# BULLETIN

OF THE

# U.S. ANTARCTIC PROJECTS OFFICER

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# BULLETIN of the

# U.S. ANTARCTIC PROJECTS OFFICER

An account of logistic and scientific programs and current events of interest in Antarctica. Published from September through June and distributed to organizations, groups, and individuals interested in United States Antarctic programs, plans, and activities.

Rear Admiral James R. Reedy, USN
United States Antarctic Projects Officer

Vol. V, No. 8 April 1964

ACKNOWLEDGEMENTS

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The United States Antarctic Projects Officer and his staff are indebted to Mr. J. H. Weir and the Honorable George Laking of the New Zealand Embassy for granting permission to reproduce the speech delivered to the Antarctican Society on 30 January 1964, and to Mr. Earl H. Moser, Jr., of the U. S. Naval Civil Engineering Laboratory for preparing the article on USNCEL research and development in polar regions

All photographs are official U. S. Navy photographs unless otherwise noted. The map on page 24 was prepared by the National Science Foundation and appeared in the Antarctic Status Report for November 1963.

Greenwich Mean Time is used throughout this issue except where otherwise noted.

No events after 15 March 1964 appear in this issue.

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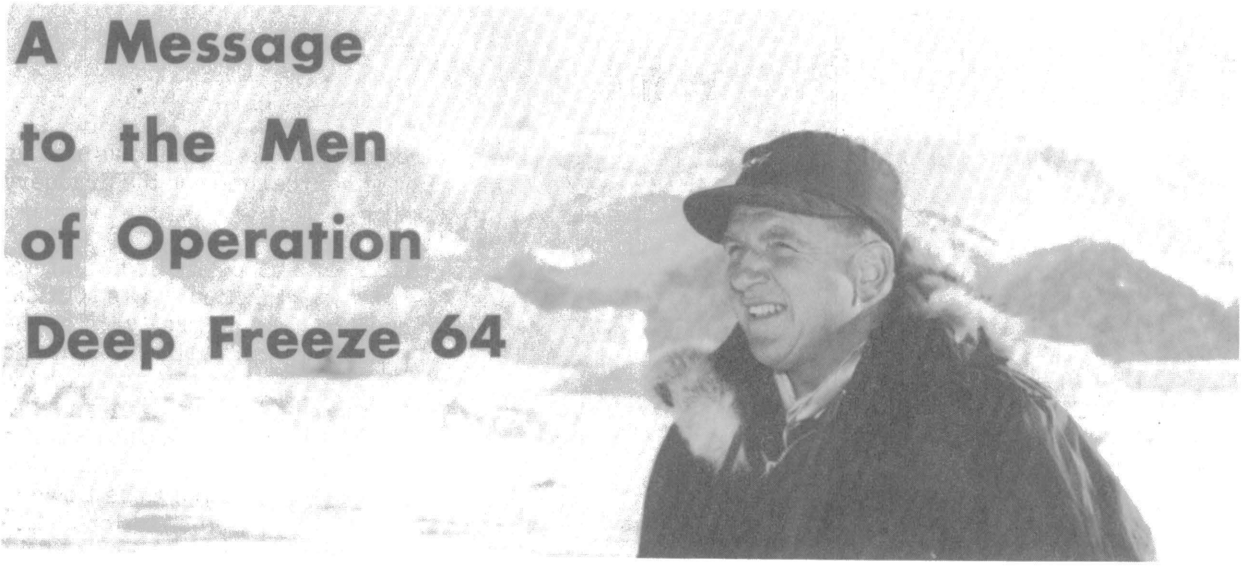
# A Message to the Men of Operation Deep Freeze 64



"The departure of USS GLACIER from Hallett Station, after an unfortunate fire, brings to a close the summer operating season. At this time, I want to convey my most hearty congratulations to every officer and man who has participated in the overall highly successful Operation DEEP FREEZE 64.

"Each unit of the task force has performed so well that it is impossible to single out in this message any one group for special commendation. The base management, clean-up, and maintenance by Antarctic Support Activities, the air transportation and resupply effort by Air Development Squadron SIX, the U. S. Air Force units, the U. S. Army helicopter detachment, the difficult antennae construction work of Mobile Construction Battalion EIGHT under most severe conditions, the icebreaking, escort work, and reconnaissance of the icebreakers, the seamanship and cargo handling of the resupply ships; these and all other tasks have been accomplished with the efficiency, enthusiasm, and skill that are in the highest traditions of the United States Armed Services. To the entire summer support group, I say 'well done'.

"For the wintering-over party; the departure of the last ship marks the beginning of your battle with an increasing hostile environment. You have a challenging task before you.

"To you, I send my best wishes for a successful winter. The next six months will give you additional opportunity to learn a great deal more about the Antarctic and yourselves. Do your work well, and remember always that you are in the thoughts and prayers of those of us preparing for next season's operation."

— Rear Admiral James R. Reedy
United States Navy

# Monthly Digest

On 12 March 1964, the Commander, U. S. Naval Support Force, Antarctica, issued his final situation report of the season. All ships were north of 60° South latitude and, therefore, out of the Antarctic as defined by treaty. Stations were being secured for the winter, and 289 men (including 1 United States scientist wintering-over at the Russian Vostok Station) were settling down to face the winter. By the time this Bulletin is in the reader's hands, darkness will have fallen over the South Pole and the shades of night will be creeping across the continent toward its periphery.

It is too soon to close the accounts of DEEP FREEZE 64, as all the information is not yet in. Certain highlights, however, are clearly visible. In the field of aviation, two remarkable flights were made, one at the beginning of the season, the other towards its close. On 1 October, two LC-130Fs landed at Williams Field after a flight of 14-1/2 hours from Cape Town, South Africa, a distance of 4,700 miles. Australia now remains the only large land mass in the Southern Hemisphere from which aircraft have not yet penetrated to the Antarctic. An aerial reconnaissance of 10 February went from McMurdo beyond the Pole, if that is the correct expression, and found some hitherto unseen mountains in Queen Maud Land.

