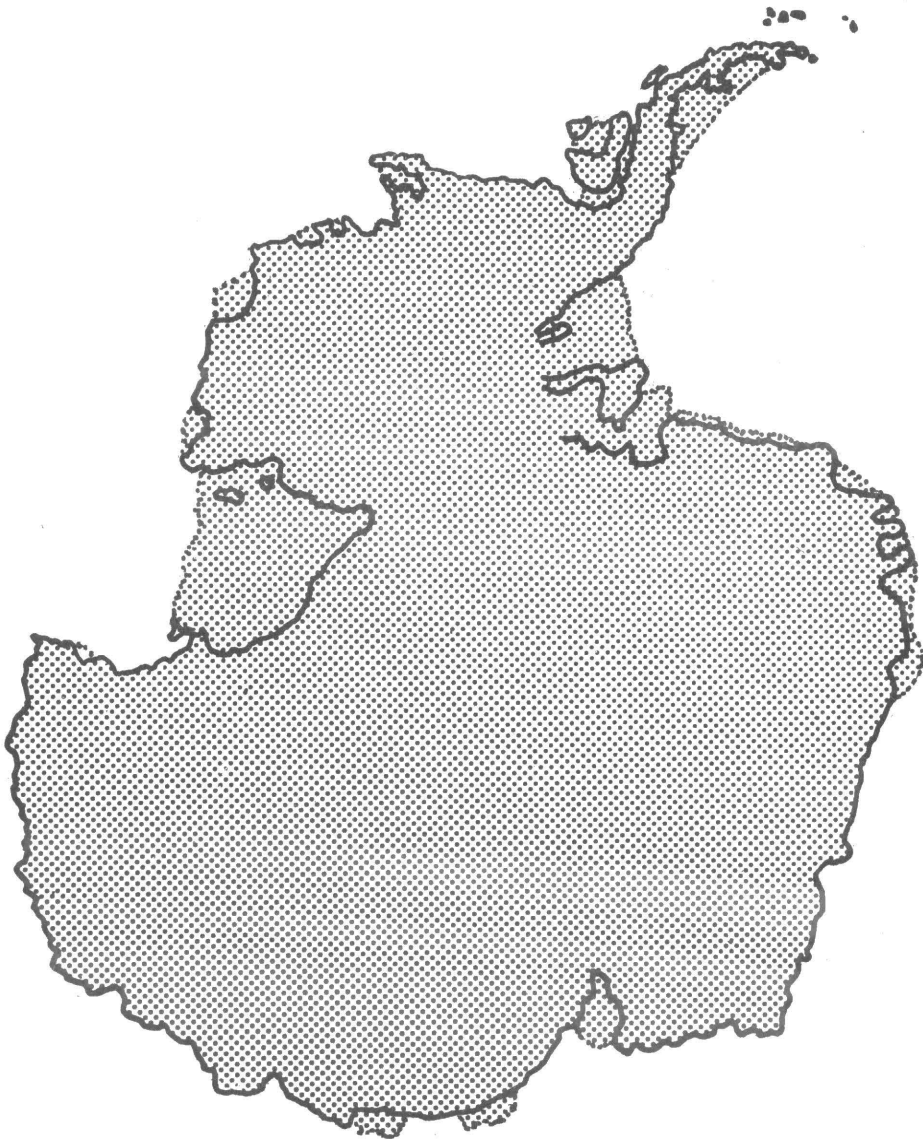


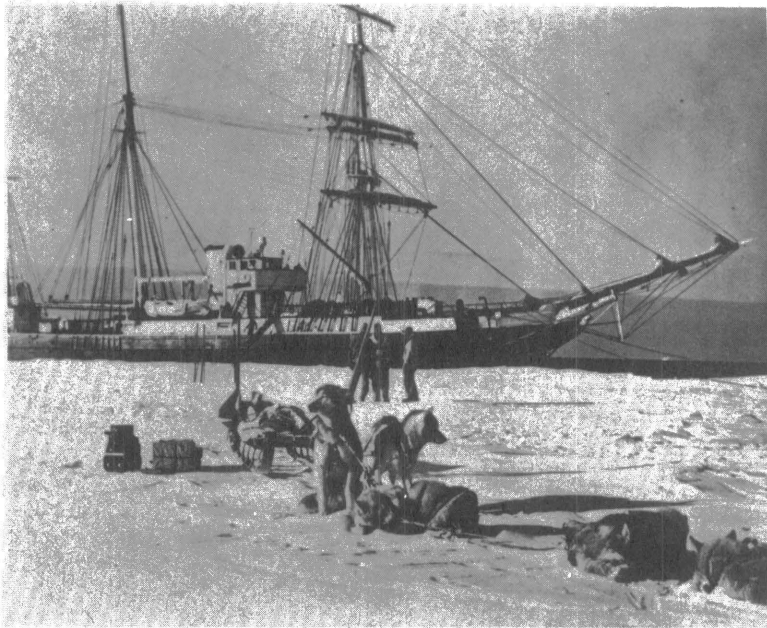
BULLETIN

U. S. Antarctic Projects Officer

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January 1961



The Bear at West Base (Little
America III), January 1941

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The Bulletin wishes to thank Mr. Briesemeister for his article, which begins on page 8.

Material for other sections of this issue was drawn from radio messages, news releases of the Department of Defense and the National Science Foundation, and information provided by the American Geographical Society, the National Geographic Society, the U.S. Air Force Aeronautical Chart and Information Center, the U.S. Geological Survey, the U.S. Navy Hydrographic Office, and the U.S. Naval Support Force, Antarctica.

Appreciation is expressed to Messrs. William Crawford, M.S.A. Delaney, Clyde Henning, Carl Herlacher, William Radlinski, Walter Seelig, and Philip Smith for their assistance in the compilation of articles in this issue.

The photographs used, unless otherwise credited, are official U.S. Navy photographs.

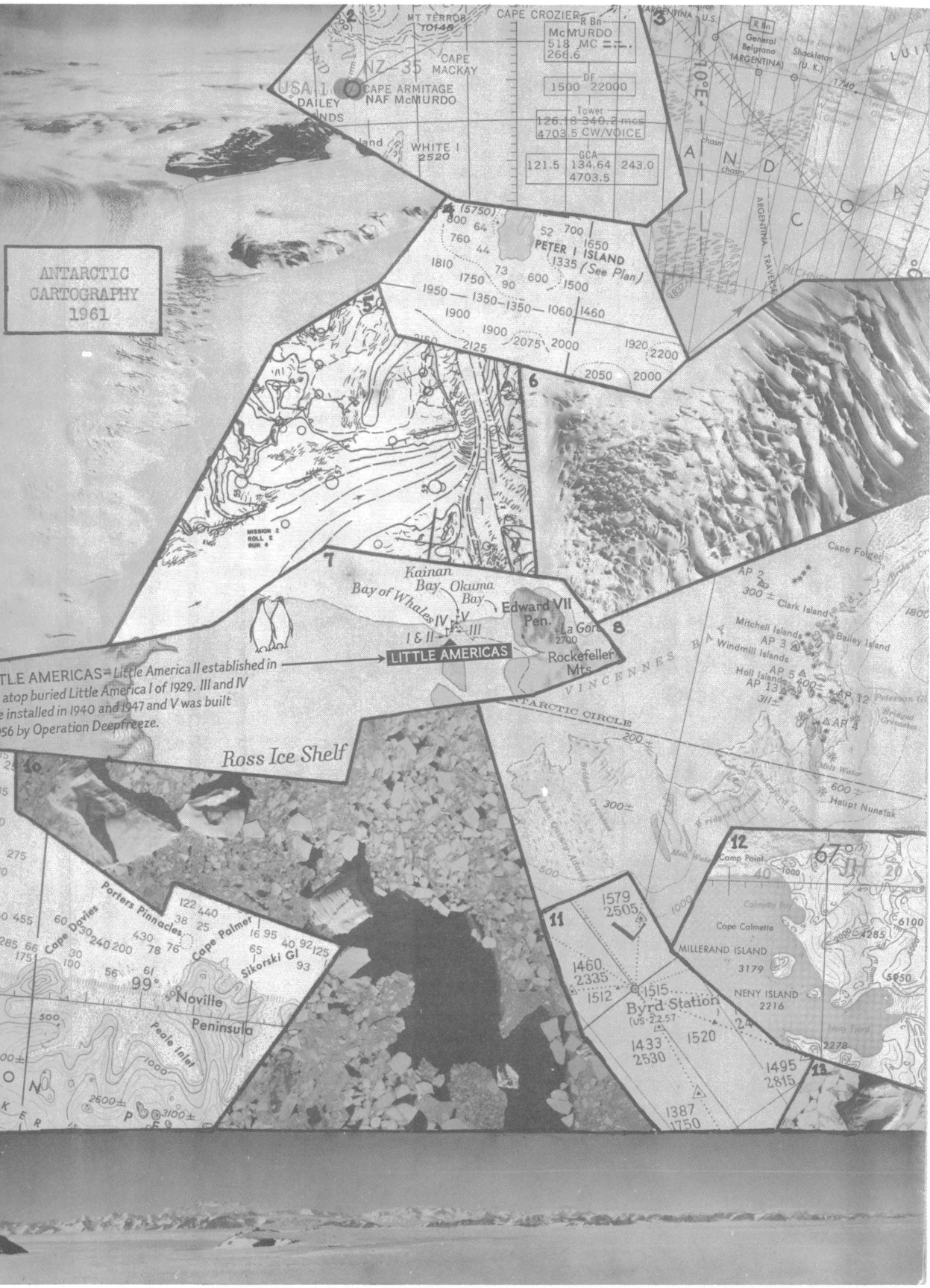
Maps printed in Mr. Briesemeister's article are copyrighted by the American Geographical Society, and are reproduced through the courtesy of Mr. Briesemeister and the Society.

This issue of the Bulletin covers no activities or events after 11 January 1961.

The Bulletin of the United States Antarctic Projects Officer is published monthly, except July and August. All inquiries should be directed to the United States Antarctic Projects Officer, 718 Jackson Place, N.W., Washington 25, D.C. Telephone: STerling 3-0860, Extension 3796.

The issuance of this publication was approved by the Secretary of the Navy on 19 April 1960.

ANTARCTIC
CARTOGRAPHY
1961



The United States' Antarctic cartographic program serves a dual purpose. It not only provides maps for the planning of scientific studies and their support, but also supplies maps and charts for use by units and personnel operating in the field.

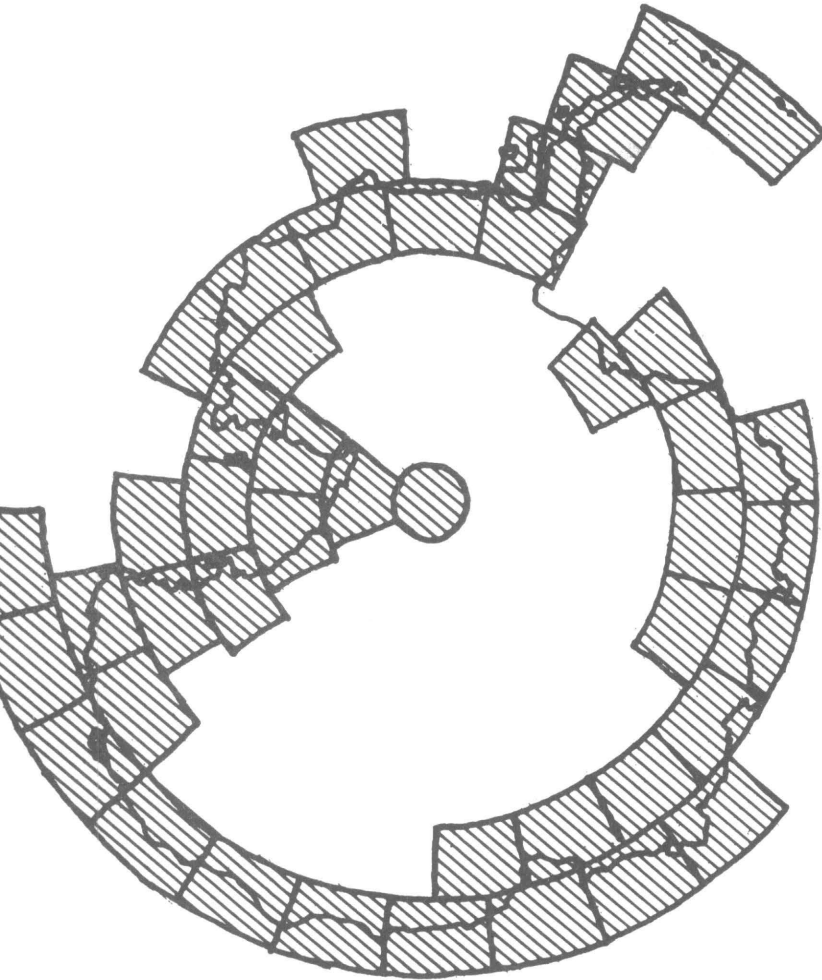
Three government agencies serve as primary Antarctic map producers. These three, the U. S. Air Force Aeronautical Chart and Information Center, the U. S. Geological Survey, and the U. S. Navy Hydrographic Office, plus the American Geographical Society and the National Geographic Society, are chief producers of Antarctic maps and charts in the United States.

