should be expected, to assume risks to its own survival on behalf of others. In recent years, some European commentators have expressed the fear that the U.S. nuclear guarantee may mean that European security is hostage not so much to American firmness of will but rather to American steadiness and wisdom—both of which have been questioned severely. Henry Kissinger caused sizable tremors throughout NATO-Europe in 1979 when he said: ". . . our European allies should not keep asking us to multiply strategic assurances that we cannot possibly mean or if we do mean, we should not want to execute because if we execute, we risk the destruction of civilization." See "The Future of NATO," in Kenneth A. Myers, editor, *NATO: The Next Thirty Years* (Boulder, Colorado: Westview, 1980), p. 8. This book comprised conference papers delivered in September 1979. European anxiety about the steadiness of U.S. policy is strongly implied in Michael Howard, "Reassurance and Deterrence: Western Defense in the 1980s," *Foreign Affairs*, Winter 1982/83, pp. 309-24.

18. See European Security Study, *Strengthening Conventional Deterrence in Europe: Proposals for the 1980s* (New York: St. Martin's, 1983); Thomas A Callaghan, Jr., "Can Europe Be Defended?" *Policy Review*, Spring 1983, pp. 76-85; John J. Mearsheimer, *Conventional Deterrence* (Ithaca, New York: Cornell University Press, 1983); William W. Kaufmann, "Non-nuclear Deterrence," in John D. Steinbruner and Leon V. Sigal, editors, *Alliance Security: NATO and the No-First-Use Question* (Washington: Brookings, 1983), Chapter 4; Elmar Dinter and Paddy Griffith, *Not over by Christmas: NATO's Central Front in World War III* (Chichester, United Kingdom: Antony Bird, 1983); Richard K. Betts, "Conventional Strategy: New Critics, Old Choices," *International Security*, Spring 1983, pp. 140-62; and the subsequent "Correspondence" between Betts and Edward N. Luttwak in *International Security*, Fall 1983, pp. 176-82.

19. The long-term defense plan (LTDP) adopted by NATO in 1978 called for achievement of 3 percent per annum growth in real defense expenditures for a ten-year period in order to correct deficiencies across-the-board in conventional forces. As of 1984, the LTDP essentially is dead. For example, in November 1983, the British government announced that it would be unable to meet the requirements of the LTDP. While there are economic reasons for the unwillingness of most NATO-European countries to meet the LTDP goals, European distaste for a true conventional "war-fighting" strategy goes far deeper than economic considerations alone. See Colin S. Gray, "NATO Defense and Arms-Reduction Proposals," *Military Review*, October 1983, pp. 62-68.

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The Air Power Symposium Programs Division of Air War College at Hq Air University will host its Ninth Air Power Symposium on 11-13 March 1985. The theme is "The Role of Air Power in Low-Intensity Conflict," which will be covered in four interrelated sessions: Implications of the Threat, National Security Policy for Lower Levels of Conflict, Military Strategy for Implementing Policy, and Military Forces for Lower Levels of Conflict.

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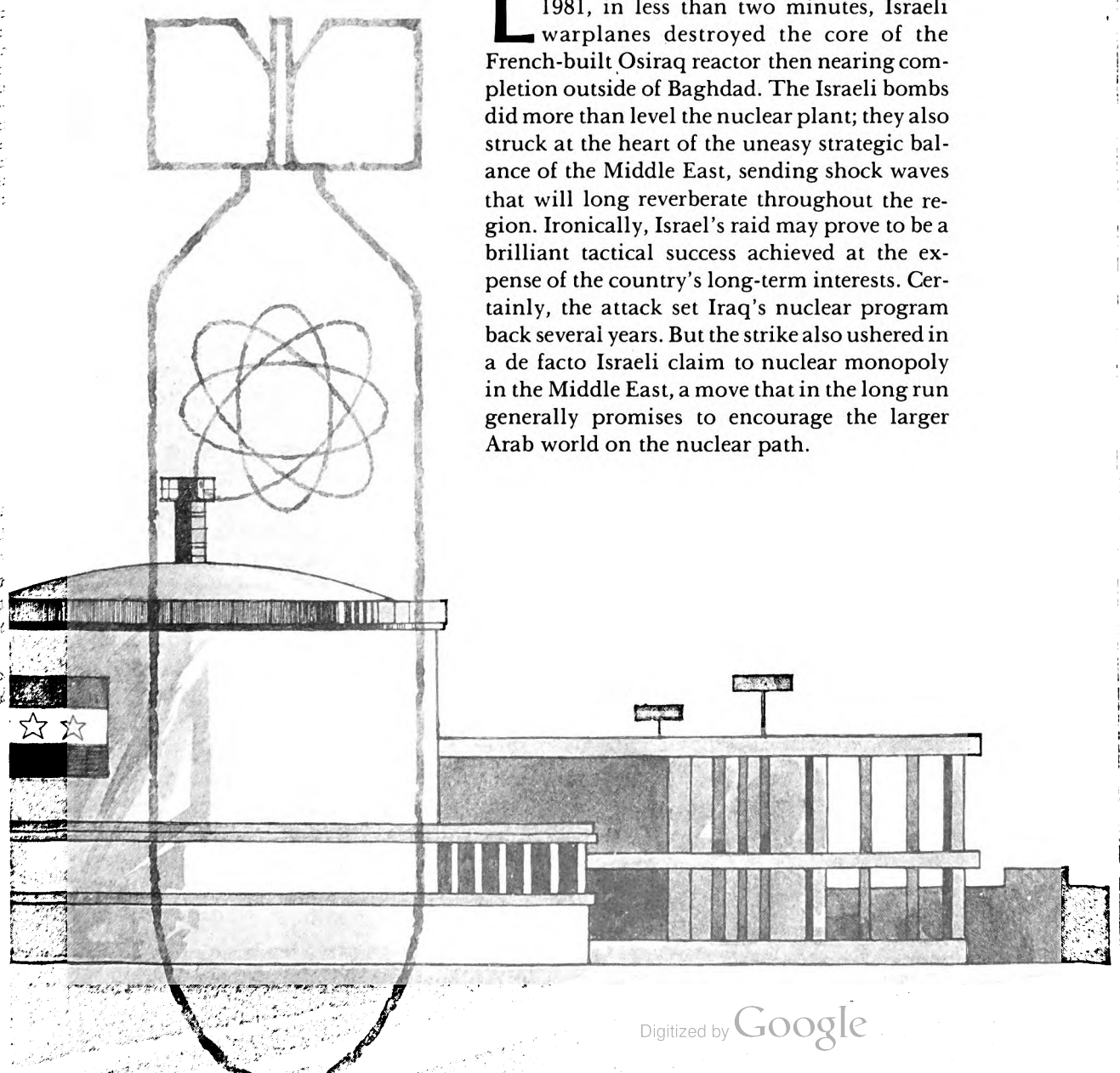
THE ISRAELI STRIKE AGAINST OSIRAQ

the dynamics of fear and proliferation in the Middle East

LUCIEN S. VANDENBROUCKE



LATE on a Sunday afternoon in June 1981, in less than two minutes, Israeli warplanes destroyed the core of the French-built Osiraq reactor then nearing completion outside of Baghdad. The Israeli bombs did more than level the nuclear plant; they also struck at the heart of the uneasy strategic balance of the Middle East, sending shock waves that will long reverberate throughout the region. Ironically, Israel's raid may prove to be a brilliant tactical success achieved at the expense of the country's long-term interests. Certainly, the attack set Iraq's nuclear program back several years. But the strike also ushered in a de facto Israeli claim to nuclear monopoly in the Middle East, a move that in the long run generally promises to encourage the larger Arab world on the nuclear path.

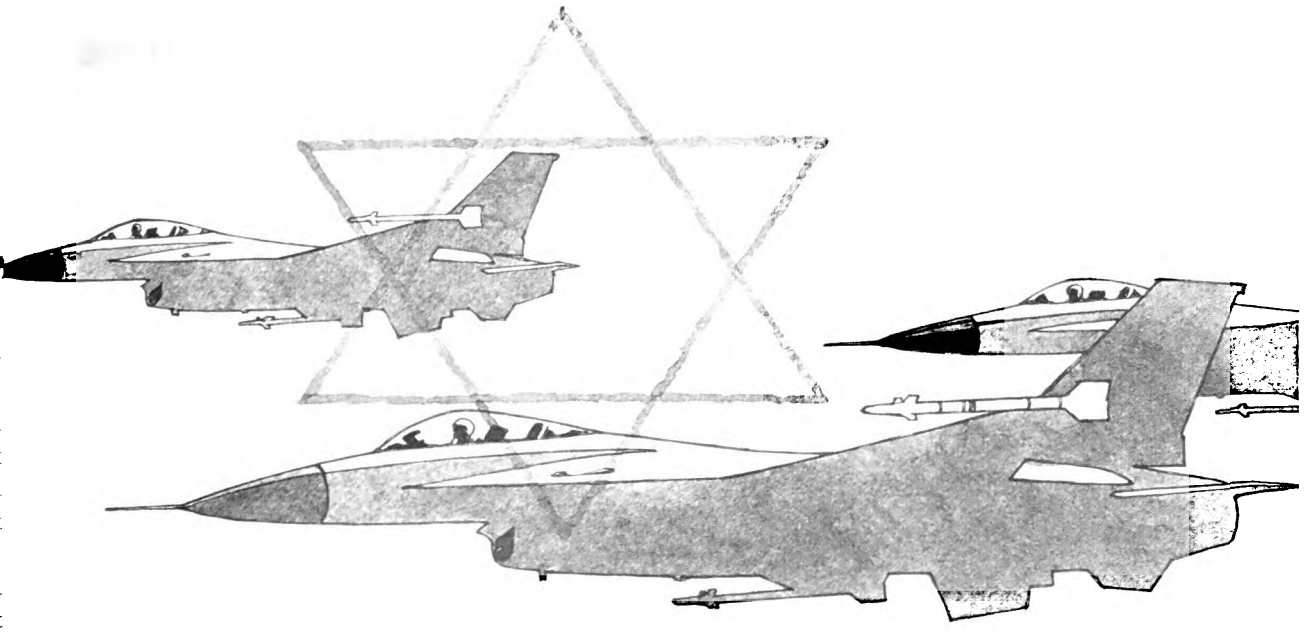
CONSIDERABLE controversy surrounds Iraq's nuclear program. The Iraqis insist that their intentions are peaceful, pointing out that Iraq is a party to the Nonproliferation Treaty and has agreed to operate its nuclear facilities under the safeguards of the International Atomic Energy Agency (IAEA). Furthermore, there is no doubt that an Iraqi program of peaceful nuclear development makes economic sense. Although the country has some of the largest petroleum reserves in the world, the Iraqis are justified in preparing for the day when the oil wells run dry.[1] Iraq also aspires to make rapid strides in its technological development and has a legitimate interest in increasing its expertise in the nuclear field.

Certain signs, however, indicate that Iraq's interest in nuclear technology goes beyond peaceful uses of the atom. The sheer size of the Iraqi nuclear program is surprising. Iraq's hopes of becoming the nuclear center of the Arab world notwithstanding, the goal of training 500-600 scientists and technicians at its nuclear facilities is unusually ambitious in light of the severe shortage of scientific personnel that is afflicting the country's other development efforts.

Moreover, the Osiraq materials testing reactor (MTR) that Iraq purchased from France (among the largest of its kind in the world) seems a poor choice for initiating a peaceful nuclear program. The primary function of MTRs is to see how the materials used in nuclear power plant construction react when exposed to intense and prolonged radiation. Since Iraq does not manufacture nuclear power plants, the usefulness of Osiraq for its peaceful nuclear program remains questionable. If Iraq's objective is weapons-grade fissionable material for nuclear weapons, Osiraq becomes a good choice because it can conceivably supply this material in two ways. First, the reactor fuel, consisting of highly enriched uranium (HEU), well suited for nuclear weapons production, could be diverted for military use. Another path to fissionable material lies in the irradiation of targets of natural or depleted uranium inside the reactor. These targets are partially transformed through neutron bombardment into weapons-grade plutonium, which can then be extracted and used to make nuclear devices.[2]

The pattern of Iraq's nuclear efforts indicates that such access to fissionable material is a major objective of the country's nuclear program. Upon first approaching the French nuclear industry in 1974-75, Iraq requested a gas-graphite power reactor, which is an inefficient source of electricity but an excellent supplier of large quantities of plutonium. (In fact, gas-graphite reactors produce so much plutonium that they are the major source of the element for the military programs of France, the United Kingdom, the United States, and the Soviet Union.)[3] The French indicated to Iraq that they no longer manufactured graphite reactors but that they could offer conventional light-water power reactors, which are far less proliferating. Rejecting this proposal, Iraq then shifted the focus of its nuclear program from power generation to research and, in 1976, acquired Osiraq—a facility which again offered far better access to fissionable material than did conventional power reactors.[4] When France subsequently suggested replacing Osiraq's weapons-grade fuel with the non-weapons-grade caramel fuel that French scientists had just developed, the Iraqis again refused.[5]

This apparent willingness to settle for any kind of reactor, provided it was of the more proliferating type, followed by Iraq's refusal to switch to non-weapons-grade fuel, points toward a major Iraqi desire to obtain bomb-grade material. This goal is further evidenced by Iraq's efforts in the late 1970s to acquire an Italian Cirene-type reactor. Again, Iraq's interest in an uneconomical reactor that remains in the experimental stage seems surprising, unless the Iraqis were mainly attracted by Cirene's capacity to produce large amounts of weapons-grade plutonium.[6]



Still other signs indicate Iraq's interest in eapons-grade fissionable material. Iraq has urchased large quantities of uranium ore and pleted uranium for which there is little con-ivable use in a peaceful nuclear program. As eviously noted, both substances can be irra-ated in Osiraq to produce plutonium. This enario becomes all the more plausible since aq has acquired both a fuel fabrication labo-tory and a "hot cell." The Iraqis can use the boratory to fashion natural and depleted u-nium targets for insertion into the reactor; en they can recover the plutonium from the radiated targets in the hot cell.[7]

The size of the Iraqi program, the country's stinate search for a reactor providing good cess to weapons-grade material, the refusal of bstitute fuel for Osiraq, and the purchase of e uranium and facilities needed for pluto-um production all indicate a high degree of terest in fissionable material. While this ttern does not necessarily prove that Iraq's clear efforts are merely a military program in disguise, it does suggest that the civilian program contains a hidden agenda: preparing for an eventual Iraqi bomb.

The Iraqis themselves have made certain statements confirming their interest in nuclear weapons. In 1975, the Iraqi leader Saddam Hussein described his country's efforts to buy a nuclear reactor as "the first Arab attempt at nuclear arming." Two years later, Naim Haddam, a prominent member of Iraq's Central Revolutionary Command, declared: "The Arabs must get an atomic bomb. The countries of the Arab world should possess whatever is necessary to defend themselves." Then, immediately after the raid on Osiraq, Hussein denied that Iraq's nuclear program had any military implications. But he also added: "Any state in the world which really wants peace . . . should help the Arabs in one way or another to acquire atomic bombs."[8]

The Iraqis have several real incentives to acquire nuclear weapons. Joining the nuclear club promises domestic gains, for it would in-

spire national unity and pride in a country that is badly divided along ethnic and confessional lines. By enhancing the stature of Iraq in both the Middle East and the larger world, an Iraqi bomb would also help the nation's leadership reach its goal of making Iraq the dominant power in the Gulf as well as a major participant in world affairs.[9] Iraqi rulers also appear to believe that nuclear weapons would enhance their country's security. Convinced that Israel is a nuclear state, the Iraqis view an Arab bomb as a necessary deterrent: "Peace in the Middle East requires an Arab bomb today. . . . This is necessary to maintain equilibrium and to prevent the Iraelis from using their bomb against Arabs."[10] No doubt the Iraqis are likewise persuaded that an Iraqi deterrent would also prove effective against neighboring Iran, at least until the Islamic revolution had a large and threatening nuclear program of its own.

On balance, then, while there is no incontrovertible proof of Iraq's intention to obtain nuclear weapons, the characteristics of its nuclear program, combined with the statements and incentives of its leadership, make it highly likely that Iraq wishes to acquire at the very least the capacity to build nuclear weapons.

There remains the question, however, of how close Iraq had come to this objective at the time of the Israeli strike. Here, the preponderance of the evidence indicates that although Iraq's program would have given the nation a nuclear capability eventually, it was unlikely to pose an immediate threat.

In principle, Osiraq might have supplied weapons-grade material both by diversion of the reactor fuel and by production of plutonium. Yet in practice, neither scenario was likely, given the safeguards on the Iraqi reactor, including regular visits by IAEA officials and a permanent presence of French technicians until 1989. Of the two paths to fissionable material, diversion of reactor fuel probably looked the least attractive. Osiraq and its accompanying Isis reactor, a small training facility also supplied by France, were designed to run on a fuel load of about 12 kgs of HEU each. Isis would run indefinitely on a single charge, while Osiraq normally would require approximately three loads a year. Delivery of fuel for Osiraq was to be staggered, however, the French supplying a new charge only when the previous one had been spent and always sending the depleted fuel back to France. Thus, the most fresh HEU the Iraqis could have hoped to divert at any one time would have been a load each from Isis and Osiraq, or 24 kgs in all—enough perhaps to produce a single atomic bomb.[11] Preventing the operation of the reactors, such a diversion would have been noticed immediately. France, which has pledged to abide by the Nonproliferation Treaty,[12] would have had to cease its deliveries of HEU, and Iraq's nuclear program would have come to a halt. Thus, while on the face of it, the Iraqis had secured the option to divert HEU, in reality they were bound to find fuel diversion highly unappealing because of the costs and risks involved.

Nor did the second path to proliferation, clandestine production of plutonium by irradiation, hold out much more promise. For one thing, the specially shielded transportation devices needed to move the irradiated uranium targets are next to impossible to conceal.[13] Similarly, irradiating the targets themselves was unlikely to escape notice. Producing enough plutonium for one bomb entails inserting about five hundred natural uranium rods, weighing a total of twenty tons, into the reactor core. As the reactor accommodates approximately twenty such assemblies at a time, the process involves repeated movements in and out of the reactor core of targets that look very different from the irradiation capsules used in any legitimate experiment. In addition, inserting and removing the uranium targets is a difficult and time-consuming process, calling for high technology and reactor shutdown.[14] The production of enough plutonium for a bomb would thus generate visible and suspicious activity at the core that could hardly escape ob-

ervation by the French technicians, visiting nternational Atomic Energy Agency inspectors, or the IAEA's permanent surveillance cameras at the site.

It is therefore highly unlikely that with the greed-on safeguards, Iraq could have produced significant quantities of fissionable material without detection, which, in turn, would ıave automatically triggered a French cutoff of eactor fuel. Nevertheless, had the Iraqis somehow evaded supervision and secretly produced ɔlutonium while feigning to operate the reactor in normal research fashion, Iraq might ıave obtained up to a kilogram of plutonium a ear, or enough for one or two bombs over a en-year period.[15]

Iraq, of course, could have withdrawn from he Nonproliferation Treaty and canceled its greement with France. Such a step would have eft the Iraqis free to operate the reactor with-ıut supervision. Once cut off from the French upply of HEU, however, it is improbable that raq could have secured additional reactor fuel. ıt present, there are only six other potential uppliers of highly enriched uranium, none of vhom could be expected to assist in an unsuɔervised operation of Osiraq.[16] Withdrawal from he Nonproliferation Treaty and unsafeguarded ıse of the reactor could have become a plausiıle scenario only several years from now, when ddditional suppliers of enriched uranium, such s Pakistan or Brazil, will appear on the market nd might be willing to supply Iraq with unafeguarded reactor fuel.

While it seems highly reasonable to assume hat Iraq's civilian nuclear program conceals a ıilitary rationale and that Osiraq provided a ɔundation for an eventual Iraqi weapons proram in the latter half of the decade, it is highly nlikely that the reactor would have provided raq with nuclear devices in the immediate fuure. Nevertheless, as one specialist commented, to say that successful diversion would have een unlikely, or for that matter very unlikely, s not to say that it would have been impossible. he distinction is important and should be kept in mind."[17] The difference was not lost on the Israelis, who chose not to gamble on the odds, no matter how favorable.

SINCE most of the Israeli government's deliberations leading to the June 1981 raid remain secret, it is difficult to ascertain the full range of considerations that entered into the decision to bomb Osiraq. It is clear, however, what while Israeli leaders had worried about the Iraqi nuclear program for years, they had been divided over the appropriate response. The Begin government's decision to attack the reactor, reached essentially by the Ministerial Defense Committee, a subcabinet group, reflected these divisions. While Prime Minister Menachem Begin, Foreign Minister Yitzhak Shamir, Agricultural Minister Ariel Sharon, and Chief of Staff General Rafael Eytan pushed vigorously for a strike, several other ministers opposed the idea but lost in the final decision process. There was also strong dissent from other quarters. When news of the Begin government's plan was leaked to former Prime Minister and opposition leader Shimon Peres, he opposed the idea, as did the other senior members of his party with whom he shared the information. Peres even made a last-minute plea to Begin in an effort to reverse the decision.[18]

Several observers have suggested that Israel's concern over the long-term regional strategic balance played a major part in the decision to attack. According to this view, the Israelis fear that in the long run they will lose their conventional military superiority in the Middle East and that only their nuclear monopoly can ensure local preponderance. Thus, the Israelis could not allow a confrontation state to acquire atomic weapons of its own—a development that might offset Israel's nuclear advantage.[19] It is difficult to know to what extent such thinking influenced the decision, however, since Israel has never made clear the role of nuclear weapons in its overall doctrine of

defense.[20] It should be noted, however, that the major proponents of the strike included men like Sharon, who believe neither in the inevitability of Israel's conventional decline nor in the usefulness of an Israeli nuclear deterrent.[21]

Whatever strategic rationale may have entered into Israel's decision to attack, the move probably sprang from more than a cold appraisal of the regional balance of power. Overlaying these calculations was a simpler emotion: the visceral fear of an atomic genocide. Inescapably, Israel embodies the memory of the holocaust: always present to the Israeli populace and their leaders is the thought that such a catastrophe could occur again. Five wars with Israel's Arab neighbors, whose incendiary rhetoric has often promised extermination, have done nothing to allay these fears. From this dread of another holocaust, which has obsessed Menachem Begin more than any other Israeli leader,[22] has arisen a specific Israeli outlook encompassing the tendency to rely in matters of security on "worst possible case" analysis. Hence, when faced with a menace, at least some Israelis would rather overestimate than underestimate the threat.[23]

Given this disposition, which appeared widespread in Begin's hawkish Likud government, the prospect of a nuclear-armed Iraq certainly seemed alarming. Israel, whose population is largely concentrated in one or two urban areas, is particularly vulnerable to nuclear attack: one or two atomic warheads could deal the country a mortal blow. Further compounding Israeli apprehensions was the fact that the first Arab country threatening to go nuclear was Iraq. By its rhetoric, if not necessarily by its deeds, Iraq had long been in the vanguard of the confrontation with Israel. Known for its support of various terrorist groups and its bitter denunciation of the Camp David peace process, Iraq had acquired a record of chilling statements. President Hussein had repeatedly refused to accept "that the monstrous Zionist entity conquering our land really constitutes a state." Commenting on a decision to boycott nations that have embassies in Jerusalem, he also added: "Some people may ask if this decision is the best that can be taken. No, a better decision would be to destroy Tel Aviv with bombs."[24]

On the other hand, Hussein had never tried to implement the latter policy, and his actual behavior in the Arab-Israeli conflict had been considerably more prudent than his rhetoric would suggest.[25] Moreover, it was far from evident that Hussein was about to acquire nuclear weapons, and, even if he were, that he would be reckless enough to use them against Israel, thereby inviting an equally devastating Israeli counterstrike upon Iraq.[26]

In the decision-making process, Israeli fears and the propensity to rely on worst-case analyses seem to have prevailed. The advocates of the strike focused on the unreasonable, rather than the reasonable, aspects of Iraqi behavior, and thus even a limited prospect that Iraq might soon acquire a nuclear bomb became more of a risk than they were prepared to accept. Dismissing Hussein as a bloodthirsty lunatic and a *meshuggenah* (crazy person), Begin, for instance, became convinced that the Iraqis would not hesitate to attempt nuclear genocide. During the aftermath of the raid, in explaining his reasons for favoring the attack, he stated succinctly: "After the holocaust another holocaust would have happened in the history of the [Jews]. There won't be another holocaust in the [history] of the Jews." In their own explanations for the raid, other key decision makers reiterated this dread of a nuclear holocaust unleashed by an irresponsible Iraq. Sharon, for example, declared that "nuclear arms in the hands of a country like Iraq constituted a danger not only to Israel . . . but to the entire world." Similarly, Eytan explained that "nuclear weapons should not be in the hands of rulers such as those in Iraq," adding that for Israel the destruction of Osiraq "was a matter of life and death."[27]

Other considerations may have influenced the timing of the raid, if not the decision itself. Israel's parliamentary elections were fast ap-

roaching, and although the Begin govern-
ıent had recently gained a slight lead in the
olls, the outcome of the contest promised to be
lose. Under such conditions, it would hardly
e surprising if certain decision makers also
eighed the domestic gains a successful opera-
on could provide. Convinced that the Iraqi
uclear program had to be stopped forcefully
nd without delay, Begin also knew that the
abor opposition held different views. Thus,
ıe Prime Minister no doubt perceived that this
ıight be Israel's last opportunity to check an
minous threat.[28]

ISRAEL'S decision seems to have
een largely influenced by the fear of another
olocaust, the propensity to dwell on worst-
ase scenarios, and the particular circumstances
f the moment. Paradoxically, however, it is
uestionable whether the country's long-term
ecurity was enhanced by the strike. An imme-
iate consequence of the raid was to further
train Israel's relations with the international
ommunity. Most nations rejected Israel's con-
ention that it had acted in self-defense, and the
aid elicited a unanimous resolution of con-
lemnation by the United Nations Security
Council.

Of greater concern for Israel, however, was
he generally negative reaction of its closest
lly, the United States. Even though certain
oices were sympathetic to Israel's fears, the
verall American reaction was unfavorable.
Many in the news media regretted the gap be-
ween the remoteness of the threat and the se-
erity of the response.[29] Meanwhile, the raid
omplicated the Reagan administration's ef-
orts to draw moderate Arab states into a stra-
egic consensus against the Soviet Union. In
he wake of the raid, these states were more
ikely to perceive Israel, not the Soviets, as the
reater threat.

The short-term U.S. reaction was to join in
he Security Council's condemnation of the
aid and to suspend the delivery of American warplanes to Israel. More serious, perhaps, was the probable long-term reaction. Many Americans tended to view the attack not as an isolated incident but as another episode in a disturbing sequence of events. Coming shortly after Israel's controversial foray into southern Lebanon in 1978, the annexation of the Golan, and the acceleration of the pace of Jewish settlements on the occupied West Bank (and soon followed by the full-scale invasion of Lebanon and the devastating siege of Beirut), the raid contributed to the growing perception that Israel has become an "irrational," "lawless" state. As the Israeli analyst Shai Feldman keenly observed:

> The intimacy in American-Israeli relations can . . . be accounted for by the two countries common "Western" values and culture, as well as their shared commitment to democratic norms. Since the raid on Osiraq seemed to manifest a form of lawless behavior, the operation hurt the most sensitive nerves of America's support for the Jewish state. Rising doubts regarding Israel's commitment to the aforementioned norms and values would necessarily have a long-term effect on U.S.-Israeli relations.[30]

Thus, the raid appears to have encouraged one of the greatest threats to Israel—its increasing international isolation. Simultaneously, the benefits that the raid provided for the country's security remain uncertain, for it is questionable whether the operation truly checked proliferation in the Arab world.

Even before the Israeli strike, numerous observers were convinced that the Middle East was on the verge of nuclearization, with several Arab states moving toward the nuclear threshold.[31] Iraq was one of those states, and, without a doubt, the raid set Iraq's projects back at least several years. Beyond that, however, the event may actually have increased Arab motivations to acquire nuclear weapons, adding not only disincentives for regional proliferation but incentives also.

Certainly, by its destruction of Osiraq, Israel increased disincentives for proliferation in the Arab world. It is now clear to Israel's oppo-

nents that any attempt at nuclear arming is an invitation to attack. Indeed, Israel has since stated that "nuclear weapons must not be in the possession of Arabs" and that she is prepared to strike again, not necessarily against Iraq only.[32] While the Arabs had acknowledged the possibility of such action in the past, it now has ceased to be simply a theoretical notion but has become a distinct probability.

Israel's action also may have created a greater Arab awareness of the instability that might ensue if an Arab power did acquire the bomb. Since Israel did not hesitate to launch an unprecedented attack against a nuclear facility that was merely a potential threat, the Arabs have good cause to wonder how the Israelis would react to a truly operational Arab nuclear force. The Arabs may conclude now that the prospect of a conventional or even nuclear Israeli strike against such a target has become much more credible, even though such an attack would be a major escalation in the level of violence in the Middle East. As a result, Arab interest in the nuclear option might conceivably have diminished.

Finally, the raid against Osiraq has resulted in new, practical obstacles to regional proliferation. By dramatizing the nuclear danger in the Middle East, the Israeli action prompted a number of nuclear suppliers to greater circumspection, making access to sensitive material and facilities more difficult. For instance, as a precondition to rebuilding Osiraq, France has insisted that the Iraqis accept the caramel fuel as well as additional safeguards on the reactor. In addition, foreign technicians may be somewhat more reluctant to work at nuclear sites so obviously susceptible to preemptive attack.[33]

However, the effect of these disincentives should not be exaggerated. First, there is no guarantee that Israel can repeat its Osiraq success. As demonstrated in the October 1973 war, it is certainly not impossible for an Arab state to protect vital targets with an air defense network that is extremely difficult to penetrate. Similarly, if Arab nuclear facilities were to be built in Algeria, Libya, or Saudi Arabia, they might prove to be beyond Israel's striking range. In fact, Hussein vowed after the raid: "If the Israeli planes return, they will not have a chance to attack important plants [again]." On another occasion, he added that the Arabs might place "critical links of their nuclear efforts in locations that are out of Israel's reach."[34]

Likewise, to the extent that the Arabs have publicly discussed nuclear issues at all, they generally have seemed confident that the logic of superpower deterrence would apply also within the Middle East. Rightly or wrongly, they have tended to assume that a nuclearized Middle East would result in a stable "balance of terror" in which neither side would dare launch a preemptive attack.[35] There is no evidence yet that the Israeli raid has changed these perceptions. On the contrary, shortly after the raid, Jordan's King Hussein declared that an Arab bomb was an inevitable precondition of regional stability:

> [In nuclear] armaments a certain equilibrium is necessary. If there is no equilibrium, there is no limit, and if there is no limit, the door is open for aggression. We all know that Israel has several atomic bombs . . . . Arabs should not be held for less intelligent than they are . . . . [Soon] Israel's atomic superiority will no longer exist.

In his own comments after the Israeli attack, Saddam Hussein voiced the same belief that the spread of nuclear weapons would actually help stabilize the Middle East. By matching Israel's nuclear weapons, he maintained, the Arabs would "secure and safeguard the peace," adding explicitly that a nuclear Middle East would mirror the nuclear balance between the superpowers. Elaborating on the reasoning behind his call for an Arab bomb, the Iraqi leader explained:

> The same logic is used by the United States and . . . the Soviet Union . . . . I don't think the Soviet Union intends to use nuclear weapons against the United States or vice versa . . . . Yet both sides

continue to develop their military nuclear capabilities.[36]

Lastly, the increased obstacles to proliferation may not prove insurmountable. Not all of the traditional nuclear suppliers have necessarily experienced the same change of heart as the French, and new sources of sensitive material and technology are becoming available. Already, such states as Argentina, Brazil, India, and Pakistan have the technical abilities to provide extensive assistance to an Arab nuclear program, and at some point one or several of them may also have the incentive to do so.[37] As the examples of India and Pakistan illustrate, the rapid dissemination of nuclear technology worldwide is making it increasingly feasible for a moderately developed but determined Third World nation to assemble a nuclear weapons program, drawing on its indigenous resources.[38]

While the raid dramatized the Israelis' determination to prevent Arab access to nuclear weapons by every means available and perhaps placed new practical obstacles on the road to regional proliferation, the operation simultaneously increased the incentives for proliferation. One such incentive—not to be taken lightly in the Middle East—is the wish to efface a humiliating affront. Of central concern in the Arab world are the notions of honor *(sharaf)* and face *(wajh)*, and the readiness to avenge humiliation has often been a wellspring of Arab behavior.[39] The Israeli action dealt a severe blow to the pride of the region. For the Arab nations, the raid signified that Israel was claiming a right of veto over technological developments within their very borders. In addition, the Iraqis' powerlessness in the face of Israel's military prowess revived painful memories of the Arabs' 1967 defeat. The leader of the Gulf Cooperation Council aptly summarized the mood of the area in the wake of the attack: 'We are humiliated, insulted. We and the other Arabs have been treated as nonexistent human beings." Or, as the Kuwaiti press put it: 'By penetrating the adjoining air space of the Arab states and raiding Iraq, the Israeli air force has in reality penetrated the dignity of all the Arabs."[40]

Not surprisingly, the Arab world reacted with angry defiance,[41] and, if the past provides any clues to the present, no doubt yearned to avenge the insult. As a result, Arab interest in nuclear weapons may have increased. Not only is the Iraqi leadership likely to perceive an Iraqi bomb as a means of avenging the affront, but rulers throughout the Middle East now realize that the Arab leader who develops atomic weapons will become an overnight hero both at home and throughout the Arab world. Thus, for Arab leaders, the nuclear option may have gained in attractiveness. The Jordanian paper *Ad Dustur* emphasized this ominous implication in the wake of the raid:

> If it is true that facing up to challenges resurrects nations . . . then we do not doubt that [the attack] will prompt Iraq and other Arab states to do the impossible to possess the nuclear weapons.[42]

This propensity for "going nuclear" appears even more likely in view of a key set of perceptions that characterizes the Arabs' view of the world: a pervasive sense of insecurity, which produces, in turn, deep feelings of mistrust. In a penetrating analysis of Arab perceptions, John W. Amos has noted that Arab "images are permeated with an element of threat . . . stemming from . . . what might be called an escalatory perception of events." As a result, Arab political behavior displays extensive distrust and the tendency to expect the worst from any adversary.[43]

Given these dispositions, the raid against Osiraq heightened Arab apprehensions in several ways. First, perennial Arab distrust ensured that what the Israelis perceived as defensive action was seen by the Arabs as an act of aggression.[44] Thus, for the Arab world, Israel's unprecedented attack against Osiraq represented an alarming new degree of escalation in Israeli belligerence, which was reinforced by rumors of Israeli support for an Egyptian drive

into Libya, Israel's increasingly hard line regarding the occupied territories, and the later, unprecedented Israeli invasion of Lebanon. In the words of Iraqi Foreign Minister Saddun Hammadi, for instance, the raid constituted "a qualitative change in the aggressor's policy" and indicated Israel's determination "to escalate [its] provocations with acts of armed aggression prior to launching a fullscale war in order to subjugate the Arab countries and impose full Zionist control over the whole Middle East."[45]

Because the Arabs are convinced that Israel is a nuclear power,[46] the raid, in their eyes, also signified that Israel was asserting an exclusive right to nuclear weapons in the Middle East. Since the need of a nuclear monopoly for purely defensive purposes is open to doubt, the Israeli move could only cause heightened concern among Israel's ever-suspicious opponents, intensifying Arab fears that Israel's nuclear weapons might be intended for at least some aggressive purposes. Hence, the raid fostered not only fears of Israeli assertiveness in the region but growing alarm about the ultimate purpose of Israel's nuclear program. That Israel one day might exploit its monopoly to engage in nuclear coercion seemed increasingly credible to Arab leaders.

In the wake of the Baghdad strike, this fear of nuclear blackmail was voiced throughout the Arab world. Saddam Hussein spoke for many when he asked: "What would happen if the Israelis imposed conditions on the Arabs, they [the Arabs] did not accept them, and Israel used nuclear bombs . . .? What would happen to the Arabs and mankind under such blackmail?" Similarly, the Arab League denounced Israel's "policy of threats and nuclear blackmail," and Jordan's Prime Minister Mudar Badran proclaimed: "Keeping nuclear weapons in the hand of the Israelis and depriving the Arabs of them is tantamount to an invitation to the Arabs to surrender to Israel's will."[47] Given that the Arabs have relied predominantly on military power to ensure their security, their reinforced belief that Israeli nuclear blackmail is possible is likely to encourage the view that the Arab world needs its own nuclear weapons to meet the Israeli threat.[48]

Israel's strike may have encouraged regional proliferation in still one other way. Traditionally, the Arab world has been reluctant to confront the issue of nuclear weapons in the Arab-Israeli conflict. In the earlier stages of the conflict, the Arabs were confident that their superior numbers and resources would defeat the adversary ultimately, and they had no desire to give the conflict a nuclear dimension, which, if exploited by Israel, might enable the Israelis to offset the Arabs' natural advantages.[49] Later, as evidence accumulated to indicate that Israel had become a nuclear power, the Arabs were slow to acknowledge this development. Although some spokesmen did express strong concern, many in the Arab world seemed to ignore the matter of regional nuclear imbalance. It was as if they were unwilling to face up to the unfavorable reality that Israel's nuclear status portended.[50] But by taking out the Iraqi reactor and in effect boldly proclaiming their intention of enforcing a nuclear monopoly, the Israelis have forced the Arab world to address the problem and implicit dimensions of nuclear inferiority. Moreover, by dramatically revealing how much it fears an Arab bomb, Israel may have suggested to some of its foes a powerful new means of leverage in their struggle.