Equally significant, if not so dramatic, was the substitution of C-130Es for C-124s by the Military Air Transport Service. The air drops, which had been a feature of Antarctic logistics since 1956, were suspended, and fuel was delivered to inland stations by Navy LC-130Fs equipped with internal fuel tanks. Although the wastage on air drops was minor, the task for a small station's crew to recover, sort, and store the materials, which tended to scatter with the wind, was considerable. Both the loss and the labor have been saved.

Aviation, too, contributed directly to the science program as well as providing logistic support. In addition to the parties placed in the field, the Army's turbo-powered helicopter detachment carried geologists on a survey of the Ellsworth Mountains. With this aid, the scientists accomplished in days what would on the surface have required weeks, landing as high as 12,000 feet with neither the time nor the drudgery of climbing.

In our emphasis on science and logistics, we sometimes forget that Antarctica has its political aspects, governed by a unique treaty. For the first time, inspections permitted by the Antarctic Treaty were carried out. United States inspection teams visited Argentine, British, Chilean, New Zealand, and Soviet bases, and flew over a French one. Inspectors from Australia, New Zealand, and the United Kingdom were flown to McMurdo and other United States stations. Everywhere the welcome was in the spirit of the Treaty.

For the ships, it was a good year with light ice in the Ross Sea area. Instead of more than 60 miles of channel to be cut in McMurdo Sound, as occurred on DEEP FREEZE 63, there was slightly less than 30. Even with this reduced task, some damage occurred to ships, the worst being loss of propeller and shaft by USS ATKA in late November.

By contrast, USCGC EASTWIND, which went to the Antarctic Peninsula, found heavy ice. Similar conditions were reported in the Weddell Sea and elsewhere, but they were not such, as impeded ships in the performance of their missions, and no calls for icebreaker assistance were received. On two occasions, however, young New Zealand seamen were transferred to United States ships for emergency appendectomies.

Among the more unusual events was the journey by air of a detachment of SeaBees to the Soviet Vostok Station. There, they set up a camp and proceeded to erect antennas for a cooperative scientific project in which United States and Soviet scientists are participating.

This project involves the study of cosmic rays by the forward scatter technique. It is part of the program of geophysical investigations known as the International Years of the Quiet Sun. The general objective is to complement and complete the work done during the International Geophysical Year, when solar activity was at its height. Scientists who are engaged in this program are among the 288 men, who have settled down for the long winter at United States stations.

# Antarctica

## FIRE AT HALLETT STATION

On 5 March at about 1930 hours (0730, 6 March, local time), fire was discovered in the science building at Hallett Station. All hands turned to and fought the blaze. In the 25- to 30-knot winds then blowing, the fire rapidly got a good hold and spread to the aurora tower. Chemical extinguishers, the principal reliance in Antarctic fire-fighting, proved ineffective under these conditions, and water was used, exhausting the station's supply. Although the two structures and their equipment were almost a total loss, the fire was contained and did not spread to other buildings. There were no fatalities, and injuries were limited to minor burns incurred by those fighting the fire.

Firefighting Equipment at McMurdo Station Used to Battle a 1961 Fire Amidst Raging Winds Similar to the Recent Fire Which Damaged Two Buildings and Destroyed Equipment at Hallett Station.

Fortunately, USS GLACIER, the last ship in the area, was only 70 miles away at the time and put on flank speed to reach the scene as soon as possible. GLACIER replenished the station's water supply from her tanks. Personnel equipment and some other supplies were also replaced from GLACIER's stocks. On board the ship were 100 members of Mobile Construction Battalion EIGHT returning home from their season's activities. They, and GLACIER's crew, assisted in cleaning up the station.

An inspection was carried out by Captain James B. Elliott, Jr., USN, Commander, Antarctic Support Activity, representing the Navy, and Dr. Trevor Hatherton, representing the New Zealand Department of Scientific and Industrial Research. It was found that the auroral instruments, ionosonde, and riometer were a total loss, that the geomagnetic and cosmic ray gear could be repaired from parts available at the station, and that the whistler and earth current programs could continue unaffected. Some loss of records from the seismology, whistler, earth current, ionosonde, and riometer projects had occurred. Hallett Station's ability to support the personnel on board remained unimpaired. The inspectors estimated that the scientific programs had been reduced about 50 per cent.

McMurdo Station Firemen Mixing the Ansul Dry Chemical Used in Extinguishing a Fire in the Parachute Building at McMurdo in 1961 Similar to the Recent Fire at Hallett Station.

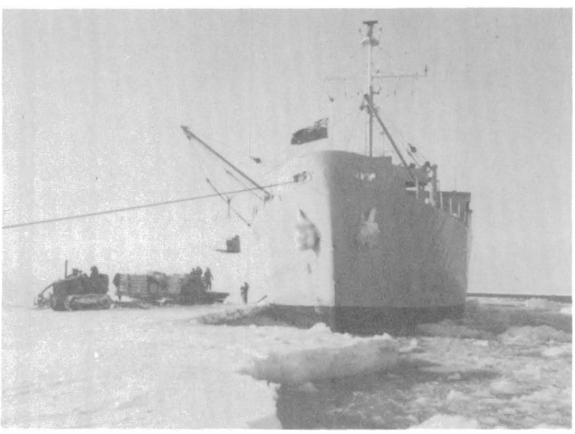
After considering the report, the Commander, U. S. Naval Support Force, Antarctica; the Head, U. S. Antarctic Programs Office, National Science Foundation; and the Director of the Department of Scientific and Industrial Research decided to continue the operation of the station and those scientific programs not affected by the fire. Two members of the scientific party returned to New Zealand aboard GLACIER.

The cause of the fire was not definitely determined, but it was believed that it originated between 0705 and 0730 (local time) from malfunction of a space jet heater.