The three government agencies have produced maps and charts covering portions of the continent. These are used extensively in field operations. The societies have printed many sketch maps for articles in the Geographical Review (AGS) and the National Geographic Magazine (NGS). These articles have related the activities of Antarctic expeditions, and in some cases, discussed various aspects of the continent's geography. The societies have also compiled maps of the continent as a whole.

In total, these five organizations have produced more than 150 Antarctic maps and charts. The areas that these cover and the programs of each are discussed in the pages that follow.

NOTE: The collage "Antarctic Cartography 1961" on page 1 contains sections from the following maps, charts, and photographs: (1) Aerial photograph of Nordenskjold Ice Tongue and Mawson Glacier, Victoria Land (1956, Official U. S. Navy Photograph). (2) From U. S. Navy Hydrographic Office Antarctic Strip Chart 16384-4, "Scott Island to McMurdo Sound" (3rd edition, July 1958, Scale 1:2,188,800). (3) From U. S. Air Force Aeronautical Chart and Information Center Global Navigation and Planning Chart GNC26N, "Antarctica" (1st edition, June 1959, Scale 1:5,000,000). (4 and 9) From U. S. Navy Hydrographic Office Nautical Chart HO6638, "Amundsen Sea to Palmer Peninsula" (3rd edition, 26 September 1960, Scale 1:1,500,000). (5) From a compilation by the U. S. Geological Survey, "Sentinel Mountains" (Preliminary Copy, 1960, Scale 1:250,000). (6) Aerial photograph of a crevasse area in the Sentinel Mountains (1959, Photography flown by U. S. Navy for U. S. Geological Survey). (7) From "All-out Assault on Antarctica", by Rear Admiral Richard E. Byrd, USN (Ret.), in the National Geographic Magazine (August 1956, page 147). (8) From U. S. Geological Survey, Australian Quadrant, Knox Coast, Experimental Chart (1958, Scale 1:1,000,000). (9) See (4). (10 and 13) Aerial photograph of ice conditions in the Ross Sea (not dated, Official U. S. Navy Photograph). (11) From American Geographical Society map, "Antarctica" (Revised edition, December 1959, Scale 1:3,000,000). (12) From U. S. Air Force Aeronautical Chart and Information Center World Aeronautical Chart 1789 "Alexander I Island" (1st edition, 17 September 1959, Scale 1:1,000,000). (13) See (10). (14) Aerial photograph of Britannia Range and Barne Inlet (1956, Official U. S. Navy Photograph).

U. S. AIR FORCE
AERONAUTICAL
CHART AND
INFORMATION
CENTER

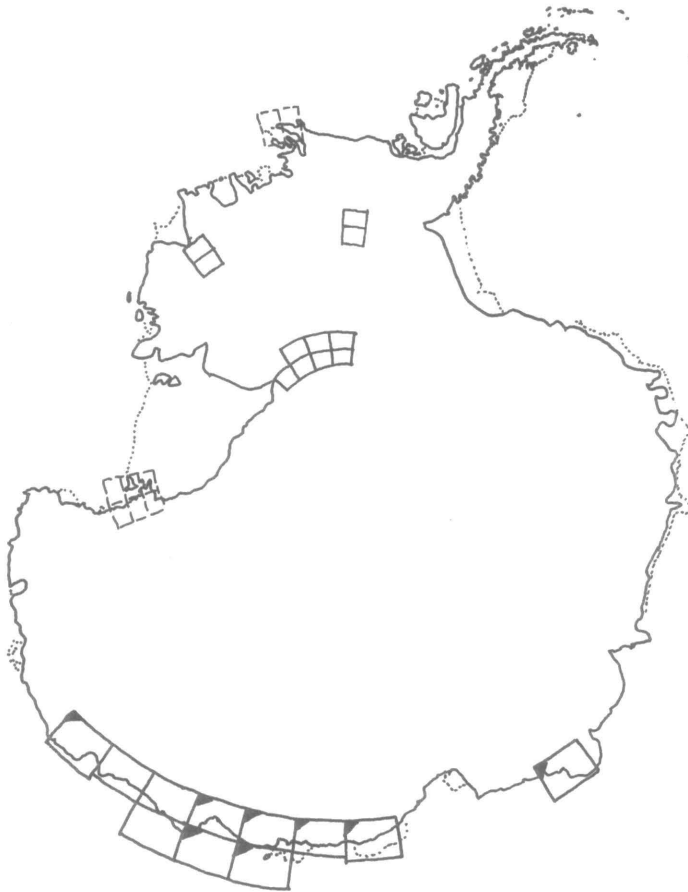


This chart shows the WAC coverage over the Antarctic continent. Other WAC's cover Sub-Antarctic Islands.

The Aeronautical Chart and Information Center program provides for the production and maintenance of the World Aeronautical Charts (WAC) covering the Antarctic continent and sub-Antarctic islands. 54 WACs covering this area have been published to date; 35 have been revised since September 1959, while 19 are earlier editions. These charts are compiled from all available foreign and domestic sources at the scale of 1:1,000,000. In addition, six charts of the Global Navigation and Planning Chart series (1:5,000,000 scale), cover the Antarctic continent and the surrounding area.

ACIC's charting program consists of the revision and/or recompilation of these charts as new material becomes available. It should be noted that in certain areas completely covered by ice, WAC charts have not been produced. However, when additional cartographic information becomes available, charts will be issued.

U.S. GEOLOGICAL
SURVEY

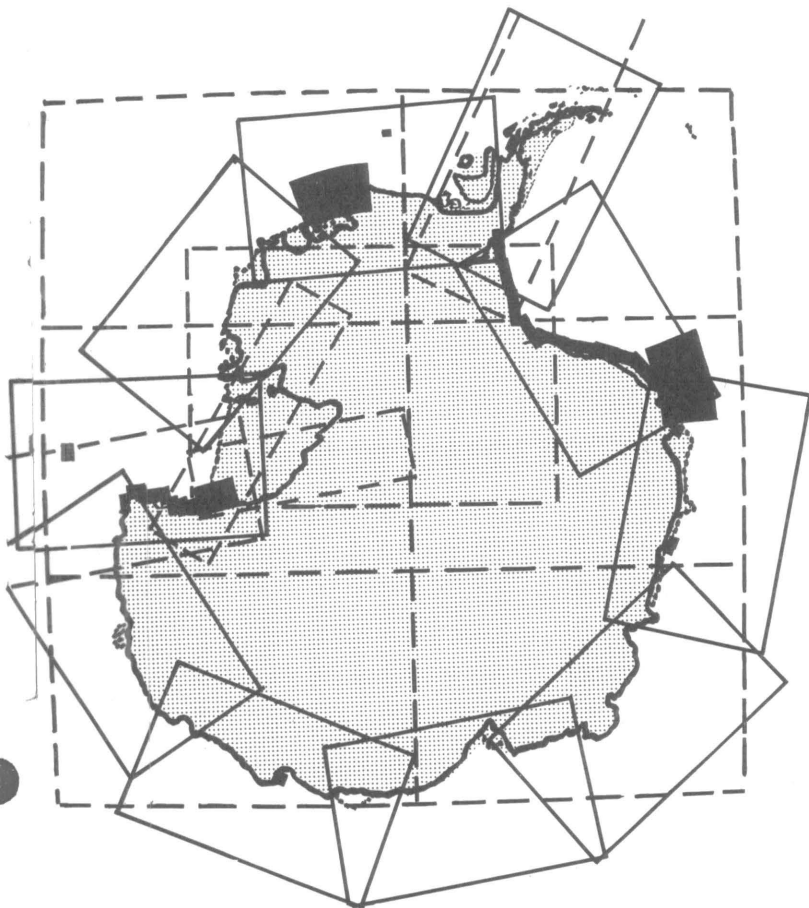


Areas covered by USGS maps
Checked corners indicate
maps already published.
Others in various stages
of production.

The U. S. Geological Survey is currently producing topographic maps of several areas of the continent at scales from 1:250,000 to 1:1,000,000. Three 1:500,000 maps covering a portion of the Wilkes Land Coast are to be published in the spring. The first eight of this series and an experimental map of the Knox Coast area were published in 1956 and 1958. Mapping is in progress in three other areas, the Horlick Mountains, the Sentinel Mountains, and the Executive Committee Range. Work has begun on the McMurdo Sound and Thurston Peninsula areas, but will not be published until further ground control and aerial photography is obtained.

During 1961, U. S. Geological Survey expects to complete two sheets in the Sentinel Mountains and two in the Horlicks. Manuscript editions will be produced covering the Horlicks (five sheets) and the Executive Committee Range (two sheets).

U. S. NAVY
HYDROGRAPHIC
OFFICE



Areas covered by Hydrographic Office charts. Solid lines indicate nautical charts; dashed lines indicate air navigation charts; large scale nautical charts shown in solid black.

When Operation DEEP FREEZE began in 1955, only seven Navy Hydrographic Office charts were available covering the Antarctic area. Since that time 34 charts have been issued, as well as plotting and miscellaneous charts. At the present time, 64 charts, covering waters adjacent to the continent, have been issued. Nine others cover approaches to the continent. Initially, no air navigation charts were available. 17 of these have been printed since 1955.

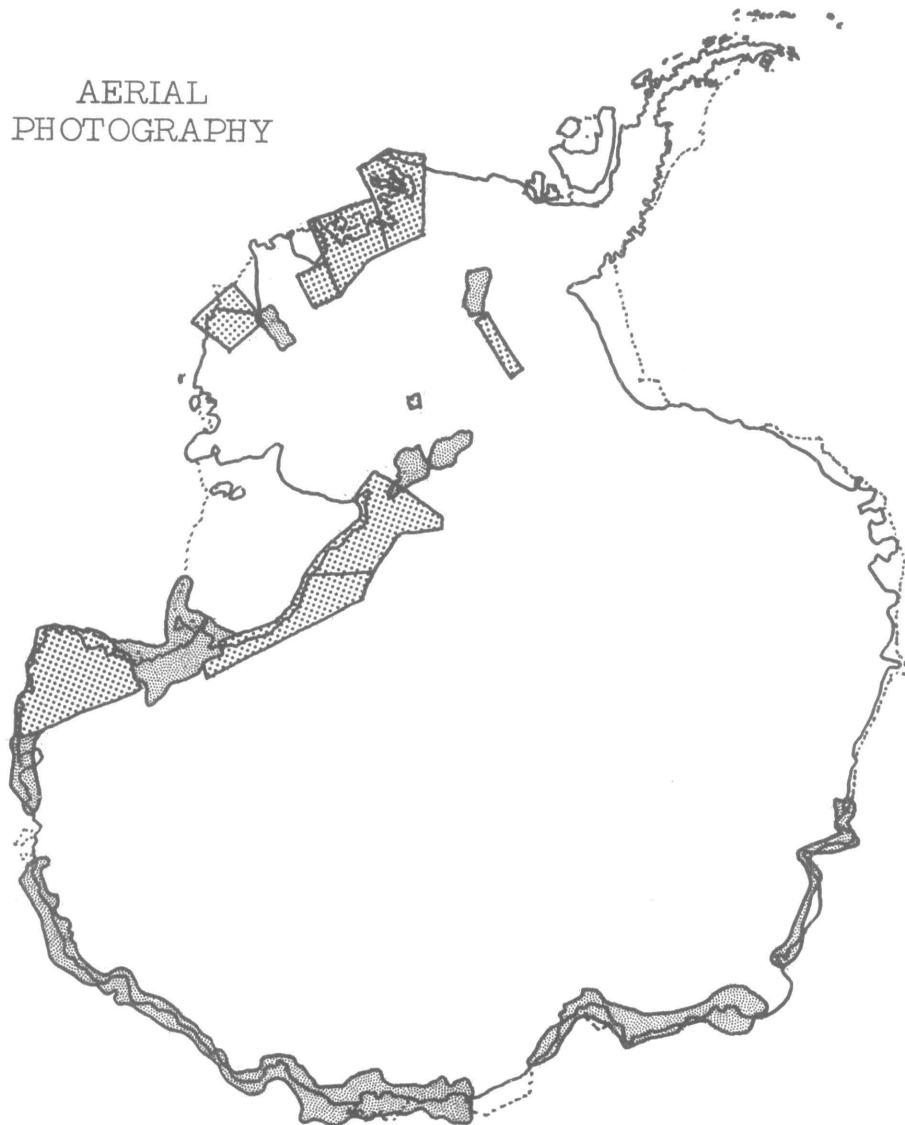
The charts vary from 1:6250 to 1:11,250,000. They are compiled from all available source materials and are constantly being revised. In addition to charts, the Hydrographic Office produces sailing directions and other navigation aids, as well as oceanographic and other marine science studies.

