

A Brief History of

NORAD



As of 31 December 2012

North American Aerospace Defense Command

Office of History



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Table of Contents

Title Page	1
Table of Contents	3
History of the North American Aerospace Defense Command.....	4
Key Historical Events	12
Lineage and Honors	32
NORAD Emblem.....	33
Commanders	34
Deputy Commanders.....	35
Headquarters Locations.....	36
Area of Operations	37
NORAD Aircraft.....	38
Associated Units.....	39

History of the North American Aerospace Defense Command

Constructing a North American Air Defense

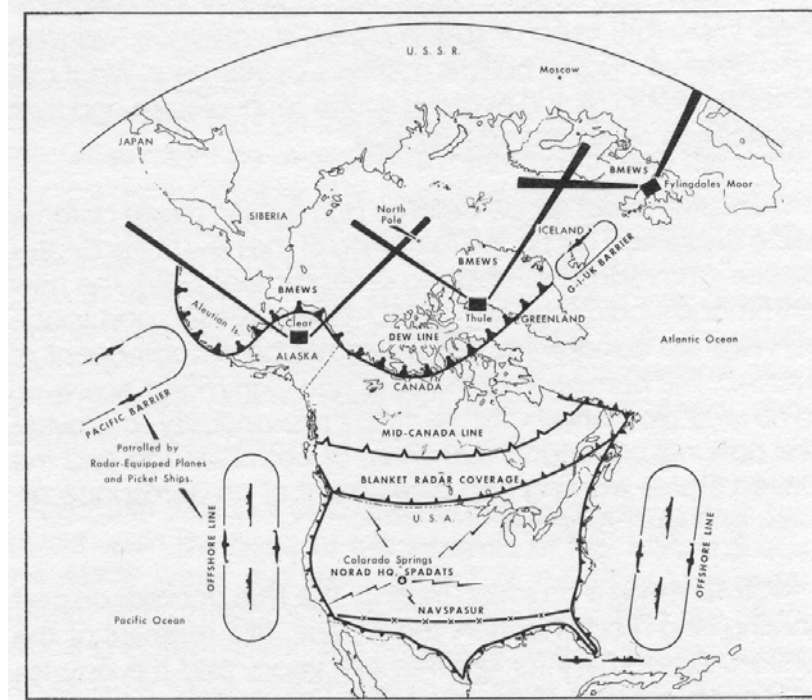
With the beginning of the Cold War, American defense experts and political leaders began planning and implementing a defensive air shield, which they believed was necessary to defend against a possible attack by long-range, manned Soviet bombers. By the time of its creation in 1947, as a separate service, it was widely acknowledged the Air Force would be the center point of this defensive effort. Under the auspices of the Air Defense Command (ADC), first created in 1948, and reconstituted in 1951 at Ent AFB, Colorado, subordinate Air Force commands were given responsibility to protect the various regions of the United States. By 1954, as concerns about Soviet capabilities became more grave, a multi-service unified command was created, involving Naval, Army, and Air Force units—the Continental Air Defense Command (CONAD). Air Force leaders, most notably Generals Benjamin Chidlaw and Earle Partridge, guided the planning and programs during the mid 1950s. The Air Force provided the interceptor aircraft and planned the upgrades needed over the years. The Air Force also developed and operated the extensive early warning radar sites and systems which acted as “trip wire” against air attack. The advance warning systems and communication requirements to provide the alert time needed, as well as command and control of forces, became primarily an Air Force contribution, a trend which continued into the future as the nation’s aerospace defense matured.



**Headquarters, North American Defense Command,
Ent AFB, Colorado Springs, CO.**

As Air Force leaders developed plans and proposed warning system programs, they became convinced of the logical need for extended cooperation with America’s continental neighbor, Canada. US-Canada defense relationships extended back to World War II when the two nation’s leaders formally agreed on military cooperation as early as 1940, the Ogdensburg

Declaration. These ties were renewed in the late 1940s with further sharing of defense plans in light of increasing Soviet military capabilities and a growing trend of unstable international events, such as the emergence of a divided Europe and the Korean War.



North American air defense systems in mid-1960s.

Defense agreements between Canada and the United States in the early 1950s centered on the building of radar networks across the territory of Canada—the Mid-Canada Line (also known as the McGill Fence), the Pinetree Line, and the famous Dew Line. This cooperation led to a natural extension of talks regarding the possible integration and execution of air defense plans. The RCAF and USAF exchanged liaison officers and met at key conferences to discuss the potential of a shared air defense organization. By 1957, the details had been worked out and the top defense officials in each nation approved the formation of the North American Air Defense Command, which was stood up on 12 September at Ent AFB, in Colorado Springs, Colorado, home of the US Continental Air Defense Command and its subordinates, including USAF Air Defense Command. General Earl Partridge, USAF, who was both the ADC and CONAD Commander, also became commander of NORAD, and the senior Canadian RCAF official, Air Marshal Roy Slemon, who had been the key Canadian delegate in most of the cooperation talks, became deputy commander, NORAD. Nine months after operational establishment of the command, on 12 May 1958, the two nations announced they had formalized the cooperative air defense arrangements as a government-to-government bilateral defense agreement that became known as the NORAD Agreement. The NORAD Agreement and its associated terms of reference provided the political connections which would make possible the longevity of the Canadian-US aerospace defense relationship into the future years. The NORAD

Agreement, with its requirement for periodic review, ensured a flexibility to adapt to a changing defense environment as would be evident by the events that would soon face the fledgling command.

The Evolving Threat

Within one year of its establishment, NORAD began the process of adapting its missions and functions to “a new and more dangerous threat.” During the 1960s and 1970s, the USSR focused on creating intercontinental and sea-launched ballistic missiles and developed an anti-satellite capability. The northern radar-warning networks could, as one observer expressed it, “. . . not only [be] outflanked but literally jumped over.” In response, the USAF built a space-surveillance and missile-warning system to provide worldwide space detection and tracking and to classify activity and objects in space. When these systems became operational during the early 1960s, they came under the control of the NORAD.



Canadian CF-101 Voodoo intercepts Russian TU-95 Bear Bomber flying near the North American airspace buffer zone.

Throughout the 1970s, the ballistic missile threat caused policy makers to reassess the effectiveness of the air defense system. This meant the potential demise of the arguments for enhanced traditional air defense and moved NORAD to focus on such challenges as improved warning of missile and space attack, defense against the ICBM, and greater protection and survival of command, control and communication networks and centers. This resulted in a reduction of the USAF interceptor forces and closure of various portions of the radar network. Modernization of air defense forces became a hard argument. As a result of changes in US strategic policy, which had come to accept the concept of mutual vulnerability to ICBM attack, the need to spend about \$1 billion a year on air defense was challenged. In 1974, Secretary of Defense Schlesinger stated the primary mission of air defense was to ensure sovereignty of air

space during peacetime. There followed further reductions in the size and capability of the air defense system. By the late 1970s, the remaining components—some 300 interceptors, 100 radars and eight control centers—had become obsolescent and uneconomical to operate.

Over the years, the evolving threat caused NORAD to expand its mission to include tactical warning and assessment of possible air, missile, or space attacks on North America. The 1975 NORAD Agreement acknowledged these extensions of the command's mission. Consequently, the 1981 NORAD Agreement changed the command's name from the North American “Air” Defense Command to the North American “Aerospace” Defense Command.

The 1980s brought important improvements for the aerospace defense mission. Again, NORAD demonstrated an adaptability to meet these changes. In 1979, the US Congress ordered the USAF to create an air defense master plan (ADMP). The ADMP, modified and upgraded, became the US administration's outline for air defense modernization and the foundation for NORAD cost-sharing discussions between Canada and the United States. The modernization accords signed in 1985 called for the replacement of the DEW Line radar system with an improved arctic radar line called the North Warning System (NWS); the deployment of Over-the-Horizon Backscatter radar; greater use of USAF Airborne Warning and Control System (AWACS) aircraft; and the assignment of newer USAF aircraft, specifically F-15s, F-16s, and CF-18s, to NORAD.

The late 1980s witnessed another expansion of the NORAD mission. On 29 September 1988, President Reagan signed legislation that involved the US Department of Defense, and specifically NORAD, in the campaign against drug trafficking. The command's role in this mission was to detect and track aircraft transporting drugs and then report them to law enforcement. Usually, suspect aircraft were light general-aviation planes crossing into the United States and Canada without having filed flight plans, or private aircraft that had filed plans but then deviated from their route to drop off drug shipments. In this effort, NORAD worked with law enforcement and appropriate unified commands. Specifically, the command began surveillance of aircraft flying at all speeds. NORAD also had a role in selecting radars, tethered and mobile, which would be used to close gaps in low-altitude coverage along the southern tier of the United States.

After the Cold War

Like the US Department of Defense as a whole, the end of the Cold War resulted in major changes for NORAD. In 1992, the command completed a “NORAD Strategy Review” study, which documented the wide-ranging changes in the security environment since the close of the Cold War. The report noted the need for air sovereignty, warning, and assessment, as well as the potential need to better integrate a ballistic missile defense mission. In short, the report provided a baseline for the command's continued existence. While the Soviet threat abated, not

all traditional aerospace threats went away. Although the USSR no longer existed, its successor states still had air-launched and submarine-launched cruise missiles. In addition, NORAD planners envisioned terrorists possibly using cruise missiles or similar weapons. Capable of flying over long distances and avoiding radar coverage, the missiles posed a significant threat to North America. Neither Canada nor the United States had a reliable system to prevent a concerted or isolated cruise-missile strike on the continent. NORAD plans called for enhanced ground-based radar and USAF AWACS aircraft to detect the missiles, and air defense fighters would attack the threat with air-to-air missiles. Other improvements in space surveillance were advocated to improve capabilities.