Fire, of course, has always been the most dreaded hazard of the Antarctic. All United States stations have elaborate systems for the detection and suppression of fires, and trained fire-fighting parties who maintain a 24-hour watch. Fire alarm systems use ceiling heat indicators that are triggered to go off at temperatures of 120 to 130 degrees. Principal reliance for extinguishing fire is placed on Ansul dry chemical, as water is scarce and it and other liquids are subject to freezing. As noted above, the chemical proved ineffective under conditions encountered at Hallett. At McMurdo Sound, a far larger station than Hallett, the fire department has a power wagon and a Nodwell tracked vehicle, each equipped with a 2,000-pound dry chemical container and six fire extinguishers. In addition, there is a fire trailer for fighting outside fires that carries a 1,000-pound chemical tank and a 100-gallon water tank.

## PIER CARVING

Icebreaking is a major task in each year's Operation DEEP FREEZE. Cutting a channel through ice up to 15 feet thick requires the force of a 6,500- or 8,600-ton icebreaker slamming into the pack under full power, utilizing inertia and dead weight to crush and fragment the solid ice sheet. Yet operations under heavy ice conditions also require precision since, before the cargo vessels can be unloaded at McMurdo Station, icebreakers must carve out a "pier" or berthing area shaped to the contours of the cargo carrier's hull.



Food, Supplies, and Scientific Equipment Being Unloaded From HMNZS ENDEAVOUR, Berthed in the Pier Carved Out for Her by one of the U. S. Navy Icebreakers.

The requirements for a suitable pier are dictated by the need for safety and efficiency. The site must provide a stable platform upon which cargo can be placed and men and heavy equipment can operate without risk of breaking through. It must also be firmly attached to the main body of the pack so that when the ship is moored to the ice, typically high winds will not cause the portions of the ice tied to the ship to "break out" carrying cargo, men and equipment with it. The site must also be free of cracks and flaws so that it can withstand the "carving" operation without breaking up or opening leads which would make off-loading operations unsafe or unfeasible.

With these requirements in mind, a survey is made consisting of ice coring, to determine the thickness and density of the ice, and chemical analysis of the cores, to determine salinity of the ice, which, in turn, indicates the tensile strength of ice. When a site is selected, the icebreakers begin the task of carving it to fit the ship, for any irregularity in the berth may cave-in or puncture the thin-skinned cargo carrier.

The actual operation begins with the stationing of controllers on the ice. They signal for icebreaker movements with hand signals and megaphones. At the direction of the controllers, the icebreaker must execute maneuvers involving tremendous force with great precision, a task requiring utmost patience and skill. Once the icebreaker has completed the shaping of the mooring, the face is cut smooth and finished with ice saws and dead-man anchors are installed in the ice.

Successful preparation of a berth is wholly dependent upon the success of the site survey and selection and the skill of the icebreaker crews. Even then, the task may be impossible, as evidenced by an incident involving USS ATKA during DEEP FREEZE 64 when she attempted to cut a berth for USNS PVT. JOHN F. MERRELL. A freak pressure change caused a lead to open at right angles to the berth cut and, after a day's work employing all the skill and knowledge of the icebreaker men, the pier could not be saved and the project had to be abandoned at that site.

## POST-SEASON FLIGHT TO AMUNDSEN-SCOTT SOUTH POLE STATION ESTABLISHES LONGEST SUMMER SEASON IN HISTORY OF STATION

The need for essential spare parts and scientific instruments necessitated a flight to Amundsen-Scott South Pole Station on 25 February, after the station had already been officially isolated for the 1964 winter season for 11 days.

Rear Admiral James R. Reedy visited the station aboard a Navy Air Development Squadron

SIX LC-130F which took in the necessary equipment and made the last mail delivery.

This flight was the latest to the South Pole of any austral summer season. Previously, the latest landing had been on 17 February 1961. This season, the men at Amundsen-Scott witnessed the longest austral summer in the history of the station. On 23 October 1963, Admiral Reedy ended the 1963 winter period of isolation at the station by completing the earliest south polar landing in history.*

A U. S. Navy LC-130F Similar to the One That Flew the Post-Season Flight to Amundsen-Scott South Pole Station on 25 February 1964.

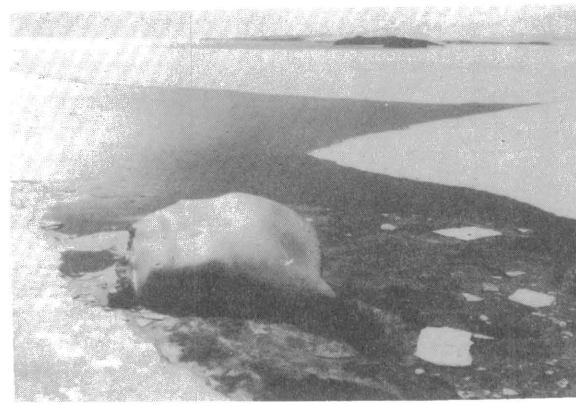
A summary of the first flights to the station and the last flights out of the station for all seasons since the station was opened are presented below.

| Operation | First Flight In | Last Out |
|---|---|---|
| DEEP FREEZE II | 31 Oct 56 | 12 Feb 57 |
| DEEP FREEZE III | 26 Oct 57 | 27 Jan 58 |
| DEEP FREEZE IV | 16 Nov 58 | 29 Dec 58 |
| DEEP FREEZE 60 | 21 Nov 59 | 5 Feb 60 |
| DEEP FREEZE 61 | 30 Oct 60 | 17 Feb 61 |
| DEEP FREEZE 62 | 28 Oct 61 | 16 Feb 62 |
| DEEP FREEZE 63 | 5 Nov 62 | 16 Feb 63 |
| DEEP FREEZE 64 | 23 Oct 63 | 25 Feb 64 |

*See "Earliest Landing in History Successfully Completed at South Pole," Bulletin, December 1963, page 2.

## ICEBERG ENTERS SHIPPING CHANNEL IN McMURDO SOUND

On 26 February, a large iceberg, estimated to measure 500 feet long, 200 feet wide, and 100 feet high and weigh 1-1/2 million tons, was spotted at the entrance to the shipping channel in McMurdo Sound. After several days at the entrance, it began floating into the channel and had to be removed.