On the return of the ships from DEEP FREEZE 61, new material (aerial and radar photography, oceanographic and hydrographic data, etc.) will be used to revise old charts, and in some cases, new editions will be printed.

The Antarctic cartographic activities of the American Geographical Society are discussed elsewhere in this issue (see page 8.).

The National Geographic Society has produced numerous maps to accompany the articles which appear in its Magazine. These, and its 1:7,000,000 map of the continent produced in 1957, are vivid examples of its interest in Antarctic programs. The Society will publish a new Antarctic map for inclusion in its Atlas in 1965. Articles with page-size maps and sketches will appear in the interim.

AERIAL PHOTOGRAPHY



Shaded areas show existing United States mapping photography. The dotted areas show planned photography, Operation DEEP FREEZE 61. (In addition, reconnaissance photography over most of the coast line and many inland areas is available.)

"Original" data for many of these maps, especially the new topographic maps, comes in the form of trimetrogon aerial photography. This method has replaced reconnaissance photography and plane table survey. However, many accurate surveys have been made by earlier expeditions in Antarctic using these older means.

The United States' first large program of trimetrogon aerial photography, was during Operation HIGHJUMP (1946-47). 65,000 negatives were made by 12 aircraft over most of the Antarctic coast from 15°E to 170°E and between 95°W and 130°W. Photo reconnaissance was made of other sections of the continent. The following year Operation WINDMILL obtained additional geodetic control for use in compiling maps from the previous year's photography.

Little trimetrogon photography was flown during the first four DEEP FREEZE operations. During DEEP FREEZE 60, however, 45,000 square miles of systematic mapping photography were flown, covering sections of the McMurdo Sound region, the Sentinel and Horlick Mountains and the Executive Committee Range (see Bulletin, Vol. I, No. 10, page 10).

During DEEP FREEZE 61, a total of 325,000 square miles has been scheduled for completion (see diagram; also Bulletin, Vol. II, No. 1, page 15). At the present time, 8520 flight line miles have been completed, about forty percent of the mission. The flights have been delayed, however, by lack of good photographic weather and a shortage of aviation gasoline.

In addition to aerial photography, radar photography from icebreakers cruising in unexplored areas provides valuable data for the compilation of shore line and prominent inland features. The Thurston Peninsula charts recently published were compiled from both aerial reconnaissance and radar photography. The most recent radar surveys have been made in the Sulzberger Bay area by STATEN ISLAND (see page 27).

NEW CHARTS PUBLISHED

The U. S. Navy Hydrographic Office will publish in early February a topographic-hydrographic chart, "NAF McMurdo Sound and Vicinity." The chart, printed in four colors at a scale of 1:6250, includes a detailed topographic plot of the southern end of Hut Point Peninsula with all available hydrographic data.

The U. S. Geological Survey will publish three maps, scale 1:500,000, in the Wilkes Coast area, from 112°30' East to 127°30' East. These maps will be available in the spring.

THE AMERICAN GEOGRAPHICAL SOCIETY'S MAP OF ANTARCTICA

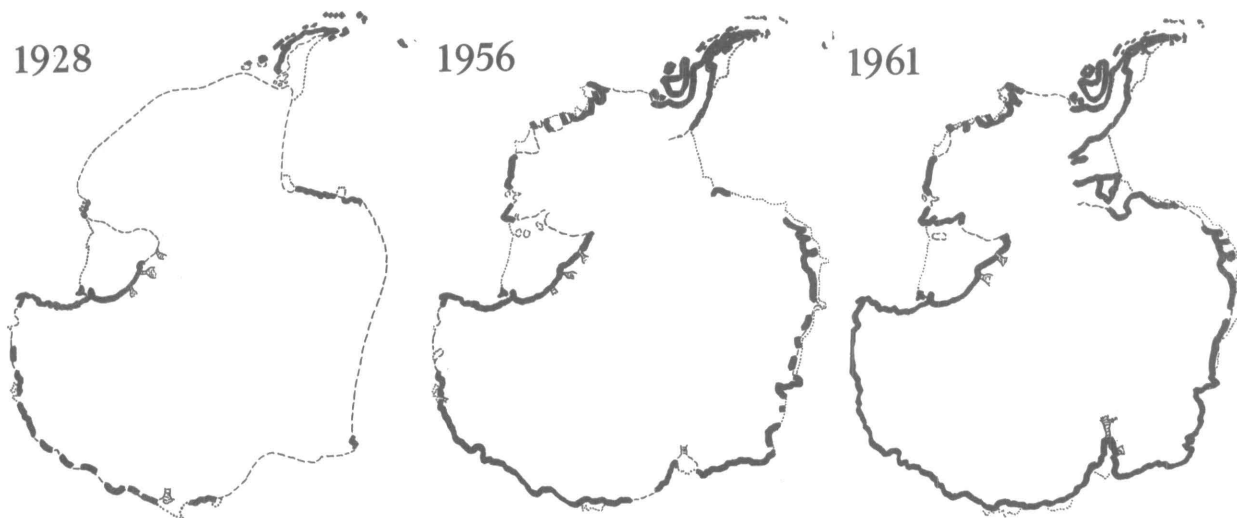
By William A. Briesemeister
Senior Cartographer, American Geographical Society

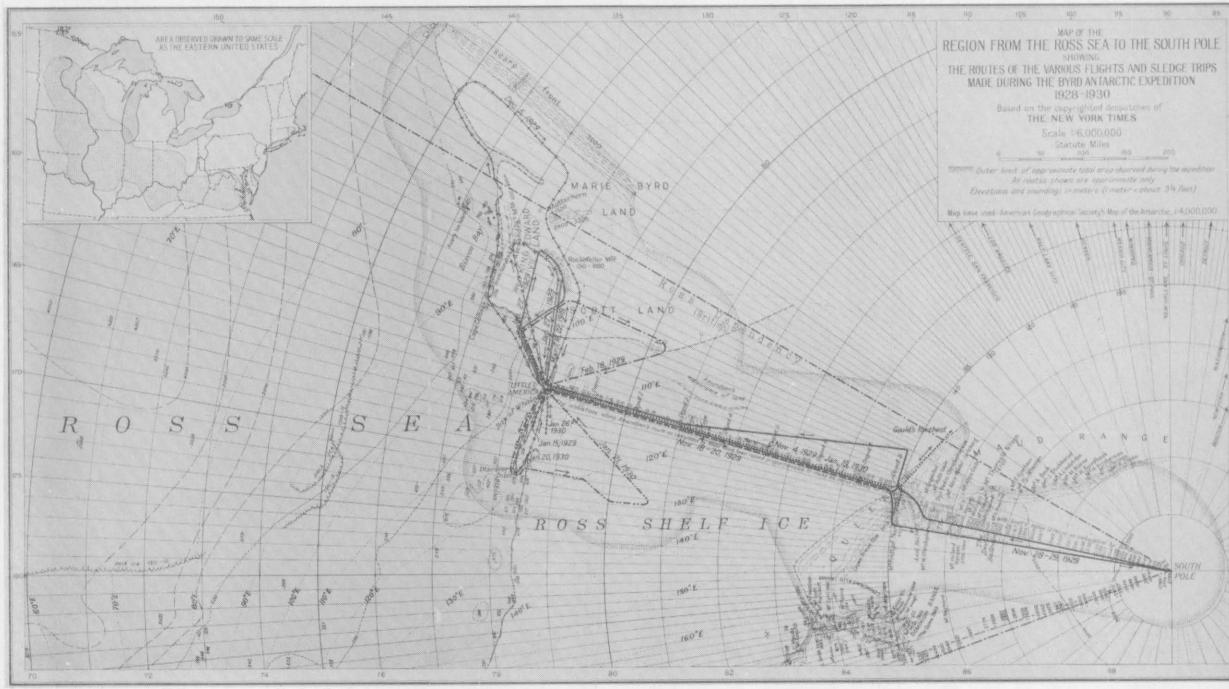
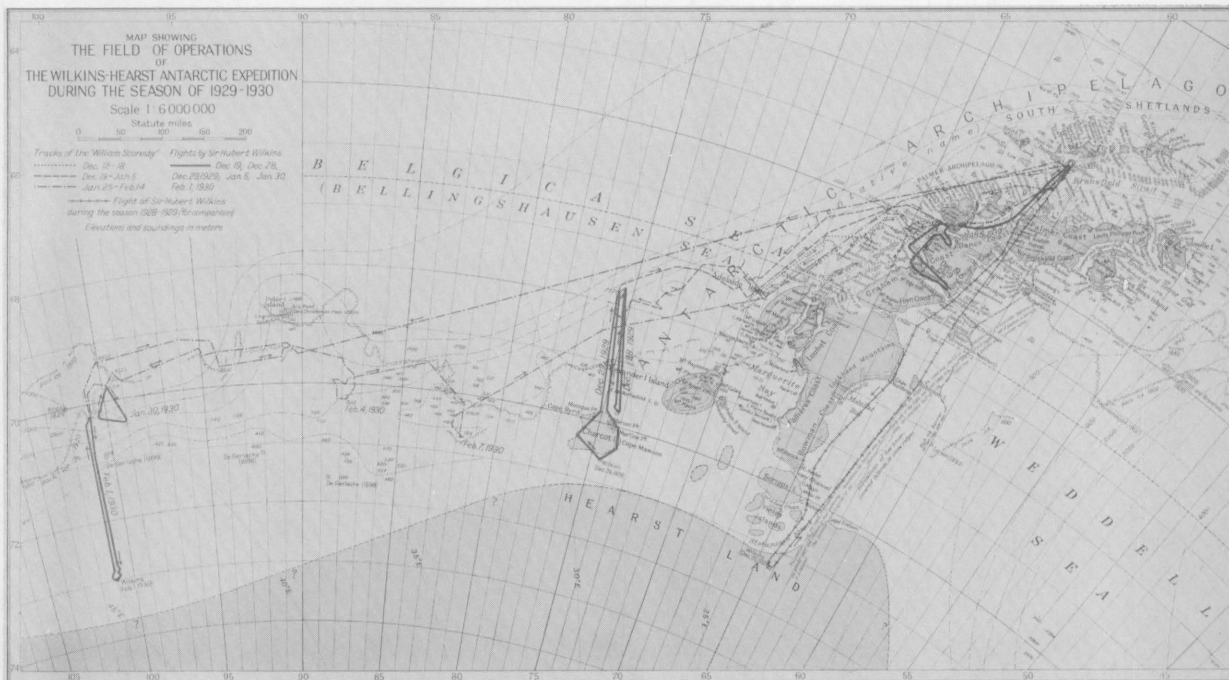
In 1928 the American Geographical Society published a specially compiled four-sheet, two-color map of Antarctica at the scale of 1:4,000,000. The original drawings, at the scale of 1:3,000,000, were also reproduced as one color contact print for use by the Byrd and Wilkins Expeditions of 1928, 1929, and 1930. Although Antarctica had been discovered more than 100 years before this, the features of the continent itself were still, at that time, relatively unknown. Only about one-tenth of the coastline had been delineated, and the half-a-dozen ventures inland had covered only several thousand square miles of the vast continent.