Canada and the United States showed their confidence in the viability of the command through renewals of the NORAD Agreement in 1991, 1996, and 2000. The 1996 renewal was especially significant because it redefined the command's mission as aerospace warning and aerospace control for North America. The document included a consultative mechanism for issues of aerospace-defense cooperation and a provision for the review and management of environmental practices related to NORAD operations.

NORAD since 9/11: Response and Transformation

On 11 September 2001, terrorists hijacked four passenger airliners, two of which obliterated the World Trade Center, in New York City, while another shattered part of the Pentagon. One of the four aircraft crashed in Pennsylvania before hitting its target, apparently either the US Capitol or the White House. The event made it clear that attacks on the homeland would not necessarily come only from across the poles and oceans which buffered the North American continent.

In the immediate aftermath of the 9/11 attacks, NORAD began Operation Noble Eagle. The purpose of this still-ongoing air patrol mission was to defend the United States against terrorist aggression originating from either within or outside the nation's air borders. Noble Eagle missions were executed primarily by the USAF First Air Force, a NORAD unit under the command of the Continental NORAD Region (CONR), located at Tyndall Air Force Base, in Florida. By June 2006, NORAD had responded to more than 2,100 potential airborne threats in the continental United States, Canada, and Alaska, as well as flying more than 42,000 sorties with the support of USAF AWACS and air-to-air refueling aircraft.



NORAD F-16 aircraft flies over the Pentagon in NOBLE EAGLE mission defending the homeland after 9/11.

Operation Noble Eagle response has become institutionalized into daily plans and NORAD exercises through which the command ensures its capability to respond rapidly to airborne threats. USAF units of NORAD have also assumed the mission of the integrated air defense of the National Capital Region, providing ongoing protection for Washington, D.C. Also, as required, NORAD forces have played a critical role in air defense support for National Special Security Events, such as air protection for the NASA shuttle launches, G8 summit meetings, and even Superbowl football events.

In recognition of the changing threat environment of the post-9/11 world, the United States Department of Defense stood up, in October 2002, U.S. Northern Command as a joint service command to execute the mission of homeland defense across all domains. With NORAD already executing the air defense mission of North America, it was a logical step to co-locate the headquarters of NORAD and USNORTHCOM in Colorado Springs, Colorado, and to retain a dual-hatted commander relationship between NORAD and a the new US joint command. As expected, the relationship opened doors toward greater military cooperation and expanding defense agreements for North America. Soon after the standup of USNORTHCOM, Canada and the United States, created a Bi-National Planning Group, tied closely to the new NORAD-USNORTHCOM relationship. The two commands provided personnel and a home for the study group at their headquarters for a four-year period. The Bi-National Planning Group worked on multiple proposals for creating wider cooperation of U.S. and Canadian military plans and protocols. One concept, that of developing plans and programs for greater maritime warning, was considered sufficiently important that the 2006 renewal of the NORAD Agreement officially added the maritime-warning mission to NORAD's existing missions.



Cheyenne Mountain entrance, c. 1990s

Another example of NORAD's continuing adaptability also came in 2006. In NORAD's fifty-year history, perhaps the most notable symbol of the command has been the Cheyenne Mountain Operations Center (CMOC), often referred to as simply "Cheyenne Mountain." This vast bunker complex, which became fully operational in 1966, sat more than 1500 feet underground and consisted of fifteen buildings which comprised the central collection and coordination facility for NORAD's global-sensor systems. In early 2006, after studies and reviews, the NORAD and USNORTHCOM commander, decided, because of the changing nature of the threat in a post-9/11 world and because of gained efficiencies in monitoring the warning networks, the CMOC surveillance and warning of attack command centers could be relocated into a dual- purpose command center located at NORAD and USNORTHCOM headquarters on Peterson AFB. Cheyenne Mountain would become an alternate command center rather than be maintained on a 24/7 basis. The NORAD and USNORTHCOM Command Center at Peterson would become the official surveillance center for both commands, designed to give the commander and the Canadian and US leadership an accurate picture of any aerospace and other domain homeland threat.

As NORAD reached its fiftieth year, most believed the command was on sound footing. The 2006 NORAD Agreement renewal expanded the mission to include a non-aerospace responsibility—maritime warning—and removed the normal practice of a five-year expiration date for the agreement. Instead, the two nations would merely review the nature of the accord for potential changes. In 2008 the command celebrated its fiftieth anniversary, unveiling the new NORAD and USNORTHCOM Command Center (N2C2). In a stellar example of governmental, military, and law enforcement cooperation, NORAD provided air security assistance to the Government of Canada for the 2010 Vancouver Winter Olympics. American and Canadian

defense and political leaders have therefore maintained the conviction that, for the foreseeable future, their common defense was best guaranteed by continued mutual cooperation.



The NORAD and USNORTHCOM Command Center, May 2008.

In 2011 NORAD reaffirmed its historic mission, adapting a vision:

*With our trusted partners, we will defend North America by outpacing all threats,
maintaining faith with our people and supporting
them in their times of greatest need.
“WE HAVE THE WATCH”*

2011 and 2012 saw the mutual cooperation continue in the form of numerous exercises and real world events. In October of 2012 the NORAD and USNORTHCOM headquarters building at Peterson Air Force Base was renamed the Eberhart-Findley Building in honor of U.S. Air Force General (Ret.) Ralph E. Eberhart and Royal Canadian Air Force Lieutenant-General (Ret.) Eric A. Findley. This is the first time the name of a U.S. military combatant command headquarters included a Canadian military officer’s name. In December Army Gen. Charles Jacoby, Jr., commander of NORAD and U.S. Northern Command, and Lt.-Gen. Stuart Beare, Canadian Joint Operations Command commander, signed the Tri Command Framework for Arctic Cooperation and the Tri-Command Training and Exercise Statement of Intent – during the 230th meeting of the Canada-U.S. Permanent Joint Board on Defense in Colorado Springs, Colo continuing the mutually beneficial relationship of defense to the homeland.

NORAD Key Historical Events

- 18 Aug 1940 President Franklin Roosevelt and Prime Minister Mackenzie King issued the declaration that voiced the concept of US-Canadian joint defense and sanctioned the establishment of the Permanent Joint Board on Defense (PJBD) to conduct necessary analysis and consultations. This would be known as the "Ogdensburg Declaration."
- 21 Dec 1945 Alaskan Air Command (AAC) was activated.
- 21 Mar 1946 Army Air Forces Air Defense Command (ADC) constituted at Mitchel Field, New York. The command was activated on 27 Mar 1946. Two bases, Mitchel Field and Hamilton Field, California, also assigned to ADC.
- 26 Mar 1946 The United States Army Air Forces activates the Air Defense Command at Mitchel Field, New York.
- 10 Jun 1946 The Air Defense Command mission expanded to the extent that ADC was required to coordinate within the US the means available from other services for air defense, such as Naval and Marine aircraft units temporarily shore-based.
- 1 Jan 1947 Alaskan Command (ALCOM) was activated as a unified command. Alaskan Air Command was designated to carry out ALCOM's air defense mission.
- 12 Feb 1947 The United States and Canadian governments issued a "Joint Statement on Defense Collaboration" emphasizing the continuing importance of cooperative defense planning and ongoing efforts. Among these proposed were an interchange of military personnel; the adoption of common designs and standards in arms, equipment, and organization, where practical; and cooperation and exchange of observers on exercises.
- 13 Nov 1947 US Secretary of Defense announced planning for a nationwide early warning system.
- 17 Dec 1947 The United States Air Force (USAF), established on 18 September, granted ADC authority to use fighter and radar forces of the Strategic Air Command, Tactical Air Command, and Air National Guard in an emergency. The Air National Guard constituted the major source of air defense units.
- 21 Apr 1948 Secretary of Defense James V. Forrestal assigned the USAF the primary responsibility for the air defense of the United States.
- 23 Apr 1948 Air Defense Command directed to establish radar systems in the Northeastern and Northwestern United States, and in New Mexico.
- 1 Dec 1948 Continental Air Command (CONAC) created and given air defense mission. ADC remained an "operational" command, but all air defense units were assigned to CONAC. TAC also placed under CONAC to provide additional fighter strength for air defense.

26 Apr 1949 The U.S. Joint Chiefs of Staff (JCS) approved the Canada-U.S. Emergency Defense Plan submitted by the Canada-U.S. Military Cooperation Committee. The Canadian Chiefs of Staff approved its several days later. The plan provided for the mutual defense of Canada and the United States against the common enemy.

1-30 Jun 1949 The first air defense exercise of the postwar period (Operation Blackjack) took place in the northeast United States.

Aug 1949 The Russians explode an atomic device.

1 Sep 1949 Eastern and Western Air Defense Forces Activated by ADC.

23 Sep 1949 President Truman publicly announced that in August the Russians had exploded an atomic device.

30 Dec 1949 The Army Chief of Staff informed the JCS that he considered creation of a unified command for the defense of the United States an urgent requirement, and he recommended its rapid establishment.

1 Feb 1950 Headquarters USAF directed Continental Air Command to establish a civil air raid warning system.

2 Mar 1950 Headquarters USAF stated a requirement to the JCS for 10 radar equipped picket ships to be stationed off the east and west coasts of the United States.

May 1950 Provisional Headquarters, Albuquerque Air Defense Sector, established by Air Defense Command at Kirtland AFB, New Mexico, to exercise operational control over the radar and fighter forces defending the Los Alamos and Sandia areas.

27 Jun 1950 Continental Air Command and the Alaskan Air Command air defense systems in the US and Alaska began 24-hour a day operations.