USS ATKA, One of the U. S. Navy's Icebreakers, Pushing the Large Iceberg Out of the Shipping Channel in McMurdo Sound Into the Sea.

USS ATKA and USS BURTON ISLAND, after a struggle, pushed it back out of the shipping channel into the sea. During the early stages of the operation, the iceberg seemed to be gaining headway in its drive into the channel. The icebreakers, however, after careful maneuvering, to prevent ice cave-in and possible bow damage, managed to push it out of the channel and safely into open water.

## ON WINTERING OVER*

We got darkness on the land,
We got ice upon the sea,
We got absolutely nothin'
You can pick right off a tree,
We got winds that are colossal
Which make walking quite a feat.
What ain't we got?
We ain't got heat.

We get kerosene by air,
We get movies, we get mail,
We get counselled by the chaplain,
But it's all to no avail.
We get springtime in November,
When the tourists start to sprout.
What don't we get?
We don't get out.

(Until MATS arrives.)

—Anonymous.

*From the MATS FLYER, February 1964, page 2.

# Stateside

## NEW ZEALAND IN THE ANTARCTIC

J. H. WEIR

[The following reproduces in major part the remarks of Mr. J. H. Weir, Counsellor of the New Zealand Embassy in Washington, D. C., before the Antarctican Society on 30 January 1964. We are indebted to Mr. Weir and the New Zealand Ambassador, the Honorable George Laking, for permission to reproduce Mr. Weir's informal talk.

In introducing Mr. Weir, the President of the Society, Rear Admiral David M. Tyree, USN(Ret.), expressed appreciation for the cooperation and hospitality, both official and personal, given to the United States by the government and people of New Zealand.]

When a New Zealander speaks to any gathering abroad, it is well understood that, no matter what the subject, he says something about the Maoris, the Polynesians who are our fellow New Zealanders and who add a colourful and cheerful quality to our otherwise rather dour society and in whose exploits, in war and navigation, we take great pride.

There is, in the annals of the Maoris, an account of a Raratongan canoe voyage to the far south in which the leader of the expedition reported having seen "things like rocks whose summits pierced the skies" projecting above the frozen white sea.

This may be only legend, but another thousand years were to pass before anything better could be recorded in European history. This was in 1642 when the Dutchman, Abel Tasman, who had been combing the South Seas in search of the unknown southern continent, discovered New Zealand and concluded that we were part of the unknown southern land he had been seeking.

If Tasman thought that New Zealand was part of Antarctica, it was another Antarctic explorer who proved that we weren't. Captain Cook sailed around and through New Zealand, and proved conclusively that the country could by no means be regarded as a frozen waste—a point, however, which those of you who have experienced our lack of central heating may have been inclined to question.

Having landed in New Zealand, Cook became, as it were, the first European "citizen" of New Zealand. A few years later, in 1773, he set out this time from Capetown, to become the first person to cross the Antarctic Circle; in the following year, operating from Queen Charlotte Sound in New Zealand, Captain Cook again sailed south and, by coincidence, on this very day, 30 January, 190 years ago, reached 71°10' South Longitude, 106°54' West, being convinced at this point that he could get no further. In his Journal for 30 January 1774 he wrote:

> "I will not say it was impossible anywhere to get in among this ice, but I will assert that the bare attempting of it would be a very dangerous enterprise and what I believe no man in my situation would have thought of. I whose ambition leads me not only farther than any other man has been before me, but as far as I think it possible for man to go, was not sorry at meeting this interruption, as it in some measure relieved us from the danger and hardships inseparable with the navigation of the southern polar regions."

I am told that since Cook's day no other ship has reached the point that Cook did. So he hadn't done too badly even if he wasn't too impressive a prophet and greatly underestimated the work of which future generations were to prove themselves capable.

Cook was but the first of many Antarctic explorers for whom New Zealand became the gateway to the south. The next explorer, it must be admitted, was not treated as kindly as his successors: Marion du Fresne was killed in the Bay of Islands. But after this unhappy episode we were visited by Bellingshausen, the Russian, who saw the first land definitely sighted south of the Antarctic Circle, by Biscoe and Balleny in the early 1830's, by Dumont d'Urville, Captain

Wilkes, Captain James Clark Ross and by Scott and Shackleton and Byrd.

During this century New Zealand has been the base for a large proportion of the expeditions that have gone south and many New Zealanders have taken part in them. In 1923 our geographical proximity to Antarctica, our historical association with the continent, and our continuing interest in the exploration of the region led to the transfer by the United Kingdom to New Zealand of jurisdiction over the Ross Dependency, an area of ice and water and almost no land, between 160°East and 150° West Longitude, south of 60° South Latitude.

We thus became something more than a staging point; we had a claim to an area which had been the scene of intensive exploratory work by Sir James Clark Ross between 1839 and 1843 and by the expeditions of Scott and Shackleton and other British parties in the early years of this century. And we had for ourselves a chunk of land invested with all the mystique of Antarctic exploration, an area of land visited by explorers whose sorrows we had shared and whose triumphs had become part of our own national heritage.

May I dwell on this point a minute by recalling that in Christchurch, from which "DEEP FREEZE" operates and from whose port at Lyttelton many Antarctic expeditions set sail, there are, in the central part of the city, only three statues of people: one is Robert Godley, the founding father; the second, Queen Victoria; and the third, Scott, the Antarctic explorer—a trinity which symbolises a great deal of our heritage.

If, in 1923, we acquired an empire in Antarctica, we scarcely proved to be born imperialists. We appointed Administrators to the Ross Dependency but they never set foot in the territory they were appointed to administer. Neither did we bring law and order to nor seek to derive what profit there might be in exploiting the indigenous inhabitants. Our chief administrative acts were attempts to regulate whaling. But as we had no gunboats in the Dependency to enforce our edicts they appear to have been for the most part disregarded, this greatly to the disadvantage of the whales.