The results of Wilkins, Byrd, and Ellsworth's first expeditions were published in the Geographical Review. Maps included with these articles to show these ventures are reprinted on pages 10-11. The earliest manifestations of the Byrd and Wilkins discoveries are best shown in a map prepared by the Society in 1929, on which appear the first notation of Hearst and Marie Byrd Lands. (A portion of the Wilkins-Hearst Expedition map is reproduced on page

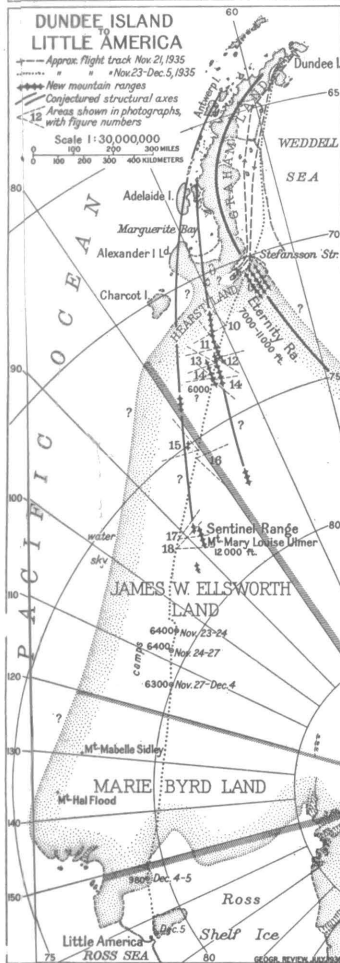
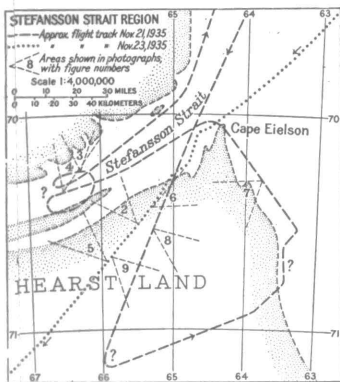
The importance of an up-to-date map comprising all recent surveys, both published and unpublished, for use in planning the program of the International Geophysical Year 1957-58, prompted the decision by the Antarctic Committee of the United States National Committee for the IGY to sponsor a complete revision of the American Geographical Society map of Antarctica on a scale of 1:3,000,000.

As in 1928, so again in 1955, the American Geographical Society compiled the new map of Antarctica from all data available at the time. The new com-





The above maps (showing the flights of Sir Hubert Wilkins and Commander (late Rear Admiral) Richard E. Byrd), the Wilkins-Hearst Expedition map on page 9 and the map of Lincoln Ellsworth's Transcontinental Flight on the next page are shown here to illustrate the first airborne explorations of the Antarctic. Note especially the first use of the names "Hearst Land", "Marie Byrd Land", and "James W. Ellsworth Land."

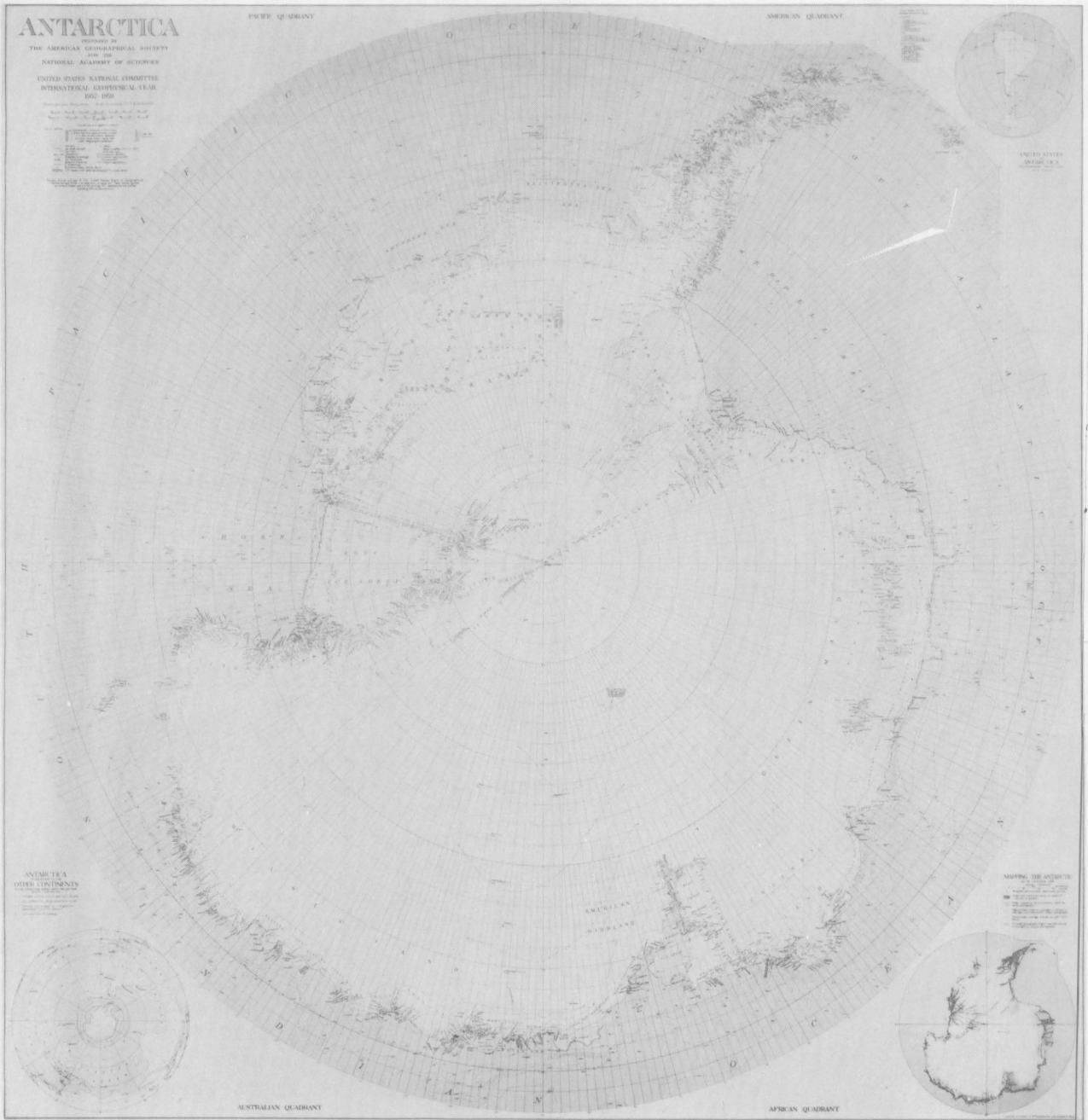


pilation was drawn in four sheets each, size 42 x 42 inches. Full cooperation was given to the Society by the U. S. Navy Hydrographic Office and the U. S. Board on Geographic Names. In addition, the survey results of recent American Antarctic expeditions which were on file in the National Archives were used. Photostatic copies of important surveys were procured and used by the Society in compiling the new map. Black-and-white contact prints of the four-sheet map of Antarctica were made available as early as November, 1955. (A sketch of the primary features of the continent as known at that time is shown on page

Nomenclature of Antarctic features presented some interesting problems. For the new map of Antarctica, use was made of the "Gazetteer of the Falkland Islands Dependencies," published in September, 1953, by the Antarctic Place-names Committee, British Foreign Office, and of the U. S. Board on Geographic Names Special Publication No. 86, May, 1947, with supplements No. 1, August, 1949, and No. 2, April, 1951. (In January, 1956, the United States Board on Geographic Names published Gazetteer No. 14, Geographic Names of Antarctica, which has been used in the revisions of the four-sheet map.) Finally, the names on the map were checked by the U. S. Board on Geographic Names. United States recommendations were adopted throughout.

The map is drawn on a polar stereographic projection with a nominal scale of 1:3,000,000 in latitude 71° (approximately 48 miles to one inch). Elevations and depths are shown in meters. Generalized contours are spaced at 200 m., 500 m., and at 500 meter intervals thereafter; sea-bed contours are at 200 m., 500 m., 1000 m., 2000 m., and at continuing 1000-meter intervals thereafter. Glaciers and ice-shelf fronts are indicated in their most recently surveyed locations, with dates showing when these positions were observed.

In the upper left corner of the Pacific Quadrant are the title of the map, scales in miles and kilometers, and a list of conventional signs. In the upper right corner of the American Quadrant is a hemisphere map on an orthographic projection, scale 1:58,000,000, showing the relation of the United States to Antarctica. The status of mapping in the Antarctic, as of December, 1955, is shown on an



inset map (scale, 1:18,000,000) in the lower right corner of the African Quadrant. On this inset are indicated: (1) accepted astronomically determined positions; (2) areas with contoured relief on scales of 1:250,000 or greater; (3) areas mapped by reconnaissance, chiefly by aerial photography; (4) approx-

MAPPING THE ANTARCTIC

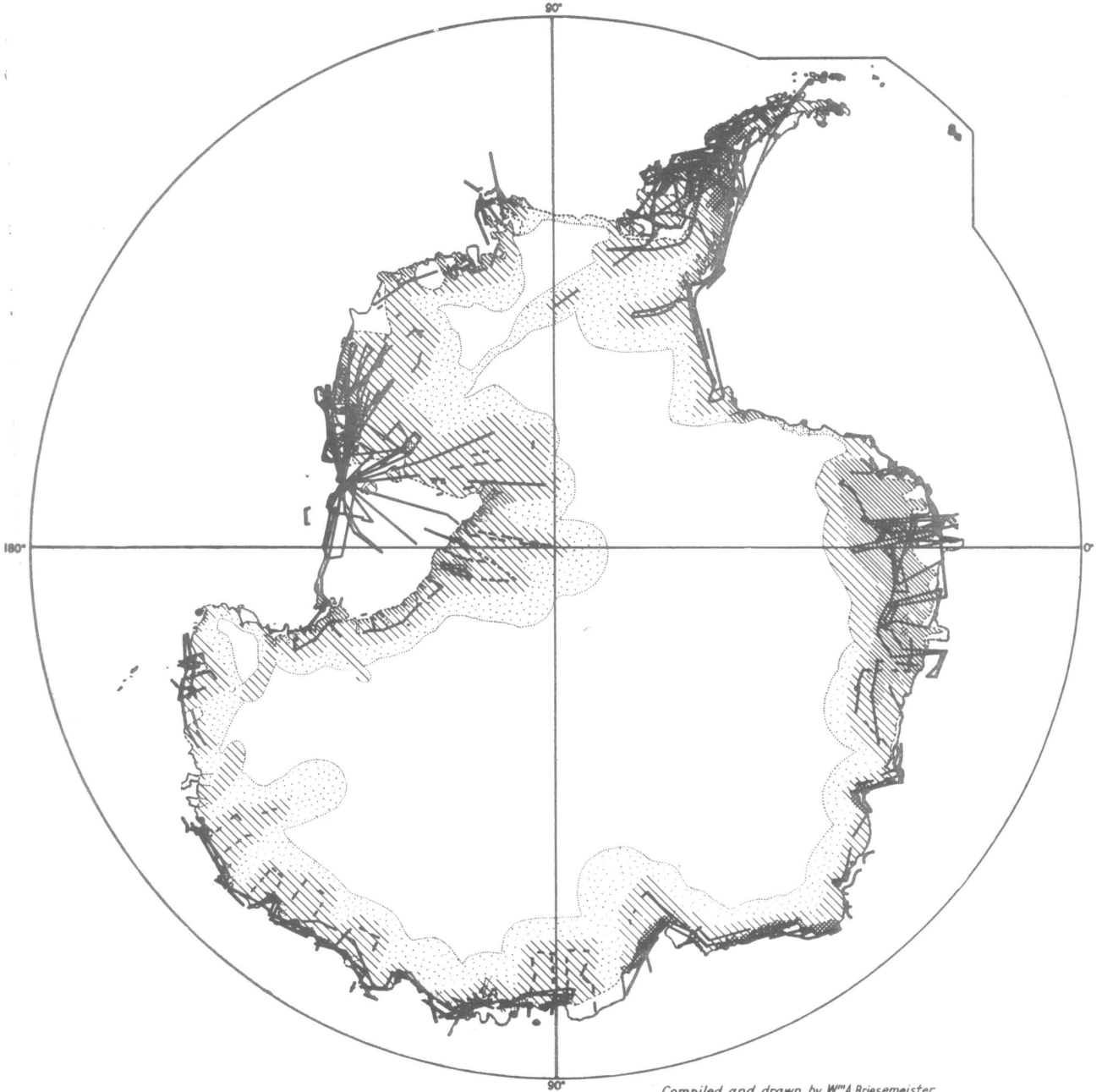
AS OF DECEMBER 1955

SCALE 1:36,000,000

0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 METERS

- Accepted astronomically determined position
- ▨ Areas with contoured relief on scales of 1:250,000 or greater

- ▨ Areas mapped by reconnaissance, chiefly by aerial photography
- ▨ Approximate areas of coverage by vertical, trimetrogon, and independent oblique photography
- ▨ Approximate coverage of areas as seen from the air
- Principal photographic flight lines with vertical, trimetrogon, or oblique photography



Compiled and drawn by W^mA Briesemeister

imate coverage by vertical, trimetrogon, and independent oblique photography; (5) approximate coverage of areas seen from the air; and (6) principal photographic flight lines. Antarctica in relation to the other continents is shown on an inset map using a polar azimuthal equal-area projection. This inset map, in the lower left corner of the Australian Quadrant, is on a scale of 1:76,000,000, and also shows: (1) probable extreme limit of pack ice in January; (2) 32°F isotherm for January (warmest month); (3) extreme limit of pack ice in August and September (maximum season); and (4) extreme limit of icebergs.