1 Jul 1950 The Air Defense Command was discontinued. The air defense mission remained with Continental Air Command.

The Army Antiaircraft Command (ARAACOM) was established at the Pentagon under Major General Willard W. Irvine.

1 Sep 1950 ARAACOM established the Eastern and Western Antiaircraft Commands. Central ARAACOM was established in April 1951.

1 Oct 1950 Northeast Air Command (NEAC) established.

1 Jan 1951 Air Defense Command (ADC) was re-established as a major command at Mitchel AFB, New York. The command moved to Ent AFB, Colorado beginning 8 January 1951. ADC inherited 21 fighter squadrons from CONAC and 37 ANG fighter squadrons assigned an M-Day air defense mission. It was also assigned four Air Divisions (Defense).

6 Feb 1951 Canada-U.S. Radar Extension Plan (Pinetree) was approved by US-Canadian Permanent Joint Board of Defense (PJBD).

16 Feb 1951 The Joint Chiefs of Staff (JCS) approved the PJBD recommendation (51/1) for an extension of the Permanent Radar Net. It called for the extension and consolidation of the present control and warning system of Canada and the US into one operational system to meet air defense needs for both countries.

- 21 Apr 1951 Air Defense Command and Tactical Air Command signed an agreement whereby TAC committed all units possessing air defense capability (including fighters, radar equipment, and personnel) to ADC for use in an emergency. Similar agreements were negotiated with Strategic Air Command, Air Training Command, and Air Proving Ground Command.
- 28 Aug 1951 Army Antiaircraft Command (ARAACOM) conducted its first unilateral exercise. Seventy-five percent of its batteries occupied tactical positions for seven weeks. The exercise was terminated on 18 October 1951.
- 10 Apr 1952 Air Defense Command (ADC) and Army Antiaircraft Command (ARAACOM) drew up a mutual agreement for the air defense of the United States. Anti-aircraft units were to pass to the operational control of appropriate USAF commanders when deployed to tactical positions, but such control was to be exercised through local ARAACOM commanders. Defended areas were to be determined by mutual agreement between the Department of the Army and the United States Air Force. ARAACOM's responsibilities were ascertaining ADC's anti-aircraft requirements and attempting to fulfill them, preparing detailed plans, providing anti-aircraft advisors, and prescribing conditions of readiness. ADC was responsible for all identification, prescribing alerts, establishing gun-defended areas, and establishing in coordination with ARAACOM the basic rules of engagement.
- 14 Jul 1952 A NIKE surface-to-air missile destroyed a maneuvering drone B-17 at a range of 17 nautical miles and an altitude of 10,000 feet.
- 24-28 Jul 1952 Beginning of the U.S. Ground Observer Corps Operation SKYWATCH during which civilian air defense observer posts were manned 'round the clock.
- 10 Sep 1952 Air Defense Command begins 24-hour Ground Observer Corps operations.
- 25 Sep 1952 First nationwide air defense exercise (Operation SIGNPOSE) was conducted.
- 12 Apr 1953 Cape Canaveral, Florida, was the scene of the first BOMARC, the only surface-to-air missile (SAM) ever deployed by the United States Air Force, test launch.
- 25 Sep 1953 Navy picket ship placed on around-the-clock duty for first time off the East Coast.
- 12 Apr 1953 The Soviet Union exploded a thermonuclear device.
- 25 Sep 1953 President Eisenhower approved a statement calling for increased emphasis on continental defense.
- 8 Oct 1953 The Canadian-US Military Study Group recommended the establishments of a line of radars for early warning along the 55th parallel. (It would be called variously Mid-Canada Line and McGill Fence.)
- 28 Oct 1953 A Nike missile was fired for the first time by a tactical unit, Battery A, 1st Guided Missile Group, at Red Canyon, New Mexico.
- 6 Nov 1953 Canada agreed to the establishment of an early warning line between Alaska and Newfoundland (Mid-Canada Line).
- 11 Jan 1954 Headquarters USAF approved the construction of five offshore radar platforms called Texas Towers. (Only three -- numbers 2, 3, and 4 -- would be constructed.)

8 Apr 1954 The US and Canada issued a joint statement on continental defense which reviewed defense cooperation since World War II, detailed efforts to construct the Pinetree Line generally along the US-Canada border, and revealed an agreement to proceed with the Mid-Canada Line.

15 May 1954 A concrete block Combat Operations Center (COC) became operational at Ent AFB, Colorado.

2 Aug 1954 The JCS directed establishment of the Continental Air Defense Command (CONAD) as a joint command.

1 Sep 1954 Continental Air Defense Command (CONAD) was activated as a JCS joint command at Ent AFB, Colorado. ADC was the USAF component command; Army Air Defense Command was the Army component; and Naval Forces CONAD was the Navy component (NAVFORCONAD), established at Ent AFB. CONAD forces were committed to the contiguous radar coverage system and of augmentation forces for all services made available during emergency periods.

5 May 1955 The United States reached agreement with Canada regarding establishment of DEW Line stations on Canadian territory.

20 May 1955 The first Texas Tower radar platform, built by Bethlehem Steel, Quincy, Massachusetts, was launched. In July 1955 it was towed to its permanent location in Georges Shoal, 110 miles off Cape Cod.

30 Jul 1955 The first West Coast picket ship station manned on full time basis.

15 Jan 1956 Preliminary planning began for an underground Combat Operations Center (COC).
Gen. Earle E. Partridge, CINC Continental Air Defense Command, directed his staff to begin preliminary planning for a Combat Operations Center to be located underground. Partridge believed his present above ground center, located on Ent Air Force Base, CO, was too small to manage the growing air defense system and was highly vulnerable to sabotage or attack.

7 May 1956 Texas Tower 2 (the first to become operational) began limited operations with an FPS-3A search radar and two FPS-6 height finder radars.

4 Sep 1956 The JCS published new terms of reference for CONAD. CINCONAD's authority was strengthened and clarified to include centralized operational control of forces, including assignments of individual anti-aircraft batteries and designated targets.

14 Sep 1956 Continental Air Defense Command (CONAD) sent its preliminary requirements for an underground Combat Operations Center to HQ USAF. The early design, based on the Strategic Air Command headquarters model, proposed an above-ground headquarters, a basement, and a three-story underground Combat Operations Center.

19 Dec 1956 The JCS and Canadian Chiefs of Staff Committee received recommendation from the US/Canada Military Study Group calling for operational integration of the two nation's air defense forces.

Jan 1957 CONAD establishes functional and performance requirements for the Combat Operations Center. Emphasis placed on survivability, self-sufficiency and system redundancy.

Secretary of Defense approved recommendations that the Air Force develop the early warning system and communications, and that the Army carry out research and development on local acquisition radar, target track radar, and the missile for ICBM defense.

Apr 1957

1 Apr 1957 Northeast Air Command (NEAC) was discontinued and ADC was assigned operational control of the DEW Line.

15 Apr 1957 The Air Defense Command was assigned operational control of the Distant Early Warning Line (DEW Line) and all atmospheric defense units of the inactivated Northeast Air Command.

1 Jul 1957 The Atlantic DEW Line Sea Barrier (extension of the DEW Line), operated by the Navy, became fully operational, with four picket ships and four airborne early warning aircraft operated between Argentina, Newfoundland, and the Azores Islands.

15 Jul 1957 The main DEW Line, from Cape Dyer, Bafflin Island, to Cape Lisburne, Alaska, declared technically ready.

1 Aug 1957 Canada and the United States announced an agreement to establish integrated operational control of the air defense forces of the two countries.

The East and West portions of the DEW Line placed under operational control of the United States Air Force (USAF) Air Defense Command and Alaskan Air Command, respectively.

12 Sep 1957 The North American Air Defense Command was established and activated at Ent AFB, Colorado. This command is an international organization, taking operational control of Canadian Air Defense Command air defense units and United States Air Defense Command air defense units. The first NORAD Agreement was drafted. CINCNOAD dual-hatted as Commander-in-Chief, CONAD, the US joint command.

23 Oct 1957 A USAF BOMARC missile successfully intercepted and knocked down a B-17 drone at a distance of 100 miles over the Atlantic.

31 Oct 1957 All eight sections of the Mid-Canada Line reached a limited operational status.

1 Jan 1958 The Mid-Canada radar Line was declared fully operational.

15 Feb 1958 The Air Defense Command was given operational control and contract administration of the DEW Line, except the Aleutian extension.

23 Apr 1958 CINCNOAD (Gen Partridge) told the Joint Chiefs of Staff that his Combat Operations Center should be remote from other prime targets and hardened to withstand a thermonuclear blast and continue to operate. He said a recent RAND study determined the base location would be in the Colorado Springs area in a granite mountain of the Rocky Mountain front range. General Partridge said this was the best solution and could be done "at reasonable cost."

12 May 1958 The governments of Canada and the United States ratified and signed the initial agreement sanctioning shared air defense command arrangements for all of North America. The agreement included 11 principles governing the organization and operation of NORAD and called for a renewal of the agreement in 10 years.

26 Jun 1958 The Semiautomatic Ground Environment (SAGE) System became operational for the first time in the New York NORAD Sector direction center, McGuire AFB, New Jersey.

1 Jul 1958 The Pacific radar sea barrier became fully operational. Four radar picket ships and four airborne early warning and control aircraft patrolled from Midway to the Kodiak Islands in Alaska.

31 Jul 1958 CINCNORAD (Gen. Partridge) recommended to the Joint Chiefs of Staff that a hardened Combat Operations Center with an adjacent headquarters complex for NORAD be constructed without delay in the Colorado Springs area.