By humiliating the Arabs, encouraging fears of nuclear blackmail, and generally dramatizing the Arab world's nuclear inferiority, Israel's raid thus created strong incentives for regional proliferation—incentives that may outbalance the disincentives also brought about by the raid. One cannot conclude, of course, that the raid will inevitably lead to regional proliferation: any nation's decision to acquire nuclear weapons is highly complex, involving not only the balance of general incentives and disincentives to proliferate but also the particular domestic and international circumstances of its own government and people.[51] Whether

the mix of these factors will prompt any given Arab nation to acquire the bomb remains to be seen, but, in part *because of* the Baghdad raid, proliferation seems more likely.

IN DESTROYING nuclear facilities that posed only a limited threat at the time of the attack, the Israelis were prompted by acute fears for survival and a traditional reluctance to take chances in matters affecting their security. Whether the attack enhanced Israel's security is doubtful. By dramatizing the nuclear imbalance in the Middle East and encouraging Arab fears of nuclear coercion, the strike gave Israel's equally apprehensive opponents ample cause for concern and multiplied Arab incentives to develop an offsetting nuclear capacity. While ultimate results are still unknown, the raid illustrates the fear and reaction that characterizes the Middle East—a region now awakened to its uncertain nuclear future.

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Notes

1. Joseph A. Yager, editor, *Nonproliferation and U.S. Foreign Policy* (Washington: Brookings, 1980), p. 208.

2. George Amsel, Jean Pierre Pharabod, and Raymond Sene, "Rapport: Osirak et la Proliferation des Armes Atomiques" (Paris: Groupe de Physique des Solides, Universite Paris VII, May 1981), reprinted in *Les Temps Modernes*, September 1981, pp. 375-413.

3. Ministry of Foreign Affairs and Atomic Energy Commission, *The Iraqi Nuclear Threat: Why Israel Had to Act* (Jerusalem, 1981), p. 9. Hereafter referred to as *The Iraqi Nuclear Threat.*

4. Ibid., pp. 9-10. As opposed to gas graphite and large research reactors, both well suited for diversion of fissionable material, conventional power reactors (pressure water and boiling water reactors) are the least appealing to a would-be proliferator. Neither the uranium fuel they use nor the plutonium they normally produce are weapons-grade. To produce plutonium better suited for weapons production, conventional power reactors must be operated in a way that immediately reveals the proliferator's intentions. See Ted Greenwood, George W. Ratjens, and Jack Ruina, "Nuclear Power and Weapons Proliferation," in *Energy and Security*, edited by Gregory Treverton (Montclair, New Jersey: Allanhead, Osmun and Company, 1980), pp. 119-22, and Alexander de Volpi, *Proliferation, Plutonium and Policy: Institutional and Technological Impediments to Nuclear Weapons Propagation* (New York: Pergamon, 1979), pp. 21-25.

5. Steve Weissman and Herbert Krosney, *The Islamic Bomb: The Nuclear Threat to Israel and the Middle East* (New York: Times Books, 1981), pp. 91-93, 256-57. Iraq argued that changing Osiraq's fuel required modifications to the reactor that could delay the project.

6. *The Iraqi Nuclear Threat*, p. 10.

7. While the Italian-supplied "hot cell" is a small facility that only processes gram quantities of plutonium, the Iraqis could have expanded the capacity of the laboratory easily by using technology available on the open market. Weissman and Krosney, p. 101.

8. Weissman and Krosney, p. 89; U.S. Congress, Senate Committee on Foreign Relations, *Hearings: The Israeli Air Strike*, 97th Cong., 1st sess., 1981 (hereafter referred to as Senate *Hearings*), p. 60; "President Saddam Husayn Statement to Cabinet," *Foreign Broadcast Information Service* (hereafter, *FBIS*), 24 June 1981, p. E-10.

9. On the role of nuclear arms programs in buttressing national prestige, see Ernest W. Lefever, *Nuclear Arms in the Third World* (Washington: Brookings, 1979), p. 20. On Iraq's ambitions, see Serge Rondot, "L'Irak: une puissance régionale en devenir," *Politique Etrangere*, September 1980, pp. 637-51.

10. "Saddam to Rio de Janeiro *O Globo*," *FBIS*, 2 July 1981, p. E-10. For Iraqi fears of the Iranian program, see Shai Feldman, "The Raid on Osirak: A Preliminary Assessment," Tel Aviv University, Center for Strategic Studies, CSS Memorandum no. 5, pp. 5-6.

11. Amsel et al., pp. 378-87; Senate *Hearings*, p. 78.

12. Although it has not signed the Nonproliferation Treaty, France has pledged to respect its stipulations, which prohibit helping a nonnuclear nation acquire nuclear weapons. Ashok Kapur, *International Nuclear Proliferation: Multilateral Diplomacy and Regional Aspects* (New York: Praeger, 1979), p. 67.

13. Senate *Hearings*, p. 107.

14. Anthony Fainberg, "Osirak and International Security," *Bulletin of Atomic Scientists*, October 1981, p. 34; Hans Gruemm, "Safeguards and Tammuz: Setting the Record Straight," *International Atomic Energy Agency Bulletin*, December 1981, pp. 12-13; Christopher Herzig, "Correspondence: IAEA Safeguards," *International Security*, Spring 1983, pp. 195-97.

15. "How Long Would It Take for Iraq to Obtain a Nuclear Explosive after Its Research Reactor Began Operation?" Congressional Research Report in U.S. Congress, House Committee on Foreign Affairs, *Hearings: Israeli Attack on Iraqi Nuclear Facility*, 97th Cong., 1st sess., 1981 (hereafter referred to as House *Hearings*), pp. 88-90. According to some estimates, Iraq could have secretly produced up to 10 kgs of plutonium per year. See, for instance, *The Iraqi Nuclear Threat*, pp. 47-53. However, these calculations assume a reactor power of 70 megawatts thermal, whereas Osiraq's capacity did not exceed 40 megawatts thermal. The only way the reactor might have achieved annual plutonium yields approaching 10 kgs would have been by abandoning the agreed-on program of research with the French and dedicating the reactor exclusively to plutonium production. Furthermore, in addition to irradiating targets within the reactor core, the Iraqis would have had to blanket the core with additional uranium targets, a highly visible operation in a pool-type reactor. Nevertheless, to produce such a yearly output of plutonium, the reactor would have required from 100 to 200 kgs of HEU fuel—far more than the French had agreed to supply over the same period. Telephone communications with Anthony Fainberg, Brookhaven National Laboratory, 4 and 18 March 1983; Gruemm, pp. 12-13; House *Hearings*, pp. 59-60.

16. Besides France, the other producers of plutonium are the Netherlands, the United Kingdom, the United States, and the Soviet Union (all signatories of the Nonproliferation Treaty) and the People's Republic of China and the Republic of South Africa

(which are not signatories). China's attitude toward nuclear proliferation is very responsible, however, and given the Republic of South Africa's close ties to Israel, it is unreasonable to assume that South Africa would assist an unsupervised Iraqi nuclear program. William C. Potter, *Nuclear Power and Nonproliferation: An Interdisciplinary Perspective* (Cambridge, Massachusetts: Oelgeschlager, Gunn and Hain, 1982), p. 75; Lefever, pp. 8-9; Yager, p. 225.

17. Albert Carnesdale in House *Hearings*, p. 49.

18. Amos Perlmutter, Michael Handel, and Uri Bar-Joseph, *Two Minutes over Baghdad* (London: Vallentine, Mitchell and Company, 1982), pp. 80-84; Weissman and Krosney, pp. 7-8.

19. Amos Perlmutter, "The Israeli Raid on Iraq: A New Proliferation Landscape," *Strategic Review*, Winter 1982, pp. 39-40.

20. Israel has never acknowledged its nuclear arsenal, although most experts, including those in the CIA, agree that Israel is a nuclear power. Lefever, pp. 64-71.

21. For the contending views of Israel's strategic and nuclear posture among the country's policy-making elite, see Uri Bar-Joseph, "The Hidden Debate: The Formation of Nuclear Doctrines in the Middle East," *Journal of Strategic Studies*, June 1982, pp. 205-27.

22. On the "holocaust syndrome," see for instance, Shlomo Aronson, *Conflict and Bargaining in the Middle East: An Israeli Perspective* (Baltimore: Johns Hopkins University Press, 1978), p. 353, and Michael Brecher, *Decisions in Israel's Foreign Policy* (New Haven: Yale University Press, 1975), pp. 333-35, 508, 514. For its influence on Begin, see Aronson, p. 339, and Perlmutter, "The Israeli Raid," p. 40.

23. Aronson, p. 83; Brecher, pp. 333-35; Dan Horowitz, "The Israeli Concept of National Security and the Prospects of Peace in the Middle East," in *Dynamics of a Conflict: A Reexamination of the Arab Israeli Conflict*, edited by Gabriel Sheffer (Atlantic Highlands, New Jersey: Humanities Press, 1975), pp. 235-76.

24. *The Iraqi Nuclear Threat*, pp. 4-7; House *Hearings*, p. 106; Senate *Hearings*, p. 281.

25. Even before the Israeli raid, there were signs that Iraq was becoming less virulent on the Arab-Israeli issue. Despite the attack, this trend seems to continue. Senate *Hearings*, p. 65; Maamoun Youssef, "Iraqi President Acknowledges Israeli Need for 'State of Security,' " *Washington Post*, 3 January 1983.

26. For a cogent critique of the assumption that nuclear-armed Arab states would act irresponsibly, see, for instance, Shai Feldman, "A Nuclear Middle East," *Survival*, May-June 1981, pp. 111-12, and Steven J. Rosen, "A Stable System of Mutual Deterrence in the Arab-Israeli Conflict," *American Political Science Review*, December 1977, pp. 1373-74.

27. *FBIS*, 10 June 1981, pp. I-3-4; 11 June 1981, pp. I-4-7; 15 June 1981, p. I-11; Weissman and Krosney, pp. 19-21, 291.

28. Labor Leader Shimon Peres has stated that the nuclearization of the Middle East would not threaten Israel but would increase regional stability instead. Bar-Joseph, p. 213. One reason which the Begin government gave for the timing of the raid was that the reactor was scheduled to become operational ("hot") in July, and an attack beyond that point might have caused radioactive fallout, killing thousands. It is the consensus of the scientific community, however, that while an attack on an operational power reactor could produce such effects, the danger does not apply to a research facility. See Bennett Ramberg, "Attacks on Nuclear Reactors: The Implications of the Israeli Strike on Osiraq," *Political Science Quarterly*, Winter 1982-83, pp. 653-99.

29. See, for example, Anthony Lewis, "Living By the Sword," *New York Times*, 18 June 1981, and Richard Wilson, "Using Treaties Not Airstrikes to Halt Nuclear Spread," *Christian Science Monitor*, 24 June 1981.

30. Shai Feldman, "The Bombing of Osiraq—Revisited," *International Security*, Fall 1982, p. 134.

31. Bar-Joseph, p. 205; Henry S. Rowen and Richard Brody, "The Growing Nuclear 'Overhang' in the Middle East," in Yager, p. 177; Feldman, "A Nuclear Middle East," p. 107.

32. Israeli Prime Minister Begin and Chief of Staff Eytan, *FBIS*, 11 June 1981, p. I-7. Begin indicated that the Israelis would strike only at threatening facilities in "enemy" states, apparently excluding action against Egypt.

33. Edward Cody, "France Plans to Bar Weapons-Grade Fuel for Iraq's Reactor," *Washington Post*, 13 June 1982; Ronald Koven and Jim Hoagland, "Mitterand Says France Will Hold Iraq to Stricter Conditions on Any New Reactor," *Washington Post*, 18 June 1981. One French technician lost his life during the Baghdad raid, and reportedly a third of the Italian technicians working on the hot cells requested their repatriation after the attack. Feldman, "The Bombing of Osiraq—Revisited," p. 126.

34. *FBIS*, 2 July 1981, p. E-10; Feldman, "The Bombing of Osiraq—Revisited," p. 139.

35. Bar-Joseph, pp. 207-09; Lawrence Freedman, "Israel's Nuclear Policy," *Survival*, May-June 1975, p. 119; Steven J. Rosen, "Nuclearization and Stability in the Middle East," *Jerusalem Journal of International Relations*, Spring 1976, p. 7. Among recent Arab leaders, for instance, only the late President Sadat appears to have expressed grave misgivings about the destabilizing potential of a Middle East nuclear arms race. Perlmutter et al., pp. 34-35. In Western circles, however, the question of whether a nuclear Middle East would prove stable is the object of increasing debate. See, for instance, Rosen, "A Stable System of Mutual Deterrence in the Arab-Israeli Conflict," pp. 1367-83, and Yair Evron, "Some Effects of the Introduction of Nuclear Weapons in the Middle East," pp. 105-06, in Asher Arian, *Israel: A Developing Society* (Assen, Netherlands: Van Gorcum, 1980).

36. *FBIS*, 8 July 1981, p. F-15; 24 June 1981, p. E-3.

37. Brazil, India, and Pakistan already have small-scale nuclear cooperation programs with several Arab nations. On these points, see Rowen and Brody, "Nuclear Potential and Possible Contingencies," in Yager, pp. 203-37; Rodney W. Jones, *Nuclear Proliferation: Islam, the Bomb and South Asia*, Washington Papers, No. 82 (Beverly Hills: Sage, 1981), pp. 44-53; and Judith Perera, "Was Iraq Really Developing a Bomb," *New Scientist*, 11 June 1981, pp. 688-90.

38. De Volpi, p. 23.

39. John W. Amos, *Arab-Israeli Military/Political Relations: Arab Perceptions and the Politics of Escalation* (New York: Pergamon, 1979), pp. 25-26, 208-09; Morroe Berger, *The Arab World Today* (Garden City, New York: Doubleday, 1954), p. 90; see also Perlmutter, p. 34.

40. *FBIS*, 10 June 1981, p. C-3; 6 August 1981, p. C-1.

41. Saddam Hussein typified the Arabs' reaction of defiance. "The Arab nation is not a group of people that can surrender to aggression and blackmail. Rather, it is a great nation with a long history and glorious past. . . . Such a nation can in no way surrender and accept servitude on its territory." *FBIS*, 14 August 1981, p. E-2.

42. *FBIS*, 9 June 1981, p. F-3.

43. Amos, pp. 13, 27. On Arab mistrust and fear vis-à-vis Israel in particular, see also John Edwin Mroz, *Beyond Security: Private Perceptions among Arabs and Israelis* (New York: Pergamon, 1980), and Dale Tahtinen, "Implications of the Arab-Israeli Arms Race," *Journal of Palestine Studies*, Spring 1979, pp. 48-52.

44. Tahtinen, pp. 48-52.

45. Feldman, "The Bombing of Osiraq—Revisited," p. 140. *FBIS*, 15 June 1981, p. E-8. For similar perceptions of Israeli escalation throughout the Arab world, see, for instance, *FBIS*, 9 June 1981, pp. C-4, D-1, 2, E-3, F-1; 10 June 1981, p. D-3; and 12 June 1981, p. A-3.

46. Oz Chen, "Reflections on Israeli Deterrence," *Jerusalem Quarterly*, Summer 1982, pp. 26-40; Fuad Jabber, "A Nuclear Middle East: Infrastructure, Likely Military Postures, and Prospects for Stability," in *Great Power Intervention in the Middle East* edited by Milton Leitenberg and Gabriel Sheffer (New York: Pergamon, 1977), pp. 74-75.

47. *FBIS*, 24 June 1981, p. E-3; "Resolution of the Meeting of the

Arab League Council," 11 June 1981, quoted in *Journal of Palestine Studies*, Autumn 1981, p. 238; *FBIS*, 10 June 1981, p. F-2. For similar comments, see also *FBIS*, 15 June 1981, p. F-1, and 16 July 1981, p. E-3.

48. In a statement typical of many reactions throughout the Arab world, the Kuwaiti paper *Ar Ray al Am* wrote: "We want to manufacture an atomic bomb . . . what motivates us to call for the possession of this weapon is that Israel possesses it. By using this weapon and the most advanced American weapons, Israel wants to defeat and humiliate us. . . . This does not mean that we would use the bomb, only that we would prevent Israel from using it against us." *FBIS*, 23 July 1981, p. C-1. For similar statements, see Saddam Hussein, *FBIS*, 24 June 1981, p. E-10; *FBIS*, 16 June 1981, p. G-2; and *Joint Publication Research Service, Near East-North Africa Report*, 16 November 1981, p. 20. On the Arabs' reliance on their military capabilities to ensure their security, see Paul (Fuad) Jabber, *Not By War Alone: Security and Arms Control in the Middle East* (Berkeley: University of California Press, 1981), pp. 11-12.

49. Robert E. Harkavy, *Spectre of a Middle East Holocaust: The Strategic and Military Implications of the Israeli Nuclear Weapons Program* (Denver: University of Colorado Monographs Series in World Affairs, 1977), p. 55.

50. Ibid., p. 70; Paul Jabber, "The Nuclear Middle East: Will It Be Stable?" Unpublished paper presented at the University of Connecticut at Storrs, 21 March 1982.

51. On this point, see John J. Weltman, "Nuclear Devolution and World Order," *World Politics*, January 1980, pp. 169-93.

So long as you prefer abstract words, which express other men's summarized concepts of things, to concrete ones which lie as near as can be reached to things themselves and are the first-hand material for your thoughts, you will remain, at the best, writers at second-hand.

Sir Arthur Quiller-Couch
On the Art of Writing

SURPRISE FROM ZION

the 1982 Israeli invasion of Lebanon

MAJOR MARK G. EWIG

THE PALESTINIANS expected an Israeli attack on their positions in southern Lebanon; the 30,000-man Syrian force in Lebanon braced for possible confrontation with the Israelis. Despite warnings of an ex-

ected attack, the Palestinian forces fell to the sraelis in less than seven days. The Syrians lost ıore than eighty aircraft and twenty advanced ırface-to-air missile (SAM) batteries, while ıe Israelis admitted losing only two aircraft. A ıajor reason for the humiliating defeat of the alestinian and Syrian forces in the June 1982 sraeli invasion of Lebanon was the achieveıent of political and military surprise by the sraelis. An examination of the background for ıis conflict and the role of surprise in Israeli ıilitary doctrine reveals how the Israelis :hieved this surprise.

Israel's Preinvasion Military Situation

Three important milestones provided the ackdrop for the 1982 Israeli surprise attack: ıe 1975-76 Lebanese civil war, the 1978 Israeli ıvasion of Lebanon, and the July 1981 ceasere agreement between the Israelis and the Palstinians. The first milestone was signaled by ıe end of the Lebanese civil war, which left ırge numbers of Palestinian forces positioned ı southern Lebanon. The Syrians, who had ntered the civil war on the side of the Chrisans, maintained a large contingent of troops ı Lebanon's Bekáa Valley, just east of Beirut. 'he Israelis reluctantly accepted this status uo.

The second milestone, which led to several nportant consequences, was the 1978 Israeli ıvasion of Lebanon. Following a Palestinian errorist raid into northern Israel, the Israeli efense Forces (IDF) launched an attack to lear Palestinian forces from a ten-kilometer rip inside Lebanese territory. Even though ıe invasion lasted only seven days and apeared to meet with limited success, the Israelis ıay have been forced to withdraw under presıre from the United States.

After the 1978 Israeli invasion, the Palestinins used their growing power to build an infrastructure in southern Lebanon as the inreasing impotency of the Beirut government became more and more apparent. Their acquisition of a territorial base and growing strength allowed the main Palestinian entity, the Palestine Liberation Organization (PLO), to shift from exclusively guerrilla tactics to fixed positions and tactics along more conventional military lines.[1]

To protect the Palestinians and, perhaps more important, the Syrian Air Force in Lebanon, from Israeli air attacks, Damascus introduced advanced surface-to-air missiles into the Bekáa Valley in April 1981. Israeli Prime Minister Menachem Begin demanded the immediate withdrawal of these SAM-6s and the cessation of Syrian Air Force activity over Lebanon.[2] Even though the Israelis wanted to destroy the missiles, they eventually conceded to U.S. requests for restraint.

The third milestone came with the July 1981 cease-fire agreement. As secular fighting had increased among various Lebanese factions, Israeli air raids against Palestinian and Syrian forces had intensified. To prevent further escalation, the United States sent a special envoy, Philip C. Habib, who ultimately succeeded in negotiating a cease-fire agreement. Eventually, the Israelis argued that the PLO was taking advantage of this agreement to strengthen its position in southern Lebanon. Israeli officials noted that the Palestinian forces were equipped with long-range rockets and artillery capable of striking Israeli northern settlements.[3] Tel Aviv stated that the buildup of these forces violated the cease-fire and further warned that any Palestinian cross-border attacks or terrorist attacks against Israelis anywhere were cease-fire violations. When an Israeli diplomat was assassinated in Paris in April 1982, the IDF called up reserve forces and moved troops along the Lebanese border. Many thought that an Israeli invasion was inevitable. Later in the month, when a single IDF soldier was killed in a land-mine explosion, the Israelis attacked PLO targets in southern Lebanon. In justifying its action, Tel Aviv charged that the soldier's death had been just one of more than 130

cease-fire violations since the July 1981 agreement.[4] The stage was now set for the 1982 invasion that would be launched after the 3 June assassination attempt against the Israeli ambassador assigned to the United Kingdom.

Surprise and Israeli Military Doctrine

The Israelis are considered to be one of the contemporary masters of the art of surprise.[5] As former Israeli General and Defense Minister Moshe Dayan said, "Israel must always try for surprise in one form or another."[6] Israel cannot afford to be attacked. The necessity for using surprise in warfare arises from four important Israeli constraints: its long border with little strategic depth; its small population, dwarfed by its Arab neighbors; its comparatively meager economic resources; and its fear of direct superpower intervention.[7]

There are several reasons why Israel must achieve surprise in the context of these constraints. Above all, surprise is a force multiplier. Richard K. Betts argues that surprise nearly doubles a force's combat capabilities.[8] Surrounded by hostile neighbors and lacking in strategic depth, Israel must achieve surprise and change the battlefield ratio by destroying, enveloping, or paralyzing large numbers of the enemy quickly. Such use of surprise also can reduce the duration of war and the possibility of involving nations outside of the immediate combatants. Thus, in both the 1956 and 1967 Arab-Israeli wars, the IDF used the advantages gained from surprise to decisively defeat numerically larger enemy forces.[9] Conversely, as the 1973 war showed, Israel cannot afford to be the victim of a surprise attack without paying a heavy price.

Somewhat related, and another reason for using surprise, is that Israel must minimize its combat casualties. Israel's small population and democratic tradition render it vulnerable to manpower losses.[10] As noted earlier, the death of even a single IDF soldier can trigger serious retaliation. Since surprise gives an attacker a favorable 1:5.3 casualty ratio (versus 1:1.1 without surprise), surprise is an important part of Israel's political-military doctrine.[11]

Surprise also builds on Israeli strengths. Intelligence services with superb capabilities give Tel Aviv vital information about its enemies. Not only does Israeli intelligence provide a means for misleading, misinforming, and confusing opponents about Israel's intentions and capabilities, but also it allows surprise attack plans to be nurtured in secrecy. Short interior lines of communication permit the IDF to shift forces rapidly from one front to another and to engage a neighboring enemy with minimum movement prior to attack. Finally, Israel's technically competent, highly motivated military offers the Jewish state the weapons of war necessary to carry out a surprise attack.

Surprise, in and of itself, is not important.[12] What is important is the impact that it has on its victim.[13] The victim forms an estimate of his opponent's intentions and capabilities—the who, what, where, when, and how of an attack—aspects that the attacker can manipulate for advantage. In other words, to attain the optimal effect, an attacker must be prepared to exploit the battlefield gains and opportunities achieved through surprise.

To exploit surprise fully, Israeli strategic doctrine emphasizes offensive operations that seek quick, decisive, and unequivocal victory on the battlefield. This strategy uses indirect approach, deception, speed and mobility, and secrecy in order to obtain its objectives.[14] Ultimately, doctrine, strategy, and objectives determine the composition, equipment, and tactics of the forces. When these elements are coupled with an effective intelligence organization, Israel possesses a force ideally suited to achieve surprise in warfare.

Political Surprise

While military surprise is very important, its effects are intensified when accompanied by

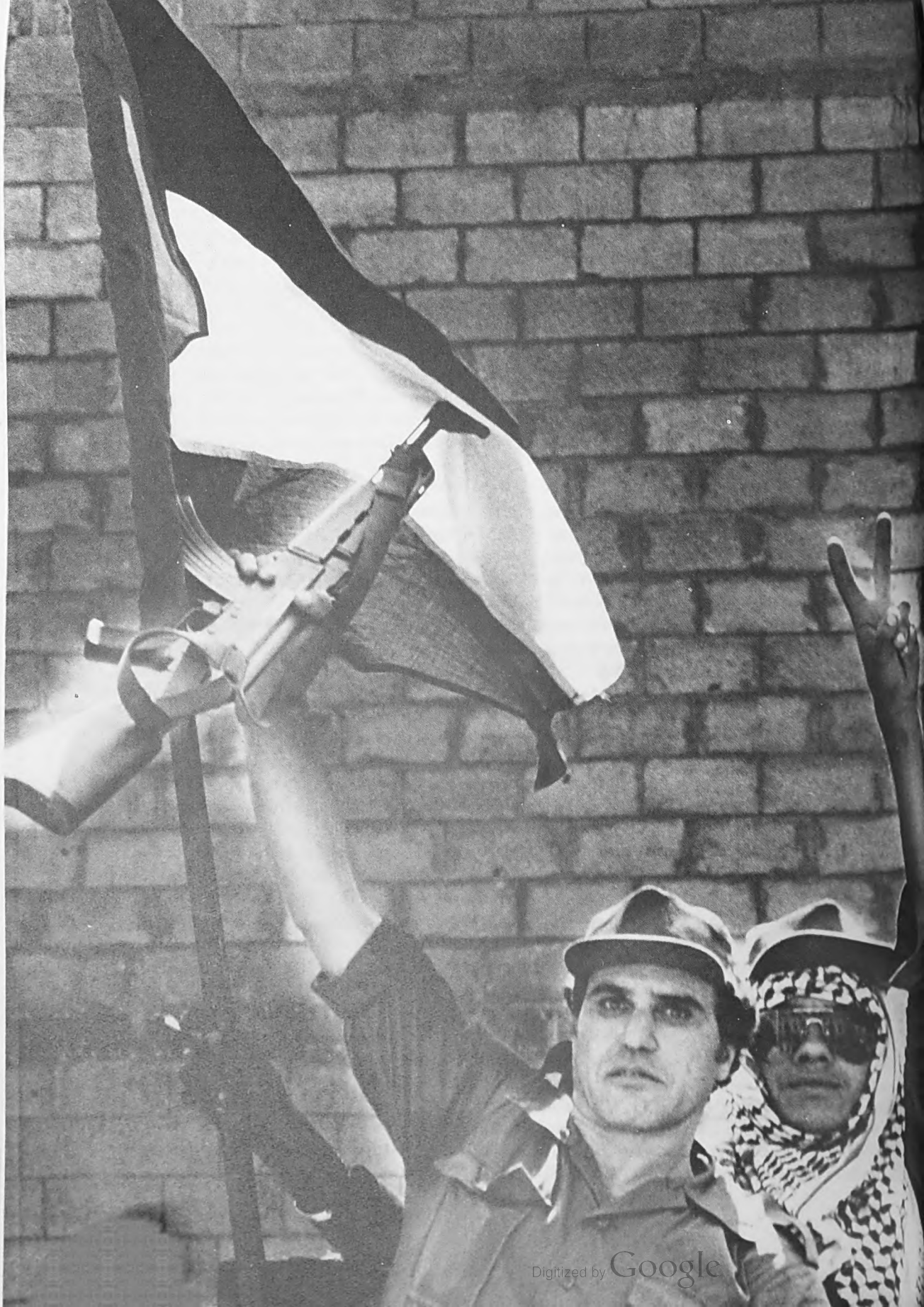
rprise on the political level. Political sur-
ise involves an "unexpected international
ove that has a direct impact on one or more
tes."[15] Clearly, the 1982 Israeli invasion of
banon fits this definition. A model devel-
ed by Michael I. Handel helps to explain
ıy the Palestinians and the Syrians failed to
ticipate the Israeli attack. Handel suggests
at surprise occurs when barriers distort the
ar perception of information which could
ovide warning. He identifies three major
rriers that threw the Palestinians and the
rians off guard: the conflictive environment
ıe international and regional background),
e enemy (Israel), and self (the Palestinians
d the Syrians).[16]

International attention on 6 June 1982 was
ıt focused on the Israeli-Lebanese border.
ıe British-Argentine conflict in the Falk-
nd/Malvinas Islands was in the spotlight as
e world braced for the expected British as-
ult. Simultaneously, the United States and
ırope were watching with great interest events
lated to President Reagan as he began an
ıportant trip to Europe on 3 June. In the
iddle East, tensions resulting from the Iran-
aq war, renewed unrest among the Palestini-
ıs on the West Bank, and Israeli-Egyptian
gotiations concerning Palestinian self-rule
ominated the news. Thus, even when tensions
creased in early June along the northern Is-
eli border, many other areas were holding the
orld's attention. Had other events not been
ch a distraction, political pressures might
ve persuaded Israel not to invade.

Viewing events inside Israel, the Palestini-
ıs and the Syrians did not receive signals
ointing toward an imminent invasion. Rather,
raeli Defense Minister Sharon's visit to Wash-
gton in late May raised speculation about the
vival of the strategic cooperation agreement
tween Israel and Syria.[17] Prime Minister Be-
n's impending visit to the United States, sched-
ed for late June, made military action seem
en more remote, at least until after the Wash-
gton meeting. It seemed unlikely that Tel Aviv would jeopardize relations with the United States. Meanwhile, within the Israeli Knesset (Parliament), a debate was continuing inconclusively on the wisdom of an invasion into southern Lebanon. Many northern settlers expressed public opposition to an attack, for fear that Palestinian retaliation would come before successful Israeli Defense Forces action. Even after the attempted assassination of the Israeli ambassador in London on 3 June, there was no perceived public clamor for Israeli action, especially a northward invasion. Consequently, the Palestinians and Syrians received signals that argued against an attack, particularly at that moment.

As for self-generated perceptual barriers, the Palestinians believed that there was no immediate danger of a full-scale invasion. Even after the three days (3-5 June) of Israeli air raids against PLO positions (in retaliation for the attack on their ambassador), the PLO response with cross-border rocket attacks was moderate—at least compared to the actions that had preceded the 1978 invasion. Even if an attack came, PLO leaders believed, the Israeli fear of casualties and possible U.S. pressure would limit the scope of the attack.[18] Certainly, the Palestinians did not contemplate an attack designed to destroy the PLO as a military and political force. Such an attack would involve not only urban warfare in Beirut against the PLO headquarters and main Palestinian refugee camps but also certain combat with the Syrians—two aspects which could force Tel Aviv into a long and costly fight. Because of Palestinian adherence to these concepts, PLO leader Arafat reportedly was not even in Lebanon on 5 June.[19]

The Syrian situation was somewhat different. Damascus had pledged to support Palestinian forces in Lebanon in the event of an Israeli attack.[20] However, their troop deployments in Beirut and the Bekáa Valley, far away from any suspected invasion targets, allowed them to determine their level of involvement in any conflict. The Syrians were determined not to let the



Palestinians drag them into a fight. For two days after the attack began, Damascus appeared to accept Tel Aviv's repeated assurances that Israel's only objective was to push the Palestinians out of rocket range of the northern settlements.[21] Somehow, Syrian SAM batteries and their nearly 30,000 troops seemed off-limits to an attack. Several people asserted that Syria may even have been "colluding with the Israelis against the Palestinians."[22] What Damascus also obviously failed to grasp was that the purpose of the invasion might be to change the entire political landscape in Lebanon, an action which would mean an end to or diminution of the Syrian presence there.

Here, then, was a situation where the selective perceptions of both the Palestinians and the Syrians clouded their reactions to the observable political events. Even threatening statements by Israeli Defense Minister Sharon were ignored because they contradicted the preconceived notion that Israel could not afford to conduct a full-scale invasion. In the end, both Palestinians and Syrians failed to realize that the Israelis probably would never find a better moment to strike at the PLO and simultaneously change the unstable situation on Israel's northern border.

Military Surprise: Lebanon, 1982

When the Israelis launched their sudden attack into Lebanon, Palestinian surprise was due in part to "alert fatigue" or the "cry-wolf" syndrome.[23] This phenomenon results from the desensitization of an entity's warning capability because the threatened attack or event did not occur. On possibly as many as four occasions prior to the June attack, Palestinian forces predicted and prepared for the expected Israeli attack. Each time the attack never came.

The Israelis invaded Lebanon in 1982 to smash the Palestine Liberation Organization (PLO) both militarily and politically. Although mauled and dispersed, the PLO survived to remain an important part of the problems bedeviling peace in the Middle East.

It is not surprising, therefore, that the PLO saw the events in early June as a repeat of previous Israeli saber rattling. Arafat's presence outside of Lebanon on the day before the attack dramatized this point.

Perhaps a second reason for PLO surprise was that the Palestinians incorrectly assumed they had developed a deterrent to an Israeli invasion. Whether in the form of the expected military participation of Syria in the conflict or of the threatened massive rocket attack against Israeli settlements, they believed these circumstances constituted capabilities that might deter an Israeli strike.[24] When the Syrians did not respond and when the swiftness of the Israeli attack destroyed the PLO long-range artillery and rockets, the Palestinians realized their deterrence was chimera.

If deterrence failed, the PLO knew that Israel could destroy its infrastructure in southern Lebanon. Not only were the Palestinians outmanned, outequipped, and without a real plan of action, but they also were forced to structure their military preparations to fight either Israel or Lebanese enemies, or both.[25] The PLO's basic plan was to use its increased forces, the mobility of its rocket launchers, and its underground fortifications to inflict heavy casualties on any invading Israeli force. The Palestinians believed that any Israeli attack would mirror the 1978 invasion and ultimately allow them to restore their military infrastructure in southern Lebanon.[26] What occurred, however, was a blitzkrieg-like, combined arms operation by what Chaim Herzog calls "the best force fielded by Israel in battle to date."[27] Because of meticulous execution of plans by Israeli Defense Forces that used enhanced mobility through rear-area heliborne and amphibious operations, the Palestinian force, which could best be described as paramilitary, was easily defeated.

The Syrian forces, on the other hand, were not totally inferior to the Israelis and may have possessed the best military capabilities ever faced by the IDF. Nevertheless, the Syrians lost more than eighty aircraft, while Syrian SAM

Battlefield success turns on the exploitation of opportunities achieved through a combination of surprise, maneuver, deception, numerical or technological superiority, and a host of other factors. The Israelis scored impressive victories en route to Beirut, but when they stopped short of realizing their objectives, the war degenerated into a siege that devastated most of the city and cost many civilian casualties.

sites in the Bekáa Valley were destroyed easily by a brilliantly planned and executed Israeli operation that achieved technical and doctrinal surprise.

Until the 1982 invasion, Syrian SAM sites had been off-limits to Israeli air strikes. As a result, the Syrians may have concluded that the Israelis considered an attack on these batteries too risky. This mind-set psychologically disarmed the Syrians. With their opponents so disarmed, the Israelis used the advantages of their superb intelligence and their mastery of electronic warfare to smash the Syrian batteries in lightning-like attacks. In these actions, the Israelis masterfully employed remotely piloted vehicles not only to gather real-time intelligence data but also to serve as decoys just prior

) the real attack.[28] A wide array of intense sraeli electronic warfare operations confused nd deceived Syrian communications, thus linding Syrian SAM radar units. Once blinded, yrian target acquisition and tracking radars ere attacked and destroyed by Israeli aircraft sing antiradiation missiles.[29] The missile batteries themselves, at this point virtually helpss, were then destroyed by cluster munitions.

The Syrians had either known about or seen ost of the Israeli equipment and munitions n combat. The tactical and technical surprise ame in the unique way the Israelis employed the equipment and munitions against the Bekáa Valley SAM sites. The Syrians failed to anticipate the sometimes small doctrinal and technical changes that can be critical in ensuring victory on the battlefield.

Similarly, Syrian aircraft, reacting to Israeli attacks on their missiles, encountered scores of Israeli aircraft that were following a meticulous plan. This plan made superb use of Israeli intelligence combined with sophisticated electronic warfare and some of the world's best aircraft (F-15s and F-16s). As Israeli E-2C Hawkeye airborne warning aircraft tracked the Syrians from takeoff, Syrian pilots encountered continuous, formidable electronic countermeasures that deprived them of necessary ground control. Furthermore, Israeli integrated training had enabled Israeli pilots to master air-to-air tactics and the use of all-aspect mis-

rench, Italian, British, and American peacekeepng forces could not keep the warring factions apart or provide the kind of security required to sustain ne government of Amin Gemayel. After the withrawal of most peacekeeping forces, the Lebanese overnment turned to Syria for an accommodation.

siles, such as the AIM-9L Sidewinder. Because of their superior qualifications, the Israelis were able to knock scores of Syrian aircraft from the skies.[30] While Arab pilots have never achieved an aircraft kill advantage over the Israelis, the 0-82 (Syrian to Israeli) air-to-air combat kill ratio was unprecedented. As in the case of the destruction of the SAMs, the Syrians had failed to anticipate changes in Israeli technology and tactics. The results for the Syrians were surprise and inevitable defeat in the air.

SURPRISE, then, played a major role in Israeli military successes against the Palestinians and the Syrians. Preconceived notions gave the Arab forces a false sense of security. The international political situation in early June 1982 seemed to tell the Arabs that an Israeli attack was quite unlikely. PLO and Syrian planners also failed to anticipate that attacks, if they did come, would not be repeats of the limited operations that the Israelis had carried out in 1978. They did not realize that the Israeli goals in 1982 would be far more ambitious than previous Israeli objectives.