The extensive use of aerial photography and the recent perfection of making seismic soundings have enabled cartographers to more accurately map the features of the continent and also to determine the approximate configuration of the sub-surface rock contours. Present programs of exploration and map compilation will eventually provide an accurate picture of a continent which, only thirty years ago, was virtually unknown.

During 1961 the present 1:3,000,000 map will be again revised. The significant amount of data accumulated from recent Antarctic operations will be compiled and a new map will be published. The new map will be compiled at 1:3,000,000 scale in four sheets and published at 1:5,000,000 as a one-sheet map. It will be oriented with the Greenwich Meridian at the top and printed in several colors.

OPERATION MATERNITY

On 22 December, a Marine Corps pilot on the staff of Air Development Squadron SIX (VX-6) flew a unique mission - unique even for Antarctic operations.

When, on 20 December, VX-6 was asked to fly some supplies to a New Zealand party of geologists camped at Mount Field in the Victoria Mountains, Captain Thomas E. Morrow, USMC, drew the flight. He was startled to learn that the New Zealand party should be reached as quickly as possible, and was puzzled by the fact that part of his 1500 pounds of cargo was a male husky dog named Lindsay.

He soon discovered that Lindsay was to replace Suzy, a husky bitch who was to be returned to New Zealand's Scott Base to produce a litter. This knowledge, coupled with unfavorable weather conditions which delayed his flight for two days, had Captain Morrow somewhat on edge by the time the weather cleared enough on the 22nd for him and Lindsay, plus Vernon M. Leslie, AD2, USN, and Louis R. Mathis, Jr., PH1, USN, to take off for Mount Field. His condition did not improve upon arriving at the New Zealand camp and finding that Suzy had already given birth to 5 pups. On the return flight to McMurdo, she produced one more and Captain Morrow was extremely grateful he had Dog Handler Leslie on board with him.

1961 FOREIGN OBSERVER EXCHANGE PROGRAM

The following observers from other nations engaged in Antarctic operations have joined Operation DEEP FREEZE, participating in the various activities as noted.

ARGENTINA

LIEUTENANT NESTOR D. LOPEZ AMBROSIONI, Argentine Navy, began his activities with Operation DEEP FREEZE 61 at NAF, McMurdo Sound, in late October. A graduate of the Argentine Naval Academy (1951), LT Lopez is a veteran of three Argentine Antarctic expeditions, two aboard the oceanographic survey ship YAMANA (1953-54 and 1954-55) and one aboard the icebreaker GENERAL SAN MARTIN (1957-58).

LT Lopez spent ten days at Byrd Station, made oceanographic studies with Dr. Willis Tressler, oceanographer of the U. S. Navy Hydrographic Office, at his McMurdo ice hole, and made flights to the South Pole by C-130 and C-124 aircraft. He returned to Christchurch in November, embarked on board GLACIER and conducted oceanographic and ice studies aboard the icebreaker on her December trip to McMurdo.

LT Lopez will remain aboard GLACIER for the Amundsen Sea expedition.

AUSTRALIA

WING COMMANDER, WARWICK ADDISON, RAAF, has served as a pilot with the RAAF for twenty years, including service in World War II and Korea. He has also served with the United States Air Force's Ninth Troop Carrier Squadron and has flown C-124s and C-130s on resupply missions to Thule, Greenland, and stations on the DEWLINE.

During his tour as observer with DEEP FREEZE 61, he worked closely with VX-6, serving as co-pilot on C-130 flights and studying the operations of the Hercules aircraft. He also flew with the Air Force C-124s to Byrd Station.

CAPTAIN M. P. BAMMAN, Australian Flight Superintendent for QUANTAS airlines, visited Operation DEEP FREEZE from 22 to 29 November. Captain Bamman observed the operation of the ice runway for wheeled aircraft and studied the problems associated with flights to Antarctica from outside continents.

His activities included briefings by the Air Force and VX-6, flights with the Globemaster and Hercules aircraft and a study of the airfield operation and maintenance.

BELGIUM

MR. JEAN-PAUL VAN BELLINGHEN, Deputy Economic Counselor at the Belgian Embassy in Washington, D. C., visited Operation DEEP FREEZE in December. Mr. Van Bellinghen is a lawyer and has served in the Belgian Embassy in Cairo, toured in the Middle East and the former Belgian Congo, and helped prepare Belgium's participation in the Conference on Antarctica.

During his Antarctic tour, he flew to the South Pole in a C-130 and visited Scott Base, Cape Royds, the field party at Barne Inlet, and USS GLACIER.

BRAZIL

MR. RUBEN J. VILLELA will serve as observer with Operation DEEP FREEZE 61 for the National Council of Brazil. Mr. Villela, a member of the scientific staff of the Oceanographic Institute of the University of Sao Paulo, will participate in the Amundsen Sea Expedition. He also has a journalistic background and has been accredited to the United States Antarctic operations by the Chief of Information, U. S. Navy.

CHILE

LIEUTENANT COLONEL HERMAN DANYAU, Chilean Army, has been named DEEP FREEZE observer by the Chilean government. LTCOL Danyau is a graduate of the Chilean Military Academy and is a veteran of 22 years of service. He has served with and commanded units of the Mountain Troops in their Andes Mountains exercises and has participated in Chilean summer Antarctic operations.

LTCOL Danyau joined ALATNA in Panama and will board GLACIER in New Zealand for participation in the Amundsen Sea Expedition.

FRANCE

DR. ANDRE DE CAYEUX (CAILLEUX) is a Professor of Geology at the University of Paris. A veteran of the 1948 French Expedition to Greenland, Dr. Cayeux is also the former president of the International Commission on Periglacial Morphology (1952-1956).

Dr. Cayeux arrived at McMurdo on 13 December, after a series of field trips with personnel of the University of Canterbury during his layover in New Zealand. His initial activities included brief field trips in the Hut Point Peninsula area, Cape Evans and Cape Royds, and work obtaining bottom samples at Dr. Willis Tressler's ice hole.

From 19 to 22 December he did field work at Cape Royds, followed several days later by a three-day study at Marble Point. Between field expeditions, he worked on his specimens at the McMurdo biological laboratory. After a visit to Scott Base, he joined the Ross Ice Shelf Glaciological Party.

SOUTH AFRICA

COMMANDER CHARLES J. F. NETTERBERG, SAN, a veteran of 25 years naval experience, is a staff officer of the Coastal Command of the South African Navy. A holder of a Master Mariner's Certificate, CDR Netterberg has commanded both destroyers and frigates. He has seen polar duty both with commercial ventures and government expeditions to the Antarctic area. He served as Ice Pilot for the South African National Antarctic Expedition (to Norway Station) in 1959-60.

CDR Netterberg journeyed to McMurdo aboard GLACIER. While at the Air Facility, he studied building construction, materials used, and heating and utility systems. His studies also included transportation methods; vehicles and their performance; stores and supplies and their packing, identification, and preservation. He also flew with a C-130 to the South Pole, but was unable to land because of the weather.

CDR Netterberg will accompany GLACIER on the Amundsen Sea expedition.

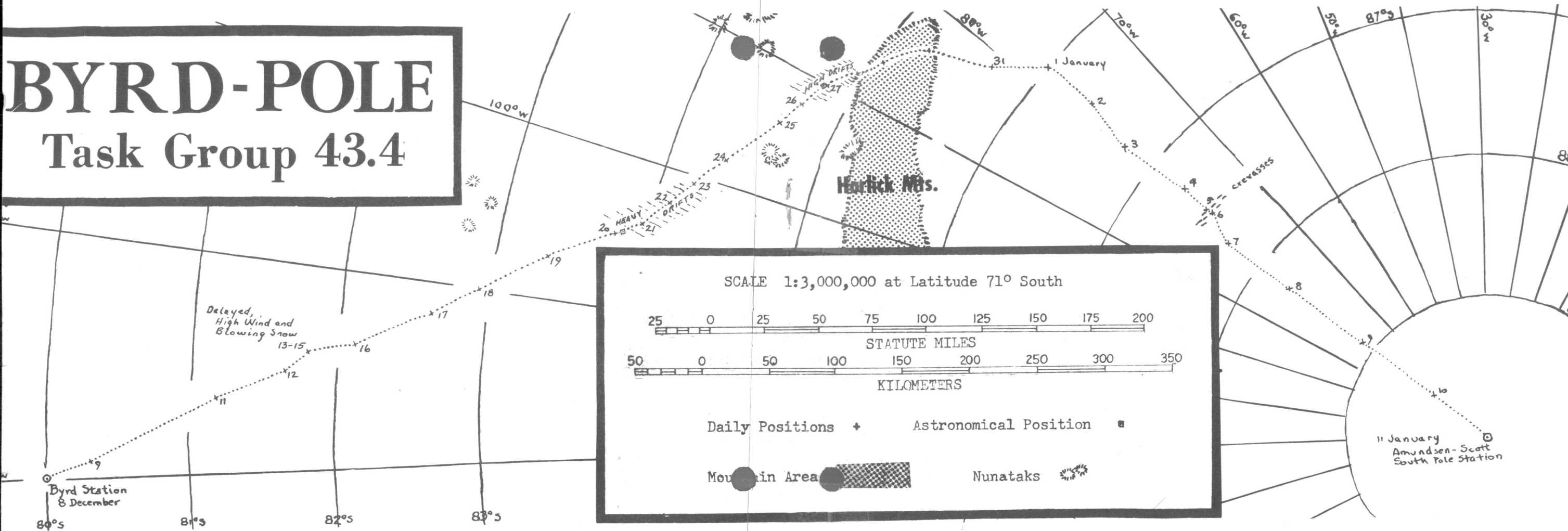
UNITED KINGDOM

DR. BRIAN ROBERTS, of the British Foreign Office and the Scott Polar Research Institute, began his polar ventures with the 1932 Cambridge University Expedition to Vatnajokull, Iceland. Since that time, he has visited both polar regions several times and has studied many aspects of the Arctic and Antarctic. Dr. Roberts was the biologist of the British Graham Land Expedition (1934-37), worked in 1950-51 with the Norwegian-British-Swedish Antarctic Expedition, and served as scientific advisor to the United Kingdom delegation to the Conference on Antarctica (1959).

Dr. Roberts journeyed to McMurdo via GLACIER. While there he flew to the South Pole by C-130, spent several days at Byrd Station, and made field trips to the Ross Ice Shelf, Marble Point, and Taylor Dry Valley. He also visited Scott Base and did work on collected specimens in the McMurdo biological laboratory.

He will remain aboard GLACIER to make ornithological studies on the Amundsen Sea Expedition.

BYRD-POLE Task Group 43.4



On 27 November 1960, at 1500 (local), TG 43.4 was activated, with Major Antero Havola, USA, in command. On 8 December, the tractor-train party began the 800-mile journey to 90° South. The party is made up of 2 low pressure D-8 tractors (one blade, one bow tank), towing sleds, a weasel, and wanigans. The tractors will be left at the Pole for use in future construction work.

Besides Major Havola, those participating are as follows:

- George Fowler, Chief Warrant Officer, U. S. Army
- Walter L. Davis, Chief Construction Mechanic, U. S. Navy
- Edward A. Martens, Chief Radioman, U. S. Navy
- Shirley F. Mahan, Radioman Second Class, U. S. Navy
- Meredith Radford, Commissaryman Second Class, U. S. Navy
- Willard E. Cunningham, Construction Mechanic Third Class, U. S. Navy
- James R. Douglas, Construction Mechanic Third Class, U. S. Navy
- Marvin F. Medlin, Construction Mechanic Third Class, U. S. Navy
- Forrest Dowling, Exploration-Geophysicist, University of Wisconsin
- Henry Rosenthal, Aurora physicist, Arctic Institute of North America

Mr. Rosenthal is conducting meteorological observations for synoptic and air operations. Also included in his scientific tasks is such glaciological work as snow sampling at various depths and placing snow accumulation markers along the route for later survey.

Mr. Dowling, on behalf of the University of Wisconsin, is making gravity observations at 3 or 5 mile intervals along the route.

The story of the traverse party is best told through the daily reports sent to McMurdo:

- | | |
|----------------|--|
| 12 December | Mail drop by Det VX-6 Byrd. Much appreciated. |
| 13-15 December | High wind and blowing snow prevented movement. |
| 16 December | Today at noon, under way 7 days. Out of this 4 1/2 traveling, 2 1/2 weathered in. In 4 1/2 days, covered 150 statute miles which gives daily |

average of 33.3 miles per traveling day. Load is getting lighter, and it is wished that daily average will increase. All is well, and work gets to be routine. This morning it took 2 1/2 hours to dig us out of the snow drifts. Presently stopped due to whiteout again.