15 Aug 1958 The first successful SAGE control of a BOMARC resulted in a direct hit on a QB-17 drone at 78 miles range and 30,000 feet altitude.

26 Sep 1958 Headquarters USAF issued General Operational Requirement No. 80-3, establishing a specific requirement for an infrared ICBM warning system.

29 Jan 1959 Air Force Form 161A, "Construction Project Justification Data," described the NORAD COC project and estimated the cost for the facility, less furnishings, computers and communications systems at \$26.19 million.

31 Jan 1959 The US Ground Observer Corps units were inactivated.

1 Feb 1959 The Royal Canadian Air Force assumed responsibility for manning operations positions at DEW Line stations in Canada.

15 Feb 1959 Air Defense Command officially assumed responsibility for contract administration of the DEW Line.

Apr 1959 Texas Towers #4 became operational, completing this part of the NORAD air defense network.

31 May 1959 CINCNORAD told the Joint Chiefs of Staff that he firmly believed NORAD should be designated the military command to operation the National Space Surveillance Control Center and he was proceeding with planning for its future integration into the new, hardened Combat Operations Center in Cheyenne Mountain.

1 Sep 1959 The first BOMARC squadron (46th Air Defense Missile Squadron) became operational at McGuire AFB, New Jersey.

3 Sep 1959 BOMARC IN-99A made its first successful intercept of a supersonic target, a Regulus rocket.

17 Nov 1959 The Office of the Secretary of Defense transferred responsibility for the Missile Defense Alarm System (MIDAS) to the USAF.

25 Mar 1960 Navy picket ships withdrawn from the Atlantic DEW Line sea barrier.

1 Apr 1960 Navy picket ships withdrawn from Pacific DEW Line sea barrier.

Jun 1960 NORAD updated the underground Combat Operations Center (COC) concept to the Joint Chiefs of Staff to include both an air and space early warning mission.

3 Jun 1960 A Nike-Hercules surface-to-air missile destroyed a Corporal missile. This was the first known instance of one guided missile intercepting another.

- 29 Jun 1960 NORAD letter to JCS updated COC concept to include integrated air and space early warning mission.
- 1 Jul 1960 The Western Air Defense Force was discontinued.
- 14 Dec 1960 The first Air Force Baker-Nunn space camera to be located in the United States began operations at Edwards AFB, California.
- 15 Jan 1961 Texas Tower #4, 80 miles southeast of New York City, collapsed in a storm with the loss of 28 lives.
- 21 Apr 1961 The NORAD commander issued instructions concerning the 425L command and control computer system operational philosophy, including use by NORAD and component personnel, NORAD entry to sufficiently enable him to evaluate indications presented, the requirements for human judgment in determining the validity of individual system indications, and identification of data as to source system.
- 18 May 1961 Excavation began for NORAD Command Operations Center (COC) in Cheyenne Mountain.
- 16 Jun 1961 Official ground breaking ceremony held at the construction site of the new NORAD Combat Operations Center. Generals Lee (ADC) and Kuter (NORAD) simultaneously set off symbolic dynamite charges. Estimated cost of the combat operations center (construction and equipment) then was \$66M.
- 9 Jul 1961 The Soviet Union unveiled bombers in the Mach 2 class at a Moscow air show.
- 15 Jul 1961 The 9th Aerospace Defense Division activated at Ent AFB, Colorado. It was the first large military space organization in the western world. The 1st Aerospace Surveillance and Control Squadron were assigned to the 9 ADD.
- 1 Aug 1961 The entire DEW Line from Greenland to the Aleutians was completed as the final four sites of the Greenland extension (DEW East) became operational.
- 14 Oct 1961 "The Day the Planes Stood Still." Exercise Sky Shield II grounded all civilian aircraft for 12 hours by special FAA order. It was the largest airborne military exercise ever: 1,800 NORAD fighters flew 6,000 sorties. An estimated 2,900 commercial flights were delayed.
- 15 Dec 1961 The last of 22 Semiautomatic Ground Environment (SAGE) direction centers became operational at Sioux City, Iowa, completing the SAGE program in the continental US.
- The last active Army Nike-Ajax units were inactivated.
- 8 Feb 1962 General L.S. Kuter, CINCNORAD, briefed President Kennedy and Vice President Johnson on the adequacy of continental defense. He advocated extending the missile warning system to cover approaches by missiles from any direction. Of utmost importance, however, he urged the installation of the Nike-Zeus ABM system at least around Washington and to cover major ballistic missile and bomber bases.

18 Apr 1962 The 425L command and control computer system program director briefed the USAF Air Defense Panel that that it would cost about \$106 million, and was directed to develop alternate plans for a \$68.1 million program and one for something less than \$105 million.

19 Jul 1962 The first successful intercept by an Army NIKE-Zeus of an ICBM. The NIKE-Zeus intercepted the ICBM ballistic nose cone flown at true speed and trajectory over Kwajalein Missile Range, Marshall Islands. The target was an Atlas launched from Vandenberg AFB, California.

Aug 1962 Excavation of the NORAD Combat Operations Center inside Cheyenne Mountain was essentially completed, but it would not be completely finished until 1 May 64 principally due to the need to repair a geological fault in the ceiling at one of the intersections by reinforcing it with a massive concrete dome at a cost of about \$2.7M.

22 Oct 1962 The Cuban Crisis caused Continental Air Command to increase its weapons readiness status and declare DEFCON 3. The alert remained in effect until 27 November 1962. Part of CONAD's interceptor forces were dispersed across the continental U.S. (CONUS).

24 Oct 1962 NORAD declared DEFCON 3 due to Cuban Missile Crisis. This level of alert remained until 27 November 1962.

8 Jan 1963 The USAF announced the decision to decommission its off-shore radar platforms (Texas Towers).

7 Mar 1963 Dedication of the new Air Defense Command headquarters, the Chidlaw Building, 2221 East Bijou Street, Colorado Springs.

25 Mar 1963 The last of the Texas Towers (#3) was shut down.

5 Jun 1963 President John F. Kennedy visited NORAD. He was briefed on the status of Cheyenne Mountain.

Sep 1963 The ADC mission expanded to include responsibility for operating "the combat crew training school for USAF personnel."

12 Jan 1964 Canada closed five of the eight section control stations of its Mid-Canada Line. Still in operation were three section control stations and 39 unmanned doppler detection stations running from eastern Manitoba to central Newfoundland.

29 May 1964 The Program 437 anti-missile system achieved initial operational capability (IOC). The 10th Aerospace Defense Squadron had one missile on alert on Johnston Island.

23 Jul 1964 BOMARC IM-99A was phased-out of Air Defense Command's inventory as a tactical weapon. The last missile was removed from operational status at Suffolk County AFB, New York, by the 6th Air Defense Missile Squadron.

24 Sep 1964 SECDEF approved the Cheyenne Mountain Complex Task Force Study, a NORAD proposal for a Space Defense Center, and construction of the underground Combat Operations Center. SECDEF also made 1 January 1966 as the target date for turning over the Combat Operations Center to CINCNORAD and established the objective that the facility would be ultimately staffed entirely by military personnel.

31 Mar 1965 Canada closed the remainder of its Mid-Canada Line. The radar line had cost approximately \$13 million a year to run.

3 Sep 1965 Air Defense Command's SPACETRACK Center and NORAD's SPADATS Center merged to form the Space Defense Center. It was moved from Ent AFB to the newly completed Cheyenne Mountain Combat Operations Center and was activated.

1 Oct 1965 A Major General was assigned as the first Director of the Combat Operations Center as recommended by the Cheyenne Mountain Complex Task Force Study Report. This established a separate Battle Staff organization. The Director was responsible directly to CINCNORAD for tactical matters and the Joint Chiefs of Staff for all others.

20 Apr 1966 CINCNORAD transferred Combat Operations Center operations from Ent Air Force Base to Cheyenne Mountain and declared the 425L command and control system fully operational.

20 May 1966 The NORAD Attack Warning System became operational.

6 Feb 1967 The Space Defense Center and the Combat Operations Center achieved Full Operational Capability. The total cost was \$142.4 million.

22 May 1967 General J.P. McConnell, USAF Chief of Staff, designated Air Defense Command as the USAF agency responsible for "providing all satellite data derived from skin tracking, including predictions of satellite decay."

15 Jan 1968 The Air Defense Command was re-designated Aerospace Defense Command. It still held the designation ADC.

1 Mar 1968 The Over-the-Horizon Forward Scatter Missile Detection System (440L) began interim capability, which allowed limited operational capability while still under development.

30 Mar 1968 The first renewal of the US/Canada NORAD contained three important changes from the original document: 1) The renewal period was reduced from 10 to 5 years; 2) Either government may terminate the agreement following a one year notice; and 3) Canada specifically confirmed that she would not be committed to participate in an active ballistic missile defense.

1 Jul 1968 The Fourteenth Aerospace Force was activated at Ent AFB, Colorado. It inherited the staff and mission of the 9th Aerospace Defense Division, which was discontinued. The First Aerospace Control Squadron was then re-assigned to the 14th Aerospace Force.