Militarily, both Arab forces knew that an invasion was somewhat likely. The Israelis were poised along the border, and Israeli doctrine emphasized the use of surprise. However, the Arabs failed to understand that surprise is related to an attacker's intentions and accomplished by the timing, location, strength, style, and intensity of his attacks.[31] The Palestinians knew the place of attack—their positions in southern Lebanon—but failed to anticipate other characteristics of the attack. When the deterrent failed, their military inferiority made them easy victims for the Israelis. Meanwhile, Syrian forces in Lebanon assumed incorrectly that they were to be spared, even after witnessing the full-scale attack against the PLO. They failed to understand that the Israelis were determined to change the political situation in Lebanon, and that this change involved the departure of the Syrians. Through small and innovative technical and doctrinal changes, the Israelis were able to destroy Syrian aircraft and SAMs with relative ease. In all of this, incorrect political assumptions created conditions that translated into political and military surprise and ultimately into an Israeli military victory in this stunningly successful 1982 invasion.

Borfink, Germany

Notes

1. Daniel Dishon, lecture at the United States Air Force Academy, Colorado, 19 April 1981, p. 1.
2. Marvin Howe, "P.L.O. Is on Alert in Lebanon," *New York Times*, 13 April 1982, p. A6.
3. David Shipler, "Israel Warns U.S. of Military Move If Diplomacy Fails," *New York Times*, 10 November 1981, p. A13.
4. David Shipler, "Israeli Border Areas Shelled after Raid on Palestinians," *New York Times*, 10 May 1982, p. A6.
5. Barton Whaley, *Stratagem: Deception and Surprise in War* (Cambridge: Massachusetts Institute of Technology, 1969), p. 81.
6. Ibid.
7. Yoav Ben-Horin and Barry Rosen, "Israel's Strategic Doctrine," Rand Corporation Collection R-2845-NA. Santa Monica, California: Rand Corporation, September 1981, pp. 5-9.
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There is no greater aid to clarity than a discreet economy of words, providing, of course, that the right words are used. Roundabout phrases should not be used where single words would serve, and we should not clutter up necessary phrases with useless words.

The Royal Bank of Canada Monthly Letter
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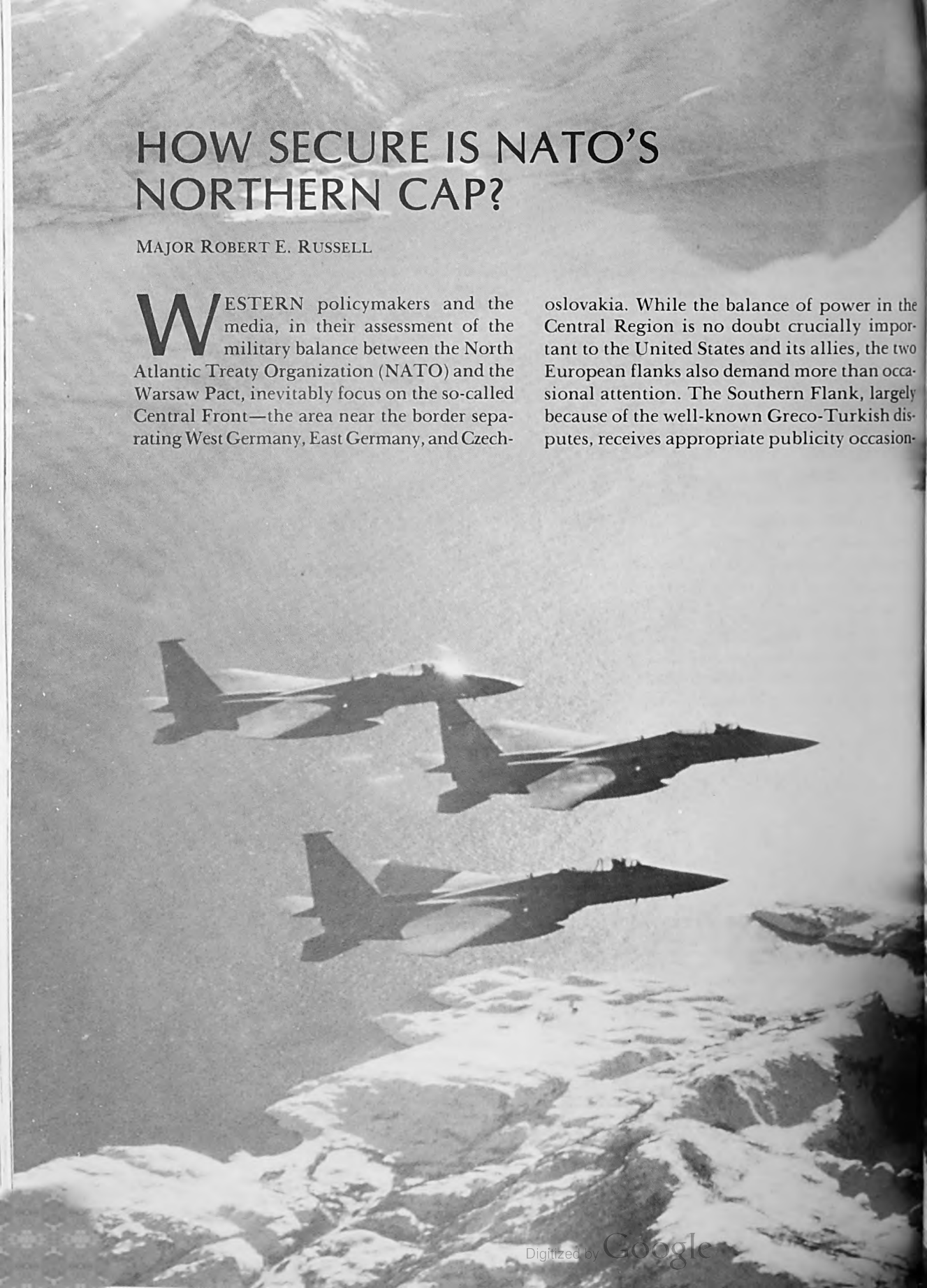
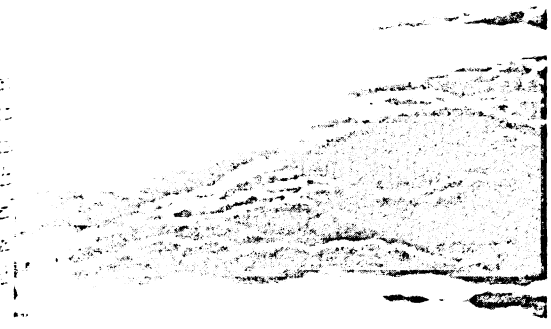
HOW SECURE IS NATO'S NORTHERN CAP?

MAJOR ROBERT E. RUSSELL

WESTERN policymakers and the media, in their assessment of the military balance between the North Atlantic Treaty Organization (NATO) and the Warsaw Pact, inevitably focus on the so-called Central Front—the area near the border separating West Germany, East Germany, and Czechoslovakia. While the balance of power in the Central Region is no doubt crucially important to the United States and its allies, the two European flanks also demand more than occasional attention. The Southern Flank, largely because of the well-known Greco-Turkish disputes, receives appropriate publicity occasion-





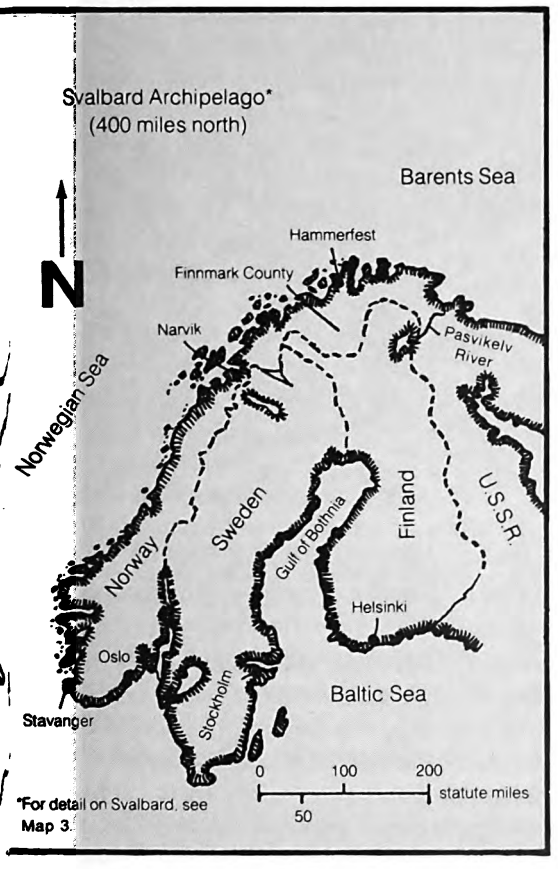
ally, but the Northern Flank, in which Norway is the key NATO member, has yet to receive all the attention it deserves.

Europe's "northern cap" is usually defined as the northern one-third of the Scandinavian countries (Norway, Sweden, and Finland), the Soviet Union's Kola Peninsula, and the Svalbard Archipelago in the Barents Sea north of Norway's mainland.[1] (See Map 1.) This area's critical relationship to the rest of NATO should not be overlooked. Its unusual geography, the size and strength of the Soviet military in the area, the Norwegian forces available to counter the threat, the destabilizing political problems of the region, and the ability of NATO to assist northern Norway—all combine to suggest that the situation in the northern cap is a potentially volatile one.

NORWAY'S northern location and unusual topography contribute to the country's security but, at the same time, present problems for rapid reinforcements by NATO. Norway, a large, elongated country, stretches over 1000 miles in length and ranges in width from 250 miles to slightly less than 4 miles at one point. (See Map 2.) Fifty thousand islands dot its 1500-mile western coast, which is lined with numerous narrow inlets that wind between extremely high banks or steep rock walls.[2] These inlets, called fjords, make amphibious landings extremely difficult or, in some cases, impossible. In western Finnmark, Norway's northernmost county, there are large mountains, many fjords, and numerous islands. Eastern Finnmark's gently rolling plain contains wide valleys with many lakes and soft marshes.[3] Most of the year, without the use of special equipment, this area is nearly impassable to ground troops. Military maneuvers on this rough terrain are inhibited also by the cold and snow.

Low temperatures in the north could affect military operations significantly. Even in the summer, the temperature in Finnmark seldom

ap 2 Norway



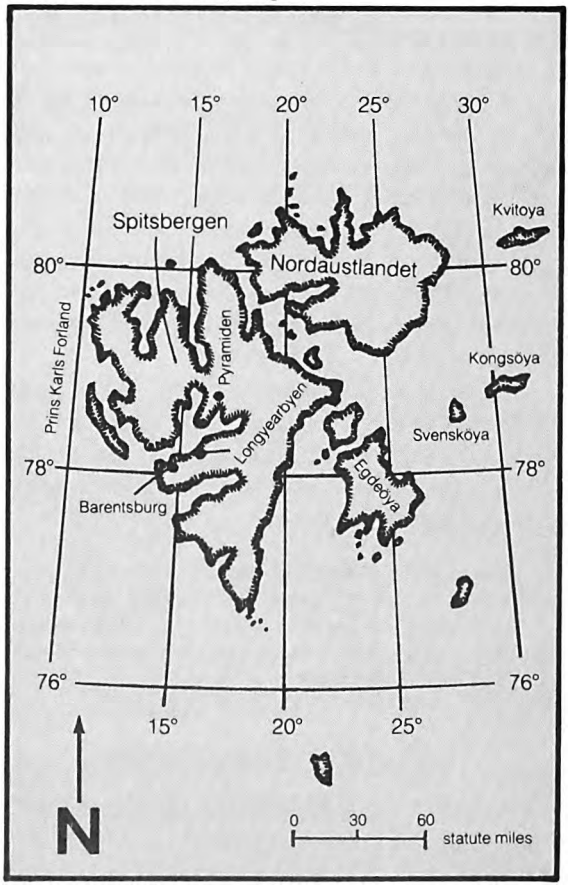
:or shipping and fishing.[8] Even more impor-:ant, this "warm" water allows access to the Atlantic Ocean for the Soviet Union's North-ern Fleet, which is stationed on the Kola Penin-sula at Murmansk.

Soviet Strength in the Northern Cap

Since World War II, the population of the Murmansk Oblast—an administrative subdi-vision of a republic in the Soviet Union—and the Kola Peninsula has nearly tripled, now ap-proaching one million people. Murmansk, a city of 300,000, has doubled its population since 1939 and is the world's largest city within the Arctic Circle.[9] More significantly, a very impressive concentration of military might in the Arctic region is situated on the Kola Peninsula, only 100 miles east of Norway's northern cape.[10]

Murmansk is the home of one of four Soviet naval fleets, the Northern Fleet, second in size only to the Soviet Pacific Fleet. It consists of approximately 500 surface combatants and nearly 175 submarines (more than 90 of which are nuclear-powered).[11] In fact, an estimated 50 percent of the Soviets' submarines are with the Northern Fleet.[12] The fleet receives its submarines from a huge shipyard near the city of Severodvinsk.[13] Furthermore, the Soviets are modernizing this formidable northern force. The first Typhoon-class nuclear-powered bal-

Map 3 Svalbard Archipelago



listic-missile submarine is now with the Northern Fleet, and a second was recently launched at the Severodvinsk shipyard.[14] The Soviets' first aircraft carrier, the Kiev, is also with the fleet, and two more will join the Kiev in 1985.[15]

Northern Fleet naval aviation has grown considerably also. An estimated 405 aircraft are assigned to the fleet.[16] Of these, 125 are bombers and reconnaissance aircraft, and another 110 are antisubmarine aircraft and helicopters.[17] Contributing further to the Soviets' growing air power in the Kola Peninsula are approximately 200 shore-based aircraft that support the Northern Fleet, plus 450 more in the Murmansk Oblast that are distributed over forty airfields. Modernization of this force is evident, with the new MiG-23 Flogger, MiG-25 Foxbat, and Tu-22M Backfire aircraft replacing older weapon systems.[18]

Supporting the Soviets' naval and air arms in the region are seven army divisions (70,000 men) and two special mobile divisions (25,000 men). In addition, a 2000-man naval regiment and a 4000-man brigade occupy the region.[19] The Soviets have paid special attention to the peculiar needs of their northern ground forces, even to the extent of fielding a special troop carrier, the GT-T, designed to operate over marshy ground or snow.[20]

Dr. Marian Leighton, who has spent more than twelve years studying Soviet strategy, believes that the Soviet military buildup on the Kola Peninsula far exceeds the requirements for a strictly defensive role:

> The naval and air components of the buildup in particular reflect the Soviet posture of forward deployment, which, in relation to the northern flank, may already have placed Norway behind the Soviet front lines.[21]

Norway's Military Posture

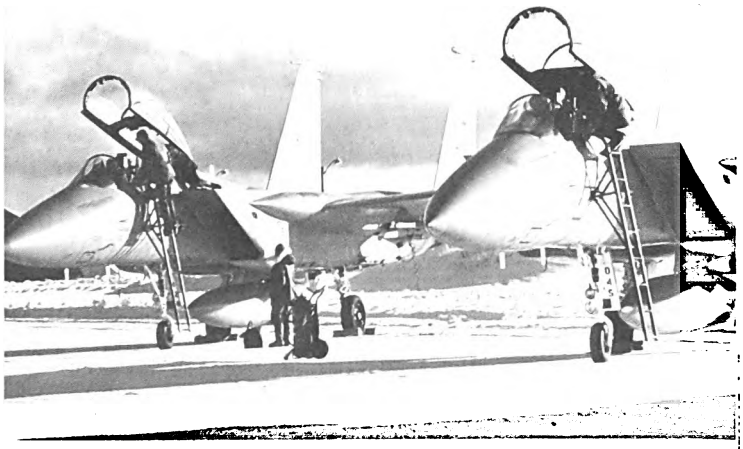
Norway's national character provides a foundation for her military strength. A parliamentary democracy, Norway has a king who governs the land and also serves as the symbolic head of her armed forces.[22] Norwegians proclaim that their foreign policy is characterized by the "desire of the people to live in peace and friendly cooperation with others." This desire is supported by two themes: protection of human rights and preservation of democratic ideals.[23] Not surprisingly, then, Norway's military forces are defensive. Although Norwegian economic constraints dictate a small armed service, public opinion generally supports the military. All able men are required to serve in the military for twelve months if service is performed in the Norwegian army, or fifteen months if in the air force or navy.[24] Approximately 64 percent of Norway's forces are conscripts; therefore, with only 36 percent of her military force as "professional" servicemen (those inductees who stay on beyond their required time), Norway's military has a continual training problem.[25] Indeed, by the time the recruit becomes fully trained, he is eligible for release from active duty.

Norway's peacetime force consists of approximately 40,000 men. A recall of past re-

The NATO response to any Soviet incursion or attack on Norway would need to be rapid and decisive. Air power will play a key role in defending the Northern Cap.

uits would summon another 300,000.[26] Nor-
ay's reserves (members of the "Home Guard")
umber about 80,000, but since these men get
nly fifty hours of training a year,[27] their value
ı combat may be limited. As might be ex-
ected, most of Norway's active forces are based
ı the northern one-third of the country. One
ıfantry brigade of 6500 men is in place there,
ıd several more could be mobilized.[28] Also
ocated in the north are one fighter squadron,
ne fighter-bomber squadron, a few reconnais-
ınce and antisubmarine warfare aircraft, and
few naval vessels.[29] Of these northern forces,
nly the 500-man Norwegian Frontier Battal-
ın mans the Norwegian-Soviet border.[30] Al-
ıough reputed to be highly motivated, these
ıen face a formidable threat to the east.

The Norwegian-Soviet border's natural fea-
ıres provide little protection for the country.
he 150-mile-long border is marked for most of
s length by the Pasvikelv River, which freezes
olid in winter. A dam for a small hydroelectric
ation is located on a bend of the river where
oth banks are in Soviet territory. It is surely no
ccident that this particular dam was designed



Air Force F-15s, like these based in Germany, can operate in the extreme weather conditions typical of the Arctic climate.

Two F-15s based at Bitburg, Germany, and an F-4C fly in formation with a pair of Royal Norwegian Air Force F-104s during an exercise. The venerable F-104s are being replaced in the Norwegian inventory by highly capable F-16s.

wide enough to allow tanks to cross.[31] Realizing that the Soviets would have little difficulty crossing the border in the north with considerable forces, Norwegians feel that maintaining stable political relations with the Soviet Union is an imperative.

Norway's Political Pressures

Although Norway joined NATO in 1949,[32] its relationship to the alliance continues to be a "marriage of convenience rather than one based on passion."[33] Norway supports the West, but she attempts to reassure the Soviets of her military restraint by adhering to the following policies:

- No foreign troops or bases on Norwegian soil in peacetime.
- No nuclear weapons in Norway's territory in peacetime.
- No allied maneuvers in the county of Finnmark.
- No allied naval or air activity east of 24 degrees east longitude (near Hammerfest, Norway).
- Warsaw Pact observers invited to military exercises.
- Upcoming maneuvers announced, even if the 25,000-man threshold (of the Helsinki Accords) is not exceeded.[34]

Norway's Foreign Minister asserts that these policies take "account of the Soviet Union" in Norwegian foreign policy and are unilateral "confidence-inspiring measures."[35] Norway believes that her allegiance to NATO and her attempt to avoid antagonizing the Soviets are both crucial to her security. Norwegians also believe that a balance of attitudes among her Scandinavian neighbors adds to the region's security.

Finland and Sweden continually receive pressure from the Soviet Union and are therefore pleased with Norway's membership in NATO. Sweden's nonalignment policy agrees with that of Finland, and Finland's geographical location and military strength are viewed by Norway and Sweden as buffers between them and the Soviet Union.[36] This intricate balance of attitudes contributes to Norway's overall security and is important to Norwegians. Not fully confident of NATO's desire or ability to protect her, Norway contributes less money to NATO each year, preferring instead to use her limited funds to increase her own defense budget.[37] But only a few Norwegians believe that NATO's increasing inability to counter Moscow's growing harassment campaign brings diminishing returns on her investment in NATO and that, consequently, the benefits of membership in the alliance may not outweigh the risks.[38]

Problems in the North

Whether or not Norway's membership in NATO is a "risk" is debatable, but continual pressures by the Soviets in the northern region may indeed drive NATO to provide the security that Norway wants for her participation in the alliance. Over the years, numerous Soviet actions in the northern cap have irritated Norway. If these annoyances continue, Norway may request increased assistance from NATO to ensure regional stability. Aware that such stability is critical to Norway's survival, NATO might respond with the additional assistance needed, which could range from political support to the stationing of equipment or even troops on Norwegian soil.

One area where continual political disagreements between Norway and the Soviet Union occur is the Svalbard Archipelago. The Spitsbergen Islands were placed under Norwegian protection by a 1920 treaty, which granted Norway and thirty-nine other signatories the right to exploit the area commercially. However, of the forty, only Norway and the Soviet Union have inhabited and explored the area, primarily for the purpose of mining coal.[39] The Soviet Union's Arktikugal Company has mining units at Barentsburg and Pyramiden.

nd Norway's sole company is located at .ongyearbyen. (See Map 3.) The coal produc- on for the countries is nearly equal (450,000 ons monthly), despite the fact that there are 000 Soviet coal miners and only 1000 Norwe- ian coal miners in the region. Why are there vice the number of Soviets as Norwegians to roduce about the same amount of coal? The lorwegians contend that the Soviet Union has lternate reasons for the number of miners—that , the Soviets do not really need the coal but use ie mining foothold to maintain a presence on pitsbergen for some future use.[40] Regardless of hy they are there, at times the Soviets have ntagonized the Norwegians in the area.

A few years ago, Aeroflot was granted use of he Svalbard Airport. Six Soviets are perma- ently based there to service only one monthly light, while Norway adequately services her eekly airline flights with only one attendant. The Soviets then brought the wives of four of the ttendants to live on the island, an action openly efying the established policy of not allowing the vives of the miners to live on the island. The 1920 reaty also prohibits militarization of the ar- hipelago, yet the Soviets have established what ome observers have called a military colony at Barentsburg, complete with electric fences and ecurity guards. Also, the Soviets have begun bas- ng their civilian version of the Mi-8 Hip attack elicopter on the island. Norwegians allege that hese helicopters are fitted with armament racks or future military use. Finally, the Soviets persist n paying lump-sum taxes for the Russians living n Spitsbergen, rather than individual tax pay- nents as the treaty specifies.[41] These (and other) arassing actions are not limited to the islands; hey extend to the Barents Sea.

A continental shelf extending from the land nass of Northern Europe to the north of Spits- ergen forms the seabed of the Barents Sea. Nor- way claims that the ocean floor is an extension of ner sovereign territory, which gives her full eco- nomic rights to the entire shelf. The Soviets con- end that the political boundary between the two countries should be defined as a "sector line" drawn from the North Pole to the mainland's Norwegian-Soviet border, dividing the seas appropriately. (See Map 4.) This sector-line issue is closely related to the issue of the Disputed Area. Norway wants the region's political boundary determined by a "median line" drawn equidistant from sovereign lands. The difference in the area established by a sector line or a median line amounts to nearly 60,000 square miles of ocean, called the Disputed Area.[42] Soviet ships taunt Norwegian shipping vessels in this area, and the Northern Fleet conducts exercises there. This Disputed Area issue continues to cause political unrest for the Norwegians, as does the issue of the Grey Zone.

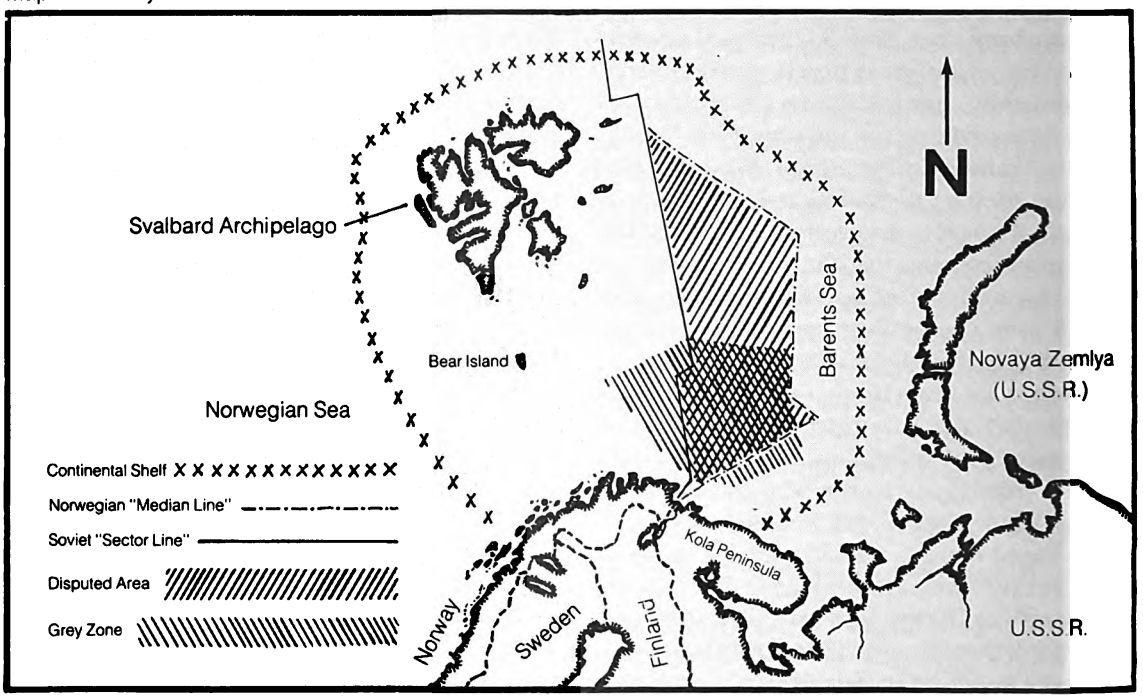
North of Norway's mainland is an area called the Grey Zone, set aside through bilateral protocol for Soviet and Norwegian fishing. Provisions of the protocol allow other countries licensed by Norway or the Soviet Union to fish in this area. However, in 1978, the Soviets turned away two British trawlers licensed by Norway.[43] Other similar incidents have caused increasing tension in the area, and observers speculate that it may be only a matter of time before an incident occurs in which Norway might need NATO's assistance. That is an important issue, as Norway questions NATO's ability to respond and support Norway's defense of the northern cap.

NATO's Ability to Defend the Northern Cap

Norway does have some valid concerns about NATO's ability to defend the northern region. Norway's policy of not allowing foreign bases on her soil hinders NATO's ability to keep the area secure or to ensure rapid reinforcements. Assuming that NATO agreed to support Norway militarily, what forces are available to deploy to Norway and what factors would make rapid, effective reinforcement difficult?

The Standing Naval Force, Atlantic (STANAVFORLANT), normally positioned off the northwestern coast of Europe, is the world's first permanent international naval

Map 4 Norway's Political Problem Areas



squadron and is tasked to defend the north Atlantic.[44] Five NATO countries, including Norway, provide forces for STANAVFORLANT.[45] However, the fleet is relatively small and does not compare in size with the Soviets' Northern Fleet. Supporting STANAVFORLANT in the defense of northern Europe is the Allied Command Europe (ACE) Mobile Force. Eight NATO nations provide these Central Region air and ground forces, which could deploy to northern Norway rapidly, provide a "show of force" demonstrating NATO's resolve, and counter a Soviet thrust until reinforcements arrive.[46] Essential to the makeup of the ACE Mobile Force are marine forces from several allied nations, including the United Kingdom, Holland, and the United States.[47] These forces must be deployed as early as possible because rapid seizure of Norway's northern cap by adversary forces would create severe difficulties for allied reinforcements seeking to reestablish NATO's security in the region. Related to this necessarily rapid decision to deploy are questions regarding adequate reception facilities, prepositioning of stockpiles, and proper training for allied forces.[48]

Host nation support and adequate seaports in the north are lacking; these matters need immediate attention.[49] Early positioning of supplies and equipment is crucial, and the land-based prepositioning program the United States Marine Corps is conducting currently in Norway is an excellent beginning.[50] However, although U.S. Marines train at two sites, the facilities, equipment, and support at these sites are inadequate. Recognizing that amphibious assaults need to be practiced constantly because of the difficult terrain and terrible weather, one Marine commander, who trained at these sites and then participated in several northern Norway exercises, expressed his concerns. For example, he indicated that amphibious landings were extremely difficult in the fjords and, even after landing, one unit progressed only thirty meters through deep snow after more than one and a half hours of intense effort because of the

ack of proper snow-removal equipment. He concluded that much better equipment is vital if the Marines are to be successful in northern Norway.[51]

THE security of Norway's northern cap is essential to NATO's security. The alliance cannot afford to let Soviet harassment of Norway and the growth of Soviet forces in the northernmost Norwegian areas go uncontested, as the political and military ramifications of Soviet gains in the northern cap are tremendous. For example, if the Soviets seized Spitsbergen and NATO did not help Norway, other alliance members would have serious doubts about NATO's effectiveness. Militarily, the Soviets would gain significant strategic benefits from this improvement of their geographic position: Backfire bombers could reach the entire United States refueled;[52] SS-20 missiles could operate as intercontinental missiles against North America;[53] and the Northern Fleet would have unchecked access to the Atlantic and would be able to interdict sea lines of communication between America and Europe easily.[54] Thus, quite apart from concerns regarding the alliance, the United States has substantial strategic interests in the situation in northern Norway.

It is imperative that NATO remain vigilant and continue to monitor the area very closely. NATO must continue to work with the Norwegian government to conduct more exercises in the area for the advantages these exercises offer in the realm of realistic training, to preposition crucial supplies, and to improve seaport facilities. The United States and other NATO members need to ensure that sufficient well-trained, well-equipped forces are available to deter Soviet encroachments and that these forces can be deployed rapidly if deterrence fails.

NATO bases its security in the north on a policy of deterrence designed to persuade the Soviets that an attack on Norwegian territory would incur costs greater than the potential gains they might obtain. However, Soviet analysts might decide that an attack on northern Norway would not mean automatic NATO involvement and could be limited to a Norwegian-Soviet confrontation. Accordingly, NATO must ensure that it can stand by its policy of reassurance.[55] To reassure its allies, NATO's future actions regarding the northern cap must be positive and convincing. The significance of maintaining security in this region and the resulting consequences if NATO ignores this strategic area cannot be overstated. One international relations expert emphasized the region's importance and placed the issue in the proper perspective when he observed: "World War III may not be won on the northern flank, but it could definitely be lost there."[56]

Mililani, Hawaii

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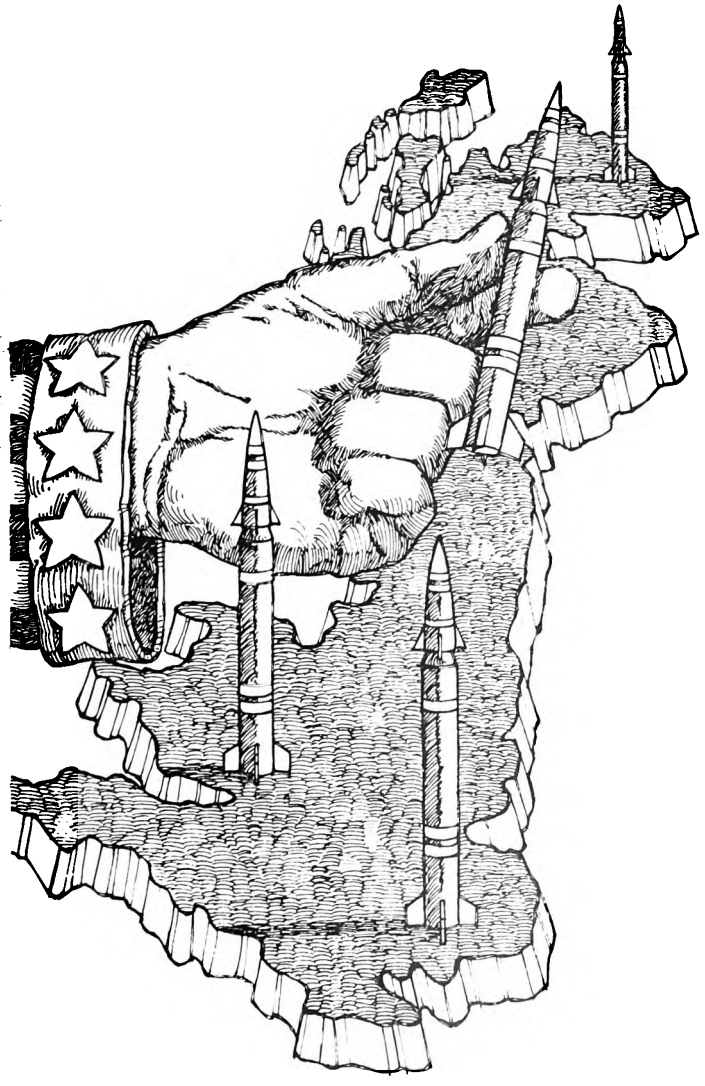
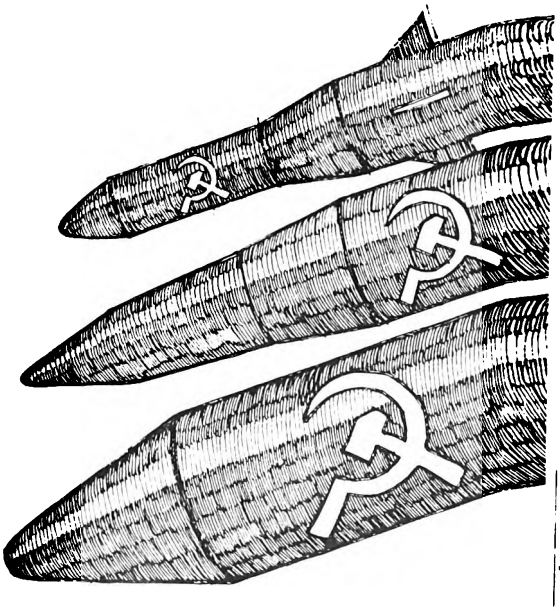
VAR-FIGHTING DETERRENCE ND ALLIANCE COHESIVENESS

.. STEPHEN J. CIMBALA

OR many years, the United States has attempted to extend the deterrent power of its strategic retaliatory forces to suade Soviet attacks on our European allies, ile improved Soviet strategic capabilities have continued to call into question the viability of this "extended" deterrence. Recent developments in U.S. declaratory and force employment policies have raised new issues affecting NATO strategy and politics—issues that





are important to Western Europe's defense. Indeed, the evolution of U.S. strategy toward an amalgamation termed "war-fighting deterrence" may well work against our efforts to maintain alliance cohesiveness, on which credible defense depends.

U.S. Policy

Since 1974, American spokesmen have articulated changes in declaratory policy that emphasize the more selective and controlled use of strategic retaliatory forces if deterrence fails. This evolution has seemed both logical and inevitable to U.S. policymakers. Secretary of Defense James R. Schlesinger made clear our desire for increased flexibility in 1974. Explaining the meaning of National Security Decision Memorandum 242 (NSDM-242), he outlined three principal components of this search for increased flexibility.[1] First, the U.S. President should have a wide range of choices about using nuclear weapons, retaining escalation control at any level of conflict. Second, targeting policy should emphasize more explicitly the capabilities to retaliate selectively against the military forces of the opponent. Third, certain categories of targets should be withheld, at least initially, to make possible termination of the conflict on favorable terms and with minimal collateral damage.[2]

Although the Carter administration came into office committed to improved strategic arms control agreements, that administration continued the evolution in employment policy toward more credible selective war-fighting options. The official pronouncement in Presidential Directive 59 (PD-59) certified the commitment of President Carter and Secretary of Defense Harold Brown to the improvement of selective counterforce capabilities in the U.S. arsenal.[3] The "countervailing strategy" announced by Brown had other important implications. The political and military leadership of the Soviet state would be explicit targets of selected nuclear attacks designed to threaten the survival of the political system in the post-attack environment.[4] The Carter administration also sought improvements in the survivability and endurance of the command, control, and communications (C^3) required to ensure that U.S. strategic retaliatory forces could execute these more calibrated war-fighting missions.[5]

The Reagan administration has continued the emphasis of its predecessors on the development of selective retaliatory options and improved strategic command and control. The Reagan program has been accompanied also by plans for significant modernization of each element of the U.S. strategic Triad. In summary form, the components of this modernization are: (1) deployment of 100 MX intercontinental ballistic missiles (ICBMs) in Minuteman silos, presumably hardened beyond present standards; (2) development of a smaller, single-warhead ICBM in either fixed or mobile basing modes, with deployment to occur during the 1990s; (3) deployment of an estimated twenty Trident ballistic missile submarines, equipped eventually with Trident II (D-5) missiles; (4) introduction of the B-1B bomber force to replace the B-52s in the strategic penetrator mission during the 1980s, plus follow-on deployment of the advanced technology bomber (the so-called Stealth bomber) during the 1990s; and (5) deployment of thousands of nuclear-armed cruise missiles on bombers, surface naval craft, and attack submarines.[6]

NATO Strategy

Since 1967, NATO has been committed to a declared strategy of flexible response. To be successful as a deterrent, flexible response depends on the coupling of NATO conventional, theater nuclear, and strategic nuclear forces into a deterrent spectrum that cannot be challenged at any link. In reality, however, the basis for the concept was never as viable as it sounded. The "flexibility" in flexible response came from the U.S. reassurances that, if neces-

ary, the United States could respond to attacking Soviet conventional forces by threatening nd perhaps using limited nuclear strikes gainst those forces. NATO confidence in U.S. illingness to initiate nuclear war in order to efeat conventional aggression has been weakned by several factors.

First, the improvements in Soviet strategic orces during the 1970s implied a potential rst-strike capability against American ICBMs. lthough the United States could still suffer uch an initial attack and retaliate against Soiet society, it could not credibly threaten Soiet silos in the same way. Thus the balance of and-based strategic forces seemed to tip, at east psychologically, in favor of the Soviet Jnion by 1980. Among West Europeans, this ituation raised doubts that the United States would or could come to their aid by escalating a onventional war into a nuclear one.