- 19 December This day started with whiteout which cleared by 1730 local and thereafter we had most beautiful day so far. Nunataks at 82°45'S, 105°W were visible for two hours for Mr. Fowler to make observations and for rest of party to admire.
- 20 December A fair day, at 0800 local, one-third of distance was traveled. All is well.
- 21 December Astrofix at 202000Z, 83°45'30"S, 105°15'00"W at Mile 294 (locally known as Cunningham Corner).
- 22 December 4 hours traveling time lost today, 3 hours due to whiteout, 1 hour due repairs to weasel. Between Mile 305 and 320 extremely rough drifts.
- 23 December Delayed by blowing snow until 1630. Time used for practical crevasse rescue exercise and taking astrofixes. Every member of the party came out of crevasses by using double stirrup and Brussick method. As a crevasse, Mr. Rosenthal's snow pit was used. Traveled until 2045. 13 miles made good. Drifts due to recent snow storm very high.
- 24 December ...Today at noon, on the way 15 days and covered 346 statute miles, 54 miles short of estimate. During these 15 days, 4 days worth of travel time lost due to limited visibility. If the weather holds, we will have a white Christmas.
- 25 December A fine day. At 241800T Horlicks came into sight. Made 30 miles. All is well.
- 26 December Stopped at Mile 399 for a fine Christmas dinner. Mild snowing. Horlick Mountains in background made a memorable setting for a Christmas celebration.

- 28 December Fine weather. From 0700 to 1500 the navigator worked on triangulation and on astro posit. Astro posit at 272000Z 84°46'48"S, 90°20'00"W at Mile 416. Actual mileage from Byrd 421.5 miles. This posit known locally as Mahan's Bend. Weather permitting, more triangulation at eastern end of Horlicks will be done in the morning.
- 2 January Turned this morning toward South Pole at Mile 522, Radford's Junction. A fine sunny day. Stopped at 1900 for New Year's dinner with all trimmings.
- 3 January Delayed 5 hours due whiteout. Made 27 miles today. All is well.
- 4 January The swing on polar plateau. Present elevation 6950 feet. A fine sunny day, high drifts and hard surface.
- 5 January The swing stopped because of crevasse field. [Major Havola requested aerial reconnaissance.]
- 6 January Trail recon underway based on VX-6 Aero observations. All is well.
- 7 January Proceeded cautiously in crevasse field from Mile 624 to astro posit 87°38'S, 82°W, thence toward South Pole along 82°W.
- 10 January 23 miles from the Pole at 89°37'S, 82°00'W. Plan on arriving at Pole 110400Z plus or minus two hours. Excellent snow conditions. Temperature plus 52°F in the sun; -16° in the shade - both extremes during the trip. "Channel fever" noticeable among the crew. All is well.
- 11 January Arrived at South Pole (110500).

Upon the completion of this 800-mile trek, Major Havola received the following message from Rear Admiral David M. Tyree:

WAS PLEASED AND PROUD TO RECEIVE THE REPORT OF YOUR SAFE ARRIVAL AT THE SOUTH POLE X I WISH I COULD HAVE HAD THE PRIVILEGE OF GREETING YOU AT THE END OF YOUR LONG HISTORIC TREK IN WHICH YOU BLAZED A NEW

AND IMPORTANT TRAIL ACROSS THE ANTARCTIC ICE AND SNOW X THIS MARKS, TOO, THE FIRST AMERICAN PARTY TO REACH THE POLE BY GROUND TRAVEL X YOU AND YOUR MEN ARE TO BE CONGRATULATED FOR THE OUTSTANDING MANNER IN WHICH YOU HAVE DELIVERED THE TRAIN X THE SKILL AND EFFICIENCY WITH WHICH YOU CONDUCTED THE HAZARDOUS OPERATION IS A MATTER OF GREAT PRIDE TO THE ENTIRE TASK FORCE X WELL DONE TO YOU AND YOUR SPLENDID CREW X

ADMIRAL TYREE

NAVAL AUXILIARY AIR FACILITY BEARDMORE

On 3 November 1960, Naval Auxiliary Air Facility Beardmore was relocated and rebuilt by a crew dispatched with the equipment-carrying C-130. David G. Weaver, AG3, USN, Terry S. Padgett, CMA3, USN, and Charles A. Powell, RM2, USN, were selected to man the post. This outpost near the Beardmore Glacier is used primarily as a weather station during the summer support phases of Operation DEEP FREEZE. It was established in 1956 to refuel ski-equipped R4D Skytrains and P2V Neptunes which were making flights to the South Pole from McMurdo Sound.

After two weeks at this three-man camp, Padgett and Powell were relieved by Walter S. Steadman, RML, USN, and Franklin Ford, CMA2, USN. On 21 December Weaver, Steadman, and Ford returned to McMurdo, leaving in their place at Beardmore Gary E. Signor, AGAN, Thomas H. Badger, RM2, and Joseph H. Dudding, Jr., CMA3, USN, who will remain at the weather station for a 6-week period.

ELLSWORTH AND WILKES RELIEVED

On 31 December the Argentine icebreaker GENERAL SAN MARTIN arrived at Ellsworth Station, relieving the party established there in February 1958. The twenty-four man party, unable to be relieved during the 1959-60 season when GENERAL SAN MARTIN was turned back by heavy ice conditions, included one American, Floyd Johnson, meteorologist of the U. S. Weather Bureau. Four Americans, three meteorologists and an auroral physicist, will participate in the 1961 program at the station.

Wilkes Station was relieved on 2 January 1961, when Magga Dan, chartered to the Australian National Antarctic Research Expedition, arrived at the Windmill Islands site. Richard L. Penney, University of Wisconsin biologist, who voluntarily spent a second year to complete his studies of the behavior of the Adelle penguin, remarked as the relief and resupply began, "My, but the ship is a lovely sight."

1961 TRAVERSE OPERATIONS

Three oversnow traverse and two airlifted survey programs have been scheduled for Operation DEEP FREEZE 61. The report on the Byrd-Pole party, under Major Antero Havola, USA, begins on page

Three scientific traverses, all conducted by the University of Wisconsin under a grant from the National Science Foundation, are also in the field. Two of these, the McMurdo-Pole Traverse under Dr. Albert P. Crary, and the Ellsworth Highland party under Dr. Charles R. Bentley, are oversnow traverses. The third, an airlifted survey, is based from Byrd Station. The second airlifted survey is a Very-Low Frequency study conducted by scientists from Stanford University.

ELLSWORTH HIGHLAND

The first traverse party departed for the field on 14 November. Departing from Byrd Station, Dr. Bentley and six scientists headed northeast on the first leg of a track which would eventually end on the Eights Coast.

The traverse party consists of the following personnel:

Charles R. Bentley, exploration geophysicist and traverse leader, University of Wisconsin

Herbert Meyers, geomagnetician, U.S. Coast and Geodetic Survey

Hiromu Shimizu, glaciologist, Ohio State University

John R.T. Molholm, glaciologist, Ohio State University

George Widich, traverse engineer, University of Wisconsin

Perry E. Parks, Jr., exploration geophysicist, University of Wisconsin

Robert R. Feyerharm, meteorologist, U.S. Weather Bureau, began the traverse at Byrd Station. Three weeks later, he left the party on a resupply aircraft.

On the first leg of its journey, the party bisected the first and last legs of the 1957-58 route. This 250-mile section was completed on 1 December. The party then turned northward, crossing another leg of the earlier traverse on 11 December at 77°25'S, 100°30'W. Proceeding northward for about 50 miles, it turned east on a track parallel to the 1957-58 route. This leg was completed by the end of December, and the party turned northwest toward the southern end of the Hudson Mountains.

Along its route, the party has been resupplied by Air Development

Squadron SIX R4D aircraft flying from Byrd Station. One of these missions was complicated when the aircraft sheared a tail wheel on landing (Bulletin, Vol. II, No. 4, page 21).

The traverse will terminate on the Eights Coast, where the party will be picked up by aircraft for return to Byrd Station.

McMURDO - POLE

The McMurdo-Pole party began its 1400-mile trek on 10 December. Delayed nearly a month because of repairs that had to be made to two of the three vehicles being used, the party followed a safe route through the heavily crevassed areas of the Skelton Glacier which had been marked a few weeks earlier by a helicopter-supported three-man party. On the Skelton Glacier, Dr. Crary remeasured a number of glaciological movement stakes he had set out on a 1958 traverse, and continued other studies initiated on this earlier trip.

At the Plateau Depot (7750 feet above sea level), VX-6 aircraft had stored 4000 gallons of fuel, two tons of food, and one and a half tons of explosives for use by the party. The party arrived at this point on 24 December and two days later began the southbound journey.

From the Plateau Depot, the party will travel south on the polar plateau following a route about 200 miles west of the Britannia and Queen Alexandra ranges to a fuel cache. This depot, 137 miles from the head of the Beardmore Glacier, will enable the party to resupply with 72 barrels of fuel dropped by Air Force Globemasters in October. The party will then travel south along Amundsen's route to the Pole.

The party consists of the following personnel:

- Albert P. Crary, exploration geophysicist and traverse leader, National Science Foundation
- Edwin S. Robinson, exploration geophysicist, University of Wisconsin
- Mario B. Giovinetto, glaciologist, Ohio State University
- Jack C. Zahn, glaciologist, Ohio State University
- Sveneld A. Evteev, glaciologist, exchange scientist from Soviet Union
- Ardo X. Meyer, geomagnetician, U.S. Coast and Geodetic Survey
- Jack B. Long, traverse engineer, University of Wisconsin
- Ralph E. Ash, traverse engineer, University of Wisconsin

SCIENTIFIC INVESTIGATIONS

The McMurdo-Pole Traverse plans to make 12 major stations and 150 to 200 minor ones during its journey. Investigations will include the following:

Ice depth will be measured at all major stations by standard, seismic reflection methods. At three or more major stations, ice thickness determinations will also be made by seismic refraction methods. This type of seismic program will also give the velocity of the seismic wave in the rock material under the ice, which in turn gives an indication of the type of rock under the ice.

Annual snow accumulation will be studied in shallow pits and trenches at all major stations. Annual layers will be identified by studying density, temperature, grain size, and crystal size.

Snow, firn, and ice will be investigated for density, crystal size, and crystal orientation from ice cores at depths down to about 100 feet.

The surface character of the snow, including sastrugi heights, size, frequency, and orientation, will be logged.

Gravitational values, and information on the angles and intensity of the earth's magnetic field, will be determined.

At all major stations, ice temperatures will be observed by thermohms to depths of 100 feet or more in the drill holes. Changes in temperature below 50 feet give valuable information on the past history of the ice and past climatic variations.

Surface meteorological measurements will be made three times daily.

Mountain ranges and ice-free nunataks visible from the traverse route will be located to furnish additional ground control for mapping projects.

The program of the Ellsworth Highland party is similar to that being conducted by the Crary group.