1 Aug 1968 Continental Air Command (CONAC) was inactivated.

- 5 Oct 1969 An armed MiG-17, flown by a Cuban pilot who wished to defect, flew from Santa Clara, Cuba, to Homestead AFB, Florida, virtually undetected until it flew past the base control tower and signaled that it wanted to land. It was later learned that the pilot flew very low over the ocean and under the beams of surveillance radars. He was detected once when he rose to 3,000 feet to verify navigation by homing in on a Miami radio station. The track was declared invalid because it disappeared quickly from the screen. The report by the Subcommittee on Air Defense on Southeastern United States, of the House Committee on Armed Services, recommended improving radar facilities in the area.
- 1 Jun 1970 Aerospace Defense Command accepted the 474N Sea-Launched Ballistic Missile Detection and Warning System. It consisted of seven FSS-7 radar sites situated along the east and west coasts of the United States. (The system had numerous problems and deficiencies and did not reach initial operational capability until May 1972.)
- Mar 1971 Twenty-seven Nike Hercules batteries in the US were released from air defense alert and inactivated on 30 June 1971.
- 1 Jun 1971 Aerospace Defense Command accepted from Air Force Systems Command the four receiver sites, the Correlation Center, and the communication segment of the Over-the-Horizon Forward Scatter Radar System (440L).
- 1 Apr 1972 Canada's two BOMARC air defense missile squadrons (the 446th SAM Squadron, North Bay, Ontario, and the 447th SAM Squadron, Lamacaza, Quebec) were released from NORAD alert preparatory to deactivation.
- 31 Oct 1972 The last BOMARC surface-to-air missile squadron, the 22nd Air Defense Missile Squadron, at Langley AFB, Virginia was inactivated; BOMARC interceptor activity ended.
- 10 May 1973 Canada and the US extended the NORAD agreement without alteration for a period of two years to 12 May 1975.
- 6 Jun 1973 The Raytheon Corporation was awarded a \$39.5 million contract to build a fixed single face, phase array radar on Shemya Island, Alaska.
- 1 Jul 1973 Continental Air Defense Command and Aerospace Defense Command headquarters begin consolidation and streamlining.
- 31 Mar 1974 The Safeguard Anti-Ballistic Missile (ABM) site at Grand Forks, North Dakota, achieved initial operational capability. This was the nation's first ABM site. Operational command was assigned to CINCNORAD through US-only channels in April 1975. NORAD did not have a role in Safeguard missile defense. The site achieved full operational capability in October 1975, but was closed in February 1976.
- 11 Jun 1973 Aerospace Defense Command recommended to Air Force Systems command the development of a five site network of deep space electro-optical sensors that would supplement and eventually replace the Baker-Nunn space camera. The Ground-Based-Optical Deep Space Surveillance System (GEODSS) would use three optical telescopes and highly sophisticated electronic analysis and display equipment.

1 Oct 1974 Installation of the Ballistic Missile Defense Center in Cheyenne Mountain, the command link between the NORAD/CONAD Combat Operations Center and the Safeguard Missile Defense Center at Grand Forks, was completed.

4 Jan 1975 The US Army Air Defense command, a component command of the North American Air Defense Command/Continental Air Command, was inactivated at Ent AFB, Colorado.

17 Mar 1975 The Over-the-Horizon Forward Scatter Radar System (440L) ceased operations prior to inactivation of sites and units.

30 Jun 1975 Continental Air Defense Command (CONAD) was disestablished. Aerospace Defense Command (ADCOM) took over former CONAD operations.

1 Jul 1975 The Joint Chiefs of Staff reorganized Aerospace Defense Command (ADCOM) into a specified command. It retained its MAJCOM status. It took over the roles and responsibilities of the Continental Air Defense Command.

Aug 1975 The first of a new series of quarterly NORAD exercises, Vigilant Overview 76-1, was conducted.

1 Oct 1975 Headquarters, Alaskan ADCOM Region was re-designated and activated at Elmendorf AFS, Alaska. -- Aerospace Defense Command assumed control of missile warning and space surveillance forces of Alaskan Air Command.

1976 NORAD Combat Operations Center became a separate organization from NORAD/ADCOM Directorate of Operations, with a 1-star commander. Established as an AF Controlled Unit. The Missile Warning Division was placed under the Directorate of Space and Missile Warning.

10 Feb 1976 Aerospace Defense Command, acting on JCS orders, informed all concerned that Safeguard operations were terminated and that the system was released from operational control of CINC Aerospace Defense Command.

Apr 1976 PAVE PAWS, a phased-array early warning radar proposed to replace Sea-Launched Ballistic Missile warning system radars (AN/FSS-7s), contract awarded for site at Otis Air Force Base, Massachusetts, and at Beale Air Force Base, California.

Oct 1976 New phased-array Cobra Dane radar system began tests at Shemya AFB, Arkansas. Cobra Dane supported SPACETRACK and other missions.

1 Oct 1976 The 14th Aerospace Force, Ent AFB, Colorado was inactivated and its personnel and units (missile and space surveillance) were re-assigned to HQ ADCOM and ADCOM divisions and the Alaskan ADCOM Region.

Dec 1976 Ent Air Force Base was declared excess. Personnel were moved to Peterson AFB and the Chidlaw Building, near downtown Colorado Springs.

1979 NORAD and Air Force Air Defense Command developed a series of command-level programs to resolve operational effectiveness and suitability problems with the aging 427M computer system. These problems were addressed by the creation of individual acquisition programs with limited scope and cost.

- 29 Jan 1979 The first E-3A AWACS aircraft was designated to support NORAD's mission. This marked the beginning of the changeover from SAGE to Joint Surveillance System radar in the 25th NORAD Region.
- 29 Mar 1979 The USAF made a public announcement of its plans to reorganize its aerospace defense forces. Consequently, the USAF inactivated ADCOM as a major command and reassigned its resources to other commands.
- Apr 1979 The last U.S. Army air defense HAWK and NIKE continental air defense batteries were deactivated.
- 9 Apr 1979 Operational control of the last air defense artillery units removed from CINCNORAD and passed to the Army's Forces Command. This ended 25 years of Army participation in North American air defense.
- 1 Oct 1979 The first part of two part reorganization of aerospace defense resources took place with the transfer of ADCOM's atmospheric defense resources (interceptors and warning radars) to Tactical Air Command (TAC), and its communications and electronics assets to Air Force Communications Service. Air Defense, Tactical Air Command (ADTAC) was established as a Numbered Air Force equivalent under Tactical Air Command.
- 9 Oct 1979 Canada signed the Letter of Offer and Acceptance (LOA) between the US and Canada. The LOA provided for two Region Operations Centers, both to be constructed at North Bay, Ontario, as part of the Joint Surveillance System.
- 9 Nov 1979 For about three minutes, a test scenario of a missile attack on North America was inadvertently transmitted to the operational side of the 427M system in the Cheyenne Mountain Complex Operations Center. The test data was processed as real information, displayed on missile warning consoles in the command post, and transmitted to national command centers. About eight minutes elapsed between the time the test data appeared and NORAD assessed confidence that no strategic attack was underway. This aroused widespread public and Congressional interest. Corrective actions to prevent a reoccurrence continued into 1980. This incident was fictionalized and exaggerated in the 1983 movie *WarGames*.
- May 1980 Canada and the United States postponed renewal negotiations for the NORAD agreement by a one-year extension.
- 3 & 6 Jun 1980 Failure of a computer chip within a line multiplexer (Nova 840 computer) of the NORAD Control System caused false missile warning data to be transmitted to Strategic Air Command, the National Command Center, and the National Alternate Command Center. Again, a number of technical and procedural changes were made. This incident built upon the public and congressional concern dating to 9 November 1979.

1 Sep 1980 A special USAF Inspector General Examination of Air Force Support for the Tactical Warning and Attack Assessment (TW/AA) (the Leaf Report) called the system "...at best adequate." Although parts of the system were new and upgrades were planned, most of the computer-processing capability and some of the sensors were based on 20-year old technology. The changing threat called for new subsystems and major system upgrades. Such a complex system, constantly in a state of evolution, required continued attention from high level leadership and its various elements should be managed as a complete system. The report found that elements of TW/AA were not being managed that way.

Mar 1981 President Reagan and Prime Minister Trudeau finalized the U.S.-Canada Joint Policy Statement on Air Defense.

12 Mar 1981 General Hartinger selected Peterson AFB as the site for the Backup Facility to the NORAD Cheyenne Mountain Complex. It would assume command and control functions should the Mountain experience a failure during peacetime.

12 May 1981 The NORAD Agreement was renewed for five more years. The renewal was preceded by extensive Canadian public discussion and reports on the status of the agreement. Opinion weighed heavily on the side of continued participation and that Canada should consider participation in space-based programs and systems. Major changes included: (1) The BMD caveat dropped; (2) "Air defense" changed to "aerospace defense;" (3) Continued effort was to be made to realign regional boundaries; (4) Wording changes that indicated the importance of space to North American defense and a need for enhanced cooperation in space surveillance activities were made.

12-15 Apr 1981 Space Defense Operation Center crews, and Space Detection and Tracking System sensors, under the operational control of ADCOM, supported the Space Shuttle's maiden flight.

25 Aug 1981 CINCNOAD directed the establishment of an emergency relocation team. Its purpose would be to assist CINCNOAD or his successor in the post-attack reconstitution and redirection of forces. The name was later changed to the Rapid Emergency Relocation Team (RAPIER).

21 Jun 1982 The Air Force announced that it was forming a new major command, Space Command, in Colorado Springs. The command would be concerned with space operations in support of military operations.

1 Sep 1982 United States Air Force Space Command was activated and given resource management of missile warning and space surveillance assets under ADCOM's operational control. General James Hartinger, Commander, Lieutenant General Richard C. Henry, Vice Commander.

16 Nov 1982 NORAD COC Backup Facility at Peterson AFB achieved FOC. It would assume command and control functions from Cheyenne Mountain if that facility was disabled or experienced a major failure.

7 Jun 1983 The Air Force Chief of Staff asked the Chairman of the Joint Chiefs of Staff (JCJS) to consider creating a new unified/joint command to support space operations.

18 Mar 1985 Secretary of Defense Caspar W. Weinberger, and the Canadian Minister of Defense, Erik Nielsen, signed the North American Air Defense Modernization Memorandum, which authorized the building of the North Warning System (NWS).