Over the years, however, there grew up in New Zealand a feeling of some misgiving about our failure to exploit the Ross Dependency. Who knew what hidden wealth might lie beneath the ice? And if we were not established as the owners of our segment, if we did not permanently occupy more than the odd island as a weather station, who knew but that some other power might usurp our claim? People were already declining to recognize New Zealand's right to the Ross Dependency.

In 1956, as Sir Edmund Hillary was about to leave New Zealand to set up Scott Base and lead a New Zealand team to the Pole, the Government moved to settle the question. Hillary was appointed Magistrate and Postmaster of the Dependency; Captain Kirkwood of the ENDEAVOUR, Assistant Administrator, and Dr. Trevor Hatherton the scientific leader, was made coroner. Thus for the first time did the Ross Dependency gain the respectability conferred by a resident bureaucratic structure.

This brings us almost to the present, to the establishment of Scott Base and the joint United States-New Zealand base at Cape Hallett, the IGY programmes and the activities of the New Zealand group led by Sir Edmund Hillary in support of the British Trans-Antarctic Expedition.

The character of Scott Base and the nature of the first team's accommodation and equipment were the product of a compromise between finance, tradition, and Sir Edmund Hillary. While the Government contributed some money for the Trans-Antarctic Expedition, much of it—contrary perhaps to what some Americans would expect in a welfare state—much of the money was raised by public appeal. The appeal, however, did not raise enough to satisfy Sir Edmund Hillary who, after his first visits to Antarctica, stepped up his demands for better and more modern equipment. In the process he shocked some of New Zealand's fireside explorers who were held firmly in the grip of traditionalism, who deplored the introduction of machinery into the virgin snows and regretted the provision of certain home comforts which, presumably, by subtracting from the hardships of exploration lessened the honour and glory.

Hillary stood firmly and wisely for good equipment and a bit of comfort, and, within the limits of the finance that could be raised, succeeded in introducing some modern accommodation and equipment and some useful if makeshift machinery. When he set off to lay the supply depots for the T. A. E., Scott Base was warm and reasonably comfortable, the party had a "weasel" and some converted Ferguson tractors never meant for Antarctic use and the team had built a structure they called a caboose, which looked something like a horse float on runners and which, most important, was heated. The story of the laying of the depots, Hillary's final dash to the pole to the wild cheers of his fellow New Zealanders at home and the differences between Hillary and the British T.A.E. leader, Dr. Vivian Fuchs—differences which reflected the national characteristics of New Zealanders and Britons, as much as the temperaments of the two men—these are well-known to you and I shall avoid becoming involved in the controversy.

I should say something about the nature and scope of the work carried out by New Zealand scientists and field parties since 1956. I hope you won't mind if I, as a layman, confine myself to a most general statement and don't attempt to wrap my tongue around some of the words that scientists use.

Just as during the first years of the Antarctic scientific programme the activities of New Zealand scientists at Scott Base and Hallett Station were related principally to the requirements of the IGY, so during 1964 they will, for the most part, be geared to the requirements of something which I see is called the International Years of the Quiet Sun. In the intervening years research investigations have also been carried out for various New Zealand scientific bodies.

For some years now the major field objective of the Ross Dependency Research Committee—which coordinates the New Zealand scientific programmes in the territory—has been the completion of topographical and geological reconnaissance of the part of the Dependency area not submerged beneath the ice. This year the only large area not already surveyed is being explored by an eight-man party led by Mr. Bob Miller, the surveyor who was deputy leader of the New Zealand component of the Trans-Antarctic Expedition of 1956-58. The party is using dog sledges—which, unhappily—to the layman—seem doomed to play a lesser role in future Antarctic exploration—but was placed in the field by U.S. Navy aircraft. The second field party, a smaller group, is undertaking geological studies and is equipped with motor toboggans.

The scope for field work in Antarctica has attracted attention from a number of New Zealand institutions which are now regularly sending small research teams to the area. The emphasis in our activities is thus changing from wide-ranging and spectacular exploratory field journeys to the prosecution of detailed research into specific problems in relatively limited areas. The projects may be of value scientifically but for the most part they don't make good copy. There's limited romance in the study of the ice break-out in McMurdo Sound, or in the physical and chemical processes taking place in the hot lakes in the Dry Valley areas west of McMurdo Sound, or in the analysis of snow samples. Biological studies of penguins and seals at Cape Royds and of skua and penguin colonies at various locations offer a little more scope, but oceanographic surveys by the New Zealand Navy ship, ENDEAVOUR, are again somewhat esoteric —unless the ship were to get stuck in an ice-pack.

One project, however, deserves more than scant mention. This season attention is being focused on the little-known Balleny Islands, a chain of four main islands, a number of islets lying about 150 miles north of the Oates Coast of Victoria Land. Only about half a dozen landings on these inhospitable islands have ever been recorded, and not one of these was for more than a few hours. It is hoped this summer to make a high-level aerial survey, a short icebreaker visit in order to examine ice conditions and carry out a low-level helicopter reconnaissance, and an icebreaker reconnaissance in March to enable the landing of small parties to carry out research work ashore. Finally it is hoped that as a result of these surveys it will be possible to occupy a station somewhere in the group for a couple of months during the next summer season.

As in previous years the New Zealand programme will be dependent, to a very considerable extent, upon United States logistic support, both for transit between New Zealand and McMurdo and for the transport and resupply of parties in the field. Our gesture towards reciprocity, and it is only a gesture, is the provision of space on our research and supply ship, ENDEAVOUR, for the transport of oil and other supplies for the United States programme. Although there is an agreement between our two countries for United States support of New Zealand activities in return for base facilities at Christchurch, the generous help we have received in the transportation of men and supplies has gone far beyond the terms of formal agreement. Without this help our activities in the Antarctic could never have reached their present level.

Finally, may I bring to your notice that this week there has been a further notable development in New Zealand activity in Antarctica. Mr. Walter Nash, who was once New Zealand Minister in Washington, for long our Minister of Finance, Leader of the Opposition, and, for a term, Prime Minister—and, as such, strongly advocating a completely international regime in Antarctica—this week became, I should think, the first octogenarian to visit Antarctica, including the South Pole.