AIRLIFTED TRAVERSES

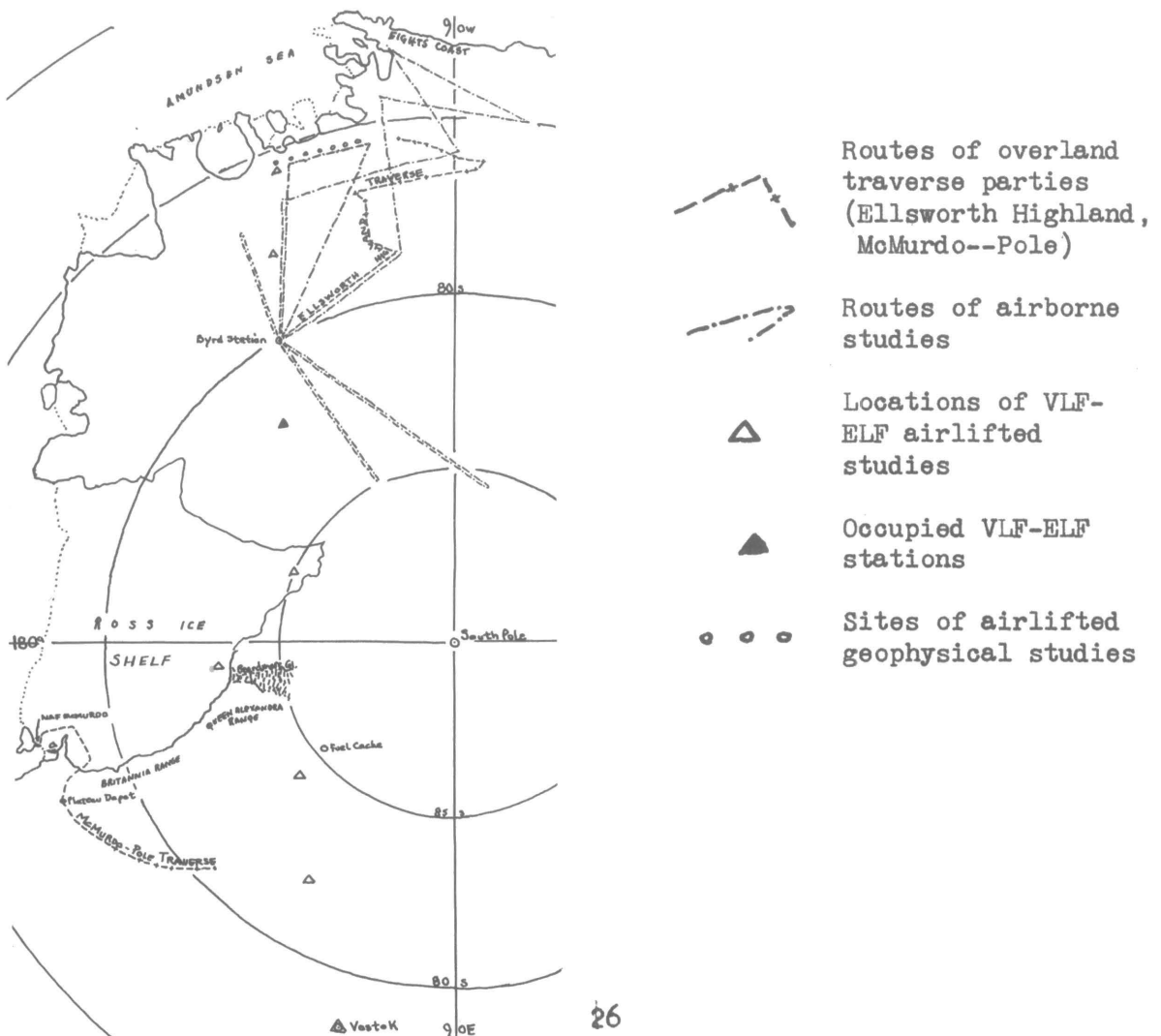
A three-man airlifted traverse party from the University of Wisconsin, scheduled to conduct studies at seven stations between the Kohler Range and the Hudson Mountains, has been delayed because of the lack of fuel and JATO. This survey will make landings on a reconnaissance basis in areas difficult to reach on the surface or not yet covered by oversnow traverses. Seismic,

gravity, and magnetic observations will be made during the landings. Geologic investigation will be undertaken in mountain areas.

In addition, the party will record magnetic observations while airborne. Some of these studies have been completed during aircraft missions to support other parties. By the end of December, R4D aircraft had flown nearly 9000 miles towing the magnetometer.

A Stanford University program will provide for four field investigators to conduct an airlifted survey to determine the geomagnetic latitude control of Very-Low Frequency and Extra-Low Frequency phenomena at nine sites in Marie Byrd Land, on the Ross Ice Shelf, and in Victoria Land. The sites, which extend from Vostok to the Kohler Range, will be visited for approximately three days each. Observations will be coordinated with those to be taken at Byrd Station and on space probes and satellite experiments.

These two airlifted programs are expected to begin their operations in January when the aircraft are released from the support of other field parties.



STATEN ISLAND ON SURVEY

On 7 December, USS STATEN ISLAND (AGB-5) left Port Lyttelton for her month's duty making an oceanographic survey in the Ross Sea area. Her program scheduled a series of stations in the area of the Antarctic Convergence and a study in the eastern part of the Ross Sea.

Battling heavy seas enroute to her survey area, the icebreaker could make only one station on the Antarctic Convergence. This was accomplished on 11 December. The next day she received word that a Seabee at Hallett Station had suffered a stroke and would have to be evacuated. She broke her way through the ice and on the morning of 14 December, while still twenty miles from the station, launched her helicopters to evacuate the patient.

The icebreaker then headed for McMurdo, where the patient was left for air transport to New Zealand.

On 19 December she left McMurdo Sound and headed for the eastern part of the Ross Sea. Passing near Little America V, she again launched her helicopters. A quick reconnaissance showed that the station was about 90 percent covered by snow.

On the 21st she began her first ocean station. Ten days later, her survey was completed. Her grid pattern survey included geomagnetic studies, bathymetry, marine biological collections, sea water carbon and biological productivity studies and marine geology. 31 stations were made in the eastern Ross Sea and Sulzberger Bay areas.

Favorable ice conditions and an all-out effort by ship's company and scientists enable the program to be completed three days ahead of schedule. On 27 December the ship cruised into Sulzberger Bay and radar-plotted the shore line and coastal areas, using the Scott Nunataks and John Bowman Peak for reference positions. It was found that the majority of the ice shelf between 152° and 156° West was afloat four to six miles on the shore line. Islands in the bay were replotted from previous positions.

On 29 December a helicopter reconnaissance was made in an attempt to locate an island reported at about 75°26'S, 146°12'W by Rear Admiral Richard E. Byrd on his 1940 voyage in this area in the Bear. The results of the search were inconclusive, but several grounded icebergs were sighted.

STATEN ISLAND accomplished not only an extensive program of oceanographic studies in a previously unknown area, but also made the deepest penetration to the east of Cape Colbeck. After completing her mission, she returned to Christchurch for refueling and resupply for the Amundsen Sea Expedition.

In April 1955, shortly after Mobile Construction Battalion Special was commissioned, the men of the unit expressed a desire to have an official plaque. With this thought in mind, personnel were requested to submit sketches for a suitable plaque.

During this same period, representatives of the Walt Disney Studios were working with the personnel of Task Force 43 and MCB Special, preparing their cameras and equipment to accompany the expedition. Since the Disney studios were well qualified to produce a suitable design, the various sketches received were forwarded there, to be incorporated in a single acceptable design. Shortly thereafter, the present Operation DEEP FREEZE design was returned for comments, with explanations of what the various portions represented, as follows:



The dark blue background shows the bottom of the world and the Antarctic continent. The gold anchor is symbolic of a naval operation. The shield, divided into four parts, depicts the type of units engaged in the operation, i.e. top left, an icebreaker, representing the ships and ships' personnel engaged in the operation; lower left, an aircraft (DC-4), representing the aircraft and aviation personnel; lower right, a bee, representing the Navy's SeaBees. In that the three types of service mentioned above constituted the operating force a penguin was depicted in the upper right corner, showing that the operation was to be conducted in the land of the penguin, Antarctica.

This design was accepted by all concerned as the emblem of Task Force 43. Mr. Walt Disney was sent a letter of appreciation and was made an honorary member of the expedition.



THE SECRETARY OF THE NAVY
WASHINGTON

The Secretary of the Navy takes pleasure in commending

TASK UNIT 43.1.3

consisting of
U.S.S. GLACIER (AGB-4) and U.S.S. BURTON ISLAND (AGB-1)
for service as set forth in the following

CITATION:

"For exceptionally meritorious service while attached to and serving with United States Naval Support Force, Antarctica during Operation DEEP FREEZE 60. Performing a feat which had never before been accomplished by surface ship, Task Unit 43.1.3 succeeded in penetrating to the coast of Antarctica in the Bellingshausen Sea area. After reaching the Thurston Peninsula, the Unit sailed through uncharted waters while delineating one hundred and twenty miles of coastline and discovering a great many new geographical features. Subsequently, in the face of almost daily snowstorms, difficult ice conditions, and poor visibility, the Task Unit carried out important scientific surveys in the fields of geology, glaciology, hydrography, and oceanography in this unexplored region. The splendid record achieved by the Unit's gallant officers, crews, and embarked scientific personnel is an eloquent tribute to their courage and resourcefulness, and serves to enhance American prestige in the field of Antarctic exploration. Their skill and devotion to duty were in keeping with the highest traditions of the United States Naval Service."

All personnel attached to and serving on board Task Unit 43.1.3 during the above period, or any part thereof, are hereby authorized to wear the Navy Unit Commendation Ribbon.

William B. Franke

Secretary of the Navy

STAFF NOTES

Dr. James E. Mooney, Deputy U. S. Antarctic Projects Officer, spent most of Christmas Day in surgery. As he and his family were leaving church services on Christmas morning, Dr. Mooney slipped on the ice and fell, fracturing his hip in two places. He was taken to Georgetown University Hospital, where a plate was put in his hip.

At this writing, Dr. Mooney is still in the hospital, but his condition is rapidly improving, and he is now able to get around in a wheel chair. His active interest in Antarctic affairs has not been the least abated by this unfortunate encounter with the ice.

THE C-130B HERCULES - A RECORD OF ACCOMPLISHMENT

The C-130B Hercules aircraft being used by Air Development Squadron SIX (VX-6) in Antarctica for logistical support are entering an impressive record of accomplishment in the annals of Antarctic history. During the two-month period between 29 October and 27 December 1960, the 3 planes made a total of 80 flights to Byrd, New Byrd, and South Pole Stations, carrying 718.5 tons of cargo. 20 flights, with a total of 191.9 tons, were made to the South Pole; 28 flights, carrying 239.4 tons, to Byrd; and 32 flights, with 287.2 tons, to the new Byrd Station. These payloads consisted of building materials, fuel oils and lubricants, and communications and scientific equipment, ranging from communications antennas to equally unwieldy arches for the construction program at New Byrd Station.

In addition to this huge amount of cargo, the Hercules aircraft carried 100 "passenger tons" to the three stations, including DEEP FREEZE staff members, members of Antarctic support activities, scientific personnel, visitors, and correspondents.

The increased scope of support made possible by these giants of the air is illustrated in two notable feats. Personnel and their vital equipment and supplies were transported on 3 November to the Beardmore Weather Facility in a single C-130 flight, an operation which would have taken several R4D flights.

In the other instance, two Hercules flew, on 10 December, 1400 miles from McMurdo Sound to a site in the Walker Mountains on the Eights Coast, delivering the University of Minnesota geological party of Dr. J. Campbell Craddock. After having landed on an unprepared snow surface, the two aircraft returned to McMurdo without refueling, thus completing the longest logistics flight ever undertaken in Antarctica.

R4D RETRIEVED FROM HORLICK MOUNTAINS

(See also page 21, Bulletin, Vol. II, No. 4, December 1960)

Three members of Air Development Squadron SIX (VX-6) have recently proven that, to the Navy, the impossible takes just a littler longer than the normal to perform, even in the freezing, windy temperatures of Antarctica.

On 25 November 1960, an R4D Skytrain, piloted by Captain Joe G. Walker, USMC, collapsed a port landing gear while attempting to land a group of civilian scientists from Ohio State University's Polar Research Foundation in the central Horlick Mountains, 300 miles from the South Pole. After 15 1/2 hours, all personnel were evacuated by a Rescue Skytrain from McMurdo, piloted by Captain Joseph F. Lisicky, USMC.

On 10 December, Captain Lisicky, Fred A. Long, Jr., ADC, USN, and Sergeant Andrew N. Holzemer, USMC, were flown from Byrd Station to the site of the crashed plane with orders to repair it, if at all possible, so that it could be returned to McMurdo, and eventually to the United States, for overhaul. This aircraft represented one-third of the Skytrain capability for DEEP FREEZE 61, and if it could not be made airborne, VX-6 air support of the scientists would be greatly curtailed.

The party started work in good weather, and anticipated finishing in three or four days. But the capricious Antarctic weather whirled in around them, stranding them for two weeks and forcing them to subsist on survival rations. They slept in sleeping bags in the aircraft, which was heated by a portable Herman Nelson heater.

When the three first arrived, they had to dig the plane out of snow drifts, only to have it covered again by each new storm. It was sometimes impossible to breathe out-of-doors because of the force of the wind. Temperatures dropped down below zero, accompanied by winds up to 60 knots.

On 20 December they watched a cyclone, some 3 to 5 miles distant, shoot a column of snow thousands of feet up into the air.

Despite the elements working against them, the repair job was finished, and on 26 December, after several days delay because of whiteout conditions, a second R4D flew into their location, piloted by LT George Janulis, USN, and LT Robert H. Farrington, USN, with Captain Walker and Navigator Fred W. Streitenberger, USMC, aboard. Captain Walker and Sgts Holzemer and Streitenberger flew the repaired aircraft back to Byrd Station with the second plane, Captain Lisicky and Chief Long aboard, providing cover.