Second, the evolutionary developments in J.S. declaratory policy (i.e., the trend toward elective counterforce targeting) raised the conern of Europeans, who felt that credible deterence of war in Europe should be based on a rude rather than a surgical American retaliatory policy. Selective nuclear options and calibrated war-fighting capabilities implied an ability or willingness to confine nuclear war to Europe while isolating the American and Soviet homelands.

Third, the lack of confidence in American strategic capabilities, relative to those of the Soviets, led to demands to meet Soviet theater nuclear force improvements with NATO forces based in Europe. Thus was born the "572" decision to deploy 464 ground-launched cruise missiles (GLCMs) and 108 Pershing II missiles in NATO countries, beginning in December 1983. The deployments were part of a "twin track" decision to begin negotiations with the Warsaw Pact on the reduction of intermediate nuclear forces (INF). The principal NATO concern in this regard was the large number of Soviet SS-20 intermediate-range ballistic missiles (IRBMs) deployed in the western Soviet Union since 1977, numbering about 250 by 1983.[7]

While the United States intended the Pershing II and GLCM deployments as coupling for theater and strategic systems to strengthen deterrence and European confidence, unintentionally the deployments coupled Soviet protests about the buildup and European nuclear peace/nuclear freeze movements. The results were stalled INF negotiations with the Soviets, plus public opposition in Europe to the proposed NATO deployments, which highlighted differences in NATO strategy.

The simple truth is that NATO strategy depended on a credible threat to escalate to strategic nuclear war between the superpowers at the moment most favorable for the United States. This "escalation dominance" was now missing, and it was not likely to be restored in the near future. Actually, the 572 deployments had a more political purpose than a military one. Their operational military contribution beyond the existing capabilities of U.S. strategic systems was not clear even to experts.[8]

NATO strategy also suffered from conventional force imbalances relative to those of the Warsaw Pact. Although the conventional weaknesses of NATO can be overstated, analysts seemed to agree that the Soviet/Pact forces would outnumber NATO on many critical indicators at the outbreak of war. And these numerical advantages in tanks, artillery, and aircraft might be complemented by the advantage of surprise.[9] It seemed apparent that NATO could not guarantee containment of a Soviet attack with conventional forces for very long, while simultaneously the U.S. nuclear guarantee was more in doubt. Thus, the flexible response policy designed to strengthen European confidence appeared increasingly unconvincing.

NATO Politics

American declarations of intentions and capabilities for selective strategic warfighting

have aroused political opposition in Europe, and the opposition groups, in some cases, include influential elites needed to implement NATO strategy. Belgian and Dutch leaders are wary of the 572 deployments, in part because of what they perceive as Reagan administration war-fighting rhetoric. Opponents of West Germany's Christian Democratic government (such as key Social Democrats), who may take power before the 572 deployments are completed, have demanded greater efforts at INF negotiations as an alternative to deployments. British Prime Minister Margaret Thatcher, who supported the deployment timetable, nevertheless demanded a British veto over the firing of nuclear-armed GLCMs from British bases.

To the extent that discussion of war-fighting strategies makes the probability of war seem higher or the consequences more devastating, should deterrence fail, it also engenders opposition in Europe. Fears run both ways and are not always consistent, but they are potent. Because the discussion of improved war-fighting capabilities sounds belligerent, Europeans fear that a higher probability of war is developing. But they also fear that Western unwillingness to plan for limited nuclear war may invite the Soviets to try an attack on favorable terms. NATO, as a coalition, not only would be hard pressed to obtain nuclear release in time to rectify a Soviet surprise attack but also would probably be incapable of providing successful resistance without escalating to U.S.-Soviet central war.[10]

Europeans note that American critics too have questioned whether changes in declaratory policy have been matched by improved U.S. capabilities for nuclear warfighting. In fact, American analysts have questioned whether the "limited nuclear options" and "countervailing strategy" assertions offer anything more than flexible targeting, which is not all that new anyway.[11] If war-fighting deterrence is perceived as more shadow than substance by American analysts, it can hardly be convincing on the other side of the Atlantic. Europeans may be correct to be skeptical. We may indeed have begun the 1980s with the rhetoric of selective nuclear warfighting but without the capabilities. On the other hand, if we succeed in developing further capabilities, we dissuade the Europeans from increasing their budgets for conventional defense. If the United States is more willing to initiate limited nuclear strikes against Soviet conventional forces because the capacity for this kind of "battle management" has improved significantly, why should Europeans spend more money for nonnuclear forces?

THE ARRIVAL of war-fighting deterrence is as disconcerting as it appears to be inevitable. It seems self-evident to American planners that the United States needs improved war-fighting capabilities for credible deterrence in an age of strategic parity. But the more refined and calibrated these capabilities become, the more they threaten Europeans with "limited" (from our perspective) nuclear war, and the more irrelevant European conventional commitments may seem to them. There is no way out of this dilemma other than explaining our policies much better than we have thus far. If the Soviets can be deterred only by a new version of "flexible response" in which the "flex" is now intratheater nuclear warfighting, our NATO allies must understand this as we do. Otherwise, we have a coalition with no strategy.

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Notes

1. Secretary of Defense James Schlesinger, Press Conference, 10 January 1974, excerpts in *Survival*, March/April 1974, pp. 86-90.

2. Desmond J. Ball, "The Future of Strategic Balance," in Lawrence S. Hagen, editor, *The Crisis in Western Security* (New York: St. Martin's Press, 1982), pp. 121-43.

3. Address by Secretary of Defense Harold Brown, 20 August 1980, ıblished in *Survival*, November/December 1980, pp. 267-70; ɔuis René Beres, *Mimicking Sisyphus: America's Countervailing rategy* (Lexington, Massachusetts: D. C. Heath and Company, 83).

4. Desmond Ball, "Counterforce Targeting: How New? How able?" *Arms Control Today*, February 1981, reprinted with revi-ɔns in John F. Reichart and Steven R. Sturm, editors, *American -fense Policy*, Fifth Edition (Baltimore: Johns Hopkins Univer-y Press, 1982), pp. 227-34, esp. p. 230.

5. Ball, "Counterforce Targeting: How New? How Viable?" p. 3.

6. Congress of the United States, Congressional Budget Office, *odernizing U.S. Strategic Offensive Forces: The Administration's ɔgram and Alternatives* (Washington: U.S. Government Printing Office, May 1983).

7. Dr. N. F. (Fred) Wikner, "A Balance of Theater Nuclear Forces: Can We Count? Where Are the Reloads?" *Armed Forces Journal International*, May 1983, pp. 92-101.

8. Colin S. Gray, *Strategic Studies: A Critical Assessment* (Westport, Connecticut: Greenwood Press, 1982), p. 86.

9. Richard K. Betts, *Surprise Attack: Lessons for Defense Planning* (Washington: Brookings Institution, 1982).

10. Jeffrey Record, *NATO's Theatre Nuclear Force Modernization Program: The Real Issues* (Cambridge, Massachusetts: Institute for Foreign Policy Analysis, November 1981).

11. The case that flexible targeting has been added to an unrevised "mutual assured destruction" doctrine is argued in Keith B. Payne, *Nuclear Deterrence in U.S.-Soviet Relations* (Boulder, Colorado: Westview Press, 1982).

Samuel Eliot Morison Prize

The American Military Institute (A.M.I.) is pleased to announce the Samuel Eliot Morison Prize to be awarded in recognition of the most outstanding scholarly contribution to military history in 1984. The winner will receive a medal and a cash award of $100.00.

Readers are encouraged to submit nominations to the Chairman of the A. M. I. Awards Committee by 1 March 1985, which must be accompanied by a brief explanation of the scholarly contributions of your nominee. The particular scholarly contribution may be a book or major article touching on any aspect of military history but must have made a distinctive and original contribution to the benefit of other students of military history.

The address of the Awards Committee is:

Professor Archer Jones
Department of History
North Dakota State University
Fargo, ND 58105

THE DANGER OF NUCLEAR DIPLOMATIC DECAPITATION

DR. HOWARD TAMASHIRO

PERHAPS the most dramatic element of President Reagan's strategic FY 1983-87 five-year program involves the upgrading of U.S. command, control, and communications (C^3) capability. Key military leaders fear that command, control, and communications in a nuclear war may be the Achilles' heel of U.S. strategic forces.[1] Recent reports on strategic false alarms and the dangerously obsolete North American Air Defense (NORAD) and Worldwide Military Command and Control System (WWMCCS)[2]—the core of our strategic defense C^3 architecture—have heightened these fears.

To meet this threat, the Reagan administration plans to spend about $20 billion on C^3 upgrading. Besides replacing obsolete systems, this massive C^3 spending is part of a larger, retailoring program designed to give the United States the capability to, in Secretary of Defense Caspar Weinberger's words, "conduct a prolonged nuclear exchange over a protracted period."[3]

However, there is a deeply disturbing asymmetry about this new C^3 interest. All talk centers on military uses—i.e., battlefield intelligence, target acquisition, strategic systems control, electronic warfare, satellite defense, etc. Little attention is directed toward diplomatic C^3 needs, which are at least as important as military ones. Outside the context of a total war, negotiations in some form are inevitable following the outbreak of war, and such negotiating assumes a survivable, diplomatic C^3 system, which U.S. planners appear to be ignoring. This oversight is especially puzzling for an administration that covets a limited nuclear war-waging capability.[4]

Believers in limited nuclear war assume that political gains in such a setting are achievable, which implies that combatants will be able to stop nuclear fighting in a timely fashion. And this, in turn, assumes survivable C^3 links for negotiating and truce implementing. Moreover, continuous communications between combatants may provide strong incentives to control escalation pressures, a necessary ingredient in all limited war scenarios. As former Secretary of Defense James Schlesinger observed in 1974 Senate hearings:

> If we were to maintain continued communications with the Soviet leaders during the war, and if we were to describe precisely and meticulously the limited nature of our actions, including the

desire to avoid attacking their urban industrial base, . . . political leaders on both sides will be under powerful pressure to continue to be sensible.[5]

But one need not be a believer in limited nuclear war in order to see the need for diplomatic C^3. If any nuclear war erupts, it is vital that fighting stop as soon as possible before all control is lost, which again requires a survivable, diplomatic C^3 capability.

HOW vulnerable are our diplomatic C^3 links in nuclear war? While much of the literature in this area is classified, the public material is not reassuring. To assess this vulnerability, we must consider at least two levels of diplomatic communication: leader-to-leader links and leader-to-subordinate links.

The major leader-to-leader link between the superpowers is the telecommunications hot line (MOLINK) joining Washington and Moscow. It is the most conspicuous, official effort to date for coping with the problem of war termination. But while it has proved invaluable for handling international crises, MOLINK's survival in a nuclear context is doubtful for two basic reasons. First, both the Washington and Moscow areas will be high-priority targets. Second, the long-range communication elements in MOLINK are fragile and easily could become incidental victims of nuclear strikes aimed at other nearby targets. The four ground stations, terminals, and telephone cables for MOLINK are all unhardened. The system's large dish antennas at Fort Detrick, Maryland, would probably collapse if exposed to as little as 5 pounds per square inch (psi) blast overpressure. MOLINK's satellites are unhardened and could be knocked out easily by exoatmospheric explosions. In short, as noted by former Secretary of Defense Donald Rumsfeld in 1977, "the system is not designed to survive a direct attack."[6]

Leader-to-subordinate links are no less vulnerable to nuclear effects. In the United States, the Worldwide Military Command and Control System is *the* command and control system used, either directly or indirectly, by *all* government departments in a crisis. However, failures in the WWMCCS have cast serious doubts about its reliability. These failures center on (but are not confined to) the Honeywell 6000-series computers, which are the heart of the WWMCCS currently. For example, in a 1977 exercise, Prime Target, the WWMCCS computers were linked to computers of the U.S. Atlantic Command (LANTCOM), European Command (EUCOM), Readiness Command (REDCOM), Tactical Air Command (TAC), and the National Military Command Center (NMCC). EUCOM tried to get or send data through the computer network 124 times but failed 54 times because of "abnormal" computer shutdowns; LANTCOM tried 295 times, with 132 failures; TAC tried 63 times, with 44 failures; and REDCOM tried 290 times, with 247 failures (i.e., a success rate of 15 percent). Overall, the WWMCCS worked only 38 percent of the time.[7] Bad planning and the procurement of incompatible data processing equipment are the main reasons for these problems. The military is now trying to correct and upgrade the WWMCCS.

Compounding these design problems is the danger posed by electromagnetic pulse (EMP). EMP refers to electromagnetic disturbances produced by a nuclear blast, which can destroy electronic components and circuits.[8] Some military C^3 links are now being EMP-shielded, but the process will not be completed for many years. Moreover, experts themselves disagree on the effectiveness of shielding.[9]

Other radiation effects from nuclear blasts that could disrupt C^3 links include both atmospheric ionization and transient radiation effects on electronics (TREE). Ionization can interfere with certain very-low-frequency transmissions. TREE, which refers to the impact of x-rays, gamma rays, and neutrons, can destroy solid-state devices and circuits.[10] These threats render military C^3 capabilities highly prob-

lematical in a nuclear context.

The effects of EMP, TREE, etc., have produced much concern within military circles. The literature in this area focuses almost exclusively on the problem of preserving *military* leader-to-subordinate links, however. Unfortunately, the vulnerabilities of *diplomatic* C^3 links are far more acute than those of the military.

In a nuclear context, the Department of State will need to depend on the trouble-plagued WWMCCS, in part because State's non-WWMCCS communications are even more fragile than the military's systems. Much of State's telecommunications depends on civil systems that are largely unprotected and, hence, TREE- and EMP-vulnerable. Some hardening of existing telephone lines and circuits is now going on, but U.S. diplomatic communications are still extremely delicate.

Perhaps the worst problem facing the Department of State comes from the direct, physical damage produced by nuclear blast. Most of the 235 U.S. embassies and missions worldwide are located in vulnerable, urban areas. Given the Soviet Union's present military doctrine, which calls for immediate C^3 targeting,[11] the survival time for Department of State telecommunications is problematical. Hardening alone will not give us a survivable, diplomatic C^3 network. When one considers that survivability in a protracted, nuclear war means surviving not just one strike, but *multiple* strikes, then hardening as a complete solution seems futile.

Neither does satellite technology now in place offer a viable answer to C^3 vulnerability. Certainly, satellites are playing an increasingly crucial role in command and control. They provide the most important communications mode between Moscow and Washington (the hot line), and they link national command authorities with their respective military forces. But satellites, together with their ground stations, are very vulnerable to attack or jamming.

Because of payload limits for launch vehicles, satellites are made of light materials and have little shielding. This "softness" makes them easy marks. Moreover, both superpowers are developing weapons (missiles, lasers, etc.) for destroying satellites. It has been estimated that merely two U.S. laser-armed platforms could destroy all Soviet low-orbit satellites in less than twenty-four hours.[12] The Soviets, on the other hand, using exploding-interceptor satellites might be able to hit all U.S. low-orbit satellites in less than two hours. Shielding, warning sensors, reserve "in-orbit" satellites, emergency-launch capabilities for replacing satellites, and smaller satellite radar cross sections are protective countermeasures that are being studied. With present technology, it is doubtful that satellites can survive a dedicated antisatellite attack.

Satellite communications can be neutralized also by severing their links with ground control and receiving facilities. Jamming is one possibility; another is hitting the extremely vulnerable tracking, control, and communications relay facilities on the ground. These ground stations are all "soft" and could not resist more than 5 psi blast overpressure. Moreover, because of technical factors and financial limitations, these stations cannot be hardened or put in a mobile mode. Thus, successful military or diplomatic satellite communications, in a nuclear context, is a highly doubtful enterprise.

Given the high vulnerability of present C^3 links, it is clear that current unilateral attempts to safeguard communication links will not be adequate. Maintaining reliable C^3 capabilities will require increased efforts in both the technical realm and the diplomatic sphere.

In the technical area, hardening, redundancy, and dispersal are needed. Improvements have been realized but more are necessary.

- Existing ground control and receiving facilities for our satellites must be hardened. The following should be procured, where feasible: fiber optical circuits (which are not vulnerable to EMP effects), underground cables with lower atomic-numbered materials, additional control

nd receiving points in our ground-based communications network, filters for antenna inputs o ward off EMP effects, a system of dispersed omputers that distributes processing load and hares a common data base, and more backup ranches and circuit redundancies in our communications networks. These technical improvements should include C^3 channels for diplomatic missions abroad.

- Currently, the United States depends heavily on airborne systems to provide survivable C^3 inks in a nuclear setting. Unfortunately, the aircraft have become increasingly vulnerable. They depend on runways or in-flight refueling, hey can be detected by satellites, and they are ot available in large numbers.[13] At best, they ffer C^3 capabilities for only a few days. The umber of entry points that these aircraft have o ground-based communications is surprisingly small. For instance, "there are only 14 round entry points which allow the National Emergency Airborne Command Post (NEACP) nd the SAC AABNCP (Strategic Air Command Alternative Airborne National Command Post) ccess to ground-based, communications networks."[14] To improve the situation, we must ncrease the number of aircraft assigned to C^3 missions; increase the number of "ground communicating entry points" for these aircraft; make these aircraft more jam-resistant; give more aircraft the capability of supporting diplomatic C^3 needs, not simply "one-way" military emergency-action transmissions; and explore the option of moving C^3 tasks to more survivable, and less time-pressured, submarine systems. Allowing the State Department access o such seaborne systems will go far toward upgrading our diplomatic C^3 in a nuclear setting.

- Currently, the military has a last-resort relay system in case all airborne relays are destroyed—the Emergency Rocket Communications System (ERCS). Approximately one dozen silo-based Minuteman III ICBMs are employed in the system. Launched with an extremely high trajectory, they can provide about thirty minutes of message transmission. The ERCS is designed for military use. However, the possibility of using an upgraded ERCS for diplomatic transmissions should be explored. Further, unlike the present ERCS, which is increasingly vulnerable to Soviet ICBM attack, a system dedicated to diplomatic support might be safeguarded by multilateral agreements among the major powers.

- The military sees the commercial telecommunications industry as a possible backup system of last resort. Unfortunately, the electric-power and commercial telecommunications industries have done little to EPM-harden their facilities. Such hardening, together with the storage of spare parts and the development of contingency plans to cope with nuclear attack, is badly needed.

Unfortunately, technological safeguards alone cannot provide a survivable diplomatic C^3 capability in a nuclear context. We also must seek options and safeguards at the political level. The following are offered as illustrative possibilities:

- Overall control of U.S. Armed Forces lies with the President, the Secretary of Defense, or their deputized alternates (i.e., the national command authorities or NCA). However, it is highly uncertain whether the NCA would survive a surprise attack on Washington, D.C. Because diplomatic resource people will be sorely needed, particularly if the NCA is disabled, quick-response evacuation plans for key diplomatic personnel should be drawn up, similar to those for the NCA. Certainly, more should be done to safeguard such personnel than is now contemplated.

- Current dependency on airborne command systems could unintentionally promote escalation. Airborne links might be able to survive a dedicated C^3 Soviet attack for up to 72 hours.[15] Survival beyond a week is unlikely. This limited survival time could create pressure to employ strike options before they are foreclosed by C^3 disintegration. Diplomatic efforts will not

be promising in such a time-urgent context. To avoid such "use it or lose it" pressures, backup C^3 tasks might be extended to our nuclear submarine fleet. Diplomatic functions could be especially well served here. Foreign Service officers with special instructions, plenipotentiary powers for negotiating in a nuclear context, and the relevant foreign-language skills might be routinely assigned to selected submarines. In so doing, the United States could safeguard both its military and diplomatic options.

- To further supplement our diplomatic C^3 powers, the United States should press vigorously for emergency access to the communications facilities of friendly, foreign governments.[16] Beyond this, the United States might seek international recognition for sanctuaries or "target-free" zones. Such zones could be either land or sea tracts. These zones could then serve as neutral diplomatic turf in the manner of Sweden or Switzerland in earlier wars. Such "neutralizing" agreements for ensuring survivable communications might include orbiting satellites, ships or submarines. Certain designated satellites or vessels could be set aside for emergency communications in time of war with their status protected by international agreement. To ensure that such satellites or vessels are not used secretly for military purposes, they might be sponsored by an international organization, such as the United Nations.
- The United States might explore plans for safeguarding Soviet plenipotentiaries while obtaining reciprocal treatment for our diplomatic personnel, which would extend the traditional principle of diplomatic immunity. Without such planning, U.S. efforts to preserve a diplomatic C^3 capability might be futile. Negotiating, after all, requires that there be people on *both sides* of the communications link.
- Finally, the United States should press for the expansion of MOLINK to encompass all nuclear powers, including mainland China. Further, any diplomatic safeguards and responsibilities embracing plenipotentiaries or satellites should be extended to all MOLINK officials.

CURRENTLY, most U.S. efforts in C^3 are designed to preserve as many military options for as long as possible after the onset of a nuclear attack. However, it seems equally important to preserve negotiating options for as long as possible too. The suggestions I have outlined here are not necessarily a solution to the problem of preserving a diplomatic C^3 capability: the real solution is to avoid nuclear war altogether. Nevertheless, these suggested measures might go some distance toward redressing the imbalance between our military and diplomatic C^3 efforts.

In the theory of deterrence, a secure second-strike capability, with the associated C^3 backup, is important. But for actual nuclear combat, Bernard Brodie's counsel to "terminate the strategic exchange as quickly as possible, with the least amount of damage possible on both sides" is paramount. It follows, therefore, that a "secure second-chance" negotiating capability and the necessary C^3 support to make such termination possible deserves our deepest consideration.

University of Oklahoma, Norman

Notes

1. Air Force Chief of Staff General Lew Allen testified in early 1981:

> In the strategic field, my No. 1 worry is the fragility of our command and control . . . . Our present network of automated command, control, and communications systems [was] conceived for the most part in the late 1950's. In peacetime, these systems are reliable and effective, in wartime they are highly vulnerable to attack.

(*Armed Forces Journal International*, September 1981, p. 28.)

More recently, General Bennie Davis, Commander in Chief, Strategic Air Command, echoed these concerns: "It's [C³ survivability] my number-one priority, my number-one worry, and my number-one concern—because there are certain vulnerabilities that we have

yet solved." (*Armed Forces Journal International*, June 1981, p.

. In the eighteen months starting in January 1979, the U.S. ense system produced 147 "major" and 3703 lesser false alarms. John Prados, *The Soviet Estimate* (New York: Dial Press, 1982), 90.

or a brief description of the WWMCCS, see Richard Head, ico Short, and Robert McFarlane, *Crisis Resolution: Presiden- Decision Making in the Mayaguez and Korean Confrontations* ulder, Colorado: Westview Press, 1978), pp. 85-99.

nformation on the crippling problems of the WWMCCS is uminous. See, for example, James North, " 'Hello Central, Get NATO': The Computer That Can't," *Washington Monthly*, y/August 1979, pp. 48-52; William Broad, *Science*, 14 March 0, pp. 1184, 1186-87; Harold Brown, Secretary of Defense, House propriations Committee Hearings, January 1979, p. 256; Rich- Gutman, Director of the Government Accounting Office, use Armed Services Committee Hearings on Military Posture, rch 1979, p. 3223; "Federal Signals," *SIGNAL*, May/June 1982, 3.

or a dissenting view arguing that the WWMCCS works well, see ry Nuhn, "WWMCCS and the Computer That Can," *Parame-*, September 1980, pp. 16-21.

. Benjamin Schemmer, "Reagan Okays M-X, New Bomber ce, C³ Improvements; Defers M-X Basing," *Armed Forces Jour- International*, November 1981, p. 32.

. Present C³ imbalances between the military and diplomatic ices, unfortunately, extend beyond nuclear scenarios. The State Department, for example, has always lagged behind the Defense Department in crisis management facilities and staff support. See Head et al., pp. 68-69.

5. Senate Foreign Relations Committee, *US-USSR Strategic Policies*, 4 March 1974, p. 13.

6. Donald Rumsfeld, *Annual Defense Department Report FY 1978*, 17 January 1977, p. 146.

7. North, pp. 48-49.

8. For a brief, lucid treatment of EMP, see Janet Raloff, "EMP, A Sleeping Electronic Dragon," *Science News*, 9 and 16 May 1981; pp. 300-03, 314-15.

9. Deborah Kyle and Benjamin Schemmer, "Interview with Commander-in-Chief, SAC, General Bennie Davis," *Armed Forces Journal International*, June 1982, p. 32.

10. Desmond Ball, "Can Nuclear War Be Controlled?" *Adelphi Papers*, No. 169 (London: International Institute for Strategic Studies, Autumn 1981), pp. 10-11.

11. Fritz Ermarth, "Contrasts in American and Soviet Strategic Thought," *International Security*, Fall 1978, p. 152.

12. Richard Burt, "New Laser Weaponry Is Expected to Change Warfare in the 1980s," *New York Times*, 10 February 1980, p. 54.

13. Ball, p. 17.

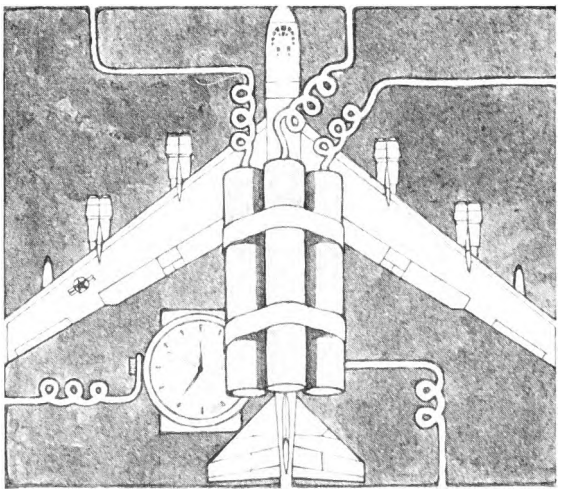
14. Ibid.

15. "Modified E-4 Project Calls for 6 Aircraft," *Aviation Week and Space Technology*, 10 May 1976, pp. 59-61.

16. The State Department seems to be moving on this issue. See Stuart Branch, "A Diplomatic Challenge: Provide More—Protecting More," *SIGNAL*, May/June 1982, pp. 22-23.

Art in writing, as in sculpture, often consists in the removal of surplusage.

Aristotle
The Poetics



IS YOUR BASE READY TO COUNTERACT TERRORISM?

CAPTAIN MICHAEL T. MCEWEN, USA

EARLY one spring morning, four terrorists hijacked the pickup truck of a civil service worker who was en route to his job at a major U.S. Air Force base in the Southwest. They murdered the worker and dumped his body in a drainage ditch where it was obscured from view.

Almost simultaneously, similar hijackings were being conducted by three other teams of terrorists stationed along rural roads that served the same base. In each instance, the terrorists loaded small arms, ammunition, plastic explosives, and detonating materials into the hijacked vehicles and drove to join the line of vehicles entering the base during the morning rush hour. They passed easily through the gates as the guards on duty surveyed the official identification stickers on their front bumpers.

Safely on base, the terrorists emerged from their vehicles, now dressed as telephone and electrical repairmen, complete with tool boxes. Moving through the base, they emplaced and armed fifty charges in office buildings, shops, and dependent housing areas. After the last of the charges had been hidden and set with time detonators, the terrorists moved toward areas they knew to be safe.

At 10:30, two charges exploded. The first killed a secretary and injured four other people in an office building. The other blast damaged the family housing unit of a senior master sergeant substantially, but no one was inside at the time.

By 10:45, the base commander was receiving and assessing initial reports on the incidents. At 11:00, he received a telephone call from the terrorist group leader. The phoner demanded that his group be provided a fully fueled and operational B-52, with full crew, to be ready for takeoff no later than 12:30 p.m. If the aircraft was not ready in time, the terrorist warned, twelve charges would detonate at various locations on the base every thirty minutes from 1:00 p.m. to 2:30 p.m. On the other hand, if his demands were met, the terrorist stated, he would reveal where to find a map of bomb locations.

The terrorist indicated that he had more than a dozen men who were armed with automatic weapons and grenades, equipped with gas masks, and prepared to open fire on any individuals who might attempt to apprehend them. He then stated that he would call back after giving the commander fifteen minutes to think things over.

A phone click indicated that the terrorist leader had hung up the phone. The base commander paused only momentarily as full aware-

ıess set in: he had a very serious problem to olve.

THIS particular scenario has never ɐeen enacted. A base commander has not been aced with this situation. Had he been, he vould have found a myriad of considerations ompeting for his attention during the short eaction time available, *unless* his prior plan-ıing for counteracting terrorists had been horough.

Given the circumstances of this scenario, a ɔase commander would have a number of ɔroblems to respond to, regardless of the course ɔf action he decides to follow in response to the errorists' demands. He will certainly want to vacuate the base so that nonessential person-ıel and dependent families will be safe. He will ılso need to establish the best possible perime-er security in order to prevent further terrorist nfiltration. Tasks such as these require signif-cantly greater manpower resources than that ıormally available from base security forces. Civilian police and even the National Guard night provide the additional personnel needed, ɔut getting access to these resources on such ıhort notice is unlikely unless there has been ɔrior planning and coordination.

Another potential problem will be the arriv-ıl of the news media. Since media attention is ı major goal of terrorists, authorities must have ɔlans and measures worked out to ensure that he coverage given is accurate and not subject o manipulation by the terrorists. An extended errorist incident could attract as many as one ıundred news media representatives. Handling hem could pose a very significant distraction o an unprepared commander.

As the commander assesses the situation, he nay desire access to specialized technical assis-ance from bomb disposal or ordnance experts. Such assistance may need to come from another nilitary installation, or it may be present in nearby civilian law enforcement agencies. Ob-viously, prior planning is necessary for the quick mobilization of such aid and advice.

These are only a few of the problem areas that the commander in the preceding scenario would face—in addition to the major problem of handling the terrorist situation itself. Obviously, planning and preparedness are the keys to maintaining control and minimizing damage.

Assessing Terrorism Counteraction Resources

Every person in a leadership position who is responsible for counterterrorism planning and preparedness must begin his efforts with a comprehensive assessment of the civilian, military, and private sector resources that are in his area of operations and responsibility. One excellent way to begin is to conduct an invitational terrorism counteraction conference. By selecting the appropriate lead agency, such as the local police department, to sponsor a symposium for top-level leaders and planners, it is possible to open many potential avenues for interagency cooperation. If an additional effort is made to have a formal presentation by a recognized academic or professional organization that has acknowledged expertise in the terrorism field, then the conference will also provide a solid educational base for the various participants. (A suggested basic schedule is a morning session of informational presentations by the terrorism studies resource group, followed by an afternoon of discussions among the invited agencies to consider capabilities, plans, needs, and guidelines. Cooperative planning and preparedness activities can evolve very nicely from such a program.)

Although the list of specific groups and individuals that might play a supporting role in the terrorism counteraction plan of any given organization obviously would be tailored to each geographic location, a number of agencies and organizations would be found on most checklists of potential counterterrorism assets.

Law enforcement. This sector is obviously

the primary resource that is available in virtually any locale. A survey of resources in this category must include all governmental levels. At the federal level, the basic resource is the U.S. government's lead agency for domestic terrorism, the FBI. In addition, there may be local representatives of such agencies as the Secret Service, the Coast Guard, and the Department of State. At the state level, usually there is a highway patrol, plus specialized state law enforcement or crime control groups. Local-level enforcement resources may encompass metropolitan police forces, nearby police departments, and county sheriffs.

Military forces. In addition to the assets of federal military installations and bases in the area, the National Guard will be the most immediately responsive mode of military assistance in most cases. When listing military resources, one should be sure to have a clear understanding of command authority and chains-of-command. Unless a request for assistance is directed to the proper command level, valuable time may be lost when help is needed.

Public services. The organizations in this category that may be helpful include fire departments and those departments or agencies responsible for public works (because of their access to heavy construction equipment), traffic control, and airport/seaport facilities. These organizations may be able to supply needed equipment or expertise in special situations. In the event of a terrorist incident, most or all of them should receive early notification so that they can assess the possible impact on their areas of responsibility and respond effectively.

Utility companies. Because control of water, electricity, or gas could be of vital concern in certain terrorist incidents, utility companies should be included in counteraction planning.

Emergency medical services. Since almost any terrorist attack could cause injuries, rapid access to quality emergency medical care is a clear necessity.[1] Most hospitals have a disaster plan that enables them to provide a high volume of emergency care on relatively short notice. However, terrorism counteraction planners must know the proper notification system that will mobilize these additional assets. Local ambulance service is another critical component of the emergency medical care system. It may be necessary for the ambulance service to call on standby personnel or adjacent services to meet the demands of a high-casualty terrorist incident. Again, knowledge of the proper notification channels is of paramount importance to planners.

News media. The news media play an important role in international terrorism. When developing a terrorism counteraction plan, planners should take special care to develop a list of names of key management and editorial personnel at each TV station, radio station, and newspaper. However, a number of special considerations must be taken into account in planning the news media liaison system that will be used in terrorist incidents.

Distant resources. Government, industry, law enforcement, and military leaders are sometimes too parochial in their terrorism counteraction outlook. Special sources of assistance often exist outside the immediate jurisdiction of the commander who finds himself faced with a terrorist incident. Although certain laws and regulations may restrict some of the assistance that one group can offer to another, some creative cooperative planning is usually possible. If the various leaders examine one another's resources and begin to exchange information to the extent that security restrictions allow, then the best possible use of available assets can be planned.

The Role of the News Media: A Dilemma

Usually, terrorism involves actions that are directed at "a target group wider than the immediate victim or victims."[2] The primary means by which this wider group is approached is the news media. Thus, the slant and content of the media coverage of given events will have great

earing on whether the terrorists are successful
n their efforts.

Commanders and other authorities gener-
lly recognize the importance of good relations
ith the news media. But where terrorism is
oncerned, special circumstances often require
ther than normal media relations and thus
rior attention by terrorism counteraction plan-
ers. Since terrorism is usually a high-priority
ews story, extra reporters are likely to be as-
gned to cover an incident. Many of these addi-
onal reporters may be strangers to the local
rea and unfamiliar with command and staff
ersonnel. Although public information offi-
ers and reporters may have the best intentions,
onfusion, uncertainty, suspicion, and even hos-
lity can develop among them as the incident
volves. Reporters who have not worked with
aw enforcement officials regularly will not
now the usual ground rules and procedures.
)bviously, there is potential for misunder-
tandings and mistakes that can lead to news
overage unfavorable to those attempting to
olve the terrorist problem, which is sometimes
xactly what the terrorists would like to see.

It is difficult to overstate the importance of
ews media coverage in terrorism. Since terror-
sts often intend to influence an audience that
s much larger than the immediate victims, the
ole of media coverage is obvious. Who had
eard of the South Moluccan separatists before
hey hijacked a Dutch train and held hostages
or nearly two weeks while radio, TV, and
ewspaper coverage focused continuous inter-
ational attention on the incident?[3] The South
Moluccans knew that they were much better
erved by appearing on the worldwide media
tage than by simply engaging in unpublicized
uerrilla fighting in the isolated Moluccans
slands of the South Pacific.

Indeed, terrorists sometimes plan their spe-
ific attacks to achieve maximum media cover-
ge even when their own chances of a success-
ul tactical outcome are reduced by the public-
ty. For instance, the Palestinian terrorists who
lanned the 1972 Munich Olympic Games at-
tack on the Israeli athletes were well aware that Israel and West Germany took very hard-line positions concerning acts of terrorism. The Palestinians probably did not really expect to secure any significant concessions during that episode, but they were certain that they would get tremendous media coverage. And while it is true that most of the people who watched the TV accounts were disgusted by the senseless killings, it is also true that they learned about the Palestinian perspective on the Mideast situation. It may be tempting to say that such situations can be eliminated by simply eliminating the press from the scene. However, exclusion of the press not only violates a fundamental principle of democracy but also plays into the terrorists' hands, offering proof that their claims of "government repression" have validity.

When the issue of international terrorism first began to gain widespread public attention in the early and mid-1970s, a number of "terrorism and the press" conferences were held in cities across the United States. Many, if not all, of these meetings were successful because they provided a forum in which the various parties in the public and private sectors could examine others' points of view and procedures. Such conferences are less effective when they follow a format in which one side tries to tell the other what "ought" to be done in terrorist incidents. These "ought" issues are value-laden and seldom are fruitful areas for discussion. A better approach is to allow each participating party to explain its needs and expectations freely after a well-planned briefing on the techniques, goals, and targets of terrorists has been presented. This type of conference will reveal the kinds of official sector-news media problems that can arise as a result of a terrorist incident. By making everyone aware of these potential problems, such a conference can reduce the probability that they will materialize during an actual event.

Even when terrorists are not sophisticated enough to create problems between the news media and the official sector deliberately, difficulties

can develop and the poor media coverage that can result may enhance acts of terrorism. However, if authorities take a cooperative stance, the slant of news coverage generally will be good.[4] Most reporters and editors deplore violence, are in sympathy with innocent victims, and want to see efficient, governmental response to terrorists' threats. It is important to understand how this natural alliance between the press and law enforcement agencies can work to reduce the effectiveness and incidence of terrorist acts.

Developing a Response Plan

After available resources have been assessed and cooperative interorganizational efforts initiated, a plan for an organization's response to an act of terrorism must be developed.[5] An organization may have a variety of plans to meet various potential terrorist threats. The key to developing plans should be an assessment of the types of threat that the particular organization is likely to face. At many facilities or bases, it will be possible to create a plan that deals with the most likely threat and then develop variations of this plan to respond to other eventualities. Because a barricade and hostage situation is the most demanding problem usually faced by organizations, the basic plan often deals with that scenario but is adaptable to cope with such problems as bomb threats, armed attacks, or arson.