NAVY COMMISSIONS USS RICHARD E. BYRD

The guided missile destroyer, USS RICHARD E. BYRD (DDG-23), which was launched on 1 February 1962, was commissioned in Seattle, Washington on 7 March 1964.

The ship, named for the famous polar explorer, the late Rear Admiral Richard E. Byrd, is of the CHARLES F. ADAMS class. She is 437 feet long and displaces 4,500 tons fully loaded. Her armament consists of TARTAR surface-to-air missiles, two 5-inch/54 caliber guns, antisubmarine rockets (ASROC), and antisubmarine torpedoes.

U.S. Senator Henry M. Jackson of Washington was the principal speaker at the commissioning ceremony which was attended by the Admiral's widow.

## GEOGRAPHIC NAMES OF ANTARCTICA

The following Antarctic names have been approved, changed, located more accurately or vacated by action of the Board on Geographic Names and the Secretary of the Interior since the last such list appeared in the December 1962 Bulletin.

The names are drawn from virtually all parts of the Antarctic, but more particularly from the Heritage Range, Jones Mountains, Windmill Islands, South Georgia, and the Antarctic Peninsula and Ross Sea areas. New nomenclature predominates, but the list includes a substantial number of amended names and six decisions which have been vacated, reflecting refinements in cartographic knowledge of the area. Names preceded by an asterisk (*) are amended forms of names previously listed as approved. Except for "islets" that have been systematically changed to "islands," the former name is cross-referenced to the new decision by use of the word "see."

| | | |
|---|---|---|
| Abel Nunatak | 63°34'S, | 59°41'W |
| Access Point | 64 50 S | 63 47 W |
| Achæan Range | 64 30 S | 63 37 W |
| Achilles, Mount | 64 29 S | 63 34 W |
| Achilles Heel | 64 30 S | 63 38 W |
| Active Reef | 63 23 S | 55 52 W |
| *Acuña Island | 60 46 S | 44 37 W |
| Acuña Rocks | 63 18 S | 57 56 W |
| *Adams Island | 66 33 S | 92 34 E |
| Adit Nunatak | 65 54 S | 62 48 W |
| Agamemnon, Mount | 64 38 S | 63 30 W |
| Agurto Rock | 63 18 S | 57 54 W |
| Ahab, Mount | 65 29 S | 62 08 W |
| Aitkenhead Glacier | 63 57 S | 58 44 W |
| Alatna Valley | 76 52 S | 161 10 E |
| Albone Glacier | 64 13 S | 59 42 W |
| *Alectoria Island | 63 59 S | 58 37 W |
| Alexander, Mount | 63 18 S | 55 48 W |
| Alibi, Mount | 65 55 S | 62 40 W |
| Allen Knoll | 63 40 S | 58 35 W |
| *Alligator Island | 66 34 S | 97 40 E |
| Allison Glacier | 78 16 S | 161 57 E |
| Allison Islands | 66 21 S | 110 29 E |
| Ambush Bay | 63 10 S | 55 26 W |
| Amundsen Coast | E. side of Liv Glacier to W. side of Robert Scott Glacier | |
| *Anchorage Island | 67 36 S | 68 13 W |
| Anderson Dome | 73 30 S | 93 54 W |
| Anderson Massif | 79 10 S | 84 45 W |
| Andreassen Point | 63 54 S | 57 46 W |
| Andrews Rocks | 54 04 S | 38 00 W |
| Anemometer Hill | 68 11 S | 67 00 W |
| *Aniline Island | 54 19 S | 36 28 W |
| *Antarctic Peninsula | Prime Head to line between Cape Adams and the coast S. of Eklund Islands | |
| Antell, Mount | 54°07'S, | 36°42'W |
| Archibald Point | 63 13 S | 56 40 W |
| Arena Glacier | 63 24 S | 57 03 W |
| Argo Point | 66 15 S | 60 55 W |
| Argus, Mount | 68 54 S | 63 50 W |
| Arrol Icefall | 64 35 S | 60 40 W |
| Arthur Harbor | 64 46 S | 64 04 W |
| Ashley, Mount | 54 07 S | 37 21 W |
| *Asses Ears | 62 20 S | 59 45 W |
| Asses Ears, The: see Asses Ears | | |
| Astro Cliffs | 66 40 S | 62 26 W |
| *Atriceps Island | 60 47 S | 45 09 W |
| Aurora, Mount | 78 15 S | 166 17 E |
| Austin Head | 54 31 S | 36 30 W |
| Austin Valley | 73 30 S | 93 19 W |
| Austral Island | 66 30 S | 110 39 E |
| Avalanche Ridge | 73 30 S | 94 22 W |
| *Avian Island | 67 46 S | 68 54 W |
| *Babe Island | 54 16 S | 36 18 W |
| Bagshawe Glacier | 64 56 S | 62 38 W |
| Bahamondes Point | 63 19 S | 57 55 W |
| Bailey Island: see Bailey Peninsula | | |
| *Bailey Peninsula | 66 17 S | 110 32 E |
| *Balaena Islands | 66 00 S | 111 07 E |
| Balæna Valley | 63 20 S | 56 23 W |
| *Bar Island | 68 17 S | 67 12 W |
| *Barlow Island | 62 52 S | 62 23 W |
| Baronick Glacier | 78 36 S | 161 50 E |
| Barrett Nunataks | 79 17 S | 81 24 W |
| Barrios Rocks | 63 19 S | 57 58 W |
| Barton Peninsula | 62 13 S | 58 44 W |
| Basecamp Valley | 73 30 S | 94 22 W |
| Battleship Promontory | 76 54 S | 160 55 E |
| Baume, Mount | 54 39 S | 36 13 W |
| Beagle Island | 63 25 S | 54 40 W |
| Beall Reefs | 66 18 S | 110 27 E |
| *Bear Island | 68 11 S | 67 04 W |
| *Beaumont Island | 68 12 S | 66 57 W |
| Beaver Rocks | 63 40 S | 59 21 W |