2 Aug 1985 CJCS approved the organization structure of US Space Command (USSPACECOM), inactivation of ADCOM, USSPACECOM's relationship with NORAD, and proposed establishment of US Element NORAD (USELMNORAD).

23 Sep 1985 USSPACECOM stood up in Colorado Springs. One USSPACECOM mission was to support NORAD by providing missile warning and space surveillance data. Component commands were Air Force Space Command, Naval Space Command, and the Army Space Liaison Office.

19 Mar 1986 Canadian Prime Minister Brian Mulroney and President Ronald Reagan signed the NORAD renewal agreement. It became effective on 12 May 1986.

1 Oct 1986 The Continental United States NORAD Region (CONR) was activated.

19 Dec 1986 Aerospace Defense Command, the specified command, was inactivated at Colorado Springs, Colorado.

Apr 1987 U.S. and Canada deployed the first segment of the North Warning System (NWS). The NWS series of radar sites replaced the DEW Line.

1988 CINCNORAD (Gen. Piotrowski) had concerns about his ability to perform simultaneous command and control of the complex NORAD and USSPACECOM missions. The CINC expressed a desire to consolidate the NORAD and USSPACECOM command centers.

15 Nov 1988 Air Force Space Surveillance Element was activated in the Cheyenne Mountain Complex. This was the first step in the process of re-defining the proper command and control relationships between AFSPACECOM and USSPACECOM.

24 Jan 1989 The Canadian Government formally agreed with NORAD's anti-drug mission being in the purview of the command's air sovereignty mission.

15 Oct 1989 CINCNORAD published the counter-narcotics campaign plan, SNOWFENCE 90 CAMPLAN. This detailed overall doctrine, strategy and force employment plans in support of national anti-drug efforts.

12 May 1990 The NORAD/USSPACECOM staffs presented the CINC (Gen Kutyna) with a proposal to establish a Consolidated Command Center (CCC) within the Cheyenne Mountain Complex, which would permit the CINC to support both commands' missions during war or crisis. The CINC approved the concept.

Jan 1991 As a result of the continued US and Allied presence in the Middle East resulting from Operations DESERT SHIELD and DESERT STORM, NORAD's Missile Correlation Center added Theater Missile Warning to its mission set.

15 Jan 1993 The NORAD/USSPACECOM Consolidated Command Center became operational in Cheyenne Mountain.

Feb 1993 CINCNOAD implemented the Flexible Alert Concept, giving CONR, CANR, ANR Commanders authority to adjust readiness in their alert fighter force according to the perceived threat. This marked a radical change from 24-hour alert status performed by NORAD alert fighters during the Cold War.

Mar 1993 Relocatable Over-the-Horizon radar entered operational status to counter illegal drug movements in the United States.

Jul 1993 CINCNOAD approved First Air Force and Air Combat Command's recommendation to consolidate Northwest and Southwest Sector Operations Command Centers (SOCCs) into West SOCC at McChord Air Force Base, Washington.

15 Jul 1993 The DEW Line was officially closed.

Nov 1993 The Deputy Secretary of Defense issued a policy announcing a major shift in focus for U.S. drug efforts. The Memorandum announced a major shift in focus for US counterdrug efforts from "transit zones" to "source countries." The new policy reduced the overall NORAD counterdrug mission.

Nov 1993 Canadian and U.S. representatives met in Washington, DC, to begin consideration of the 1996 NORAD Agreement Renewal process. Revamping the agreement to reflect the decline of the Soviet Union and the inclusion of Ballistic Missile Defense in the NORAD Agreement were major issues.

May 1994 US Secretary of Defense authorized warm storage of OTH-B radar at Bangor, Maine.

1 Jan 1995 NORAD combined the Northwest and Southwest Air Defense Sectors into the Western Air Defense Sector (WADS).

17 Apr 1995 CMOG reorganization was complete. NORAD and USSPACECOM Cheyenne Mountain centers were combined into one organization.

18 Aug 1995 Gen Ashy, CINCNOAD/USCINCSpace, personally wrote a new organization and mission directive (38-1) for the Cheyenne Mountain Operations Center (CMOC). The CMOC Commander was a USAF (joint combined billet) general officer who reported directly to CINCNOAD/USCINCSpace. The CMOC Deputy Commander was a Canadian general officer. Policy, direction, and interaction with the NORAD and USSPACECOM staffs were through/with the respective Directors of Operations.

28 Mar 1996 Canada and the US signed a renewal of the NORAD Agreement that became effective on 12 May 1996. The 1996 Agreement redefined the command's missions as (1) Aerospace warning for North America, and (2) Aerospace control for North America. A consultative mechanism was included on issues concerning aerospace defense and there was a provision that both parties agreed to sound environmental practices related to NORAD operations in accordance with joint consultations.

Apr 1996 Canada announced the planned transition of Canadian NORAD Region (CANR) headquarters functions to a consolidated 1st Canadian Air Division and Canadian NORAD Region Headquarters (1CAD/CANR HQ).

Jan 1997 CINCNOAD approved the NORAD Vision 2010 Briefing, which was developed to reflect the command's vision for 2010 and beyond to include future security challenges, missions, capabilities, and an implementation process.

1 Apr 1997 Region Air Operations Center, North Bay, Ontario, transferred operational responsibilities to the new Canadian NORAD Region (CANR) Headquarters in Winnipeg.

25 Oct 1999 NORAD fighters provided an emergency escort to the Learjet 35 carrying golfer Payne Stewart. The Learjet depressurized, killing all on board. It crashed in a South Dakota cornfield.

1 Jan 2000 NORAD/USSPACECOM's Y2K preparation was highly successful. Each unit and installation reported no mission-threatening failures.

Nov-Dec 2000 The Russian Bear flights resumed in Alaska NORAD Region area. Operation NORTHERN DENIAL positioned US and Canadian aircraft in forward operating bases through 15 December 2000.

23 Mar 2001 As the Russians de-orbited Mir which had been in Earth orbit for over 15 years, CMOG personnel monitored and reported necessary notification procedures. The messages and notifications occurred without error for the Mir de-orbit.

Mar-Apr 2001 NORAD Combat Operations and Air Combat Command operations staff members agreed to the three Air Operating Centers (CONR, CANR, ANR).

11 Sep 2001 Terrorists hijacked four U.S. airliners, crashing two into the World Trade Towers in New York City, one into the Pentagon, and one into a field in rural Pennsylvania. CMOG monitored events and directed air defense responses to the terrorist hijackings of commercial airliners and the subsequent crashes. CINCNOAD implemented and conducted OPERATION NOBLE EAGLE, the air defense response, to the 9/11 events, from the Command Post Battle Cab in Cheyenne Mountain.

U.S Joint Forces Command chopped Air Force and Navy aircraft to NORAD to protect against further terrorist attacks on New York and Washington D.C. Aegis guided missile cruisers and destroyers deployed to assist Air Force and Air National Guard defending CONUS airspace.

13 Sep 2001 CJCS designated military operations supporting homeland security as Operation NOBLE EAGLE.

9 Oct 2001 Operation EAGLE ASSIST involved deployment of five NATO E-3 AWACS aircraft to Tinker AFB in Oklahoma to support Operation NOBLE EAGLE.

26 Oct 2001 Military commanders received additional authority to defend the U.S. homeland, its states, territories, trusts, and commonwealths. Commander (CDR) NORAD was placed in charge of aerospace defense.

29 Jan 2002 Canadian Vice Chief of Defense LGen George Macdonald announced that extended collaboration between US and Canadian forces on land and sea could be modeled on NORAD.

30 Apr 2002 President George W. Bush approved Unified Command Plan 2002, which directed the establishment of United States Northern Command. Until and unless the existing NORAD Agreement was superseded, the Commander of USNORTHCOM was to be designated as Commander, US Element NORAD, and under normal circumstances, was to be designated CDR NORAD.

1 Oct 2002 USSPACECOM was disestablished and its space missions were merged into a newly activated U.S. Strategic Command. During the same ceremony, U.S. Northern Command (USNORTHCOM) was activated at Peterson AFB. With this substantial change in command structure, discussions were under way to determine the relationship of the Cheyenne Mountain Operations Center to U.S. Strategic Command and U.S. Northern Command. General Ralph E. Eberhart (USAF), CDR NORAD, assumed command of USNORTHCOM, making him the dual-hatted commander of the two organizations safeguarding the U.S. homeland and North America.

8 Nov 2002 NORAD received the Joint Meritorious Unit Award for exceptionally meritorious service and achievement in defending North America from 11 Sep 2001 to 10 Sep 2002.

16 Jan 2003 The Secretary of Defense directed NORAD to participate in multi-layer air defense of the National Capital Region using air and ground weapons systems, sensors, and command and control assets.

1 Feb 2003 NORAD provided monitoring and air support during space shuttle *Columbia's* failed re-entry and subsequent debris location.

17 Jun 2004 CDR NORAD and USNORTHCOM General Ralph Eberhart testified before the 9/11 Commission on the military response to 9/11 and NORAD support provided.

5 Aug 2004 U.S. and Canadian officials approved amendments to the 1996 NORAD Agreement, authorizing NORAD to make missile warning information available to US commands involved in ballistic missile defense.

5-10 Aug 2004 Exercise AMALGAM VIRGO 04 permitted NORAD to evaluate peacetime homeland defense and Operation NOBLE EAGLE across sector/region and U.S.-Canadian borders.

30 Nov 2004 President George W. Bush and Prime Minister Paul Martin issued a joint communiqué that reinforced United States-Canada security cooperation in the areas of intelligence/information sharing, enhanced border and infrastructure security, combating human trafficking, improved passport security and integrity, and expanding the NORAD Agreement to address increased security cooperation.