Generally, terrorist attacks can be divided into two categories, based on duration. A completed attack is an event, such as a bombing or arson, in which the terrorists have acted and departed the area during the time that the authorities react. A continuing attack poses the problem of terrorists' remaining on the scene or leaving a continuing threat (e.g., a delayed-action bomb). Usually, a continuing attack is the more difficult type of attack to deal with.

For both types of attack, response plans must cover at least four major areas of action: command, analysis/planning, security, and tactical response. However, specific planning considerations will vary greatly, depending on particular locations, organizations, and threat potentials.

In addressing the issues related to command, the planner must keep in mind that there are several different levels of command to consider. The highest level of command is the domain of the person with final authority for a given situation. This person may not be present in the actual on-the-scene activities, but his approval or agreement may be necessary to carry out certain actions, such as an armed assault against terrorists that may result in the loss of life. This "ultimate" commander must be readily accessible so that critical decisions can be made on very short notice if the situation demands.

Just below this highest level of command is the person who has overall responsibility for the terrorism reaction forces at the scene of the incident. This person normally has the authority to direct the available resources (personnel and equipment) in the manner he deems most appropriate to respond to the threat. (In some cases, he may even have been designated the ultimate authority.) However, he probably should not be the commander of assault teams or other combat forces who may come into direct contact with the terrorists. The on-the-scene commander must have a balanced and detached outlook, and he should be equipped with the best possible communications gear so that he can consult up and down the chain of command, as required.

An aggressive and well-trained individual should command the assault or tactical personnel selected to counteract the terrorists directly. This commander should not be called on to become involved in the overall incident management problem. He should be free to give his full attention to decisive action against the terrorists should that become necessary.

The area of analysis/planning probably provides the best hope for a successful outcome of an incident. The resources available in this area may be very limited in the early phases of an incident, but planners should try to expand this resource rapidly whenever it is possible. The analysis planning team is the on-the-scene commander's think tank. This team should have the best pos-

ble information on the physical environment, ersonalities of the terrorists and hostages, avail- ole terrorism counteraction resources, and any ther pertinent aspects of the problem. This roup must assess the developing situation and ormulate possible courses of action for the ommander to consider. Some of the individuals n the analysis/planning team may be specialists om outside the parent organization. These ight include local psychiatrists, explosive or omb experts, medical personnel, building or acilities engineers, and terrorism specialists from uch agencies as the FBI, Department of State, nd nearby academic institutions.

The need for a terrorism counteraction plan to ddress security is obvious. Few incidents can be managed effectively unless the area of operations s sealed off from outside interference by the news nedia, the public, and possible terrorist rein- orcements. Providing such security may be diffi- ult for the security forces normally available, particularly if the perimeter to be covered is ex- ensive. For this reason, planners must make rovisions to acquire whatever additional man- ower may be necessary to ensure complete and ontinuous security.

Another security issue is emergency medical ervice. A hostage situation, bombing, armed as- ault, or other violent actions could result in erious casualties. The need for emergency medi- al personnel and ambulances may be much greater than the local system can accommodate. Therefore, a terrorism counteraction plan should require that an assessment of the casualty poten- ial be accomplished during the very early phases f an incident so that adequate emergency medi- al services can be mobilized.

The fourth area to address in the plan is tacti- al operations—a term used in its broadest sense. Such operations are not limited to assaults by "SWAT teams." In fact, the hostage negotiation process is a tactical response. It seeks to accom- plish the tactical objective (i.e., release of hos- tages and surrender of terrorists) without the use of violence. In a bomb-threat situation, the de- ployment of search teams and bomb disposal experts would be a tactical operation. The tacti- cal operations part of the counterterrorism plan should address the entire range of actions and activities that the commander might undertake to respond directly to the terrorists threat.

These four areas comprise the basic elements of an effective terrorism counteraction plan. The specific application of these basic guidelines is the job of the terrorism counteraction planner who must study and evaluate the threat potential, response resources, and environmental factors within his designated area of responsibility.

Testing the Plan: A Training Exercise

After a plan has been developed and distributed, it is prudent to test it. A well-designed and realistic training exercise is an excellent means to determine the strengths and weaknesses of any given plan. Lacking this experience, an organization is faced with the possible prospect of testing the plan during a real incident.

Military organizations are usually very experienced with training exercises. However, because some of the specific aspects of counterterrorism action distinguish this operation from other types, some basic points about a counterterrorism training exercise may be useful to consider.

A terrorism training exercise should be based on a written plan. Having the plan in written form not only facilitates the planning and operation of the exercise but also provides a reference document that can be used as the basis of an afteraction critique. The exercise plan can be conveniently divided into two sections: preparation and execution.

The fundamental item in the preparation section is the incident scenario. Exercise planners should develop a scenario that is based on a realistic appraisal of the potential threats their organization faces. The scenario must describe or delineate the composition of the "terrorist" group conducting the attack, the actions of the group, the timetable for the attack, and the area of opera-

tions. The scenario must be broad enough in scope to test the response plan realistically, but it should not be more ambitious than necessary. For instance, a scenario might call for the command and control force to initiate a mass evacuation, but the scenario can be written in such a manner that the response is confined to the planning/analysis arena and not actually carried out basewide. In simplest terms, the scenario should specify the type of incident being conducted and the target that has been selected. The challenge facing the scenario writers is to maximize realism while minimizing interference with nonparticipating organizations and individuals.

The scenario should also contain adequate information on the ideological motivation of the terrorist group. In most cases involving U.S. organizations, it is probably most useful to assume that the terrorists are part of a radical revolutionary group. Their demands might refer to "U.S. warmongering," "capitalist exploitation," "American imperialism," and "rebellion by the masses." Developing an actual list of demands in the language of the likely terrorists not only adds realism to the exercise but provides an opportunity for exercise participants to detect "soft" demands that may be useful points of negotiation.

Selection of the individuals who will be the terrorists is clearly an important part of the preparation process. The primary factor in this selection should be experience or training in small-unit military or law enforcement tactics. At least one of the terrorists should have some acting experience, if possible, so that he or she can interact easily with the negotiators. If the terrorist recruits are not familiar with the basic ideology they will represent, they probably should be given a "cram course" in it. Recruitment of minority members and women for the terrorist team should be considered seriously also. Their presence will reflect the varied composition of real terrorist groups and may offer additional challenges and pressures for force leaders and negotiators to cope with.

A final consideration and an extremely important one in preparation is to plan notification and coordination procedures so that outside organizations and authorities will be aware of what is going on. Although only some of them may be involved actively in the exercise, it is important to communicate clearly with other interested agencies in the area so that an embarrassing and potentially dangerous false alarm can be avoided. Remember to extend the planning and coordination to the news media. While it may be desirable to have reporters assume initially that an incident is real, it is vital in such instances to ensure that the senior editors and station managers are informed about the deception in advance and cooperative about carrying it out.

If the preparation activities for an exercise have been accomplished thoroughly and conscientiously, execution of the exercise should be relatively smooth. Execution itself can be divided into three phases: prediscovery, attack, and resolution.

The prediscovery phase of the exercise includes the breaching of the perimeter security system, if any, and the infiltration of the terrorists and their material into the area of operations. However, if the goal of the exercise is to test more than the security system, it may be necessary to bring the terrorist team "inside" before the exercise begins. A security system that is already highly effective will detect the terrorist infiltration. To allow the scenario to be played out and to test out the complete terrorism counteraction plan in such circumstances, an arbitrary breach of security may need to be assumed.

The attack phase of the exercise might be a bomb placement, an act of arson or sabotage, or a hostage-taking. Only the hostage-taking incident requires a significant amount of special planning. The hostages should be treated realistically but not overzealously. There have been cases where hostages in an exercise have been accidentally injured because they or the terrorist team had not been briefed adequately on procedures.

Once the attack has commenced, the resolution phase should flow naturally as the terrorism counteraction plan is put into effect. If the resolu-

ion phase involves interaction between the terorists and the control force, some instruction hould be given to the terrorist team on the most esired scheme of play. For instance, during a ostage incident, the terrorists could be preinstructed to "execute" one hostage in an effort to provoke the control force into an assault. Or, the nstructions might be for the terrorists to begin vith a very hard-line stance and then negotiate lown to a complete surrender *if* the control force ises a reasonably credible line of negotiation.

It is difficult to generalize on the desirable ength of this resolution phase except to say that t ought to be long enough to test the response lan fairly. In any case, it is probably better to uspend an exercise, even though it is incomplete, rather than force it to proceed at an unrealstic pace.

Although developing a good training exercise requires substantial effort, such as exercise offers probably the best possible means to test and evaluate a terrorism counteraction plan. Literature on counterterrorism training is becoming available to assist training planners. A very complete discussion of the special problems that distinguish a terrorism incident simulation from other types of training exercises can be found in Stephen Sloan's recent book, *Simulating Terrorism*.[6]

AS RECENT incidents around the world have shown, terrorist threats and attacks against U.S. Armed Forces are a real and continuing danger. Commanders and their staffs have an obvious responsibility to prepare for such an eventuality. Beyond the very basic guidelines offered here, some excellent formal training is now available. The Air Force Dynamics of International Terrorism Course at Hurlburt Field, Florida, is an informative one-week overview. The Army offers other one-week courses, including a Terrorism in Low-Intensity Conflict Course and the Individual Terrorism Awareness Course, which are offered at the Special Warfare Center, Fort Bragg, North Carolina, plus a Countering Terrorism Course, offered at the Military Police School, Fort McClellan, Alabama.[7]

Fort Bragg, North Carolina

Author's note: The views and opinions expressed in this article are those of the author and not those of the Department of Defense. The information in the article should be considered a supplement to official guidelines and not a substitute for any applicable directives or regulations. Terrorism counteraction is a dynamic and rapidly growing endeavor within the Armed Forces, and readers are urged to consult the latest publications of their service in order to ensure that the latest official procedures are understood and implemented.

Notes

1. Martin E. Silverstein, "Emergency Medical Preparedness," *Terrorism: An International Journal*, vol. I, no. 1, 1977, pp. 51-69.
2. *Patterns of International Terrorism: 1982*, U.S. Department of State, 1983, p. i.
3. *International and Transnational Terrorism: Diagnosis and Prognosis*, Central Intelligence Agency, April 1976, p. 24.
4. Richard Clutterbuck, *Living with Terrorism* (New York: Arlington House, 1975), p. 147.
5. *Countering Terrorism on U.S. Army Installation*, Training Circular 19-16, Department of the Army, April 1983.
6. Stephen Sloan, *Simulating Terrorism* (Norman: University of Oklahoma Press, 1982).
7. The Terrorism in Low-Intensity Conflict Course focuses particularly on terrorism directed at peacekeeping and advisory forces, the Terrorism Awareness Course covers self-protection techniques, and the Countering Terrorism Course concentrates on base security.

military
affairs
abroad

THE INDIAN AIR FORCE OF THE 1980s

modern clout in Southwest Asia

First Lieutenant Jerrold F. Elkin

THE Indian Air Force (IAF), the largest air arm in non-Communist Asia, is engaged in an extensive modernization effort. For example, advanced combat aircraft, including the Soviet MiG-23 and 27 Flogger, Anglo-French Jaguar, and French Mirage 2000 are being assimilated by the IAF or soon will be added to its inventory. As a consequence, India will have the capability to overwhelm the Pakistani Air Force (PAF), despite the PAF's acquisition of forty F-16s; gain local air superiority in a conflict with China along their common border; and inflict significant damage on the navies of extraregional powers operating in waters adjacent to the subcontinent.

Command Structure

The IAF headquarters, located in New Delhi, consists of four principal branches: Air Staff (led by an air chief marshal designated as Chief of the Air Staff), Administration, Plans and Policy, and Maintenance.[1]

Operational and support elements are organized into four geographic commands (Southwestern, Western, Central, and Eastern) and two functional commands (Training and Maintenance). The area commands direct some forty-five fixed-wing squadrons, fourteen helicopter units, and more than thirty SA-2/SA-3

squadrons.[2] The IAF's fixed- and rotary-wing aircraft inventory numbers 1400, of which approximately 635 are combat aircraft. Indian Air Force personnel strength is 113,000.[3]

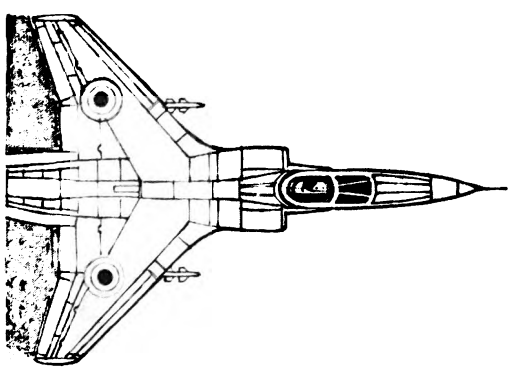
Missions

The IAF has been tasked with the following responsibilities: air defense, long-range interdiction/counterair operations, close air support, reconnaissance, transport, and heliborne support.[4]

air defense

The Soviet MiG-21 is the numerically predominant interceptor in the IAF. Currently, India is replacing its MiG-21FL Fishbed-D assets with the more advanced MiG-21bis Fishbed-N. The IAF has integrated the Matra 550 Magic close-combat missile with the "bis" variant and is endeavoring to upgrade this aircraft's radar, avionics, and vertical acceleration.[5] India now is manufacturing the MiG-21bis under license; the production run of 150 units will be completed in the mid-1980s.

The MiG-21 fleet is being supplemented by variable-geometry MiG-23MF Flogger air superiority fighters. These aircraft are armed with the AA-7 Apex AAM, the AA-8 Aphid, and 23-mm cannon. Reportedly, the IAF will employ Floggers and Fishbeds in groups of six: two MiG-23MFs will attempt to down incoming aircraft with air-to-air missiles; and intruders eluding these Floggers will be met by four MiG-21s.[6]



Air defense resources will be augmented materially by the impending acquisition of forty Mirage 2000 multirole fighters. Early in 1985, IAF pilots will start ferrying the forty aircraft from France to India, with the last delivery scheduled for December 1986. New Delhi retains the option to assemble/coproduce an additional 110 aircraft, although it is unlikely that this option will be exercised.[7]

The Indian Mirage will be fitted with internally mounted electronic support measures (ESM) and electronic countermeasures (ECM) equipment. The aircraft will carry two 30-mm Defa cannon, along with two Matra 550 short-range and two Matra Super 530-D medium-range air-to-air missiles (AAMs). Alternatively, it can be loaded with 11,000 pounds of ordnance on nine external stations.[8]

The Mirage 2000 will be powered initially by the SNECMA M53-5 engine rated at 20,000-pound thrust, but later it will be retrofitted with the 22,000-pound-thrust M53-P2. Similarly, the Thomson-CSF RDM (multifunction Doppler) radar will be superseded in 1985 by the Thomson-CSF/Electronique Serge Dassault pulse-Doppler radar designated RDI.[9] The RDI radar, mated with the Matra 530-D AAM, gives the Mirage 2000 a look down/shoot down capability.

In endeavoring to justify Mirage 2000 expenditures, government spokesmen have argued that Pakistan's acquisition of sophisticated American aircraft alters the balance of air power in the subcontinent. Therefore, it is necessary to procure the Mirage 2000 to serve as a counterpoise to the F-16. However, it is doubtful that the IAF leadership fully embraces this proposition.

The IAF is aware that, among air forces in the region, it enjoys an overwhelming superiority (both qualitative and quantitative) in virtually all categories of air weaponry and equipment. Indeed, this marked power asym-

metry allowed the IAF to advocate conclusion of the Mirage 2000 agreement (while the aircraft still was under development) in the face of a late 1982-early 1983 F-16 delivery date. If F-16 deployment had been perceived as affecting Indo-Pakistani power relationships significantly in the near term, then the IAF probably would have supported one or more of the following policy alternatives: prompt off-the-shelf acquisition of an existing interceptor capable of carrying long-range AAMs and guns with a high rate of fire, significant expansion of the MiG-23MF procurement program, immediate purchase of advanced AAMs, and/or greatly accelerated upgrading of ground-based air defense systems.

Manned interceptors, in conjunction with SA-2/SA-3 squadrons, form one component of India's Air Defense Ground Environment system (ADGES).[10] Other constituent elements include static and mobile radars, tropospheric scatter and microwave communication links, and regional air defense centers tasked with threat assessment and determination of appropriate responses. The ADGES, to be completed by the end of this decade, suffers from a number of shortcomings. First, the system may prove vulnerable to low-flying aircraft, especially those employing ECM. Second, terrain masking may prevent radar detection of intruding aircraft in hilly areas along the northern border. Third, there is insufficient redundancy in the ADGES communications network.[11] Nevertheless, the ADGES will furnish an air defense capability far exceeding that of any neighboring state.

long-range interdiction/ counterair operations

In the event of hostilities with Pakistan, the IAF reportedly plans to attack command and control centers, all Pakistani Air Force main bases, and segments of the communication/ transportation infrastructure. The resulting immobilization of Pakistan's armed forces would be followed by strikes against major ground units.[12] The Jaguar, India's principal deep-penetration/ all-weather interdiction aircraft, would perform many of these missions. Two Jaguar squadrons now are operational; this force will expand to five squadrons by 1987.

Approximately 60 percent of the Jaguars to enter IAF service will be assembled in India. These aircraft will incorporate Adour Mk811 turbofan engines (affording 15-25 percent greater thrust than the original power plant), the Sagem Uliss 82 second-generation navigation/attack system, and two Matra 550 Magic AAMs carried on overwing pylons (thereby freeing the one fuselage and four underwing stations for a variety of ordnance options, including bombs of up to 1000 pounds, cluster munitions, and rocket pods). The Jaguar also may be fitted with the French Agave radar in order to increase its maritime interdiction capabilities.[13]

close air support

Indian planners anticipate that any future war with Pakistan will be a high-intensity, short-duration affair (partly because of likely diplomatic intervention by third parties). Consequently, the IAF is developing a powerful tactical strike force to facilitate rapid advances by ground elements. Offensive air support will be furnished by at least three MiG-23BN and eight MiG-27 squadrons, augmented by the MiG-21M Fishbed-J and Ajeet (an upgraded version of the British Gnat).[14] Aging Hawker Hunter Mk 56, Sukhoi Su-7, and Hindustan Aeronautics Limited HF-24 Marut fighter-bombers are being removed from the inventory.

The MiG-23BN, already operational in the IAF, has a centerline GSh-23 cannon and six fuselage and underwing hardpoints, which can be loaded with a variety of ordnance ranging from iron bombs to ASMs. The MiG-27 Flogger-D, a dedicated ground-attack variant of the MiG-23, will be assembled (and, eventually, produced under license) in India. April 1984 is the target date for the assembly of the first MiG-27 by Hin-

ustan Aeronautics Limited (HAL), a public-ector firm. In addition to a 23-mm cannon, the MiG-27 can carry up to 7716 pounds of external rdnance, including a mix of air-to-air and air-o-surface missiles.[15]

econnaissance

New Delhi's desire to enhance its information-athering capabilities (especially concerning Pakistani and Chinese military installations and roop disposition in border areas) led to the 1981 urchase of Soviet MiG-25R Foxbat reconnais-ance aircraft. Reconnaissance tasks also are dis-harged by Jaguars fitted with photoreconnais-ance pods, Canberra PR Mk 57s, and camera-nd sensor-equipped HS-748 Avros. Maritime econnaissance responsibilities were transferred o the Indian Navy in the mid-1970s.[16]

ransport

The multiplicity and obsolescence of transport ircraft types, along with concomitant difficul-ies in spare parts procurement, have served to legrade IAF operational readiness in the airlift rea. The IAF transport fleet in the main consists f 1940s-vintage C-47 Dakotas; Fairchild C-119Gs (nicknamed "flying coffins" by Indian ircrews), which entered service in 1952 and were o have been retired in 1967; An-12 Cubs, sched-led for retirement in 1975, but which will re-nain in the inventory until the late 1980s; Cari-ous; and Otters. Serviceability rates of these air-raft are quite low. For example, in 1982 all -119s and many C-47s were grounded because f metal fatigue and wing spur cracks.[17] Few aribous are airworthy at any time. These cir-umstances, in turn, have placed a considerable urden on the two An-12 squadrons. Intensive se of the IAF's thirty-odd Cubs (e.g., transport-ng supplies to troops in Ladakh and lifting aramilitary forces to assist in suppression of omestic violence) has resulted in availability evels as low as 20 percent.[18]

The IAF is attempting to remedy this situation y procuring appreciable numbers of modern transport aircraft. The Air Force has ordered approximately 100 Soviet An-32 Cline medium transports to replace the C-119s and Caribous. The An-32 is a rear-loading STOL aircraft able to paradrop men and equipment. The An-12 is to be superseded by the Soviet Il-76 Candid heavy transport. Finally, a defense committee has selected the Dornier Do 228-200 light transport to assume communication, liaison, and utility duties presently handled by C-47s and Otters.[19]

heliborne support

Some airlift support is provided by IAF rotary-wing aircraft, such as the Soviet Mi-8 Hip. The Mi-8, which can lift twenty-eight troops or as much freight as the C-47, plays an important logistic support role in northern and northeastern India. Further, many of the more than sixty Hips in service are armed with 57-mm rocket pods to provide close air support for army units.

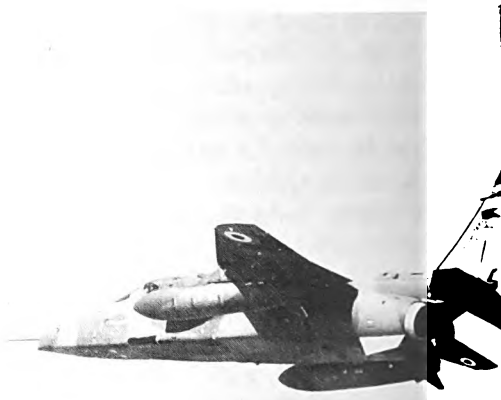
The IAF helicopter inventory also includes the SA 316B Alouette III (renamed Chetak) and the SA 315B Lama (renamed Cheetah)—French helicopters manufactured under license in India. A number of the approximately 150 IAF Chetaks are fitted with AS-11 antitank guided missiles. In addition to its antitank responsibilities, the Chetak is tasked with communication and liaison missions. The Cheetah performs a variety of activities in mountainous areas and, organized into airborne observation post flights, assists in directing Indian Army artillery fire.[20]

The IAF has a requirement for a multipurpose advanced light helicopter (ALH). Such a helicopter was to be designed and produced by Hindustan Aeronautics Limited; however, changes in IAF design parameters, inadequacies of HAL's engineering staff, and a generally dilatory approach to project decisionmaking have slowed ALH development for a decade. Consequently, India is purchasing Soviet Mi-24 Hind gunships as an interim step.[21] However, rather than being an interim step, the Hind purchase may indicate termination of indigenous helicopter design/fabrication efforts.

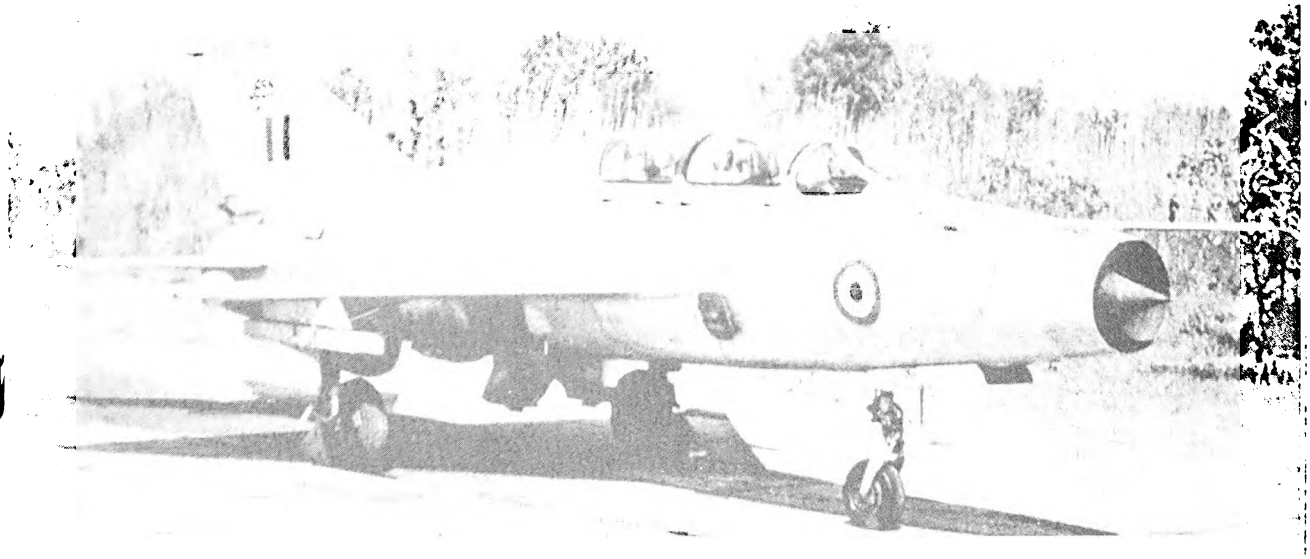
Relationship with Other Services

Indian Air Force interaction with the Indian Navy and Army is marked by both conflict and cooperation. Protracted jurisdictional battles have been fought with the Navy over maritime patrol and interdiction. In the mid-1970s, the following compromise was reached: the Navy assumed responsibility for reconnaissance missions, while maritime interdiction remained under IAF control. However, IAF control of this interdiction mission may prove nominal at best, as the Navy's air arm rapidly is augmenting its inventory of advanced antishipping weaponry by procuring such systems as the Sea Eagle long-range missile (to be carried by Westland Sea King helicopters). In addition to this clash with the Navy, the IAF is engaged in a dispute with the Army about helicopters. The Indian Army is endeavoring to bring IAF helicopter assets within its organizational purview, arguing that most rotary-wing aircraft perform ground force support functions. Furthermore, its leaders suggest that their service's combat effectiveness would be enhanced greatly by integration of attack helicopters with mechanized infantry, armor, and

The MiG-23, MiG-21, and Anglo-French Jaguar (above) are among the advanced fighter aircraft in the Indian Air Force . . . . Two Jaguar squadrons are already operational, with three more planned by 1987. These fighters (such as the one below) can perform air-superiority as well as land and maritime interdiction missions.



Since 1966, Hindustan Aeronautics Limited has manufactured several versions of the MiG-21, including the MiG-21FL (above) and the MiG-21 Mongol trainer (below).



heliborne troops. The IAF rejects the "major user" principle, asserting that all air activity must be coordinated by one service.[22]

Despite these policy disharmonies, the military leadership recognizes that India's strategic environment demands increased interservice cooperation. As a result, the number of joint service exercises has increased dramatically. For example, a large amphibious warfare exercise was held in the Nicobar Islands during April 1983. Indian Air Force participation included preinvasion strikes by Canberra medium bombers, evaluation of damage levels by photoreconnaissance, and rocket attacks against enemy positions by Mi-8 helicopters.[23] More significantly, the first triservice command has been established in the Andaman and Nicobar Island chain. Headed by a naval officer reporting to Eastern Naval Command, this organization has been assigned several ships, an army brigade, and, in the future, a fighter squadron.

IAF Capabilities

Traditionally, Indian defense planning has focused on the threats presented by Pakistan and China. The IAF appears capable of fulfilling its combat missions against either of these potential adversaries.

In an Indian-Pakistani conflict, there would be a pronounced disparity in IAF-PAF strength levels. For example, India enjoys a substantial numerical advantage in sophisticated fighters and fighter-bombers. In contrast, the obsolescent F-6, a Chinese version of the MiG-19, forms the major part of Islamabad's interceptor/ground attack force. Beyond this, the IAF surpasses the PAF in virtually all operational and support areas, ranging from command, control, and communications (C^3) and electronic warfare (EW) to logistics. If India and Pakistan engage in a fourth war, it is likely that the IAF would defeat the PAF in short order.

Indian Air Force weapon systems and equipment also are qualitatively superior to those of the People's Republic of China, but China's combat aircraft far outnumber those of the IAF. Nevertheless, in a Sino-Indian conflict, China probably would not be able to apply all her air resources against the IAF. First, few Chinese airfields are close enough to the Indian border to permit effective operations. Second, those bases that are near India have not been upgraded in terms of support facilities, and this deficiency would impede Chinese efforts to reposition units. Finally, aircraft deployed to Tibet would be hampered by high-altitude takeoffs, which would decrease munitions loads and increase fuel consumption. In contrast, New Delhi has been assiduous in concentrating air and ground forces against China. Thus, many IAF squadrons are located within striking distance of the China-India frontier. Assuming meteorological conditions in the Himalayas do not preclude flight operations, the IAF should prove able to gain local air superiority in an Indian-Chinese conflict.

In addition to security concerns generated by Pakistan and China, New Delhi is disquieted both by the presence of extraregional powers in waters contiguous to India[24] and by the vulnerability of its island possessions. While the Navy must assume primary responsibility for defense of offshore areas, the Air Force will perform significant duties as well. Thus, a fighter squadron is to be stationed in the Andamans, and a squadron also may be placed in the Lakshadweep chain.[25] Island-based units probably will consist of Jaguars fitted with advanced antishipping weaponry. IAF maritime interdiction resources, along with the Indian Navy's Sea Harriers and Sea Kings armed with third-generation Sea Eagle missiles, will constitute a formidable threat to forces operating in the Indian Ocean.

Future Procurement Activity

If India's civilian leadership maintains or increases present IAF funding levels, Air Headquarters is likely to seek further force modernization, including acquisition of the following systems: an airborne early-warning system to pro-

vide look down acquisition and integrated battle management capabilities; precision and standoff munitions to ensure high kill ratios and minimize exposure of costly strike aircraft; sophisticated ECM equipment;[26] a "Wild-Weasel"-type electronic defense suppression system; a state-of-the-art air superiority fighter, such as the Soviet MiG-29 Fulcrum (reportedly, New Delhi has purchased a number of MiG-29s, which may enter the IAF inventory by the end of 1984); a domestically manufactured light combat aircraft to replace the Ajeet and Hunter; and an advanced remotely piloted vehicle to deliver ordnance in hostile air defense environments.[27]

THE IAF has become one of the world's strongest air forces, a fact that must be appreciated by any of India's potential military adversaries. India's increased air power, in conjunction with the ambitious modernization programs of her Army and Navy, not only will reinforce India's national security but enhance her ability to attain foreign policy goals. For example, it affords New Delhi the means to impose stability on island-states in the Indian Ocean—an important option for India, given the recent communal violence in Sri Lanka. It also permits New Delhi to assist threatened Indian nationals, or citizens of Indian descent, in countries along the Indian Ocean littoral.[28] Further, as part of India's overall arms buildup, IAF modernization provides a military underpinning for Indian claims of middle-power status in the context of global interaction.

U.S. Air Force Academy

Notes

1. A. W. Grazebrook, "The Armed Forces of the Asia Pacific Region: No. 5—Why Is India's Big Navy Still Expanding," *Pacific Defense Reporter*, August 1983, p. 11.
2. *The Indian Air Force and Its Aircraft* (London: Ducimus Books, 1982), p. 5. Hereafter referred to as *The Indian Air Force*.
3. "The Military Balance 1982-83," *Asian Defense Journal*, January 1983, pp. 40-41.
4. *The Indian Air Force*, p. 5.
5. Ibid., pp. 6, 54; G. C. Katoch, "Defense of the Skies: No Room for Half Measures," *Statesman* (Calcutta newspaper), 1 June 1983, p. 4.
6. Ravi Rikhye, "The F-16 Again," *Indian Express* (Bombay newspaper), 12 January 1983, p. 1.
7. "Air Force to Begin Introduction of Mirage 2000 Fighter," *Statesman*, 5 September 1983, p. 11.
8. Ibid.
9. Jeffrey M. Lenorovitz, "France, India Complete Mirage 2000 Buy," *Aviation Week and Space Technology*, 26 April 1982, pp. 24-25.
10. The Army, which is responsible for air defense under 5000 feet, controls SA-6, SA-7, Tigercat, and AAA assets.
11. Katoch, p. 1.
12. Ravi Rikhye, "New Pak Threat to India's Security," *Times of India* (Bombay newspaper), 7 January 1982, p. 4.
13. "Supply of Jaguars from UK Completed," *Asian Defense Journal*, February 1983, p. 87. India is the first country to integrate successfully an air-to-air missile on the overwing pylon of a fighter aircraft.
14. Rikhye, "The F-16 Again," p. 1.
15. "India Gets Equipment for MiG-27 Production," *Patriot* (New Delhi newspaper), 6 June 1983, p. 4.
16. *The Indian Air Force*, pp. 7-8.
17. "Air Force Grounds Dakota, Fairchild Aircraft," *Times of India*, 14 February 1983, p. 5.
18. Shekhar Gupta, "Distress Signals," *India Today*, 31 August 1983, p. 88.
19. "India Selects Do 228 Again," *International Defense Review*, August 1983, p. 1030.
20. *The Indian Air Force*, pp. 10, 52, 61.
21. Ibid., p. 10.
22. H. K. Dua, "Government Drags Feet on Army Air Wing," *Indian Express*, 1 April 1983, p. 7.
23. R. S. Bhandari, "Amphibious Warfare," *Sainik Samachar* (military journal published in New Delhi), 28 August 1983, pp. 22-23.
24. India's desire to exclude both U.S. and Soviet forces from the Indian Ocean is suggested by a statement in the most recent annual Report of the Ministry of Defense: "The intense and rapidly growing military activities of the Major Powers in the Indian Ocean have serious implications for us." Government of India, Ministry of Defense, *Report: 1982-83*, 1983, p. 2.
25. "Lakshadweep Being Developed as Defense Base," *Newsmag*, 16 April 1983, p. 31.
26. IAF doctrine reportedly calls for two ECM-equipped aircraft, along with four other escorts, to accompany fighter-bombers on strike missions. Typical missions will involve sixteen aircraft, attacking targets in waves of four at thirty-second intervals. Rikhye, "F-16 Again," p. 1.
27. Ashley J. Tellis, "IAF's Tasks for Tomorrow," *Times of India*, 11 June 1982, p. 4. In recent years, New Delhi has acquired weaponry from a number of West European states. However, the Soviet Union remains India's principal arms supplier. Given Moscow's willingness to offer highly favorable terms in arms transactions (e.g., payment in Rupees, at concessionary interest rates, over seventeen years following an initial seven-year grace period), this pattern probably will continue.
28. Grazebrook, p. 25.

commentary

To encourage reflection and debate on articles appearing in the *Review*, the Editor welcomes replies offering timely, cogent comment to be presented in this department from time to time. Although content will tend to affect length and format of responses, they should be kept as brief as possible, ideally within a maximum 500 words. The *Review* reserves the prerogative to edit or reject all submissions and to extend to the author the opportunity to respond.

INFORMAL DOCTRINE AND THE DOCTRINAL PROCESS: A RESPONSE

Lieutenant Colonel Dennis M. Drew

WHEN one reads Major General I. B. Holley's article one begins to understand the enviable reputation of this remarkable man.* General Holley retired recently from the Air Force Reserve after a long and distinguished military career. But there is more to I. B. Holley than meets the eye. He holds the title "Professor," which accurately indicates his standing as a teacher at the highest academic level. But Professor Holley is also Doctor Holley, a scholar of the highest rank, known for his original research and numerous publications. In all three roles, he has been an inspiration to those in the military-academic community.

His well-thought-out article is concisely constructed and elegantly written. More important, he is absolutely correct: throughout the literature concerning military doctrine, semantic problems confuse readers and muddle issues. In Clausewitzian terms, semantic inaccuracies form a linguistic fog of war. Professor Holley's article clears away much of the fog and makes a significant contribution to our understanding of doctrine and related subjects.

I believe, however, that Professor Holley does not place enough importance on what he calls "informal doctrine" and its place in the doctrine development process. Informal doctrine is the result of repeated experiences that produce similar results and subsequently produce beliefs—sometimes personal, sometimes broadly held—about what usually works best. One would assume, given the state of Air Force doctrinal publications, that these informal doctrinal beliefs are much more ubiquitous than officially blessed doctrines. One might also assume that these informal beliefs are more timely, more accurate, and more useful than officially sanctioned doctrine, which must suffer through the travails of bureaucratic coordination and compromise before publication.

On the other hand, informal doctrinal beliefs may not be accurate and useful. Those who hold such beliefs may have an experience base that is shallow (i.e., repetitions too limited

*Major General I. B. Holley, Jr., USAFR (Ret), "Concepts, Doctrines, Principles: Are You Sure You Understand These Terms?" *Air University Review*, July-August 1984, pp. 90-93.

) draw accurate generalizations). The expe- ence base might also be too narrow (e.g., ombating only one kind of enemy aircraft) to e generalized. Unfortunately, those who hold nformal doctrinal beliefs based on insufficient ata will rarely realize the shortcomings of eir beliefs until too late—a situation that can ad to excessive combat losses and eventual efeat.

This dual nature of informal doctrine (easily eveloped, but with a high possibility of error) uts the process of developing official doctrine nd the importance of official doctrine in a new ght. The doctrine development process must valuate informal doctrine and separate the heat from the chaff. Well-founded informal octrinal beliefs must be sorted out from the lethora of half-baked ideas that permeate rge and diffuse organizations. The official octrine that results from the development rocess becomes the vehicle for inculcating ell-founded beliefs throughout the force. veryone must know, in Professor Holley's ords, what "pattern of behavior *will probably* ad to the desired result." Thus, those who evelop and publish official doctrine face a ifficult task and bear a critically important sponsibility.