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|---|---|---|
| Bednarz Cove | 66°21'S, | 110°32'E |
| Begg Point | 54 03 S | 37 59 W |
| Bekker Nunataks | 64 40 S | 60 56 W |
| Benlein Point | 66 29 S | 110 29 E |
| *Bennett Islands | 66 57 S | 67 35 W |
| Benz Pass | 63 41 S | 58 22 W |
| *Berthelot Islands | 65 19 S | 64 09 W |
| *Betbeder Islands | 65 15 S | 65 02 W |
| Bibby Point | 63 48 S | 57 57 W |
| Bildad Peak | 65 49 S | 62 36 W |
| *Bills Island | 64 50 S | 63 31 W |
| Birkenhauer Island | 66 29 S | 110 37 E |
| *Birks, Mount | 65 18 S | 62 09 W |
| Biscoe Point | 64 49 S | 63 49 W |
| Bishop Peak | 78 10 S | 162 09 E |
| Bistre, Mount | 65 03 S | 62 02 W |
| Bjelland Point | 54 06 S | 36 44 W |
| Black Peak: see Greaves Peak | | |
| *Black Thumb | 68 25 S | 66 53 W |
| Black Thumb Mountain: see Black Thumb | | |
| *Blair Islands | 66 50 S | 143 09 E |
| *Blake Island | 63 37 S | 58 58 W |
| Blakeney Point | 66 14 S | 110 35 E |
| Blancmange Hill | 64 00 S | 57 40 W |
| *Block, Mount | 85 45 S | 177 20 E |
| *Block Peak | 85 32 S | 177 00 E |
| Bob Island | 64 56 S | 63 26 W |
| Bombardier Glacier | 64 19 S | 59 59 W |
| Bomford Peak | 54 08 S | 37 38 W |
| *Bone Bay | 63 38 S | 59 04 W |
| Bone Cove: see Bone Bay | | |
| Bone Point | 66 25 S | 110 40 E |
| Bongrain, Cape: see Bongrain Point | | |
| *Bongrain Point | 67 43 S | 67 48 W |
| Bonnabeau Dome | 73 31 S | 94 08 W |
| Bonner Beach | 54 50 S | 36 01 W |
| Borchgrevink Coast | Cape Adare to Cape Washington | |
| Bordal Rock | 54 49 S | 36 14 W |
| Bore | 54 16 S | 37 10 W |
| Boreal Point | 63 08 S | 55 48 W |
| Borrello Island | 66 19 S | 110 22 E |
| *Bosner Island | 66 28 S | 110 36 E |
| Bosner Rock: see Bosner Island | | |
| Bowie Crevasse Field | 79 07 S | 84 45 W |
| Boydell Glacier | 64 11 S | 59 04 W |
| Boyer Rocks | 63 35 S | 59 00 W |
| Brading, Mount | 64 17 S | 59 17 W |
| Brandt Cove | 54 49 S | 36 02 W |
| Brandy Bay | 63 50 S | 57 59 W |
| Brash Island | 63 24 S | 54 55 W |
| Bratina Island | 78 00 S | 165 32 E |
| Breaker Island | 64 46 S | 64 07 W |
| *Breakwater Island | 64 47 S | 63 13 W |
| Breakwater Rocks | 54 12 S | 36 35 W |
| Briggs Glacier | 54 10 S | 37 08 W |

| | | |
|---|---|---|
| Brocken | 54°29'S, | 36°04'W |
| Brögger Glacier: see Brøgger Glacier | | |
| *Brøgger Glacier | 54 32 S | 36 26 W |
| Brooker, Mount | 54 30 S | 36 14 W |
| Browning Island: see Browning Peninsula | | |
| *Browning Peninsula | 66 28 S | 110 33 E |
| Browns Point: VACATED | 64 30 S | 63 02 W |
| Bruce Island | 64 54 S | 63 08 W |
| Bryde Rocks | 54 01 S | 38 16 W |
| *Buff Island | 64 50 S | 64 33 W |
| Bulnes Island | 63 18 S | 57 58 W |
| Bulwark, The | 78 20 S | 163 39 E |
| Burn Murdoch, Cape: see Murdoch, Cape | | |
| Burn Murdoch Nunatak: see Murdoch Nunatak | | |
| Cabrial Rock | 54 19 S | 36 14 W |
| Cache Heights | 73 28 S | 94 05 W |
| Cain Nunatak | 63 34 S | 59 42 W |
| Camana Rock | 54 10 S | 36 37 W |
| Camelback Ridge | 73 31 S | 94 24 W |
| Camel Nunataks | 63 25 S | 57 26 W |
| Canso Rocks | 63 39 S | 59 18 W |
| Canty Point | 64 45 S | 63 32 W |
| Carcelles Peak | 54 22 S | 36 30 W |
| Carleton Glacier | 78 01 S | 162 29 E |
| Carlita Bay | 54 14 S | 36 38 W |
| Carro Pass | 63 57 S | 58 09 W |
| Carse, Mount | 54 43 S | 36 05 W |
| *Casabianca Island | 64 49 S | 63 32 W |
| *Casy Island | 63 14 S | 57 30 W |
| Cathedral Crags | 63 00 S | 60 34 W |
| *Cat Island | 65 47 S | 65 13 W |
| *Cave Island | 62 27 S | 60 04 W |
| Cave Landing | 66 23 S | 110 29 E |
| Cave Ravine | 66 23 S | 110 29 E |
| Cave Rock: see Cave Island | | |
| Chaplains Tableland | 78 00 S | 162 38 E |
| Chaplin Head | 54 03 S | 37 54 W |
| Chapman Point | 65 56 S | 61 17 W |
| Charles, Cape: see Charles Point | | |
| *Charles Point | 64 14 S | 61 00 W |
| Chaucheprat Point | 63 32 S | 56 42 W |
| Cheapman Bay | 54 09 S | 37 31 W |
| *Chick Island | 66 47 S | 121 00 E |
| *Cholet Island | 65 03 S | 64 02 W |
| Christensen Glacier | 54 20 S | 36 52 W |
| Christmas Cliffs | 73 33 S | 94 17 W |
| Christoffersen Heights | 73 36 S | 94 06 W |
| Christophersen Glacier | 54 25 S | 36 47 W |
| Church Bay | 54 00 S | 37 47 W |
| Churchill Point | 66 24 S | 110 23 E |
| Cinder Spur | 62 08 S | 58 10 W |
| Clark Island: see Clark Peninsula | | |
| *Clark Peninsula | 66 15 S | 110 33 E |
| *Clements Island | 65 56 S | 66 00 W |
| Clements Markham Island: see Clements Island | | |