ANTARCTIC CHRONOLOGY (1960-61)

(See Bulletin, Vol. II, No. 2, page 14-15; No. 3, page 16-17; No. 4, page 25-26)

- 2 December EASTWIND arrived Port Lyttelton (020800).
STATEN ISLAND arrived Port Lyttelton (022030).
- 7 December STATEN ISLAND departed Port Lyttelton (070200) for McMurdo.
- 8 December Byrd-Pole Traverse (TF 43.4) (Major Antero Havola, USA, leader) departed Byrd Station (081920) for South Pole.
- 9 December EASTWIND departed Port Lyttelton (092200) for McMurdo Sound.
R4D landed at Eights Coast, 73°30'S, 95°W, with geological party. Two C-130s followed.
- 10 December McMurdo-Pole Traverse (Dr. Albert P. Crary, leader) departed NAF, McMurdo Sound (100430) for Plateau Depot (arrived 24 December).
- 12 December EDISTO arrived Port Lyttelton.
Work commenced on main tunnel, New Byrd Station (120815).
STATEN ISLAND diverted to vicinity Hallett for evacuation of cardiac patient (122340).
- 13 December STATEN ISLAND arrived Hallett and embarked cardiac patient (131930) for transfer to McMurdo.
USNS GREENVILLE VICTORY (TAK-237) changed operational control to Task Force 43 at Davisville, R. I. (132210).
- 16 December TOWLE, arrived Port Lyttelton (162000).
- 18 December WILHOITE anchored Auckland Island (180001); departed (181200) for Dunedin (arrived 191015).
- 19 December Automatic weather station (GOLF) established (190001) at 78°03'S, 158°15'E.
STATEN ISLAND departed McMurdo for scheduled oceanographic operations (190400).

22 December TOWLE departed Port Lyttelton (2700700) for McMurdo (arrived 250900).

24 December UC-1 (142412) down near Darwin Glacier. Personnel evacuated 25 December. Aircraft recovered 26 December.

Downed R4D arrived Byrd Station (250044) from central Horlicks.

GLACIER departed McMurdo Sound (240530) for Port Lyttelton (arrived 300100).

GREENVILLE VICTORY departed Davisville (241400) for Panama Canal Zone (arrived 291200).

25 December UC-1 (142425) made emergency landing (252217) off Hut Point. No personnel injuries. Aircraft recovered on 3 January.

26 December McMurdo-Pole Traverse departed Plateau Depot (260655) for South Pole.

27 December Pole Station chapel and part of garage collapsed, causing temporary power loss. No personnel injuries. Power restored.

28 December ALATNA arrived Port Lyttelton (280230).

29 December STATEN ISLAND completed oceanographic operations in Ross Sea; departed for Port Lyttelton (arrived 062000 January).

Trail laid out to auroral sub-station 40 miles from Byrd Station; air strip marked at sub-station site.

30 December ALATNA departed Port Lyttelton (300900) for McMurdo (arrived 8 January).

31 December GREENVILLE VICTORY departed Panama Canal Zone (310200) for Port Lyttelton.

Ellsworth Station relieved.

2 January GLACIER departed Port Lyttelton (020700) for Wellington (arrived 022000).

Wilkes Station relieved.

3 January USS ARNEB (AKA-56) changed operational control to Task Force 43 (031500) and arrived Davisville (031700).

2 R4D flights placed USGS party in field in the eastern Horlick Mountains.

4 January WILHOITE departed Dunedin (042200) for ocean station (arrived 072200).

9 January WILHOITE departed ocean station.

10 January EASTWIND fire; operational readiness unimpaired; departed McMurdo for Hallett.

TOWLE departed McMurdo for Port Lyttelton.

OTTER ACTIVITY

On 24 December, while on a resupply flight to the New Zealand party in the Mount Christmas area, a VX-6 Otter, piloted by Captain Thomas E. Morrow, USMC, had to make an emergency landing, due to power failure, 30 miles east of Darwin Glacier. Also on board was Captain L. D. Bridge, RNZA, the leader of New Zealand's Scott Base. There were no personnel injuries, and only minor damage was done to the starboard ski.

A helicopter, flown by LT John A. Hickey, USN, and a ski-equipped P2V Neptune, piloted by LT David J. Finn, USN, were dispatched to locate the Otter and to evacuate the personnel. On the return trip, foul weather forced the helicopter to land near Koettlitz Glacier; however, the next day all personnel were safely back at McMurdo Sound.

Captain Morrow returned by helicopter to the downed aircraft, and after making some repairs, he was able to fly it back to McMurdo on 2 January.

On 26 December, another Otter, piloted by LTJG William D. Hughes, USNR, upon take-off from McMurdo, over-ran the skiway and collided with a snow bank. While there were no personnel injuries, the damage on this plane was more extensive, consisting of a collapsed port main landing gear, ruptured fuselage and associated frame damage, ruptured forward fuel cell, and a buckled tail ski.

As the plane hit the snow bank, it bounced into the air, contacted the skiway, and again became airborne, continuing for approximately 3/4 of a mile before finally coming to earth.

SOME SONGS OF THE SOUTH POLE

Edward A. Bacon, former Deputy Assistant Secretary of the Army, who visited Operations DEEP FREEZE IV and 60, has published a book of poetry, Some Songs of the South Pole. The poetry describes not only the men and Operation DEEP FREEZE, but also the environment in which these activities take place.

The book contains a foreword by Rear Admiral George J. Dufek, USN (Ret.), and an historical sketch by Dr. James E. Mooney. It is available at the Francis Scott Key Book Shop, Washington, D. C.

TIROS II IN OPERATION DEEP FREEZE

On 8 December 1960, TIROS II, the United States television-equipped satellite, inadvertently took part in Operation DEEP FREEZE 61, giving Antarctic meteorologists a more detailed picture of weather conditions over the wide ocean between Australia and Wilkes Land than they had ever seen before.

The satellite is not on a polar orbit, nor is it earth oriented, but on 8 December, happenstance pointed it in the right direction as it passed over this vast ocean area, resulting in a rare picture of clear skies, fair weather cloud, heavy cloud and frontal systems over an area 3600 miles long by 900 miles wide.

The picture was taken at 1800 (local time) and Washington passed the computed figures, interpolated from the photographic survey, on to DEEP FREEZE headquarters at Christchurch, New Zealand. Ten minutes after the information was received in New Zealand, Captain W. Lanterman, USN, staff meteorologist, was studying the reconstructed weather chart.

USNS GREENVILLE VICTORY (TAK-237)

GREENVILLE VICTORY departed Davisville on 24 December. In her hold was 2463 short tons (4531 measurement tons) of cargo. 82.6 percent (by weight; 77.0 percent by volume) of this is destined for use at NAF, McMurdo Sound. 12.5 (18.4) percent will eventually be used at Byrd Station. The other 113 short (275 measurement) tons is for use at Pole Station, Hallett, and Christchurch.

ADDITIONS TO THE LIBRARY COLLECTION

ARGENTINA

Armada Argentina, Grupo Naval Antartico, Orden de Operaciones: GRUANTAR 01/60; GRUANTAR 02/60. Sept. 1960, annexes, tables, charts. [mimeo.]

Beltramino, J.C.M., Sobre los Nombres de Antartico y Antartida. In: Revista Geografica Americana, Ano XXV, Vol. XLII, No. 250, Nov. 1958, p. 447-452, illus.

BELGIUM

Centre National de Recherches Polaires, Bulletin d'Information, No. 3, Oct. 1960.

DENMARK

Larsen, H., ed., Acta Arctica, Fasc. XII: The Circumpolar Conference in Copenhagen, 1958. 1960, 92p., illus.

NEW ZEALAND

Helm, A.S., Supplement to the Provisional Gazetteer of the Ross Dependency. New Zealand Geographic Board. 1960, 30p. [mimeo.]
(Includes: Additional List of Expeditions to the Ross Dependency. 10p.)

New Zealand Antarctic Society, Antarctic, Vol. 2, No. 8, Dec. 1960.

SOVIET UNION

Academy of Sciences of the USSR, International Geophysical Year. Bibliography of Literature in Russian, No. 3, 1959. 1960, 88p. [Foreword and table of contents in English.]

[Lebedev, V.], Who Discovered the Antarctic? In: Soviet Union (English edition), No. 127, 1960, p. 52, illus.

Monakhov, F.I., I.P. Pasechnik, and N.V. Shebalin, Seismic and Micro-seismic Observations on the Soviet Stations during the International Geophysical Year. Academy of Sciences of the USSR. 1959, 38p., illus., tables. [Title page, table of contents, and conclusion in English.]

UNITED KINGDOM

Falkland Islands Dependencies Survey, Programme of Work, 1960-61. N.D., 22p., chart. [mimeo.]

_____, Progress Report, 1959-60 Season. N.D., 12p. [mimeo.]
(FIDSC:NO.6/60)

Heap, J., Graham Land Area: Ice Forecast for the 1960-1961 Navigation Season. Falkland Islands Dependencies Survey. N.D., 1p. [mimeo.]

MacDowall, J., Distribution of Atmospheric Ozone; A Preliminary Analysis of Some International Geophysical Year Observations. Reprint, Nature, Vol. 187, No. 4735, July 1960, p. 382-383, illus.

Pratt, J.G.D., A Gravity Traverse of Antarctica. The Trans-Antarctic Expedition Committee. 1960, 22p., tables, fig., map. (T.A.E. Scientific Reports, No. 2.)

_____, Seismic Soundings Across Antarctica. The Trans-Antarctic Expedition Committee. 1960, 69p., tables, fig., map, app. (T.A.E. Scientific Reports, No. 3.)

_____, Tides at Shackleton, Weddell Sea. The Trans-Antarctic Expedition Committee. 1960, 21p., tables, fig., plates. (T.A.E. Scientific Reports, No. 4.)

UNITED STATES

American Society of Polar Philatelists, Ice Cap News, Vol. 5, No. 6, Nov.-Dec. 1960.

Camn, J.B., Snow-Compaction Equipment: Snow Drags. U.S. Naval Civil Engineering Laboratory. Oct. 1960, 40p., illus. (Tech. Report 109.)

Chance Vought Aircraft, Inc., Nuclide Heat: Utilization of Radionuclides for Remote Area Heating. Sept. 1960. (CVA Report EOR-13152.)

Commerce Dept., Office of Tech. Services, Information on Soviet Bloc International Geophysical Cooperation - 1960, Nos. 140/150.

Dartmouth College Library, Stefansson Collection, Polar Notes, No. II, Nov. 1960.

IGY World Data Center A: Glaciology (Amer. Geog. Soc.), Glaciological Notes, No. 4, Oct. 1960.

National Academy of Sciences, IGY Bulletin, Nos. 41 and 42, 1960.

Navy Dept., Bureau of Yards and Docks, Snow Removal. Oct. 1953, 47p., illus., tables. (Tech. Pub. NAVDOCKS TP-PW-29.)

Nobles, L.H., Glaciological Investigations, Nunatarssuag Ice Ramp, Northwestern Greenland. May 1960, 57p., illus., tables, app. (SIPRE Technical Report 66.)

Office of Naval Research, Naval Research Reviews, Nov. and Dec. 1960.

Sharpe, L.M., Reactors in Merchant Vessels. In: Atom Industry, Vol. IX, No. 3-4, April 1960, p. 5, 6, and 8, illus.

Special Libraries Association, Geography and Map Division Bulletin, No. 41, Oct. 1960.

State Dept., The Conference on Antarctica. Washington, October 15 - December 1, 1959. Sept. 1960, 78p. (Dept. of State Pub. 7060; International Organization and Conference Series 13.)

Tien, C., Analysis of a Sub-Ice Heat Sink for Cooling Power Plants. July 1960, 17p., illus., tables, app. (SIPRE Research Report 60.)

INTERNATIONAL ORGANIZATIONS

International Council of Scientific Unions, Special Committee for the IGY, Annals of the International Geophysical Year, Vol. X: The Fifth Meeting and the Termination of CSAGI. 1960, 288p., illus., tables.

ADDITIONS TO THE MAP COLLECTION

BELGIUM

Institut Geographique Militaire

- Princess Astrid Coast, East Part (69°20'S to 70°30'S;
12°00'E to 18°00'E)
- Princess Ragnhild Coast, West Part (69°20'S to 70°30'S;
18°00'E to 24°00'E)
- Princess Ragnhild Coast, East Part (69°20'S to 70°30'S;
24°00'E to 30°00'E)

1960. Scale 1:250,000 [Lambert Conformal
Conical Projection with two standard paral-
lels: 68°40'S and 71°20'S] [Based on
vertical aerial photographs taken in Febru-
ary 1960 (IRIS Operation 1960)]