Inherent in the process of turning informal octrine based on field experience into official octrine is the notion that official doctrine hould "bubble up" from below rather than be nposed from above. I have argued elsewhere at there are various levels of doctrine, which re distinguished and defined by their levels of bstraction.[1] Although it is difficult to trans- te field experience and the doctrinal beliefs erived therefrom directly into the more ab- ract levels of doctrine, operational doctrine hould issue directly from generalizations based n field experience.[2] To base it on anything lse is to run the risk of producing ineffective nd perhaps fatal dogma rather than doctrine.

How does one let doctrinal beliefs bubble up) be evaluated and officially blessed? The dy- amic changes of German tactical doctrine during World War I provide an excellent model.[3] The development of elastic defensive methods in 1916-17 and the development of the so-called Hutier offensive tactics in 1917-18 were the direct result of the German High Command's solicitation of ideas from *battle-field units*. Although Germany was strategically unsuccessful in the war, both of these doctrinal changes were masterpieces of successful doctrine at the tactical level.

All of this leads us to a set of difficult questions. Do we recognize the pervasiveness of informal doctrine? Does our official doctrine bubble up from informal doctrine? Do we actually ask our warriors in *field units* for their beliefs about what usually works best? How do we sort out sound beliefs from those that are unsound? Who does the sorting, and what biases do they bring to the task? When our doctrinal beliefs are based on exercises, maneuvers, and war gaming rather than on actual combat, do we understand and consider the assumptions, biases, and limitations of those simulations that may have colored the results? Do we recognize that although our exercises have considerable value they are always poor imitations of actual combat—or do we seduce ourselves into thinking that mock combat portrays reality accurately? The answers to these questions will cast considerable light on the Air Force doctrinal development process and on the value of the official doctrine developed by that process.

Professor Holley has made a significant contribution to our understanding of a very complex subject. However, his greatest service has been to raise additional questions of considerable importance. Indeed, there is more to Professor Holley—and more to his article—than meets the eye.

Maxwell AFB, Alabama

Notes

1. For a more complete explanation, see Lieutenant Colonel Dennis M. Drew, "Of Trees and Leaves: A New View of Doctrine,"

Air University Review, January-February 1982, pp. 40-48.

2. Although the Air Force calls this level of doctrine "operational doctrine," the term "organizational doctrine" is used in "Of Trees and Leaves" (see note 1).

3. Timothy T. Lupfer, "The Dynamics of Doctrine: The Changes in German Tactical Doctrine during the First World War," *Leavenworth Papers*, No. 4, U.S. Army Command and General Staff College, Fort Leavenworth, Kansas, July 1981.

Colonel Drew is Deputy Director for Research, Center for Aerospace Doctrine, Research, and Education, Air University.

ON SEEKING A FORUM FOR THE MITCHELLS

Colonel Paul F. Murphy

WHEN reading "Seeking a Forum For the Mitchells,"* I was struck by the logical fallacy it exposed. Major Denny Nelson makes the point that the Air Force of the '80s lacks a forum for the present-day "Mitchells" to air their views. However, the fellowship he holds and the publication of his views in the *Review* are clear evidence that such a forum does exist today as in the past.

The Air University is the one organization that has the facilities, people, and mission necessary to stimulate, cultivate, and propagate the ideas, arguments, and controversy so vital to continued excellence. For those of us not at AU, the *Review* is our link to that process. Accordingly, I would like to see a few good arguments in each issue. There are two sides to every coin, and the *Review* could do us all a favor by tossing the coins and letting us see how they come up. It should also be fun!

Whiteman AFB, Missouri

*Major Denny R. Nelson, "Seeking a Forum For the Mitchells," *Air University Review*, July-August 1984, pp. 85-86.

Colonel Murphy is Vice Commander, Headquarters 351st Strategic Missile Wing (SAC).

ON CLASSICAL MILITARY STRATEGY AND BALLISTIC MISSILE DEFENSE

Major General Haywood S. Hansell, Jr., USAF (Ret)

I WOULD like to offer my congratulations to Major Owen E. Jensen on his thoughtful article.* I find myself in strong agreement with his argument for a balanced system of strategic defenses and strategic offensive capabilities.

Michael Howard divides military history and analysis into four categories or "dimensions"—operational, logistical, technological, and societal. In my opinion, the societal dimension—the willingness and courage of the people of our democracy to take great risks and endure great suffering in pursuit of national goals—has now become the dominant dimension in the determination of U.S. strategic military requirements and the consequent setting of limits to U.S. policy worldwide. National policy and national decision making are now, more than ever, resting upon the defenseless shoulders of our exposed citizens.

The people of our democracy are directly threatened with potential annihilation if they pursue policies in conflict with those of the Soviet Union, and those American people are literally our national command authority. In our present state of defenselessness, I find it difficult to believe that our people will stand up to a Soviet nuclear threat in a possible future confrontation or conflict, nor do I believe that they will support vigorous conventional warfare where escalation to nuclear warfare is a possibility.

Unfortunately, given existing circumstances, our people may be prudent in their hesitancy, for we have permitted the Soviets to reach military superiority, and I doubt that a defenseless population could be well served by our present Army, Navy, or Air Force. Without resolute and secure sources of support, military forces tend to diminish in potential effectiveness, even though those forces should be capable not only of providing continental defense but of exercising "defensive compellence" abroad in support of the nation's vital values where those values are challenged.

As Major Jensen points out, Clausewitz described war in its broad relationship to national purpose: "It is clear, that war is not a mere act of policy, but a true political instrument, a continuation of political activities by other means." War has as its objective the preservation or fulfillment of a nation's goals and desires. However, in today's environment, the mere *threat* of war has become nearly as decisive as military victory or defeat in war itself, and fear of nuclear devastation can so disarm a defenseless democracy that national objectives become subverted.

One aspect of an effective national policy is security for our national assets and safe survival of our people despite changing international circumstances, including confrontations and armed conflict. Yet safety at home, by itself, is inadequate as a transcendent aim, in part, because our national goals also include domestic prosperity and retention of individual and institutional freedom—aspects of policy that extend beyond our national borders. Our domestic prosperity has need of unprejudiced access to foreign markets and foreign sources of materials, and we need to support an international environment of freedom. To ensure all of these aspects of our national interest in today's world requires our having the capability to exercise military force abroad. We do not aspire to conquer territory or to establish suzerainty over other people, but we do have

*Major Owen E. Jensen, "Classical Military Strategy and Ballistic Missile Defense," *Air University Review*, May-June 1984, pp. 54-63.

need to demonstrate military power in support of our rights, values, and associates abroad; that is, we need sufficient capability to exercise "defensive compellence" to force aggressors to desist from acquisitive domination over our essential values beyond our borders.

The recent military action in Grenada is an example of "defensive compellence" on a very minor scale. We did not invade to acquire. We invaded to prevent further extension and establishment of Soviet and Cuban power in a region that we consider vital to our security and commerce. We restored local government and withdrew as Grenada regained stability. To the great credit of the Reagan administration, our military action was swift, conclusive, and carried out so quietly that no confrontation with the Soviets ensued.

Our military capability to exercise defensive compellence on a larger scale rests upon two fundamental bastions: (1) our people's willingness and courage to take grave risks in the face of confrontation, potential nuclear escalation, and active conflict, for which *urban defenses* are essential; and (2) the availability of military instruments capable of exercising *offensive* power to inhibit recourse to war or to compel others to desist from aggressive actions or policies, including those instruments required, in extremis, for controlled and selective destruction of an aggressor's capability to wage war. If we lack these military capabilities, we can expect eventually to lose safety, domestic prosperity, and freedom for ourselves and for others who depend on our strength.

Defense strengthens deterrence. It is necessary not only to deter war but, most important, to deter Soviet domination. Defense offers an alternative to capitulation and strengthens our position in the face of crisis. It also can decrease the likelihood of nuclear holocaust by providing time for deliberate decision rather than instantaneous resort to massive retaliation lest our vulnerable offensive weapons be destroyed.

Many military analysts and proponents espouse the maintenance of the "existing balance." To my mind, no such balance exists. We are attempting to balance the collective will and courage of 220 million frightened American voters against that of fourteen tough men in the Kremlin. Soviet citizens have little voice in major decisions (indeed, their opinions may be ignored completely by the Kremlin), but our voting citizens must have a reasonable chance of survival—they must have defense—if we are to expect them to support policies and programs that possibly might increase the risk of nuclear confrontation or conflict. This situation must be remedied, not sustained. We must reduce the potential effects of nuclear attack as much as possible.

Fortunately, technology offers a potential remedy in the rapidly developing field of directed-energy beams and kinetic-energy ballistic missile defense weapon systems, and President Reagan has recognized and proclaimed the national need. In the months ahead, I hope that we can develop the national consensus necessary for establishing an effective BMD system, thereby enhancing our nation's security and restoring our ability to act boldly in our national interest. Deploying such a system would not supplant the need for offensive capabilities. But it would restore and augment the usefulness of our Army, Navy, and Air Force.

Hilton Head, South Carolina

Major General Haywood S. Hansell, Jr., USAF (Ret), (B.S., Georgia Institute of Technology) was active in formulating the air plans instrumental in defeating Nazi Germany. He retired in 1946, was recalled for the Korean War, and then retired again in 1955. General Hansell is author of *The Air Plan That Defeated Hitler* (1972), and his recent article "The Societal Dimension: The Influence of Urban Defense on Strategic Options" appears in *National Security Strategy* (Praeger, 1984) edited by Dr. Stephen J. Cimbala.

R books, images, and ideas

War must be waged in earnest or not at all. There can be no middle course.

V. I. Lenin

AN INSIDER'S WARNING TO THE WEST

LIEUTENANT COLONEL GREGORY VARHALL
MAJOR KENNETH M. CURRIE

ONE of the Russian legacies to the Soviet Empire was a serious perspective on life. Love is serious. Hate is serious. Life is serious. Death is serious. And, as it involves all four of these, war is a very serious business. Two books that relate various aspects of the Soviet outlook on war particularly well have been published recently. Written by Viktor Suvorov, the pseudonym of a former Soviet combined arms officer who fled to the West, *The Liberators:*

Inside the Soviet Army and *Inside the Soviet Army* are destined to make a valuable contribution to the field of Soviet studies, particularly in regard to military doctrine and Moscow's intentions toward the West.

The two volumes stand in sharp contrast to one another. *The Liberators* is a bitter, often sarcastic collection of anecdotes about life in the Soviet army and the events leading up to the 1968 "liberation" of Czechoslovakia. It portrays an army of doubtful readiness and ability—an army concerned more with the externals of military prowess than with proficiency and professionalism. *Inside the Soviet Army,* written later, is a much less subjective look at the Soviet military machine. Suvorov continues to point out weaknesses, but he does so without much of the bitterness he reveals in *The Liberators.* Here it is clear that Suvorov regards the Soviet military as a formidable adversary despite its shortcomings. When read together, the two books provide an insight into the Soviet Armed Forces that would be difficult to match, short of face-to-face conversations with a Soviet combined arms officer.

Viktor Suvorov became a Soviet officer because of an overproduction of fertilizer in the Soviet Union. Actually, the story is a bit more complex than that. Suvorov was a truck driver on a collective. He had been detailed to pick up the 150 tons of fertilizer being donated by a state chemical combine, he had twenty-four hours to accomplish the task, and he had only a broken-down truck with a ton-and-a-half tank. If he failed to accomplish his assignment, his Regional Committee First Secretary would be fired. One final detail: a single round trip would take ten hours. Impossible? Nothing is impossible in the Soviet Union! Suvorov and the dozens of drivers from similarly honored collective farms queued at the combine and accepted their first loads; then they drove away to the Dnieper River into which they poured their liquid nitrogen and returned for their second and subsequent loads. Thousands of fish were killed, but Suvorov returned to his *kolkhoz* (agricultural cooperative) ahead of schedule to report that he had accomplished his objective. When he asked what he should do with the single load of fertilizer he had brought back, he was told that he could use it on his private plot, since the gift from the combine had come a full two months before the *kolkhoz* could use it on the fields. Suvorov did as he was instructed. Later that spring, when his neighbors' plots were growing well, Suvorov's plot was barren: obviously, it had had too much fertilizer too early. Faced with the prospect of starvation, Suvorov examined his two other alternatives—prison or the army. Suvorov did what any patriotic Soviet citizen would have done under similar circumstances and thus began his career in the Soviet army.

TO THE reader unacquainted with the realities of Soviet life, *The Liberators* is filled with anecdotes that frequently sound unbelievable.† For example, Suvorov describes how the "puritanical" Warsaw Pact Commander Viktor Kulikov ordered the destruction of German beer halls, only to order them rebuilt immediately after learning that his soldiers were paid for the halls' revenues. In another hilarious story, he tells of "sclerotic" Army General Alexander Yepishev who repeated his entire speech while his audience of Soviet army officers dutifully transcribed a duplicate set of notes.

One of the most compelling chapters in *The Liberators* describes the execution of a young Soviet soldier for desertion during the Czech crisis of 1968. In this account, which sharply brings to mind the stories of the Gulag by Alek-

†**Viktor Suvorov, *The Liberators: Inside the Soviet Army* (London: Hamish Hamilton, 1981, $7.95), 202 pages.**

andr Solzhenitsyn and others, Suvorov power-ully and almost poetically describes how a istol-packing KGB officer carried out an exe-ution shortly after the death sentence was ronounced. The story makes it clear that some hings in the Soviet Union have changed very ittle.

If there is a problem with this book, it is uvorov's consistent portrayal of the Soviet rmy as an ill-equipped, poorly disciplined orde incapable of effective combat. Suvorov ccurately recounts the grim realities of the oviet Ground Forces of 1968, but he does not oint out that many of the equipment deficien-ies which he describes have been corrected ince then. On the other hand, recent accounts orroborate that the problems of poor disci-line and morale persist, and Suvorov's ac-ount may well have a contemporary analogue mong the Soviet soldiers in Afghanistan. Nev-rtheless, there is the danger that those unfa-niliar with Soviet military power in 1983 will se *The Liberators* to downplay the Soviet hreat. Although Suvorov makes it clear that he Soviet officer and his soldiers are not ten eet tall, one should not automatically assume hat they are midgets who can easily be dealt with in a conflict.

It is in reading Suvorov's second book, *Inside he Soviet Army*, that one realizes that Suvor-ov's knowledge of the Soviet military system is ndeed worthy of expanded treatment.† (In act, Suvorov tantalizes his readers with the suggestion that the military's intelligence arm—the GRU—merits a book in itself, thus olding out the promise of a third book in this eries.) *Inside the Soviet Army* is one of the nost important books in its field published in he past decade, providing us our first compre-ensive look inside the Soviet military since the ublication of *The Penkovskiy Papers*. It should e read by all U.S. military officers who would like to expand their knowledge of their potential battlefield opponents and by all national decision makers who must understand the Soviet military mind-set and its implications for U.S. national security. In fact, if one were limited to a single book on the Soviet military, this volume should receive strong consideration.

Inside the Soviet Army picks up where *The Liberators* left off: the time is 1968, and the Soviet army is preparing to liberate either Czechoslovakia or Romania. After a brief account in the anecdotal fashion of his first volume, Suvorov launches into a well-written tutorial on the Soviet military. He does not revert to long anecdotes until the close of the book, where he uses them to describe the career patterns of Soviet officers.

The basic premise of *Inside the Soviet Army* is that Western observers do not understand the Soviet Union. Instead, we mirror-image, failing to recognize that the Soviets are working from a totally different experiential and cognitive basis. As disturbing as this premise may be, it is probably closer to the truth than many of us are willing to admit. Consider for a moment the test Suvorov offers:

> Three Soviet motor-rifle companies are on the move in the same sector. The first has come under murderous fire and its attack has crumbled, the second is advancing slowly, with heavy losses, the third has suffered an enemy counterattack, and, having lost all its command personnel, is retreating. The commander of the regiment . . . has three tank companies and three artillery batteries in reserve . . . . "You are to guess," I say, "what steps a Soviet regimental commander would take . . . . And if a company commander asks for air support, does he get it?" (p. 170)

The obvious American answer is to apply artillery, armor, or close air support to assist the units in trouble. "Wrong!" says Suvorov. The Soviet regimental commander would ignore both the unit in retreat and the unit

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†Viktor Suvorov, *Inside the Soviet Army* (London: Hamish Hamilton, 1982, $9.95), 296 pages.

pinned down under fire. All support must go to the unit that is pushing ahead.

Too often we overlook differences in philosophy that underlie others' decisions. If our adversary does not react to situations or adhere to the same strategic concepts as we would, we either assume that he is in need of education or we are surprised by his "ingenuity." Recognizing differences in fighting philosophy can be a great asset to military strategists and tacticians; when they go unrecognized, serious consequences can result. Suvorov is astonished by the West's failure to appreciate and exploit these important influences in its planning. At one point, Suvorov relates how he developed a perception of the U.S. national character based on his viewing of American westerns:

> It became clear to me that a modern American cowboy who is working up to a decisive fight will always be expected to begin by spitting at and insulting his opponent and to continue by throwing whisky in his face and chucking custard pies at him before resorting to more serious weapons. He expects to hurl chairs and bottles at his enemy and to try to stick a fork or a tableknife into his behind and then to fight with his fists and only after all this to fight it out with his gun.
>
> This is a very dangerous philosophy. You are going to end up by using pistols. Why not start with them? Why should the bandit you are fighting wait for you to use your gun? . . . by using his most deadly weapon at the beginning of the fight, your enemy saves his strength . . . . This will enable him to save his own despicable life . . . . He will shoot first. At the very start of the fight. (p. 160)

This analysis leads to Suvorov's assertion that the Soviets will use their nuclear weapons from the onset of hostilities with the West. He has little regard for the possibility of a conventional war, either as a prelude to nuclear escalation or as a means of achieving Soviet objectives in toto—possibilities suggested by recent Soviet military writings. Since, to the Soviets, preemption would not constitute a first strike but would be a purely defensive act, the matter is one of common sense and national survival rather than of morality. By Suvorov's reckoning, the Soviets build nuclear weapons to use them, not to keep them in the holster.

Inside the Soviet Army has fifty-eight chapters grouped within eight major parts: the higher military organization, types of armed services, combat organization, mobilization, strategy and tactics, equipment, the soldier's lot, and the officer's path. In effect, Suvorov begins at the top and works down to the basic building block of the Soviet military, leaving that with which he is most familiar—the Soviet officer—until the end.

His description of the higher military organization is clear and concise. Disdaining the formal organizational chart approach popular in the West, Suvorov argues that there are but three forces at work at the top: the Party, the KGB, and the Army. No one of these can survive without at least tacit support from one of the others, and the relationship is a carefully structured balance of power in the classic sense. All other Soviet power relationships are permutations of these three actors. Illustrative of this is the Defense Council, the ultimate decision-making authority and policymaker for the Soviet military, which Suvorov describes as "the Supreme Being [General Secretary], his Right Hand, and, below them, the triangle—Party, KGB, and Army." (p. 34)

Moving down the military chain of command, Suvorov provides no major surprises to those familiar with Soviet command and control arrangements, including his description of the Warsaw Treaty Organization (WTO) as a nonentity. While the Soviets are obviously the major player in the WTO and are generally acknowledged as being in control of the organization, Suvorov is more blunt than most Western authors in his assessment of the WTO's role in Soviet military planning. He notes that non-Soviet Warsaw Pact members are not permitted to have their own armies; rather, their armed forces are "integrated" into Soviet-controlled formations to flesh them out, much as Soviet reservists are called up to fill up the less ready combat units. Further, as far as Suvorov is con-

cerned, Poland never signed the WTO instruments of ratification, since the Polish Minister of Defense who initialed for "free, independent, popular, socialist Poland" was, in fact, Marshal of the Soviet Union Rokossovskiy, assisted by Soviet Colonel-General Poplavskiy. (p. 17) Suvorov does not address the post-Czechoslovakia Warsaw Treaty Organization "reforms" that reputedly were to give a greater voice in Warsaw Pact affairs to the non-Soviet members. However, since most of these changes were purely cosmetic, nothing is lost by this omission.

In the sections on organization, Suvorov is simultaneously at his best and worst. His description of Soviet military organization is as clear as any available, and his personal insights are invaluable. He does an outstanding job of putting the front strategic directions, military districts, component commands, and so on into a very understandable perspective. At the same time, he reveals the book's greatest flaw: it does not touch on the ongoing reorganization of the Soviet military. Admittedly, this circumstance did not arise until after Suvorov left the Soviet Union, but he could have added a short postscript on the reorganization without expending much effort, and his unique knowledge would help place the changes into proper perspective. Despite this omission, only a few portions of *Inside the Soviet Army* appear dated, and these do not detract measurably from the book.

Some assertions made in *Inside the Soviet Army* are certain to be challenged by Western observers of the Soviet scene. For example, Suvorov's claim that the 8-K-84 missile—otherwise known in the West as the SS-11—is at once an ICBM and an ABM most assuredly will raise a few eyebrows, as will his claim that the Soviets build so many ICBMs to compensate in quantity for poor quality. Indeed, Suvorov can be fairly criticized for combining fact with fiction and the specific with the general. However, one should take note of two facts: first, many Russian émigrés seem to exhibit a proclivity to "fill in the details" even when they have run out of facts; second, when Suvorov left the Soviet Union, he was a junior officer—probably a senior captain or junior major—and his rank would have limited the amount and detail of information to which he had been privy. However, the reader would be unwise to dismiss all Suvorov's claims out-of-hand; when coupled with his obviously intimate knowledge of Soviet deception practices, they raise serious questions about Soviet intentions and capabilities which can be ignored only at the greatest peril to Western security interests.

Within Suvorov's very readable chapters are many subjects of interest to the military reader. However, if one were to look for recurring themes, the list can be narrowed to four: the offensive, the rear, equipment, and *maskirovka* (camouflage, concealment, and deception).

The Soviet philosophy of war long has stressed the offensive.[1] Mass and surprise are the key words, and forward is the direction for movement. Suvorov acknowledges that nuclear weapons have "changed the face" of battle, but he holds that they have not changed the *principles* of Soviet military art. Forces still must be concentrated to complete the decisive breakthrough. However, because they become a tempting target for the enemy's nuclear weapons when they are massed, timing is more critical than ever. According to Suvorov, the Soviets plan on a five-stage "strategic offensive" to coordinate their attack and maximize their success: an initial nuclear rocket attack (30 minutes); a mass air attack in waves (90-120 minutes); a second rocket attack to flush the remaining Soviet missiles (30 minutes); front operations (10-20 days); and, finally, a breakthrough to attack the enemy rear defenses (7-8 days). Suvorov alleges that this offensive has one alternative form, called the "Friday evening offensive," which commences with a Soviet surprise attack at the fourth stage of the normal strategic offensive. (p. 167)

Tied closely to the offensive is the Soviet appreciation of the value of the rear. Suvorov

describes protective measures and *Metro* evacuation procedures for high-level leaders, civil defense capabilities, and the productive base of the Soviet Union. The Soviets do not intend to repeat the mistakes that led to their heavy losses in World War II. The rear has a dual significance: it is the supplier and lifeblood of the offensive and, at the same time, the recovery base for the Soviet state. Consequently, it now produces the equipment and supplies for the offensive, while girding to protect itself should nuclear war come. The Soviets regard the rear as highly important in warfare—a matter that we in the West tend to ignore.

In discussing Soviet equipment, Suvorov examines three aspects: quantity, type, and quality. Keying again on his earlier assertion that timeliness is essential in successful combat, Suvorov notes that quantity is necessary to capitalize on opportunity: thus, damaged equipment would be discarded unless it were easily repairable, and replacement equipment must be readily available. The type of equipment is dictated by Soviet military philosophy: simple, reliable, potent, and ground/tank-oriented. In fact, Suvorov alleges (quite credibly to anyone who has seen the Mi-24/Hind), the Soviets' love affair with the armed assault helicopter is occasioned by their view of it as a "flying tank"—faster, more maneuverable, and capable of operating in a different medium, but a tank nonetheless. Finally, the quality of Soviet equipment, Suvorov suggests, is significantly higher than Westerners believe it to be, although he claims that some of this quality (as in the case of ICBMs, for example) is due to the "importation" of advanced Western technology. Suvorov argues that some Western perceptions of Soviet technological inferiority derive from the Soviet practice of deploying and exporting equipment. Soviet export equipment, he notes, is "stripped down," and equipment carried by Soviet troops outside the Soviet Union (i.e., in Eastern Europe) is often a full generation or more old. In some cases, Suvorov claims, troops within the Soviet Union are not issued new equipment; they train on parts of new weapon systems (an engine, a breech, and so on), while the actual systems are stockpiled unbeknown to any except the select few. Thus, he alleges, when the new weapons are used in combat, they will take the enemy by complete surprise.

This, then, brings us to *maskirovka*, literally "masking" or "camouflage." In both of his books, Suvorov refers repeatedly to the Soviet penchant for security and camouflage, concealment, and deception. According to Suvorov, all military activities are vitally concerned with this aspect of the military equation, from SALT negotiations down to subunit operations. His sections on the subject make for interesting and enlightening reading, especially when contrasted with our propensity to make everything a matter of public record and debate. For example, Suvorov finds it incredible that one of the most prominent figures in the Soviet SALT I delegation and one who smiled broadly during the signing ceremony in Moscow was the man he names as directly responsible for Soviet strategic deception—then First Deputy Chief, later Chief of the General Staff, Marshal N. V. Ogarkov.

Suvorov also touches on the question of the reliability of Soviet soldiers. He argues that in the event of war with the West, millions of Soviet soldiers would surrender to escape the oppressiveness of their system. The question naturally arises as to how the Soviets can contain such anti-Soviet sentiment and create an effective military machine. Suvorov's answer: The system exerts too many controls over the individual for him to rebel against the way things are; he must do as he is told or else risk the consequences. To use Suvorov's analogy, all Soviet "society finds itself in prison," with the Politburo "as the governing body of the prison," the KGB as the "warders," and the Army as the "guard" on the walls. (p. 269) Suvorov's description of the "strategic operation" also provides an answer to the question of how to control the troops: if the opponent's

erritory is decimated by Soviet nuclear strikes, o whom will the unhappy Soviet soldier defect?

TAKEN together, *The Liberators* and *Inside the Soviet Army* make a valuable contribution to our understanding of the Soviet Armed Forces. Suvorov's extensive treatment of the Soviet military establishment in *Inside the Soviet Army* far exceeds the claims of the title. Coupled with the less vituperative approach to his subject, this comprehensiveness makes *Inside* the better of the two releases.

One can hope that Suvorov's works will find their way to a large audience in the United States and receive the critical attention they deserve. A few years ago, the name "Cassandra" was applied to Major General George Keegan, who repeatedly attempted to draw public attention to the realities of the Soviet military threat. While the name can be used derogatorily to describe a doomsayer (certainly the sense in which it was intended by the chronicler of the general's travails), a Cassandra can also be a prophet whose warnings go unheeded, generally until it is too late. Although some of Suvorov's claims certainly can and should be challenged, particularly in those areas where he is speculating rather than relying on his firsthand knowledge of the Soviet military system, his obvious familiarity with the actual capabilities of the Soviet Armed Forces and the psyche of the Soviet officer corps make it imperative that his message be listened to. Perhaps then, we shall reevaluate our assessment of the aforementioned Cassandra also.

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Note

1. See, for example, A. A. Sidorenko, *Nastuplenie* (Moscow: Voenizdat, 1970), published in English as *The Offensive*, Volume One, USAF Soviet Military Thought Series (Washington: Government Printing Office, 1976).

KREMLIN CONTINUITY AND SOVIET SOCIETY

DR. CARL A. LINDEN

MACHIAVELLI in *The Prince* recalls with irony a conversation he had with Cesare Borgia, that Italian genius of guile and cruelty in the pursuit of power. Borgia told Machiavelli that all of his plans for winning and holding dominion in Italy were in place and only a step from success when he was struck down by serious illness. Thus it was with Yuri Andropov, whose long-term project to exercise power in the Soviet Union was recently ended by illness and death before it had scarcely begun.

AS a result of Andropov's demise, the book by Vladimir Solovyov and Elena Klepikova moves from current to historical topi-

cality like a half dozen or so of other studies of the leader recently published in the genre of today's instant political biographies.† The question no longer is the urgent: Who *is* Andropov (about whom so little is known in the West)? Instead, it has become: Who *was* he? These observations are not intended to denigrate the authors' efforts: *Yuri Andropov: A Secret Passage into the Kremlin* remains well worth reading, containing much useful information on Andropov's career and including interesting reconstructions of his moves and machinations on the path to power. For the most part, the authors tie together the bits and pieces of accessible evidence in highly plausible ways. However, some of their connections and inferences are also open to considerable doubt and question. The authors were closely familiar for a number of years with the Moscow rumor mill that fills the information vacuum left by scanty or simply misleading or self-serving official accounts of the doings of Soviet leaders. The rumors themselves are part and parcel of Soviet politics and need to be taken into the account, though with great caution and wariness.

By contrast, the book by Victor Zaslavsky suffers no loss of newsworthiness.†† It is intended primarily as a scholarly work looking at the Soviet system as a whole in the Brezhnev years. Like Solovyov and Klepikova, the author is a former Soviet citizen now in the West, whose familiarity with the Soviet system is thorough and intimate.

On first glance, *Yuri Andropov* seems rather removed from *The Neo-Stalinist State: Class, Ethnicity, and Consensus in Soviet Society* in subject matter. The former focuses on the political character and career of Yuri Andropov, probing his acquisition of power as the leader of the Soviet Union and as Brezhnev's successor. Primarily a political biography, it also has much to say about the contemporary Soviet political system. The latter book, in contrast, is not about an individual leader but is a work of political sociology. Political personality is its concern only so far as it mirrors the trends and characteristics of the Soviet system and society as a whole. Nonetheless, the reader will discover that the two books tell different parts of the same story. The takeover of the leadership by Andropov, the long-time chief of the secret police apparatus, was the sequel of the gradual reentrenchment under Brezhnev of the system's despotic control over Soviet society.

COAUTHORS Solovyov and Klepikova recount and, where there are gaps, reconstruct the history of Andropov's rise. They tell how he found an irregular, circuitous, and "secret passage" to supremacy in the Kremlin, ultimately outflanking and defeating Brezhnev's own choice as successor, Konstantin Chernenko. The ruling group, out of its instinct for mutual self-preservation, had heretofore kept the police chief on tap, not on top: the last individual who had tried to change this rule, Beria, was killed by his colleagues. Andropov, the authors show, overcame the resistance of the ruling group, avoiding such an ominous eventuality, by skillfully using the craft and coercion to which he committed such a large part of his career. He not only did not hesitate to violate the tacit agreement among Politburo members not to wash their dirty linen in public but hung out some of Brezhnev's own even before the ailing leader had left the scene (e.g., stirring up the scandal around his chief's daughter, Galina, and the questionable dealings of her friends).

In any case, the authors argue, Andropov's

†**Vladimir Solovyov** and Elena Klepikova, ***Yuri Andropov: A Secret Passage into the Kremlin*** (New York: Macmillan, 1983, $15.95), 637 pages.

††**Victor Zaslavsky,** ***The Neo-Stalinist State: Class, Ethnicity, and Consensus in Soviet Society*** (New York: M. F. Sharpe, 1982, $22.50), 208 pages.

lership amounted to little more than the Sta-nist regime in a new guise, supported by an biquitous secret police and rejuvenated by the ew cadre of leaders brought into power by ndropov. The latter included new names now the Politburo, such as Aliyev, Romanov, orbachev, and Vorotnikov. These, the au-ors say, are the "iron young men" whose thless drive to power under Andropov's aegis ill mark their way of rule. According to the uthors, they are bent on controlling the coun-y by a "regime of fear" and draconian disci-line. Similarly, say the authors, these new gures are quite capable of brushing aside eological scruples and playing on the worst rains of Russian great-power nationalism in romoting a more aggressive foreign policy an Brezhnev did.

THE Zaslavsky book describes the stemwide trend toward reinforcement of the spotic socioeconomic structure of the re-me. It tells how the Soviet party-state was turned to its basic Stalinist shape and struc-re under the aegis of the Brezhnev Politburo ter it had disposed of Khrushchev's de-alinization, political relaxation, and reforms. blished shortly before Brezhnev's demise, *he Neo-Stalinist State* delineates the process refurbishing the totalitarian police state. Ac-rding to Zaslavsky, the thrust of state policy der Brezhnev was directed toward sustaining e atomization, isolation, and privatization of l individuals subject to the system. Thus, the gime sought to separate the classes of the untryside and the city (the former, deprived both freedom of movement and material ovision; the latter, less so, and thus holding a etter" position on the scale of deprivation) d to repress a self-assertion by ethnic and tional groups within the Soviet Union and, ove all, by the industrial working class.

Zaslavsky describes the mechanisms of con-l and regulation under Brezhnev which med privileged sectors and groups and de-termined opportunity for upward mobility. Foremost among the array of administrative barriers and permissions imposed were the universal internal passport system and the institution of "closed cities" with privileged access only. Zaskavsky indicated that such a revival of controls in the absence of mass physical terror could not have been achieved without endangering the Brezhnev rulership unless a kind of tacit compromise between the populace and the rulers had been struck. Specifically, the people accepted the arbitrary power of the rulers in return for job security, some workers' privileges, upward mobility, and improvement of living conditions. What was new under Brezhnev, then, the author suggests, was not the reinforcement of the despotic structure of the system but the concessionary policy that went with it (i.e., the added sugar coating over the same old bitter pill).

THE two books reveal the thread of continuity in Soviet politics since Khrushchev. The change from Brezhnev to Andropov was a matter of ruling style, not substance. What Brezhnev began, with Andropov's aid as KGB chief, Andropov worked to complete more fully and efficiently, namely, the reconsolidation of the rulership's despotic command of Soviet society.

Andropov's effort to establish an up-to-date model of Stalinism ended before it had scarcely begun. The man whom Brezhnev favored as successor and whom Andropov so rudely pushed aside, Chernenko, not only took charge of his rival's official burial but assumed his vacated office of general-secretary as well. However, Chernenko, an aging figure from the Brezhnev Politburo, also is very likely to be an interim leader. His success in gaining the prime place after his humiliating defeat at his predecessor's hands suggests a continuing rear guard action by the elderly wing of the Politburo against its new younger members. The result, for now, is something of a leadership stalemate and suggests a troubled transition in political generations.

What can be said then about the outlook for

the regime in the face of its many unresolved internal problems? Zaslavsky looks at this question from a different angle than is usual among Western observers. He questions the prevalent view that the regime can, with safety, place increased exactions upon today's Soviet citizens and short-change them materially simply because their expectations are very low in the first place. Rather, he argues that in the Soviet system's own terms these popular expectations are not at all modest, especially when one considers what is taken for granted by Soviet citizens.

Zaslavsky points out that the Soviet citizenry expects the state to keep prices for food, consumer goods, and services stable and unvarying. However, he notes, Soviet economic experts themselves have been saying that the system, as presently constituted, is no longer capable of keeping abreast of popular demands. In fact, he maintains, the decline in growth rates and living standards of recent years endangers the "organized consensus" that helped stabilize the Brezhnev regime—namely, popular acquiescence to its neo-Stalinist regime in return for meeting its material expectations. The great dilemma facing the rulers, according to Zaslavsky, is that they will not be able to meet even the seemingly limited material demands of the Soviet population of today without "a kind of revolution that would radically disrupt the existing political-economic system" and the totalitarian power structure which that system undergirds.

Zaslavsky's analysis suggests that the Soviet rulers may soon find themselves in serious trouble if they prove unable to engage in a radical overhaul of the system. The Andropov portrayed in the Solovyov-Klepikova book evidently was not attempting such a task but was applying his reputed intelligence to refining, not reforming, the existing structure. Andropov, who, according to our authors, liked to work out a detailed plan for any major action he contemplated, nonetheless typically failed to take sufficient account of changed circumstances or unexpected turns in affairs.

Do his successors possess greater foresight than Andropov or a greater ability to act flexibly, given the rigidities and present bureaucratic inertia of the Soviet system? Chernenko certainly does not appear to have the longevity, energy, or genius to initiate or complete a new venture in regime policy and practice. Thus the regime's potential for coming to grips with the internal difficulties that have been building in the Soviet Union since the last phase of the Brezhnev era remains in doubt. If it does indeed exist, it may well remain in a state of suspense, at least as long as Chernenko sits as head of the regime.

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POTPOURRI

The Presidency of Lyndon B. Johnson by Vaughn Davis Bornet. Lawrence: University Press of Kansas, 1983, 416 pages, $25.00 cloth, $14.95 paper.

"History will judge," declared Lyndon B. Johnson after his five event-filled years in the White House. (p. 330) Yet a decade and a half later, historians still seem no closer to determining Clio's verdict. It is difficult to assess the Johnson years, according to this new study by Vaughn Davis Bornet, largely because on the home front the President's "rhetoric" of "total oversell" (p. 219) had raised hopes to unattainable heights, while in foreign affairs his attempt to make South Vietnam into an independent noncommunist state proved impossible because of the President's own restraints on the military. Thus by Johnson's high standards, neither the Great Society nor the Vietnam War fulfilled the administration's objectives. This double failure was all the more tragic, Bornet notes, because Johnson possessed the talent to translate many of his lofty hopes into reality. In civil rights, the War on Poverty, federal aid to education, and medical care for the aged, disabled, and poor, *"this presidency made a difference."* (p. 329) Perhaps after the emotions are spent and reason returns, historians will listen to Clio's judgment.