21 May 2005 NORAD deployed a new warning signal for communicating with aircraft within the Washington D.C. area. The Visual Warning System (VWS) was fielded by NORAD, in cooperation with the Federal Aviation Administration and the Air Force Rapid Capabilities Office.

13-21 Jul 2005 NORAD protected Space Shuttle *Discovery* launch at Cape Canaveral. The mission continued for *Atlantis* (Aug-Sep 2006) and *Discovery* (Dec 2006).

1 Feb 2006 Canada Command (Canada COM) stood up to conduct routine and contingency domestic operations.

11-13 Apr 2006 NORAD fighters intercepted and escort Russian Long-range Aircraft off the Canadian and Alaskan coasts.

26 Apr 2006 The United States and Canada signed the NORAD Agreement Renewal of 2006, with an effective date of 12 May 2006. This important agreement renewed the aerospace warning and aerospace control mission and added a new mission of maritime warning. The Terms of Reference states that first two missions remain unchanged and than an Implementation Planning Team would address the "how to" of maritime warning. USNORTHCOM was the DOD lead in the development of Maritime Domain Awareness.

30 Sep 2006 U.S. and Canadian fighters, from NORAD's Canadian Region (CANR) and Alaskan Region (ANR), launched to intercept two Russian Tu-95 bombers near Alaskan airspace. There was no apparent hostile intent, and the Russian aircraft remained within the limits of international airspace.

11 Oct 2006 NORAD aircraft responded to a Manhattan airplane crash that killed New York Yankees pitcher Cory Lidle and his flight instructor.

20 Nov 2006 Northeast Air Defense Sector (NEADS) and Southeast Air Defense Sector (SEADS) combined into Eastern Air Defense Sector (EADS). NORAD's Western Air Defense Sector opened its new operations center, utilizing the latest advances in integrated radar and computer technology and newly developed situational awareness systems to assist in responding to disasters.

4-14 Dec 2006 Exercise VIGILANT SHIELD 07 simulated a series of crises stressing interagency cooperation. NORAD concentrated on detection and warning of aerospace and maritime threats.

29 Jan 2007 U.S. Secretary of Defense Robert Gates visited Headquarters NORAD and USNORTHCOM and met with members of the Command. During the visit the Secretary of Defense received briefings on the command mission, homeland defense, N-NC plans, and preparedness through command exercises and training.

16 Feb 2007 NORAD and US Pacific Command commanders signed an Memorandum of Understanding coordinating operations where the command's areas of responsibility overlap during peacetime, contingency, and wartime situations.

Apr 2007 Started shortly after the September 11, 2001 terrorist attacks, Operation Noble Eagle (ONE) was the ongoing air patrol mission to defend North America against terrorist aggression either within or outside the nations' air borders. By April 2007, NORAD had responded to more than 2,700 potential airborne threats in the continental United States, Canada, and Alaska, while flying more than 45,000 sorties.

2 Jun 2007 AFNORTH opened its new Air and Space Operations Center at Tyndall AFB, Florida. The \$30 million facility, operated by the 601st Air Operations Group, Florida Air National Guard, began its mission to plan, direct and assess day-to-day air and space operations for NORAD and USNORTHCOM.

- 16 Aug 2007 Two pairs of Russian BEAR H bombers (4 total aircraft) flew and exercise. One pair flew north over the Polar cap, with no visual identification being conducted by NORAD aircraft. The second pair was visually identified and escorted by ANR F-15s until they left the Alaskan ADIZ along the Aleutian Island chain.
- 3 Sep 2007 Alaska NORAD Region F-15s visually identified two Russian BEAR H bombers in the Alaskan ADIZ and escorted them north until they left the ADIZ.
- 6 Sep 2007 Exercise AMALGAM ARROW 07-12 tested ANR, CANR, and CONR on the Operation Noble Eagle (ONE) Mission.
- 28 Sep 2007 A successful launch and intercept test of the BMDS occurred. During the test a target missile was launched from Kodiak Island, Alaska, and tracked by radar at Beale AFB, California. The interceptor missile was fired from Vandenberg AFB, California, striking the target warhead about eight minutes later.
- 22 Nov 2007 The Alaskan NORAD Region (ANR) launched fighter, tankers, and C2 aircraft to identify and monitor two Russian BEAR H bomber aircraft off the coast of Alaska. This mission was the first time that the F-22 Raptor was used in a mission in Alaska.
- Feb 2008 NORAD was part of a network of land-, air-, sea-, and space-based sensors monitoring the missile interception (and subsequent debris) of a non-functioning U.S. satellite orbiting earth.
- 25 Mar 2008 Two Alaskan NORAD Region (ANR) F-15 aircraft intercepted two Russian BEAR H TU-95 bombers over international waters heading toward Alaska. The Russians continued their robust Long Range Aviation (LRA) exercise program without filing plans for safety purposes.
- 12 May 2008 NORAD celebrated its 50th anniversary. The Secretary of Defense Robert Gates, MND Peter McKay; Bill Ritter, Governor of Colorado; General Gene Renuart, Commander NORAD and USNORTHCOM, and other distinguished participants, celebrated NORAD's 50th birthday with a Gala Ball and other special activities and events.
- 5 Apr 2009 North Korea launched a Taepodong-2 missile, supposedly for placing a satellite in to Earth orbit. NORAD and USNORTHCOM closely monitored the launch, ready to take defense action if the missile presented a threat to U.S. territory. The missile experienced engine failure, as stage one of the missile fell into the Sea of Japan/East Sea and the remaining stages plus the payload landed in the Pacific Ocean after a trajectory of 2,300 miles. A White House statement characterized the event as a "clear violation of the United Nations Security Council resolution 1718," which prohibited North Korea from conducting ballistic missile activity.
- 6 Apr 2009 A student at a flight school in Thunder Bay, Ontario, Canada, stole a Cessna 172 and flew across the border into the United States. NORAD tracked the aircraft and ordered two F-16s to follow the target of interest. The F-16s intercepted the intruder near the Michigan-Wisconsin state line. The aircraft appeared to pose no threat, and after several hours the plane landed safely near Poplar Bluff, Missouri. The motive for the flight, according to its pilot, was the desire to be shot down and killed by the fighters.

25-29 May 2009	North Korea conducted a nuclear test on 25 May 2009, followed by a series of six test launches of short-range missiles, with the final launch occurring on 29 May 2009. NORAD and USNORTHCOM monitored the events, determining that the launches did not pose a threat. However, the nuclear test caused international concern about North Korea's belligerent stance.
18-20 Jun 2009	Exercise AMALGAM DART involved detecting, identifying, tracking and intercepting potentially threatening airborne missiles or aircraft at Camp Rilea, Oregon. For the exercise the Army National Guard ground-based air defense system was integrated with U.S. Air Force AWACS and fighters, in addition to a U.S. Navy Aegis Destroyer, all under the direction of the CONR Commander at the Air and Space Operations Center at Tyndall AFB, Florida.
15 Jul 2009	The Headquarters Southeast Air Defense Sector was inactivated at Tyndall AFB, Florida. The Headquarters Northeast Air Defense Sector was re-designated the Headquarters Eastern Air Defense Sector (EADS).
2-6 Nov 2009	NORAD and USNORTHCOM conducted Exercise VIGILANT SHIELD 10. This exercise was a National Exercise Program Tier II Homeland Defense and Homeland Security field training exercise. The primary focus of the exercise was to the support of the 2010 Vancouver Olympics. NORAD fighter jets conducted training over Vancouver Island and the Canadian mainland in support of security preparations for the 2010 Olympic and Paralympic Winter Games.
13 Nov 2009	The Chairman of the Joint Chiefs of Staff awarded NORAD and USNORTHCOM military and civilian personnel the Joint Meritorious Unit Award (JMUA) for service from 1 January 2007 to 31 December 2008. NORAD's meritorious service included visually identifying hundreds of unknown aircraft in Canadian and U.S. airspace and protecting restricted airspace.
12-28 Feb 2010	NORAD supported the 2010 Winter Olympic Games in British Columbia, Canada, by providing aerospace warning and control. During the Games CANR regularly intercepted Tracks of Interest in the Olympic area. CONR provided airborne early warning and air-refueling assets to support CANR and ANR stood-by assist as directed.
3-9 Nov 2010	Exercise VIGILANT SHIELD 11 NORAD exercised its standing plan for the air defense of North America focusing on its mission of aerospace warning, aerospace control, and maritime warning.
8 July 2011	NORAD monitored and provided support to STS-135, the final launch of the U.S. Space Shuttle Program
30 Aug 12	Exercise Vigilant Eagle 12, a joint computer-based command post exercise designed to build and strengthen cooperation between U.S., Canadian and Russian military forces during a terrorist hijacking where the aircraft moves between U.S. and Russian airspace was conducted.
22-28 Oct 12	VIGILANT SHIELD, a homeland defense exercise that saw the doors of Cheyenne Mountain AFS close for the first time for over 24 hours

North American Aerospace Defense Command Lineage and Honors

As of 31 December 2012

Unit Designation: North American Aerospace Defense Command (NORAD) – re-designated on 18 March 1981.

Previous Designation: North American Air Defense Command (NORAD)

Authority: Established 12 May 1958, per NORAD Agreement of 1958, renewed March 1968, May 1973, May 1975, May 1980; March 1981, March 1986, April 1991, March 1996, June 2000, and May 2006.

Higher Headquarters: Canadian Minister of National Defence and U.S. Secretary of Defense.