Vietnam was Johnson's albatross, Bornet declares, because the President chose to wage an "open-ended" war "for democracy and against communism without having the goal of quick military victory." (p. xiii) Johnson helped to create his own credibility gap by not keeping the American public informed about the extent of this nation's military involvement in Vietnam. From the earliest days of U.S. entanglement, he knew the war was not going well and that there was little hope for immediate improvement. Yet he rejected an early suggestion for the "neutralization" of Vietnam, fearing that such a scheme would lead to the "communization" of that country, along with Laos and Cambodia. (p. 66) Furthermore, Bornet notes, Johnson never engaged in cabinet discussions of strategy in Vietnam or of the details of America's involvement. Instead of authorizing a fundamental reassessment of the Vietnam situation, he quickly ordered a continuation of Kennedy's halfway policy and ultimately escalated that commitment. Why? Because, as Hubert Humphrey later observed, Johnson firmly believed that "aggression unchecked was aggression unleashed." (p. 66)

The author makes many debatable assertions, as one might expect in a work covering such a controversial presidency. On Vietnam, Bornet believes that a congressional declaration of war would have allowed "censorship at the scene of battle," "a drawing together of the nation," (p. 263) and a chance for the government to build a "solid moral case" for the war. (p. 264) Yet one wonders if the President could have convinced Americans that the matter was one of national peril. Johnson's own erroneous assumptions about Vietnam, Bornet admits, undercut his capacity to act. Despite prevailing beliefs among U.S. decision makers, North Vietnam did not have "a small, backward, and primitive military force"; its "logistical basket" was "virtually bottomless" because of Soviet and Chinese aid; and its willingness to accept "horrendous losses" made America's "war of attrition" a hopeless strategy. (p. 85) Johnson was also "no match for slick TV" and the rest of a hostile news media. (p. 265) Finally, the President was hampered by opponents of the war, who, according to Bornet, raised a "hysterical challenge to authority wherever it might be," (p. 256) worked from the "palpably false assumption that they were representative of a thwarted American majority against the war in Southeast Asia," (p. 311) and were responsible for a "full literature of excess . . . by New Left writers, Communists, and 'progressives' who were allied actually or spiritually with the Soviet Union, China, or Trotsky and by some who were just fuzzy of thought—though famous." (p. 258) Yet contrary to traditional accounts, Bornet insists, "campus radicals" and events in Vietnam did not drive Johnson from office. (p. 311) As early as August 1964, Johnson had been considering not running for a second term because of ill health. His withdrawal on television on 31 March, Bornet explains, "was engineered to obtain a useful payoff for the nation, while still not revealing the state of his health." (p. 298)

Readers may not always agree with Bornet's assessment of the Johnson presidency, yet they will acknowledge it as the most complete account to date. As part of the American Presidency Series, this volume is a welcome addition to the growing literature on the 1960s. Bornet's organization is questionable and he is seldom objective about Vietnam, but historians will have to grapple with his work if they hope to understand that tumultuous decade.

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Pieces of the Game: The Human Drama of Americans Held Hostage in Iran by Colonel Charles W. Scott. Atlanta, Georgia: Peachtree Publishers, 1984, 402 pages, $14.95.

When a book is written by a military and scholarly authority who, as a hostage held in Iran, participated directly in an event that paralyzed the United States for over a year, expectations are high that a deeper than normal insight into the hidden story might be gained. Certainly, Colonel Charles W. Scott's credentials are impressive. As a U.S. Army Infantry officer, he was selected for the Army's Foreign Area Specialist Program on the Middle East. His formal education was supplemented by his study of Farsi (the language of Iran) at the Defense Language Institute, a service tour in Iran as the Middle East Desk Officer in the Defense Intelligence Agency, and experience in several other infantry and intelligence-related assignments. In

view of his distinguished record, Colonel Scott's failure to make an original contribution to our understanding of the internal dynamics of the Iranian hostage crisis is disappointing.

This fundamental flaw perhaps can be traced to Colonel Scott's own "romantic" bias toward Iran, for he demonstrates clearly his great love of traditional Persian literature and ancient Persian history. It is also evident that Colonel Scott's understanding of Iranian mores was biased by his almost exclusive contact with the wealthy, influential upper class.

These two prejudices—romanticism and elitism—prepared Colonel Scott poorly for viewing other Iranian aspects and perspectives, namely, the poor (depicted as dirty, unaccustomed to eating meat or using indoor plumbing, and exhibiting anomie); the middle class (frustrated by the dearth of economic opportunities and by the lack of political participation); and the mullahs (distraught by the rapid pace of socioeconomic change, the influence of Western values, the influx of foreigners, the suffering of their people, and the seemingly hard-heartedness of a corrupt government. If anything, Colonel Scott's account illustrates the tragedy of experiencing only a small part of a culture and then constructing a paradigm (based on illusions) to guide one's action. In fact, Colonel Scott appears bewildered throughout much of his book: he cannot quite understand why Iranians act the way they do.

The bulk of *Pieces of the Game* consists of painstakingly detailed descriptions of minutiae: the decor of every room he had ever been in, the blow-by-blow accounts of attempts to gain access to toilet facilities, awkward injections of Farsi phrases, etc. However, bits of valuable information, do surface sometimes: for example, the "inside story" about why one hostage, Sergeant John Subic did not receive a decoration for the ordeal. Scott details how Subic ignored the Military Code of Conduct and actively aided the Iranians who seized the embassy. Subic's assistance began just hours after the seizure of the embassy, when he accompanied the Iranians to identify all the hostages and provide key information about them, such as language fluency, friendships with Iranians, and job details. Scott provides many details about Subic's aid to the Iranians throughout the ordeal.

Overall, the work is tedious and exhausting, although Scott certainly demonstrates how the hostage experience elevates small everyday occurrences to high drama.

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Red Flag over Afghanistan: The Communist Coup, the Soviet Invasion, and the Consequences by Thomas T. Hammond. Boulder, Colorado: Westview Press, 1984, 261 pages, $11.95 paper, $26.50 cloth.

This is an excellent book about Afghanistan and Soviet and U.S. policy toward that troubled nation since the overthrow of the government in the Communist coup of April 1978. Professor Thomas Hammond brings to bear a wealth of experience in the study of Soviet policy. He makes extensive use of previously classified documents and of interviews of high-level officials of the Carter administration, diplomats and specialists knowledgeable about Afghanistan, and Afghan émigrés.

Hammond is critical of the policies of the Carter administration. He condemns the apparent confusion in Washington and in the U.S. Embassy in Kabul regarding the nature of the government that overthrew Mohammad Daoud. Even after Ambassador Adolph Dubs was killed in February 1979, American aid continued, although it was reduced. Hammond believes the mild opposition to the Communist takeover was a mistake and may have encouraged the eventual Soviet invasion.

The Carter policy toward the Soviet invasion is criticized on three counts: failure to realize until the last minute that an invasion was coming, failure to issue a credible warning to the Soviets, and failure to inform the American public promptly of Soviet preparations for the invasion. Had the U.S. President warned the Soviets of steps he might take (Hammond suggests Carter could have mentioned the ones he actually took after the invasion), the Soviets may have been deterred from invading. At worst, a U.S. warning would not have hurt any more than the aftermath measures.

The record of Communist takeovers indicates a preference for gradual reform under initial cover of a broad national front. However, the Afghan government attempted to impose radical reform quickly and brutally, arousing the wrath of the people. The inability of the Communists to rule effectively led the Soviets to take a more active role in running the government and fighting the resistance. Hammond thinks the Soviets "may have begun" to consider military intervention as early as spring 1979 but "probably made [the] decision in October."

In light of Soviet history, Hammond finds nothing new about the Soviet invasion, a more frequent act in Afghan history than is commonly realized, for the Soviets invaded Afghanistan in 1925, 1929, and 1930 also. "The only surprising thing about the invasion," says Hammond, "was that a number of top U.S. officials were surprised, . . ." While the invasion was "probably influenced by many factors," the main ones were the determination to have a cordon sanitaire to the south and to maintain the Brezhnev Doctrine.

Dr. Hammond is pessimistic about the prospects for a Soviet withdrawal. Citing the Soviets' scorched earth tactics and "migratory genocide," he doubts that the resistance movement will succeed. Although he predicts that the Soviets probably will move cautiously for a time, he anticipates that they eventually will seek to take advantage of the improved geostrategic position which their presence in Afghanistan provides. He argues that it is imperative for the United States to give arms to the *mujahideen* in their interest and our own. If the United States does not aid, he believes, its credibility will be lost. Nevertheless, he is callous about the plight of the Afghans and states that "our main goal should not be to get them [the Soviets] to withdraw; rather our chief goal should be to discourage them from invading other countries . . . ." It is imperative, he believes, that the Soviets be convinced that peaceful relations between the United States and the Soviet Union is

"the most important objective of all."

Hammond writes convincingly of American perceptions and policies but is less successful in documenting his analysis of Soviet reasoning. His comments about the Soviets are qualified by "probably," "apparently," "may have been," and so on. For example: "How much influence military leaders have on Politburo decisions *is unknown*, but *it may be* that some of the top officers helped to persuade the Politburo to favor the invasion." (Emphasis added.)

Red Flag over Afghanistan is a perceptive study, and I highly recommend it for anyone interested in Southwest Asia and the interplay of American and Soviet policy. Its suggestions for U.S. policy are pertinent to all American servicemen.

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The Shadow Network: Espionage as an Instrument of Soviet Policy by Edward Van Der Rhoer. New York: Charles Scribner's Sons, 1983, 359 pages, $17.95.

Over the past decade, Soviet espionage has become an increasingly popular subject for Western writers. John Barron's much acclaimed *KGB: The Secret Work of Soviet Secret Agents* (1974) marked the beginning of a surge of interest in the foreign activities of the KGB. The growing publicity about covert KGB operations abroad in the late seventies and the appointment of former KGB Chairman Yuri Andropov to succeed Brezhnev in November 1982 fueled further interest in the KGB. The KGB's multifarious foreign activities are a crucial aspect of East-West relations and deserve to be studied closely. Unfortunately, however, much of the recent literature on the subject has added little to our knowledge. This is certainly true of *The Shadow Network* by Edward Van Der Rhoer, which suffers from numerous weaknesses.

Van Der Rhoer's purpose, judging from the subtitle, is to describe how espionage is used as an instrument of Soviet policy. Yet aside from some short introductory chapters, in which he attempts to outline the history, functions, and purposes of the Soviet state security apparatus, the author concentrates mainly on biographical sketches. He discusses the various heads of the Secret Police from Dzerzhinsky onward and then gives the personal histories of several well-known Soviet spies. In presenting these biographies, he does not attempt to draw conclusions about how the activities of these individuals were related to Soviet foreign policy objectives at the time, nor does he relate what was going on at the higher levels of the police and party leadership.

Almost all the spy stories included have been told before, and Van Der Rhoer relies mainly on secondary sources or on well-known firsthand accounts by former Soviet intelligence officers, such as Deriabin, Orlov, Krivitsky, and the Petrovs. For anyone who has read the original accounts (which have all appeared in English), Van Der Rhoer's book will offer nothing new. Similarly, the chapter titles chosen by the author ("The Spy Who Reported to Stalin," "The Spies Who Came in from the Cold," "The Man Who Rose from the Dead," etc.) ring strikingly familiar, particularly if one has read other books on the subject, such as Joseph Newman's *Famous Soviet Spies* (1973).

The book is flawed also by Van Der Rhoer's failure to footnote key passages. For example, he provides no source for his claim that in October 1964 Shelepin and Semichastny "sealed off Khrushchev from the outside world in the state dacha at Pitsunda, where he was on vacation, so that his supporters could not warn him about plans for a coup." (p. 49) There are also some serious factual inaccuracies in the book. For example, the author states that the head of the state security organs, "like Dzerzhinsky, is usually a member of the CPSU Politburo." (p. 3) In fact, Dzerzhinsky was only a nonvoting (or candidate) member, and the party has had a deliberate policy of excluding police chiefs from this body. (There have been only two exceptions, Beria and Andropov—and Andropov's elevation to full Politburo membership was viewed as an anomaly by many observers.) The author claims also that the Soviet wartime military counterintelligence organization, SMERSH, was headed by Sergei Kruglov (p. 34), although it is well known that the notorious Abakumov was its chief, while Kruglov served as one of his deputies. Such mistakes can probably be explained by Van Der Rhoer's failure to go beyond easily accessible Western sources and avail himself of the numerous Soviet sources available on the history of the state security organs. Given the importance of the KGB and its predecessor organizations to our understanding of the Soviet Union, one hopes that some well-researched, scholarly publications on the subject will emerge in the near future. This book fails to meet that mark.

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The Soviet Control Structure: Capabilities for Wartime Survival by Harriet Fast Scott and William F. Scott. New York: Crane, Russak and Company, 1983, 146 pages, $7.95.

This book is mandatory for military analysts, policymakers, and anyone concerned with national security affairs. William F. and Harriet Fast Scott have pioneered the U.S. examination of the Soviet military and have produced two major books, *The Armed Forces of the USSR* (1981) and *The Soviet Art of War* (1982), which have expanded remarkably our understanding of the Soviet Armed Forces. *The Soviet Control Structure: Capabilities for Wartime Survival* is a logical expansion of their examination of the subject. In content and depth of research, it compares favorably with their previous books in that it relies heavily on previously untranslated Soviet sources and materials. Its analysis is equally incisive, logical, and accurate.

The authors begin by placing their subject in its historical context. They note that today's Soviet leaders, having survived the purges of the 1930s and the starvation and devastation of World War II, have perfected a system of control begun by Lenin and exploited by Stalin in order to

perpetuate their control of the populace. Stressing that such control has obvious benefits in wartime, the Scotts then focus on the structure of the Soviet control system. Beginning with the agencies of the Communist party and government and then broadening their discussion to include the KGB, MVD, Armed Forces, and Civil Defense establishments, the authors examine the diverse and redundant elements in the Soviet control structure, including the trade unions, "volunteer" groups, and legislative measures, such as martial law. In so doing, the authors provide valuable insights concerning Soviet civil defense preparations, command and control responsibilities, and the psychological indoctrination of the population for the possibility of nuclear conflict. The conclusions that the Scotts reach are modest. Noting that the structure functioned poorly in the opening days of World War II, the authors stress that today's structure must contend with potential enemies along the Soviet borders. They admit that an exact judgment of the system's value is not possible but conclude that the extensive control inherent in the system must be assessed as a strength in Soviet capabilities.

This book, which contains the only comprehensive examination of the Soviet control structure now available, should receive the widest dissemination. *The Soviet Control Structure* is ideal as a text for courses on the Soviet Armed Forces, should be mandatory reading at all war colleges, and should be part of the personal libraries of all who are interested in the Soviet military.

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Buying the Night Flight: The Autobiography of a Woman Correspondent by Georgie Anne Geyer. New York: Delacorte Press, 1983, 337 pages, $16.95.

The press is not very popular among elements of the military community, and historically the military-media relationship has been an uneasy one. Military actions in Vietnam, Angola, Lebanon, the Falklands/Malvinas, and Grenada have been reported and interpreted by the world press, but not always to the satisfaction or perceived self-interest of the military community.

For those of us who believe much of the press has gotten a bum rap for admittedly tough assignments, *Buying the Night Flight* is a timely recommendation to our military audience. Georgie Anne Geyer, within the small profession of foreign correspondents, writes consistently competent and insightful columns on some of the world's most intractable conflicts. Moreover, she is no stranger to the professional military education community, having appeared on the podiums of all war colleges since the 1960s. As a professional journalist, she writes as neither friend nor foe of the military profession. Her reportage is straightforward, sensitive, and invariably comprehensive.

Geyer is a tough, gutsy columnist from Chicago's South Side who made it early in a profession long dominated by men. She graduated from Northwestern University, speaks four languages, and has been covering foreign news for twenty years. She takes the reader through politico-military crises from Santo Domingo to Santiago, Moscow to Luanda. Especially revealing are her personal vignettes of Fidel Castro, Ayatollah Khomeini, and Lech Walesa, which both inform and flesh out their premier roles in key revolutions of our time. Her book, like her columns, allows the reader to hear not only the words but the emotions of those she interviews—one of the skills of a topnotch reporter. Geyer also interprets news in the context of the culture from which it springs, often with the backdrop of national history, and frequently with an eye toward the social distance separating people from cataclysmic events. This comprehensive approach gives the reader the context necessary to judge either the uniqueness of specific events or the implicit pattern underlying them.

Her anecdotal accounts also surface: the advantages and disadvantages of a woman reporting war and peace, struggle, and status quo. There is no room for husband and family, and she has little leisure time for hobbies. Her vocation is her avocation. Female career officers will recognize immediately the gnawing choices inevitably posed by a career.

The military professional needs to read a book like Geyer's to appreciate the expertise of competent foreign news reporters. Her account is light, adventurous, arm-chair relaxation. It makes for good reading and historical perspective on a rainy or wintry night.

Dr. James E. Winkates
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The Strategic Imperative: New Policies for American Security edited by Samuel P. Huntington. Cambridge, Massachusetts: Ballinger, 1982, 326 pages, $27.50.

Professor Samuel Huntington, Director of the Center for International Affairs at Harvard and prominent scholar in national security studies, served on the National Security Council staff in 1977-78. All but one of the other contributors in *The Strategic Imperative: New Policies for American Security* are associates of Huntington at the Harvard Center. All were chosen because they offered original and useful ideas rather than thoughts in accordance with a master plan.

The opening chapter sets the stage for the renewal of American strategy for the 1980s based on four trends that Huntington foresees: first, the development of the Soviet empire and its simultaneous external expansion and internal decay; second, the declining effectiveness of nuclear deterrence and increasing dependence on other forms of military force; third, the multiplication of the needs for deterring Soviet actions in the Middle East, against China, and in some circumstances, against the Eastern European countries; and fourth, the probability of Soviet-American war during the decade, due to a shifting balance in favor of the Soviets, an overlap of conflicting interests, and increasing instability and upheaval. He believes that much more diversified deterrence strategy than we now have is clearly indicated.

Aaron Friedberg's superb essay on the evolution of U.S. strategic doctrine, published earlier in the *Journal of Strategic Studies*, December 1980, merits repeating for a wider audience. His evaluation of past strategies strongly sug-

gests the need for new targeting objectives flowing from a more unified doctrine. Richard Betts further broadens the discussion of the political and military meaning of the nuclear balance and the equivalence policy. Stephen Rosen makes a case for civil defense and a ballistic missile defense system, writing, apparently, before High Frontier and the current "star wars" programs evolved.

A particularly useful study for the war college student or military planner is Eliot Cohen's reappraisal of systems analysis. The author believes that the systems analyst neglects study of war as a unique phenomenon that requires application and experience in order to be understood. Using Clausewitz as his authority, Cohen decisively rejects systems analysis with its overconcentration on technology, favoring a Clausewitzian-style study of war and preparation for war—i.e., emphasis on strategy, tactics, technology, and psychology. A vital need would be a better educated officer corps, strengthened by war college training in a quality, two-year study of war. Both his citation and interpretation of Clausewitz are inaccurate, but the message is indisputable.

Excellent discussions of Third World conflict and a concluding essay on energy security strategy round out this high-quality study. Well written in nontechnical language and featuring a comprehensive bibliography and helpful index, *The Strategic Imperative* is a book that the student of strategy will find thoroughly rewarding.

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Another Part of the Fifties by Paul A. Carter. New York: Columbia University Press, 1983, 328 pages, $19.95.

Paul A. Carter, a University of Arizona professor of history and author of *Another Part of the Twenties* (1977), promises the reader a reassessment of the culture of the fifties because "there is a gap between image and experience comparable to the gap in our understanding of the twenties between a sloganized 'Jazz Age' and for many people, quite a different period." He examines subject matter as diverse as science fiction, Supreme Court decisions, the rise and fall of McCarthyism, the socioreligious beliefs of Reinhold Niebuhr and Paul Tillich, the ideas of various thinkers (William Whyte, David Riesman, and Eric Hoffer, for example), and the pervasive influence of the atomic bomb on American society. But this attempt to recreate the mood of the fifties gives undue emphasis to science fiction, while he virtually ignores such phenomena as Elvis Presley, Marilyn Monroe, and James Dean.

In his examination of the political life of the period, Carter ties the fifties to the eighties. In so doing, the author emerges as a sixties-type academic liberal. It is difficult to determine whether Carter wrote the book to paint a portrait of the fifties or to deliver a partisan blast against the current administration, passing his perception off as history. While a scholar of history may be concerned about the quality of presidential candidates and may be dissatisfied with an administration and its policies, in this frequently irritating book, Carter abuses the historian's license. He turns the study of the fifties into an attack on those who took office twenty-five to thirty years later.

Throughout the book, Carter consistently places himself on the "proper" side of all issues whether that be opposing nuclear war or the actions of Senator Joseph McCarthy or favoring civil rights, the United Nations, and feminism. For example, he unfairly lambasts Adlai Stevenson for his 1955 Smith College commencement address, using 1983 equal rights values to judge Stevenson's statements about the role of college graduates. Stevenson ;may not have foreseen the future changing role of women, but how many leaders—men or women—in the 1950s did?

Carter joins a number of other writers who now view President Dwight D. Eisenhower in a more positive vein. He believes that the 1959 Antarctic Treaty was one of the overlooked high points of the Eisenhower administration and that the news media seemed virtually unaware of its existence. Carter also considers Eisenhower more of an international risk-taker than what has usually been perceived. His atoms for peace program and his equally adventurous "open skies" proposal were giant steps forward in the international peacekeeping arena.

Carter promised "another part of the fifties," but he delivers a very small part. When he manages to recreate the mood of the times, as in the chapter "Under God, By Act of Congress," his history is on solid ground. However, more frequently, he resorts to polemics. Carter may wish to read Margaret W. Rossiter's *Women Scientists in America: Struggles and Strategies to 1940* to see how an excellent writer, perhaps angered by the evidence her work uncovered, used the tools of her profession to convey a disciplined message. Unfortunately, the culture of the fifties still requires a reassessment.

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Nicaragua: America's New Vietnam? by Karl Grossman. Sagaponack, New York: Permanent Press, 1984, 228 pages, $16.95.

As an investigative journalist from Long Island with little or no prior experience in Central America, Karl Grossman decided to fly down to the region and poke around. The result is *Nicaragua: America's New Vietnam?*

Grossman has a journalist's ear for detecting the nuances of language, for asking good questions, and for nosing out what may lie beneath the rhetoric. He interviewed, it seems, virtually everybody with whom he came into contact, from his fellow passengers on the jet to Tegucigalpa to ambassadors, *contras*, and women Sandinista soldiers. He quotes liberally and perhaps even unfairly. During one interview, for example, U.S. Ambassador to Nicaragua, Anthony Quainton, stated that Grossman could quote him as a "western diplomat." The author makes jest of that understanding and quotes from his conversation with Quainton directly over the course of the next few pages.

There are other flaws in the book, the most serious coming when Grossman assesses the potential for a Vietnam-style war in the region. He labels the U.S. presence in Nicaragua—supporting the *contras*, most in particular—

as illegal, immoral, and impractical. To the author's credit, he does not hide opinions and facts presented by those in opposition to the Sandinista Revolution. He quotes as liberally from them as from its most ardent supporters. The record he presents is thus mixed. He gives all a free hand in expressing sentiment, opinion, or facts and does so in a pleasant, breezy manner. He is not unafraid to lambast old friends. When he sees evidence of the sale of Israeli weapons to the *contras*, he condemns Israel, even though he himself is Jewish and an admitted long-time admirer of the Jewish state.

Nevertheless, Nicaragua is not America's new Vietnam. History does not repeat itself, although it can occur in remarkably similar cycles. What Grossman ultimately expresses are his perhaps unchanging attitudes and those of fellow Americans, who divide the world into neat moral categories, labeling a presence in Vietnam or Nicaragua as immoral, or, conversely, appropriate and necessary for the preservation of freedom and democracy. Yet the author is, in fact, just as guilty in his quick judgment as those he attacks.

Despite its grossly ethnocentric points of view, the work provides many insights through the words of others into a violent and beautiful part of the world that we are involved with intimately. I recommend reading this account, but with caution. If the reader discards some of his most hysterical conclusions, he will find a colorful portrayal of the region and its principal actors. *Nicaragua: America's New Vietnam?* will form part of the historical record, but it prejudges too blithely and blindly.

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Vietnamese Tradition on Trial, 1920-1945 by David G. Marr. Berkeley: University of California Press, 1981, 450 pages, $25.00.

David Marr's *Vietnamese Tradition on Trial, 1920-1945* while not directly a sequel to his earlier excellent book *Vietnamese Anticolonialism, 1885-1925* (1971), is a natural follow-on to this work. As Marr himself writes, he "identified eight intellectual topics for discussion," and his writing style reflects this philosophical approach to the Vietnamese past. These topics are The Colonial Setting, Morality Instruction, Ethics and Politics, Language and Literacy, The Question of Women, Perceptions of the Past, Harmony and Struggle, Knowledge Power, Learning from Experience, and Conclusion. These discussions, to use a colloquialism, will go far in helping the reader to understand "where the Vietnamese are coming from."

This is a very useful and readable book—required reading for the specialist, but lively, lucid, and eminently readable for the general reader who wants to understand what contributed to the Vietnamese "national essence."

Well-organized and thoughtfully presented, this historical account helps to explain the beliefs, values, and cultural depth of the Vietnamese, all of which have survived centuries of recurring adversity. Americans, on the whole, have never understood any of this, and Marr's book will help somewhat to shed some light on this subject. Scholars will appreciate the copious footnotes; the general reader may ignore these and suffer no loss in understanding more about a new powerful force in the world.

For those who wish to dig deeper, Marr touches on the diverse roots of the Vietnamese—their older Taoist, Confucianist, Neo-Confucianist, and Buddhist inheritance; the growth of the newer, localized sects like the Cao Dai and Hoa Hao; and the effects of social Darwinism on Vietnamese intellectual thought.

The Indochinese Communist Party was the beneficiary of some extraordinary good luck along the way to success, yet its own sense of where history was going (in the reading of the contradictions of the times) was important to that success. Their leaders' scramble to attach themselves to the peasant uprisings in 1930 comes out well in this book; what is not quite so clear is the crucial importance of the help given to the party by that naïve and unsophisticated American OSS team, led by Archimedes Patti, whose members even today appear not to understand what happened in Hanoi in 1945, or why it happened, and what impact those events have had on subsequent Vietnamese (and American) history.

There are a few nit-picks with the work; these concern loose editing and do not detract from the considerable value of the book. A peculiarly American trend to flaccid writing ("humankind" versus mankind) can be found also.

For the specialist, there is a cautionary flag raised when Marr uses such persons as Tran Van Giau as primary sources. Tran Van Giau, the Party's Chief in Cochinchina when British General Douglas Gracey and the Allied Forces arrived in Saigon in 1945, displayed a consistent tendency to violence, and this propensity got his Vietminh expelled from Saigon by Gracey; Giau himself was recalled to the north by the party soon after. In the view of those who closely follow Hanoi, he has since been assigned duties as a writer of minor histories.

David Marr may be a little hard on those Vietnamese who, in accordance with their Confucian indoctrination and upbringing, accepted the French conquest as their fate and attempted to work within the colonial system for their own security or to better the lot of their countrymen. To these Vietnamese, many of whom were as patriotic as anyone else, Marr assigns the term *collaborator*, which he uses throughout the work. Given Marr's own politics and his unique access to Vietnamese culture, such uncompromising positions are understandable, but a true picture may not emerge from tarring everyone with the same brush. For example, following this line, all native officers and officials in the famed Indian Army and equally famed Indian Civil Service who worked with the British *raj* in India would be called collaborators. However, many of these were patriots who used their various skills to build the world's largest democracy after independence and never lost their identity along the way. Were these Vietnamese "collaborator mandarins" any worse than Ho Chi Minh, who for three decades obediently served the Comintern and during that time stayed out of his own country? Many would argue as to who were the real betrayers of the Vietnamese people, and this persistent name-calling does tend to drag the book down a peg.

Although these comments are not directed specifically at any particular author, a number of younger scholars are caught in a Catch-22 situation. They opposed the Vietnam War (and there is nothing wrong with that), and today they are allowed into Vietnam. However, the party does not grant entry into Vietnam to those scholars who are overly critical of the Communist regime. Yet it is impossible to write a truly honest and scholarly appraisal of recent events in Vietnamese history without being critical of every actor who has ever walked on that stage—including the Communists. Thus, no matter how incisive the analysis or how good the history, these scholars can only write as does Marr in this book: "It is reasonable to ask whether, after more than three decades of slaying giants, the Communist Party of Vietnam has today lost some of its capacity to respond to popular urgings." While one may ask how frequently did the party, in fact, *ever* respond to popular urging (as opposed to manipulating them), one should note that these writers can only ask the question; they are unable (as in this work) to answer it. It is thus of interest to note that much of the criticism of the present corruption of the revolution comes from the Vietnamese regime now in power, not from the American (or other) academics who are permitted to visit that country.

Vietnamese Tradition on Trial is a significant contribution to the growing literature on Vietnam. It should be read by anyone interested in the history of a once-small nation that has become a household name in this country.

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Visions of Vietnam by James McJunkin. Novato, California: Presidio Press, 1983, 250 pages, $25.00.

Visions of Vietnam is a collection of photographs by former U.S. Army correspondent James McJunkin and line drawings by former U.S. Air Force illustrator Max Crace. It is not, as the flyleaf promises, "a graphically brilliant book." On the contrary, it is a collection of surprisingly mediocre photographs interspersed with better, but certainly not "gripping," line drawings. Both artists depict the American soldier, his Vietnamese counterpart, and a sampling of Vietnamese civilians. Only Crace's line drawings depict them well.

McJunkin's photographs are a mere cut above the scrapbook/snapshot variety. His strangely static and often posed shots of soldiers and civilians evoke little sense of action or feeling. Quite often, his subjects are shot against annoyingly cluttered backgrounds, with uniforms and faces barely distinguishable from tanks, trees, and buildings. Certain combat photographers—Larry Burrows for example, or even Tim Page on a good day—could turn a certain amount of obscurity into art. McJunkin is not in their class. While effective photographers bore into their subjects, capturing pains and fear and joy as it is reflected, up close, on faces, McJunkin never gets close, physically or emotionally, to his subjects. His resulting photographs are neither art nor documentary. They are simply pictures.

I was also disappointed by the quality of the black-and-white photo reproductions. Either the Army did not train McJunkin adequately on the intricacies of f-stops and shutter speeds in the field, or it failed to introduce him to quality printing procedures in the darkroom. Certainly, the publishers did not insist on quality prints for the book. With few exceptions, his photographs are under- or over-exposed, grainy, and occasionally blurred around faces. Most lack contrast and slide into shades of gray. All in all, McJunkin's photographs contribute little to the graphic history of America's days in Vietnam.

The saving grace of *Visions of Vietnam* is Max Crace. His line drawings (of basically the same subjects) supply some of the intimacy and emotion that McJunkin's photos promise but don't deliver. Crace's drawings, with a few exceptions, have detail, clarity, contrast, and emotional depth. He moves in on his subjects and captures a range of real feelings, transforming several of his pen-and-ink sketches into vivid portraits of men in combat. Ironically, Crace's drawings are much more evocative and "real" than McJunkin's real-life companion photographs. They do not, however, save this $25.00 book.

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Touched with Fire: The Future of the Vietnam Generation by John Wheeler. New York: Franklin Watts, 1984, 259 pages, $16.95.

Touched with Fire is an emotional, personal attempt by a Vietnam veteran to explain the long-term impact of the Vietnam War on America in the 1980s. "The great issues in our time," John Wheeler writes, "will be impenetrable if we do not sort out how our passage in the Vietnam War years is shaping each of us." (p. 4) Wheeler served in Vietnam from June 1969 to June 1970 and played a prominent role in bringing about the Vietnam Veterans Memorial in Arlington Cemetery. His revisionist account is part of the increasing number that praise the integrity of those who served in Vietnam. Wheeler argues that everyone who came of age in the 1960s was touched by the fire of Vietnam, and that this shared experience unites veterans with those who opposed the war or tried to avoid the draft. His point is well taken. However, Wheeler, a West Pointer, is better at explaining the sincerity of those who fought than in sympathetically portraying the actions of protesters.

Wheeler obviously is a devout Episcopalian, but even fellow-Episcopalians will find his religious fixation overdone. (I do not believe the rites of the Episcopal Church have much to say about how a generation of Vietnam veterans can come to terms with their collective past.) Wheeler's wife is an ordained Episcopal priest; their twins were born with serious birth defects, which Wheeler fears stem from his possible exposure to Agent Orange. He is a troubled man sincerely attempting to understand a society that scorned him because he accepted a responsibility which that same society asked him to undertake. The confessional style of this utterly humorless person is overdone; every reader will tire of learning about how well Wheeler's

small circle of Washington lawyer friends (all Vietnam veterans) are doing.

Touched with Fire is presented in a curious circular fashion so that ideas are not logically developed, yet scattered throughout the book are important ideas, which others will want to develop further. For example, Wheeler believes that Vietnam, by helping make the very concept of masculinity somehow suspect, ironically helped improve professional opportunities for women in America. He also has some valuable things to say about how antiwar songs in Vietnam actually helped bond soldier together. He treats sympathetically the problems of women back home who were treated as pariahs by friends because their husbands served in Vietnam. And he wants his readers to know the vast majority of success stories for those who made the transition from Vietnam to civilian life.

Wheeler concludes that Vietnam veterans are, as a group, good; that masculinity, as a trait, is good; that America faces foreign enemies who may again require our sacrifice of soldiers; and that there are causes for which it is worth dying. The book is worth the attention of anyone struggling to understand the relationship of Vietnam to the activism of blacks and women.

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Reappraising Defense Organization: An Analysis Based on the Defense Organization Study of 1977-1980 by Archie D. Barrett. Washington, D.C.: National Defense University Press, 1983, 325 pages, $6.00.

According to author Archie Barrett, this volume was written to put into better perspective the various studies that examined the issue of reorganizing the Department of Defense. The primary study from which data were drawn was the Defense Organization Study of 1977-1980. Other purposes for preparing this book were to facilitate the work of scholars by providing a framework for viewing a rather large amount of data and to influence those who make policy affecting the Department of Defense and its organization.

Several questions come to mind in reading *Reappraising Defense Organization* and evaluating its contents. Does Dr. Barrett really reappraise defense organization, as the title would suggest, or does he just ingeminate old and worn-out ideas? Did the author really put the reappraisal of defense organization into better perspective or focus? Why does the author limit himself to very modest proposals?

The book's first seven chapters summarize the various staff studies and replies (all of which have been fully coordinated) that military readers have been totally saturated with throughout their careers. At the end, Dr. Barrett leaves us flat with some mediocre recommendations for a minor reorganization of DOD, applying the famous Band-Aid solutions to major problems.

Some key points are made early in the book:

> (a) The Defense Organization Study of 1977-80(DOS 77-80) suggests the Joint Chiefs of Staff (JCS) and the military department secretaries are weak, ineffectual, and sterile institutions dominated by the Army, Navy, Air Force and Marine Corps. Significant Department of Defense decisions . . . derive from the interplay between the Secretary of Defense . . . and each of the services, whose unflagging, skillful, and effective pursuit of their interests is deservedly legendary.
>
> (b) During the two decades since the last major reorganization in 1958, DOD organizational efforts followed directions other than structural. They focused on consolidating the performance of common functions in defense agencies and building and adjusting processes to regulate major activities . . . . That activity continues apace.
>
> (c) The commanders in chief of the unified and specified commands (CINCs) have neither the influence nor the clear-cut durable links with higher authority commensurate with their responsibilities as supreme military commanders of US forces in the field directly under the highest civilian authorities.
>
> (d) The service secretaries are not participants in top management of the Department of Defense and are not in a position to act as the actual leaders of their departments.

Dr. Barrett goes on to state that the studies are not timid in defining the appropriate relationships between central management and the rest of the Department of Defense. Many examples are described in the analysis of organizational relationships within the Department of Defense that the studies have identified as falling short of the mark in accomplishing the various missions assigned to the department. However, that is where the story told in this book really ends.

The book, basically, is a study of studies, and although the author tells us that the studies were not timid in identifying and describing problem areas, it is the opinion of this reviewer, that the studies do in fact, encourage timidity. The studies are continuously addressing the same old issues and problems of other studies, which point out the glaring fact that nothing effective has been done for years. This study marches to the familiar bureaucratic drumbeat of "reinventing the wheel" within the same structure and using the same positions and personnel, labeling it a "reorganization." It may look different on paper, but do not be fooled: it is the same organization that it was before being "reorganized." Thus, Dr. Barrett has managed to go down the familiar path himself. The reader is lost in a maze of bureaucratic terminology and acronyms embedded in study after study and staff replies to those studies.

We need fewer of these studies that provide us new form without change of substance or function. Instead, we need bold and imaginative initiatives to provide the best possible means of protecting this nation's freedom. The first of these initiatives would entail reorientation toward the wartime operational missions as the true purpose of the Defense Department. True, we believe in deterrence, but a combat-ready DOD would add a great amount of credibility to that theory. The second initiative would reinstitute the leadership mode or approach, scrapping the management approach. *Reappraising Defense Organization*, like

so many other studies, continually barrages us with the words *management, management approach, reorganize, staff, adequate staff,* etc., failing to recognize that we have had too much management and not enough leadership. Perhaps by placing less emphasis on management-oriented, staff-heavy vehicles and greater emphasis on leading people (and not shuffling them around in reorganizations), we will breathe life into the current system and allow it to function. A third initiative I would recommend is to realign the command structure so that forces assigned to CINCs would train and operate with them in peacetime, making them more cohesive and effective in the event deterrence fails. A fourth initiative would be to relegate the services to a role whereby they provide manpower and skill training but then make that manpower available to the appropriate CINC's forces. Finally, it is high time that the direction for the DOD be provided in coherently negotiated policy resulting from the proper constitutional relationships of the Executive Branch and the Congress of the United States.

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Mission to Mars: Plans and Concepts for the First Manned Landing by James E. Oberg. Harrisburg, Pennsylvania: Stackpole Books, 1982, 221 pages, $14.95.

Two American presidents left an indelible imprint on astronautics: Dwight D. Eisenhower and John F. Kennedy. Eisenhower in 1958 divided U.S. astronautical activity between civilian scientific exploration and uses of space, assigned to the National Aeronautics and Space Administration (NASA), and military applications, reserved for the Department of Defense. Kennedy in 1961 launched a program to land a man on the moon and return him to earth before the end of the decade. But while Eisenhower made certain that a civilian agency would be responsible—at least initially—for the bulk of the nation's astronautical activity, Kennedy's Apollo lunar landing program fractured NASA, dividing the civilian organization between an office of space sciences and applications on the one hand and manned spaceflight on the other. Public attention and the enormous emphasis that attended Apollo helped ensure that the proponents of manned spaceflight would control and shape the course of NASA and its programs in the years that followed. In the view of most space scientists, by the late 1970s Congress and the space agency had at least temporarily abandoned the scientific exploration and use of space with automatic vehicles in favor of an immense investment in manned systems. In American spacefaring, manned spaceflight, the Skylab, Apollo-Soyuz, Space Shuttle, and plans for a manned space station clearly prevailed.

For those interested in the promotion of manned spaceflight in general and a flight to Mars in particular, James E. Oberg's *Mission to Mars* is a book for your "must-read" list. Oberg is reported to be (in the words of the dust jacket) "a mission flight controller for the McDonnell-Douglas Aerospace Corporation" at NASA's Johnson (manned flight) Space Center. In this book, he has assembled and attempted to interpret the works of others, most notably individuals who presented papers at a 1981 Case For Man on Mars colloquium in Boulder, Colorado. His thesis is as unmistakable as it is uninformed: A manned flight to Mars must be an American achievement, and soon, before the Soviets realize this plum. But, you ask, what is man to do there? "The outbound leg of the trip, far from being boring and uneventful, will be crammed full of training tasks and other educational activities, along with housekeeping, exercise, and some uniquely valuable scientific work." (p. 15) Once landed on the martian surface, man's activities "may center around transportation capabilities, which can be made surprisingly potent." If you have not recently encountered a surprisingly potent transportation capability, hang on, it is just over the next planet. After this Introduction, the narrative deteriorates rapidly.

The real interest of *Mission to Mars* lies in its strident, mindless advocacy: it is representative of a genre. There may be a good reason for man someday journeying to Mars, but you will not find it here. Indeed, I suspect that men will visit and perhaps establish a permanent base on Mars before the end of the twenty-first century. But the author—whose credentials as a "man-to-Mars proponent" and "would-be public opinion manipulator" (p. 176) appear unimpeachable—laments that well-placed critics have caused the enterprise among the American public to suffer "a hopefully temporary eclipse." (p. 172) If this curious volume is widely read, it just may propel man on Mars into a permanent eclipse.

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Israeli Nuclear Deterrence: A Strategy for the 1980s by Shai Feldman. New York: Columbia University Press, 1983, 310 pages, $25.00.

The only full-length monograph that deals, to my knowledge, with the delicate question of Israeli nuclear potential is Professor Shai Feldman's book *Israeli Nuclear Deterrence;* and it is a *force de frappe.* Its virtues are clarity, orderliness of argument, the manner in which the author avoids cheap moralism while remaining thoroughly engaged in, yet detached from his subject, the way he exposes myths but does not replace them with others equally egregious, and finally, his ability to keep firmly before the eyes of his readers, without recourse to scenarios of lurid specificity, that frightening aspect of life in a nuclear age which the poet Saint-John Perse once described as a great principle of violence that holds sway over our habits and customs.

Still, acknowledging the fears inherent in a nuclear era does not prevent Feldman from taking an optimistic position. He argues that the government of Israel might be well advised, under carefully defined circumstances, to declare a nuclear deterrence policy. Such a policy, he believes, would lead, in turn, not only to a controllable balance of terror in the region for which the rules of the game are clearly enunciated but also to the establishment of a geostrategic regional stalemate that would permit Israel to withdraw

safely from all occupied territories under the umbrella of nuclear security. And these outcomes could not help but encourage the regional antagonists to reconceptualize their bilateral relations and to move off the dead-center of a zero-sum game mentality whereby one side demands absolute security at the expense of the other side's absolute insecurity. It is this kind of no-alternative politics which, in the past, has provided fertile ground for the ambiguity that characterizes the present nuclear situation in the Middle East.

Feldman's conclusions are reasoned carefully and authoritatively. He surveys the entire range of bibliographical literature available today and does a first-class job of synthesizing his materials into a cogent view of Israeli nuclearization, the prospects for peace and the risks of regional nuclear war, and the possible responses from the superpowers to a nuclear-armed Israel. The main defect of *Israeli Nuclear Deterrence* is perhaps that it is far too reasonable in analyzing a subject about which there is still a paucity of hard incontrovertible data.

The prospective reader should not be deterred by this caveat, however. Feldman's book is the best book currently available on this elusive subject and deserves careful scrutiny.

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The Conspiracy and Death of Lin Biao by Yao Ming-le. New York: Alfred A. Knopf, 1983, 231 pages, $13.95.

This account of the death of Lin Biao is an absorbing, if unedifying, page-turner. It presents the details of not only the unsuccessful conspiracy of Lin Biao, Defense Minister of the People's Republic of China, against Mao Zedong but also Mao's successful counterconspiracy against Lin. The book's value turns upon the authenticity of its documentation and the reliability of cited sources, which are impossible to verify. Yet, the story appears to be credible and is persuasively written.

The official version of the death of Lin Biao is well known. He is said to have died in a plane crash in the Mongolian People's Republic while attempting to escape to the Soviet Union after his plot to assassinate Mao had been exposed. Yao Ming-le follows an enthusiastic introduction by Stanley Karnow with a vivid, climatic account of the situation leading to the true event. Lin, Mao's designated heir, did not die in Mongolia. He was, in fact, blown up by rockets while riding in a Red Flag car. This vehicle was carrying him away from a dinner party that Mao had hosted and at which Lin had been treated as an honored guest. Mao had learned of Lin's conspiracy and had planned both the dinner party and the assassination. Zhou Enlai is said to have referred later to this intimate but elaborate party as "the last supper." (p. 159)

Yao goes into great detail regarding the nature and extent of both Lin's conspiracy and Mao's counterconspiracy. Lin had used the Great Proletarian Cultural Revolution (GPCR) of 1966 to expand his military base. Catering to Mao's growing megalomania, he had also promulgated the famous little "Red Book," which made "The Thought of Mao Zedong" the font of omniscience in all areas of knowledge and endeavor. On the surface, Lin appeared to be a blind follower of Mao. For his part, Mao was grateful to Lin for having restored some semblance of order after the havoc of the GPCR. It should be recalled that Mao's first heir, his former comrade, Liu Shaoqi, had become the target of the Cultural Revolution. But after replacing Liu with Lin, Mao began to have second thoughts about the wisdom of this decision. Presumably, he took Lin's statements about eternal loyalty with a grain of salt.

This fascinating book, with its dramatic descriptions of palace intrigue, power struggles, extravagant duplicity and corruption, confirms the theory that Lin attempted a coup against Mao. In the process of destroying the official Maoist story of how Lin died, it also destroys many other appearances that have been of importance and value to the Chinese communist leadership. In particular, it presents an extraordinary picture of gilded youth: the children of the top leadership. It is unmatched in its scathing detail about Lin Liguo, the son of Lin Biao. Nothing could be more totally opposed to the self-portrayed image, replete with simple proletarian virtues, of the Chinese communist leadership. This contemporary account resembles the histories of Chinese dynasties which, when painting a picture of decline, are full of deception and neurotic profligacy. This time, however, the story is refracted through a legalist-Machiavellian vision rather than through that of Confucian moralism.

What is to be derived from such a tale? That disunity between the party and the military can make trouble? That technology has changed, but the nature of intrigue has not? The story discredits Mao as much as it does Lin. Now that the era of frenzied glorification of Mao is over, dissemination of this kind of material appears to be part of the backlash. Clearly, such attempts as there were to provide for orderly succession in China went awry because of the lack of an institutional basis, coupled with too much dependency on personal whim.

Aside from the intrigue and intricacy of Chinese politics at the top (*plus ça change, plus c'est la même chose*), the book includes much interesting material about Chinese military organization and communication. Its special emphasis is on the air force, the intended power base of Lin Liguo. Two points are significant here: first, a complete degenerate like Lin Liguo was taken seriously, and second, a significant segment of the Chinese military establishment almost subverted the state.

Readers who are not much interested in the details of recent Chinese politics might enjoy this book as a form of action-adventure, but they will search in vain for heroes or heroines to admire.

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China as a Maritime Power by Lieutenant Commander David G. Muller, Jr., USN. Boulder, Colorado: Westview, 1983, 268 pages, $30.00.

Commander David Muller has produced the most valua-

ble work on China's maritime evolution since Bruce Swanson's *Eighth Voyage of the Dragon* was published by the Naval Institute Press in 1982. In contrast to Swanson's work, which presented a superb history of China's search for seapower, Muller concentrates on the period since 1945. Thus, although Muller's book can stand alone, collectively the two volumes provide an essential history of the twists and turns in the historical and contemporary development of China's maritime power and naval strategy.

Muller's focus is on more than simply naval power and strategy, as the title *China as a Maritime Power* indicates, for he concentrates on the much broader concept of "maritime power." Navies, he argues, are instruments of national policy, but they are instruments "whose development and use are motivated by strategic, economic, and diplomatic interests as well as by domestic politics." (p. 3) Herein lies the critical value of his work, for Muller returns repeatedly to these themes as he traces the changing attitudes and policies of the Chinese leadership toward the maritime dimensions of its national objectives. Thus, although the volume is structured chronologically into three parts (1945-60, 1960-71, and 1971-83), each of the three parts is organized into chapters analyzing naval history, naval strategy, naval politics, maritime economics, and maritime foreign relations. The result is an absorbing analysis not only of the growth of Chinese maritime power but also of the conflicts that emerged among factions within China's political elite as these factions fought over resource allocations, defense doctrine, and strategy and established priorities for the national objectives of the People's Republic of China (PRC).

As an intelligence officer, Commander Muller was able to arrange the declassification of numerous intelligence reports prepared between 1945 and the late 1960s. Because of this, the first ten chapters of the book contain information not previously available to scholars. This is not to say that Muller is overly reliant on these sources, for his research is broadly based on the available materials, but to suggest that those with a special interest in the PRC should pay close attention to Muller's analysis of those years. His detailed analysis of Sino-Soviet relations in the development of the Chinese navy and the final schism of 1960 will be of particular importance to students of Soviet and Chinese affairs.

Muller contends that by the 1980s, the image of China as a continental power concerned primarily with internal issues and the defense of its land mass is no longer entirely accurate. The Chinese have recognized that their future economic development is dependent on increased foreign trade and foreign technology, while future energy requirements have forced Beijing to look more toward offshore oil resources. The expansion of China's maritime interests is reflected both in the growth of its merchant fleet and the construction of at-sea replenishment vessels that permit the navy to extend its operating areas. The naval component of China's defense strategies took on greater significance as Beijing's sea-based nuclear deterrent came closer to deployment with the flight test of a solid-fueled missile from a converted Golf-class submarine and the sea trials of China's first SSBN. Assuming the continuation of current trends, Muller foresees the 1990s as years when China will become a major maritime power, with its navy an important factor in the Asia-Pacific region.

Well written, well organized, and sharply analytical, Muller's efforts have provided both the military professional and the civilian specialist with the definitive work on China's contemporary maritime and naval development.

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Hitler's Luftwaffe in the Spanish Civil War by Raymond L. Proctor. Westport, Connecticut: Greenwood, 1983, $29.95.

Against the advice of nearly all of his ministers, Hitler ordered the German military into the Spanish Civil War in July 1936. The Luftwaffe was the first to respond, sending transports and then fighters. For the next three years, the Luftwaffe trained, fought, and tested their equipment, men, and organization. It encountered a host of problems: unruly allies, forbidding climate, administrative foul-ups, a determined enemy, aged or untested equipment, and that supreme test—Spanish roads. The Luftwaffe lost almost as many aircraft to accidents as it did to combat and almost as many men to auto accidents as were killed in action. Confronted at times with as many as 100 different types of vehicles and 20 or more different types of aircraft, the men of the Condor Legion performed miracles. They were a crack outfit. Never larger than 5000 men and 100 aircraft, the legion played a vital role in the victory of General Franco.

Professor Raymond Proctor, a former professional officer, has written a straightforward, terse account of the operations of the Luftwaffe in Spain. Drawing from Spanish and German archives augmented by personal interviews and diaries, the author describes German aerial involvement in Spain from its beginning to the end. His narrative includes the type of equipment used, crew members killed, and results achieved. However, because most of his information comes from the action reports filed by the legion, *Hitler's Luftwaffe in the Spanish Civil War* is strictly limited to the operations as seen by the men in Spain. Although the author hints at what effect events had on Berlin and on the Luftwaffe in general, he is very cautious in drawing further conclusions from his material.

Spain was important for the Luftwaffe. Here the Germans learned the value of the finger-four formation for fighters, the importance of visual identification in close support work, the need for flexible organizations, and the usefulness of flak units in ground actions. The most significant lesson pertained to the methods of employing tactical air power, a lesson which the Luftwaffe never forgot. The pronounced tendencies of World War II—the emphasis on combat arms versus support arms, the downplaying of trainers and recon aircraft, the ignoring of the technical side of the Luftwaffe in favor of the combat side—all were anticipated in Spain. In hindsight, it is easy to see what the Germans learned from Spain and also what they missed.

Professional officers will enjoy this book. The cool, detached account of the operations, the interesting comments

about the equipment, the comparisons with the Russians and the Italians, and the usual tales of administrative mistakes make for good reading. Hitler was fighting a limited war in Spain, but his troops could not. Little of the savagery and none of the politics of the war are spelled out, but the feel for war is there.

One major theme in *Hitler's Luftwaffe in the Spanish Civil War* dominates and is worth noting: warfighting in a country like Spain may be a good testing ground, but it is wise to know what you are testing for and what it all will mean later for your organization.

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Foulois and the U.S. Army Air Corps, 1931-1935 by John F. Shiner. Washington: Government Printing Office, 1983, 346 pages, $13.00.

Published as part of a General Histories series by the Office of Air Force History, *Foulois and the U.S. Army Air Corps, 1931-1935* is a slightly revised version of John F. Shiner's doctoral dissertation (Ohio State University, 1975). It argues that the early 1930s was a formative period in the development of American military aviation.

When Major General Benjamin D. Foulois became chief of the Air Corps in 1931, the General Staff considered aviation as useful in support of ground operations but without any broader function. Equipped largely with wood-and-wire biplanes that had changed little since World War I, tactical air units were parceled out to corps area commanders. But dramatic changes took place over the next four years. While retaining other missions (ground support and coastal defense), the Air Corps became committed to an offense doctrine that emphasized strategic bombardment as the key to victory. Striking elements were concentrated under a single commander in a General Headquarters Air Force, and the first B-17s had come into service.

Shiner credits Foulois with playing an "instrumental part" in leading the Air Corps through this time of transition. The first pilot to hold the senior position in the Air Corps, Foulois worked tirelessly in behalf of a strong, independent air force, frequently facing formidable obstacles. As Shiner points out, the General Staff may not have been composed entirely of reactionaries, but most senior officers (General Douglas MacArthur was an exception) lacked an appreciation of air power. The nation was in the midst of the Great Depression, and the Air Corps lacked adequate funds for manpower and aircraft procurement. Under these adverse circumstances, the accomplishments of Foulois appear especially impressive.

Unfortunately, Foulois left office under a cloud. He embarrassed President Roosevelt when the Air Corps attempted to fly the mail in 1934—a public relations and operational disaster. Also, a congressional subcommittee, led by Representative William Rogers, accused Foulois of violating the law by favoring negotiated contracts over competitive bidding in aircraft procurement. An inquiry by the Inspector General cleared him of criminal charges (purchase by negotiation was common practice) but indicated that Foulois had made misleading statements to the subcommittee. Rogers harassed Foulois into retirement in 1935. Author Shiner rightfully concludes that the subcommittee's actions were "entirely unfair" to the Air Corps chief; Foulois deserved better from the country he had served so faithfully.

Shiner relied on rich primary sources to compile this detailed analysis of a pivotal time in the evolution of the air force. Although one might wish that he had taken the opportunity to broaden the focus of an excellent dissertation, it is a pleasure to have his valuable study in a more accessible form.

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Three Napoleonic Battles by Harold T. Parker. Durham, North Carolina: Duke University Press, 1983, 235 pages, $12.75.

For some time it has been the custom to dismiss much military history of the traditional sort as "drum and trumpet" writing. This viewpoint has much to commend it, but it has led to the less commendable habit of disparaging all operational history. In fact, the problem with much of the old type of military history was not that it preferred telling about battles to studying social forces and institutions but simply that so much of it was shallow, chauvinistic, and false. John Keegan in *The Face of Battle* has alluded to the frustration of trying to learn from a traditional battle piece what really happened.

In recent years, many writers have begun to correct this situation. As long ago as 1944, Duke University Press published *Three Napoleonic Battles*, by Harold T. Parker, a Duke faculty member. Due to wartime conditions, the book had a limited press run and was relatively little known. Now Duke Press has reissued it with a new afterword by the author and a foreword by Steven Ross of the Naval War College. Parker explains that in writing the book he intended to research and write in accordance with rigorous standards. Two of the battles he chose—Friedland (1807) and Aspern-Essling (1809)—are among the less commonly studied of Napoleon's battles, while Waterloo, Parker's third selection, is much better known, allowing him to make a contribution to ongoing debate.

The result is impressive. The research is extensive and detailed, relying on a wide variety of eyewitness accounts. The writing is clear, eschewing colorfully vague language but remaining lively and readable. Rather than cluttering the page, the footnotes engage the reader in understanding what we actually know about the battles. With Parker, we address such questions as what the Russian commander at Friedland thought he was doing when he blundered into a losing fight and just when Napoleon knew he was going to lose at Aspern-Essling. Drawing on medical accounts, Parker also provides a grim description of the sufferings of the wounded.

While Parker's approach remains fresh, readers of history will recognize that Parker is still writing military

history from the top down, focusing on the commanders and using other details as illustration. It was John Keegan who made the most striking departure in relating operational history—looking upward from the bottom by revealing the experiences of ordinary people in battle. Still, it would be a loss if, in applying Keegan's formula widely, we should come to think of a work like Parker's as "dated." *Three Napoleonic Battles* is a solid study and is recommended for any reader interested in Napoleonic warfare or in how military history should be written.

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The Galleys at Lepanto by Jack Beeching. New York: Charles Scribner's Sons, 1983, 267 pages, $17.95.

On 7 October 1571 a Christian galley fleet, formed from a distrustful alliance of Venetian and Spanish forces, met a Muslim galley fleet under Ottoman leadership near the western end of the Gulf of Patras in central Greece. The ensuing battle, named by the victorious Christians for the nearby town of Lepanto, marked both the high tide of the Ottoman Empire's expansion in the Mediterranean and the last and largest galley fight ever fought. The Lepanto campaign and battle have considerable historical interest for technical, military, and naval reasons, since they came at the end of a period of technological change and transition, after the general adoption of gunpowder weapons and just before the dawn of the age of the broadside sailing warship.

Lepanto has received little recent scholarly attention. For every word currently in print on Lepanto, there are at least ten available on its rough northern equivalent, the Spanish Armada campaign of 1588. A full book-length analysis of Lepanto should thus be welcomed by students of the art of war. Unfortunately, however, *The Galleys at Lepanto* suffers from defects as basic as to render it of dubious value.

First, the account lacks source citations of any kind. This oversight, in and of itself, need not be a fatal flaw. However, it is apparent, both from textual analysis and from examination of the bibliography, that the narrative is based almost entirely on badly outdated secondary sources. Unsurprisingly then, the greatest (and most irritating) weakness of the text is a pervasive western European ethnocentrism characteristic of the late Victorian sources on which John Beeching is so dependent. There is no even-handed assessment of Muslim and Christian objectives and motivations; no systematic analysis of the logistic, tactical, and technical factors on which the campaign and battle turned; and surprisingly little information about how oared war galleys and fleets of galleys were manned, provisioned, and operated. The narrative *is*, as the dust jacket asserts, well crafted, containing much entertaining detail. But a specialist's knowledge is needed to distinguish between hyperbole and reality in the text. Those with the knowledge to make the distinction will find little that is new here; those lacking it should look elsewhere for an accurate overview of the Lepanto campaign, perhaps consulting the appropriate sections of *The Venetians* by Colin Thubron and the editors of Time-Life Books.

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The Chosen Instrument, Juan Trippe—Pan Am: The Rise and Fall of an American Entrepreneur by Marylin Bender and Selig Altshul. New York: Simon and Schuster, 1982, 605 pages, $19.95.

As a veteran commercial airlines traveler, I looked forward to reading and reviewing the biography of Juan Trippe (1899-1981), the founder and president of Pan American Airways. However, by the time I finished reading *The Chosen Instrument, Juan Trippe—Pan Am*, I felt as much of a letdown as someone stuck in the O'Hare Airport holding pattern!

Marylin Bender and Selig Altshul present an interesting and informative biography of Juan Trippe, as well as an in-depth look at the creation and development of Pan-Am—as it became known. They do well in their examination of the U.S. Army Air Corps and its mail service, explaining their impact on Juan Trippe and Pan Am in the 1920s and 1930s. The authors write about the contributions made to aviation history by such people as Charles Lindbergh, Henry "Hap" Arnold, Carl Spaatz, and Eddie Rickenbacker. According to the authors, it was Charles Lindbergh who did much to influence Trippe's decision to embark on the building of an international airline.

A number of interesting and not widely known facts are brought out by the writers. For example, that Pan American Airways was one of the pioneers in establishing a worldwide communications system—a system that would be later used and expanded by the Army Air Corps during World War II; that Pan Am was also instrumental in the development of overwater navigational aids for aircraft; and that in the 1930s, Pan Am planned and developed many of the long overseas air routes that are used today by airlines throughout the world.

Nevertheless, the authors fall short in their treatment of American history, for their book contains numerous historical inaccuracies. For example, they refer to John W. Davis as a vice-presidential candidate, when, in actuality, he was a presidential candidate in 1924. They do vindicate themselves to some extent by bringing out that Franklin D. Roosevelt was instrumental in pushing the idea of an American flag carrier (which eventually turned out to be Pan Am), and for their sections on World War II and on the establishment of the Army's Air Transport Command, which provided impetus for the expansion of both domestic and international air travel after the war. The need for such expansion, coupled with Trippe's abilities, made Pan Am the leading American airline in the post-World War II era. However, the authors are generous in lavishing accolades on other pioneers of the American airline industry—Eddie Rickenbacker of Eastern Airlines, C. R. Smith of American Airlines, William Patterson of United Airlines, and the ever enigmatic Howard Hughes of Trans World Airlines—all of whom were contemporaries of Juan Trippe.

The last unit of the book examines the post-World War II period into the 1970s. It is here that one gets an in-depth look at Trippe and his accomplishments. It was he who brought the American airline industry into the jet age in the late 1950s, with the acquisition and use of the Boeing 707. Trippe and Pan Am were also responsible for the later introduction of the 747 jumbo jet to the airline industry—an action that led to the later economic misfortunes of America's airlines, the authors believe. The book closes with Trippe's retirement, Pan Am's financial troubles in the 1970s, and Trippe's death in 1981.

For the expanse of time covered and the number of pages written, the book has too few photographs. It also contains excessive trivia, particularly concerning the Juan Trippe's lineage, his Yale background, and his Yale friends in high places. Although a biography, it reads too much like a novel and is encumbered by too many anecdotal passages that detract from its continuity and objectivity. *Chosen Instrument* is informative and interesting, but I would recommend it only for those who have a very long wait at an airport or are contemplating buying stock in Pan Am.

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Families under the Flag: A Review of Military Family Literature by Edna J. Hunter. New York: Praeger, 1982, 336 pages, $34.95.

Families under the Flag, by Edna J. Hunter, underscores the remarkable resiliency of military families and their important contribution to the accomplishment of the military mission. Geared to military planners and service providers, the book combines an extensive review of the literature on military families with an annotated bibliography on military family literature. Focusing on the unique aspects and stresses of military family life and organizational responses to family concerns, the author emphasizes both the need for continuing research to assess the changing needs of military families and the importance of developing military policies and programs that respond to those needs, while supporting military mission requirements.

Families under the Flag is organized into three sections, the first of which provides a review of literature on military families. Here, Hunter addresses the changing composition of the military community from a bastion of single men to an institution with many families attached to it. She finds that no longer do many of these families fit into the traditional military family mold of husband, dependent homemaker wife, and children. Contemporary trends in marriage, divorce, single parenthood, dual-career patterns, and voluntary childlessness are all reflected in military families today. Hunter also reviews literature which suggests that these families are influenced by many of the same strains as other American families: inadequate family finances, contrasting values, changing definitions of husband and wife roles, and lack of viable family support systems. But military families are found to have additional stress created by the military lifestyle: periodic cycles of separation and reunion, frequent mobility, hazardous duty assignment, long-term separations from extended family and friends, and subservience of family needs to military objectives and requirements.

On the other hand, Hunter also finds the military lifestyle to have positive aspects for families, offering such benefits as stability of income, early retirement with pension, medical care, and social and recreational opportunities. In addition, she stresses ongoing military research on military families and the increasing provision of family support services. Hunter makes it clear that support for the military family is not simply humanitarian but based on the knowledge that what is good for the military family is good for military responsibilities as well. Unless the balance sheet shows a credit balance, the military family is likely to opt out.

The second section of the book provides specific references for section one by topic area (i.e., family and organization interface, family roles, wives adjustment, separation and reunion, mobility, children of military families, wartime stress, retention and retirement, and support services).

In the final section, Hunter presents an annotated bibliography of the literature on military families, alphabetically arranged by author, revealing the breadth, scope, and diversity of literature in this area. This bibliography should be a helpful reference source for both present and future researchers of the military family.

Families under the Flag is an important contribution to the literature on marriage and family life. It provides both a better undestanding of the military experience for families and an empirical foundation for continued research and study of military family life. By focusing on the unusual stresses on military families and describing how these families cope, it also provides new insights into means to strengthen civilian families. Military planners, other family life professionals, and service providers should find this book a very helpful aid.

Dr. Gary Lee Bowen
Arlington, Virginia

The Aircraft Treasures of Silver Hill by Walter J. Boyne. New York: Rawson Associates, 1982, 247 pages, $22.95.

All who share in the love of aviation history should visit the National Air and Space Museum and its Paul E. Garber Preservation, Restoration, and Storage Facility (popularly known as Silver Hill) in Suitland, Maryland. For those not privileged to tour Silver Hill's treasure house of historic aircraft, Walter Boyne's *The Aircraft Treasures of Silver Hill* is a must.

Even those who have visited Silver Hill will find the book a rich and rewarding experience. A collector's prize in its own right and well worth the price of admission. Boyne's exceptional work opens the doors to a fascinating tour through Silver Hill's classic hardware, including the "oddballs and brave experiments," the "bombers," the "beautiful biplanes," the "villains of World War II," and the "ghosts" that have yet to be restored or even discovered. Boyne is an expert guide, and his colorful sketches are almost as captivating as the real experience of roaming rapt among the restored relics of yesterday's skies.

Much more than a coffee-tabler for air-minded guests, this fine book provides an enchanting history (warts and all) of the National Museum's fabulous aircraft restoration facility and some not-so-fabulous bureaucrats who too often stood as obstacles to the facility's founder, Paul E. Garber, and the tireless aviation enthusiasts and employees who dedicated their lives and careers to making Silver Hill a reality and a source of national pride. Boyne takes his readers from Paul Garber's start (obtaining Lindbergh's *Spirit*), through the rundown days when the restoration effort was the "Shame of Silver Hill," to its contemporary position as the muscle for the National Air and Space Museum in downtown Washington. He also explains the "nitty-gritty" in keeping up Silver Hill.

At the time Boyne wrote this book, he was Deputy Director of the National Air and Space Museum. He is also a retired USAF colonel and command pilot who knows and cares deeply for his subject. More important to those who read his book, Boyne is a fine writer who passes his knowledge and appreciation of aviation to his reader in a way that is unforgettable. Read the book. You will like it.

Warren A. Trest
U.S. Air Force Historical Research Center
Maxwell AFB, Alabama

Yesterday's Wings by Joseph E. Brown, with photographs by Dan Guravich. Garden City, New York: Doubleday, 1982, 201 pages, $29.95.

This engaging book celebrates both the accomplishments of that remarkable organization, the Confederate Air Force (CAF), and the various World War II airplanes which the CAF has painstakingly collected and restored to operational condition at its Rebel Field base in Harlingen, Texas. There are numerous places where devotees of military aviation can see and study aging warplanes whose wings will never soar again. The CAF collection is unique because the organization has succeeded, against formidable odds, in keeping a substantial number of historically important aircraft actually flying, thereby creating a living museum of the air.

Joseph E. Brown, an active "colonel" in the Confederate Air Force, briefly recounts how the organization got its start in the early 1950s when crop duster Lloyd Nolen of Texas and a group of associates set out to acquire a P-51 Mustang. Gradually, the organization increased its fleet to today's array of American and foreign combat planes. Particularly interesting in this regard is Chapter 10, "The Saga of Fifi." Here Brown relates how the Confederate Air Force, with great difficulty, secured a Boeing B-29 Superfortress and obtained reluctant permission from the Air Force and the Federal Aviation Administration to fly it in aerial exhibitions.

Most of *Yesterday's Wings*, however, consists of short histories of the planes that make up the CAF's remarkable collection. Included are such famed warbirds as the Lockheed P-38, the Bell P-39, the Curtiss P-40, the Republic P-47, the Boeing B-17, the Supermarine Spitfire, the Messerschmitt Me 109, the Japanese Zero, and others. Although these narratives are well written, specialists in the history of military aviation will probably learn little that is new to them and may wish, as I did, that the author told more about the persons, strategies, and activities responsible for the outstanding feat of historical preservation that the CAF has accomplished.

The volume includes an excellent collection of some 170 photographs, including a number of the "before and after" variety. These photographs reveal how the rusted remnants of once-proud warplanes were lovingly transformed into flying members of the CAF fleet so that they can be seen once again where they belong—in the sky where they and the pilots who flew them served with such distinction.

Dr. W. David Lewis
Auburn University, Alabama

Somme by Lyn Macdonald. London: Michael Joseph, 1983, 366 pages, $24.95.

Frozen in time in the history of Great Britain, her Empire, and her Commonwealth is 1 July 1916. At 7:30 on that bright, hot summer morning, some 150,000 British and Imperial troops rose from their trenches and attacked the German positions in the Somme region of northern France; by evening of that same day, the British army had sustained almost 60,000 casualties, including almost 20,000 dead. The magnitude of the disaster was not immediately apparent, even inside the British army itself, since battlefield communications were hopelessly primitive, unlike developments toward immense firepower that the armies of 1914-18 had achieved. The battle was to grind on for several more bloody months and has come to symbolize all the heroism, stupidity, desperation, and romanticism of a war almost forgotten, especially in this country.

Lyn Macdonald's superb new book, *Somme*, has brilliantly recreated the essence of this terrible struggle. Avoiding the polemics that so often serve as the real focus of so many accounts of the battle, Macdonald instead concentrates on the experience of battle itself. Macdonald allows the survivors (and in ten years' research on various aspects of the Great War, she has interviewed some 3000 of them) to tell their stories, skillfully weaving their accounts into her narrative. The result is a richly textured tapestry in which the sights, the sounds, and the very feel of this war are graphically conveyed to the reader.

It would be wrong, however, to leave the impression that this beautifully illustrated, meticulously researched volume is fare only for Great War "buffs." There is much here for the military professional to ponder. It is, or should be, a sobering experience to learn, especially in light of the horrendous casualty lists, that "if a battle could have been won by planning, then the result would have been a foregone conclusion, for never in the history of warfare had a campaign been more meticulously planned down to the last infinitesimal detail." (p. 19) Yet the slaughter on the Somme cannot be explained simply as a function of blind adherence to suicidal tactics. The "creeping barrage" was developed to protect attacking infantry, and the tank—still in its developmental stage, weighing twenty-eight tons and requiring one hour and one gallon of petrol to travel half a

mile (p. 265)—was rushed into battle before it was truly ready for combat.

Others, notably historian John Terraine, have pointed out that to defeat a great power on the battlefield, like Germany in 1914, required literally oceans of blood. Some of the same leaders who demanded war *à outrance* later professed the uttermost horror at the cost of such war aims. Lyn Macdonald's book forces us to look at the costs of such decisions, not in their abstract results, but in the shattered lives and dead bodies of thousands of men. By its very simplicity and quality of deliberate understatement, *Somme* conveys better than any other book I have read what the face of battle is really like—how mistakes, heroism, and just "plain bad luck" operate on the battlefield. Because, in many ways, the combat environment of the next war may prove very much like the slaughterhouse of 1914-18, we need to examine and reflect on that earlier experience. *Somme* provides a priceless key to unlock what the Great War was actually like. Certainly it is a book that any professional officer can read and contemplate with much profit.

Major Gary P. Cox, USAF
AFIT/University of Virginia
Charlottesville

The Nazi Machtergreifung edited by Peter D. Strachura. London: George Allen and Unwin, 1983, 208 pages, $19.50.

The Nazi Machtergreifung is a collection of essays by American, British, and Canadian historians. Essentially, the essays are bibliographic reviews of previous writings and discussions of recent and continuing historical tendencies in research and interpretation. The editor, Peter D. Strachura, has contributed not only an excellent introductory essay, "Weimar, National Socialism, and Historians," but also two of the nine other essays, "The Nazis, the Bourgeoisie, and the Workers during the *Kampfzeit*" and "German Youth, the Youth Movement, and National Socialism." Professor Strachura is a competent scholar with editorial experience.

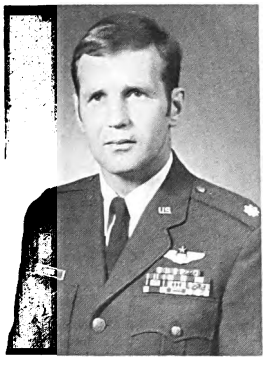
The Nazi Machtergreifung has the inherent problem of collected essays: some of them are simply better than others. Fortunately in this case, none is really bad, so the unevenness is not a major problem. Unity is achieved by developing the essays around a central theme, "the dynamics of social and political mobilization by the Nazi Party during the Weimar era," or whence came the pre-1933 support? The essays are concerned with the relationship between the Nazi Party and specific groups (women, youth, educated elite) and institutions (the church, the military), and the Party's successful mobilization of this support through ideology, propaganda, and foreign policy.

These collected essays provide an excellent introduction to the historiography and interpretations of the rise to power of the Nazis in the era of the Weimar Republic. They would be particularly valuable for those laymen or undergraduate students who have not yet read the voluminous literature now available on nazism. The footnotes provide further references (many of them, German-language sources), and the index, while primarily biographical, is adequate.

Dr. David B. McElroy
University of Alabama
Tuscaloosa

The Air University Review Awards Committee has selected "Ultra: Some Thoughts on Its Impact on the Second World War," by Dr. Williamson Murray, as the outstanding article in the July-August 1984 issue of the *Review*.

the contributors



Lieutenant Colonel Barry D. Watts (USAFA; M.A., University of Pittsburgh) is Red Team Chief for Project Checkmate at Headquarters USAF. His recent assignments have been in the Office of the Secretary of Defense and instructor at the U.S. Air Force Academy. Prior to that he flew F-4s, including a combat tour at Ubon, Thailand. Colonel Watts is the author of other articles, which have been published in *Topgun Journal, USAF Fighter Weapons Review*, and *Air Force Magazine*.

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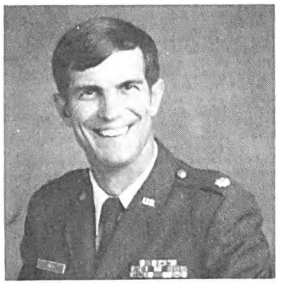

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Lieutenant Colonel Robert E. Russell (B.S., Colorado State University; M.A., Troy State University) is Chief, Studies and Analysis Branch, Threat Analysis Division, Intelligence Center, Pacific. His previous assignments include F-15 instructor pilot, flight commander, public affairs officer, and Chief, Operational Plans Division, Bitburg Air Base, West Germany. Colonel Russell is a graduate of Squadron Officer School, Air Command and Staff College, and Armed Forces Staff College.

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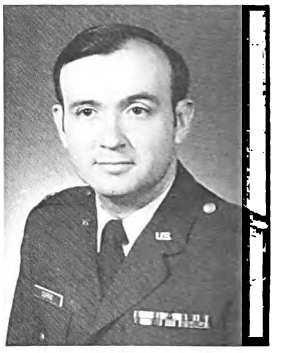
First Lieutenant Jerrold F. Elkin (B.A., Temple University; J.D., Columbia University; M.A., Ph.D., University of Pennsylvania) is a Political Science Instructor at the U.S. Air Force Academy. He has served as an analyst in the Directorate of Research, Defense Intelligence Agency, Washington, D.C. Lieutenant Elkin's earlier writings have been published in the *Air Force Law Review*, *Biochimica et Biophysica Acta*, and the *Review*.

Lieutenant Colonel Gregory Varhall (USAFA; M.A., University of Southern California; Ph.D., University of Notre Dame) is a USAF Postdoctoral Research Associate at the University of Edinburgh. He has served as flight commander and squadron commander in USAF Security Service, a staff intelligence officer in SEA, a politico-military affairs officer and branch chief on the Air Staff, and Chief of Military Threat Studies at Air War College. Colonel Varhall is a graduate of Squadron Officer School and Air Command and Staff College, and he has contributed previously to the *Review*.



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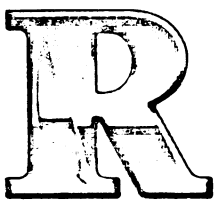

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