Station: Peterson Air Force Base, Colorado Springs, Colorado

Awards & Decorations: Joint Meritorious Unit Award, 1 July 1992 – 26 August 1996
Joint Meritorious Unit Award, 11 September 2001 – 10 September 2002
Joint Meritorious Unit Award, 1 January 2007 – 31 December 2008
Joint Meritorious Unit Award, 1 January 2010 – 31 December 2011

North American Aerospace Defense Command Emblem



The blue background of the shield signifies the air; the turquoise waters of the globe denote the sea; the yellow continent indicated the land – the three environments in which any defense of the North American continent would take place.

The silver wings enfolding the globe in a protective manner, issuing from behind the globe and out of space are symbolic of the Armed Forces and the might of NORAD.

The up position of the sword, pointing upward toward the northern skies, represents the direction from which the shortest approach of the aggressor will be met by NORAD. Discharging from the sword are two lightning bolts portraying the instantaneous striking power with which any aggressor will be met by NORAD.

NORAD Commanders

Commanders

Name:

Dates:

Gen Earle E. Partridge, USAF	12 Sep 1957 – 30 Jul 1959
Gen Laurence S. Kuter, USAF	1 Aug 1959 – 30 Jul 1962
Gen John K. Gerhart, USAF	1 Aug 1962 – 30 Mar 1965
Gen Dean C. Strother, USAF	1 Apr 1965 – 29 Jul 1966
Gen Raymond J. Reeves, USAF	1 Aug 1966 – 31 Jul 1969
Gen Seth J. McKee, USAF	1 Aug 1969 – 30 Sep 1973
Gen Lucius D. Clay, USAF	1 Oct 1973 – 29 Aug 1975
Gen Daniel James Jr., USAF	1 Sep 1975 – 5 Dec 1977
Gen James E. Hill, USAF	6 Dec 1977 – 31 Dec 1979
Gen James V. Hartinger, USAF	1 Jan 1980 – 29 Jul 1984
Gen Robert T. Herres, USAF	30 Jul 1984 – 5 Feb 1987
Gen John L. Piotrowski, USAF	6 Feb 1987 – 30 Mar 1990
Gen Donald J. Kutyna, USAF	1 Apr 1990 – 29 Jun 1992
Gen Charles A. Horner, USAF	30 Jun 1992 – 12 Sep 1994
Gen Joseph W. Ashy, USAF	13 Sep 1994 – 26 Aug 1996
Gen Howell M. Estes III, USAF	29 Aug 1996 – 14 Aug 1998
Gen Richard B. Myers, USAF	14 Aug 1998 – 18 Feb 2000
Gen Ralph E. Eberhart, USAF	18 Feb 2000 – 5 Oct 2004
ADM Timothy J. Keating, USN	5 Nov 2004 – 23 Mar 2007
Gen Victor E. Renuart, Jr. USAF	23 Mar 2007 – 19 May 2010
ADM James A. Winnefield Jr., USN	19 May 2010 – 3 Aug 2011
GEN Charles H. Jacoby, Jr., USA	3 Aug 2011 - present

NORAD Deputy Commanders

<u>Name:</u>	<u>Dates</u>
Air Marshal C. Roy Slemon	12 Sep 1957 – 14 Aug 1964
Air Marshal C. R. Dunlap	15 Aug 1964 – 25 Aug 1967
Air Marshal William R. MacBrien	26 Aug 1967 – 22 Jan 1969
LGen Frederick R. Sharp	23 Jan 1969 – 14 Sep 1969
LGen Edwin M. Reyno	15 Sep 1969 – 31 Aug 1972
LGen Reginald J. Lane	1 Sep 1972 – 1 Oct 1974
LGen Richard C. Stovel	2 Oct 1974 – 15 Sep 1976
LGen David R. Adamson	16 Sep 1976 – 17 Aug 1978
LGen Kenneth E. Lewis	18 Aug 1978 – 24 Jun 1980
LGen Kenneth J. Thomeycroft	25 Jun 1980 – 25 May 1983
LGen Donald C. Mackenzie	26 May 1983 – 10 Aug 1986
LGen Donald M. McNaughton	11 Aug 1986 – 11 Aug 1989
LGen Robert W. Morton	11 Aug 1989 – 2 Aug 1992
LGen Brian L. Smith	3 Aug 1992 – 1 Aug 1994
LGen J.D. O'Blenis	2 Aug 1994 – 7 Aug 1995
LGen L.W.F. Cuppens	8 Aug 1995 – 7 Apr 1998
LGen G.E.C. Macdonald	8 Apr 1998 – 8 Aug 2001
LGen Kenneth R. Pennie	8 Aug 2001 – 14 Jul 2003
LGen Eric A. Findley	14 Jul 2003 – 2 Aug 2007
LGen J.J.C. Bouchard	2 Aug 2007 – 10 Jul 2009
LGen Marcel Duval	10 Jul 2009 – 15 Aug 2011
LGen Thomas J. Lawson	15 Aug 2011 – 4 Sep 2012
LGen Alain Parent	04 Sep 2012 – Present

Headquarters NORAD Locations

<u>Base</u>	<u>Dates</u>
Ent Air Force Base, CO	September 1957 – March 1963
Chidlaw Building, Colorado Springs, CO	March 1963 – January 1988
Building 1470, Peterson Air Force Base, CO	January 1988 – March 2003
Building 2, Peterson Air Force Base, CO	March 2003 – October 2012
Eberhart-Findley Building, Peterson Air Force Base, CO (ex-Building 2)	October 2012 – present

NORAD Area of Operations



AADS=Alaska Air Defense Sector
WADS=Western Air Defense Sector

CADS=Canadian Air Defense Sector
EADS=Eastern Air Defense Sector

NORAD Aircraft			
Model	Popular Name	Manufacturer	Dates:
F-47 (Reg)	Thunderbolt	Republic	Mar 1946 – Nov 1947
F-47 (Fed ANG)	Thunderbolt	Republic	Feb 1951 – Dec 1953
F-61	Black Widow	Northrop	Mar 1946 – Dec 1949
F-84	Thunderjet	Republic	1947 – Jun 1954
F-80 (Reg)	Shooting Star	Lockheed	Nov 1948 – 1950
F-80 (Fed ANG)	Shooting Star	Lockheed	Feb 1951 – Dec 1953
F-86 (Day Jet)	Sabre	North American	1949 – 1954
F-82	Twin Mustang	North American	1949 – Jun 1952
F-51	Mustang	North American	Feb 1951 – Dec 1953
F-94A	Starfire	Lockheed	Mar 1950 – Jun 1954
F-94B	Starfire	Lockheed	Apr 1951 – Jun 1954
F-89B	Scorpion	Northrop	Jun 1951 – Mar 1953
F-89C	Scorpion	Northrop	Jan 1952 – Oct 1954
F-86D	Sabre	North American	Mar 1953 – Apr 1958
F-94C	Starfire	Lockheed	Mar 1953 – Feb 1959
F-89D	Scorpion	Northrop	Jan 1954 – Jul 1958
F-102A	Delta Dagger	Convair	Apr 1956 – 1977
F-89H	Scorpion	Northrop	Jun 1956 – Sep 1959
F-89J	Scorpion	Northrop	Jan 1957 – Dec 1960
F-86L	Sabre	North American	Oct 1956 – Jun 1960
F-104	Starfighter	Lockheed	Jan 1958 – Sep 1960
F-104	Starfighter	Lockheed	Apr 1963 – Dec 1969
F-101B	Voodoo	McDonnell	Jan 1959 – Sep 1982
F-106A	Delta Dart	Convair	May 1959 – 1987
F-4C, F-4D, F-4E	Phantom	McDonnell-Douglas	1959 – 1986
F-15A, F-15B	Eagle	McDonnell-Douglas	1982 – Present
CF-101	Voodoo	McDonnell	1959 – 1984
F-16	Fighting Falcon	General Dynamics	1987 – Present
CF-18	Hornet	McDonnell-Douglas	1985 – Present
F-22	Raptor	Lockheed-Martin	2008 – Present

Major Units Associated with NORAD

Unit	Dates
Newfoundland Base Command	19 Jan 1941 – 1 Oct 1950
AAF/USAF Air Defense Command. – Re-activated USAF Air Defense Command; re-designated USAF Aerospace Defense Command on 15 January 1968.	26 Mar 1946 – Sep 1949 1 Jan 1951 – 31 Mar 1980
Continental Air Command	1 Dec 1948 – 1 Aug 1968
RCAF Air Defense Group	1 Dec 1948 – 1 Jun 1951
Eastern Air Defense Force and Western Air Defense Force	1 Sep 1949 – 1 Jan 1960
U.S. Northeast Air Command	1 Oct 1949 – 1 Apr 1957
Central Air Defense Force	1 Mar 1951 – 1 Jan 1960
RCAF Air Defense Command/Canadian Force Air Defense Command. Re-designated Canadian Forces Air Command on 2 Sep 1975	1 Jun 1951 – Present
Army Anti-Aircraft Defense Command. – Re-designated Army Air Defense Command on 21 March 1957.	1 Jul 1950 – 4 Jan 1975
Continental Air Defense Command	1 Sep 1954 – 30 Jun 1974
Naval Forces Continental Air Defense Command	1 Sep 1954 – 1 Sep 1965
Air Defense, Tactical Air Command	1 Oct 1979 – 1 Jul 1987
Alaskan NORAD Region (ANR)	Feb 1962 – Present
Canadian NORAD Region (CANR)	22 Apr 1983 – Present
Continental US NORAD Region (CONR)	1 Oct 1986 – Present
United States Space Command	23 Sep 1985 – 1 Oct 2002
United States Northern Command	1 Oct 2002 – Present

NORAD/HO