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|---|---|---|
| Cletrac Peak | 64°20'S, | 59°38'W |
| Cleveland Rock | 53 59 S | 37 22 W |
| *Cliff Island | 66 00 S | 65 40 W |
| *Close Islands | 67 03 S | 144 33 E |
| *Cobalescou Island | 64 11 S | 61 39 W |
| *Coffer Island | 60 45 S | 45 08 W |
| Coley Glacier | 64 09 S | 57 14 W |
| Collier Hills | 79 42 S | 83 15 W |
| Comer Crag | 54 01 S | 37 38 W |
| *Compass Island | 68 38 S | 67 48 W |
| Connors Point | 66 18 S | 110 29 E |
| *Consort Islands | 67 52 S | 68 42 W |
| Contact Point | 63 23 S | 56 59 W |
| Corneliussen, Mount | 54 17 S | 36 58 W |
| *Cornwall Island | 62 21 S | 59 42 W |
| Cornwall Point: see Cornwall Island | | |
| Coupvent Point | 63 16 S | 57 36 W |
| *Courtier Islands | 67 52 S | 68 44 W |
| Covadonga Harbor | 63 19 S | 57 55 W |
| *Craggy Island | 62 28 S | 60 19 W |
| Crean Glacier | 54 08 S | 37 01 W |
| *Crescent Island | 54 01 S | 37 20 W |
| Crest, The | 63 25 S | 56 59 W |
| Crimson Hill | 62 57 S | 60 36 W |
| Cronk Islands | 66 19 S | 110 25 E |
| *Cruls Islands | 65 13 S | 64 35 W |
| Crutch Peak: see Crutch Peaks | | |
| *Crutch Peaks | 62 28 S | 59 56 W |
| Cruyt Spur | 64 37 S | 60 42 W |
| Cube Rock | 63 37 S | 56 22 W |
| Cugnot Ice Piedmont | 63 38 S | 58 10 W |
| Cunningham, Mount | 54 12 S | 37 18 W |
| Cutler Stack | 62 36 S | 60 59 W |
| Daggoo Peak | 65 45 S | 62 20 W |
| Dahl Reef | 66 15 S | 110 29 E |
| Daimler, Mount | 63 45 S | 58 29 W |
| Dale Glacier | 78 17 S | 162 00 E |
| *Dålk Island | 69 23 S | 76 30 E |
| D'Angelo Bluff | 87 18 S | 153 00 W |
| *Danger Islands | 63 25 S | 54 37 W |
| *Darwin Island | 63 26 S | 54 38 W |
| *Davis Islands | 66 39 S | 108 26 E |
| Dead End Glacier | 54 47 S | 35 56 W |
| Decazes, Point: see Decazes Island | | |
| *Decazes Island | 66 26 S | 67 20 W |
| *Deniau Island | 65 27 S | 64 21 W |
| Denison Island | 66 18 S | 110 27 E |
| *Detaille Island | 66 52 S | 66 48 W |
| Diana Reef | 63 26 S | 56 11 W |
| Dimaryp Peak | 63 26 S | 57 02 W |
| Dinsmoor Glacier | 64 22 S | 59 59 W |
| Diplock Glacier | 64 03 S | 58 50 W |
| Discovery Rock | 54 09 S | 36 35 W |
| *Dismal Island | 68 06 S | 68 50 W |
| Dobson Dome | 64 02 S | 57 55 W |
| Dolence, Mount | 79 51 S | 83 05 W |
| *Dot Island | 54°03'S, | 37°21'W |
| Douglas Crag | 54 46 S | 36 00 W |
| Douglas Peaks | 80 00 S | 81 05 W |
| Dow, Mount | 54 42 S | 36 10 W |
| Downham Peak | 64 17 S | 58 54 W |
| Drake Icefall | 79 46 S | 83 50 W |
| Dreadnought Point | 64 00 S | 57 48 W |
| Drew Cove | 66 20 S | 110 30 E |
| Dromedary Glacier | 78 23 S | 163 06 E |
| Dufek Coast | E. side of Liv Glacier to E. side of Beardmore Glacier | |
| Duke Ernst Bay: see Vahsel Bay | | |
| *Dumbbell Island | 68 43 S | 67 35 W |
| Duparc Rocks | 63 31 S | 58 50 W |
| Duperré Bay | 64 27 S | 62 41 W |
| *Duroch Islands | 63 18 S | 57 54 W |
| Duthiers Head: see Duthiers Point | | |
| *Duthiers Point | 64 48 S | 62 49 W |
| *Dynamite Island | 68 11 S | 67 00 W |
| Eady Ice Piedmont | 78 32 S | 165 15 E |
| Earp, Mount: see Wyatt Earp, Mount | | |
| Eastface Nunatak | 78 42 S | 163 38 E |
| East Russell Glacier: see Russell East Glacier | | |
| Eddy Col | 63 26 S | 57 06 W |
| Eden Rocks | 63 29 S | 55 42 W |
| Edgeworth Glacier | 64 23 S | 59 55 W |
| Edman Island | 66 18 S | 110 32 E |
| Edson Hills | 79 50 S | 83 39 W |
| Elephant Point: see Miers Bluff | | |
| Eliason Glacier | 64 15 S | 59 25 W |
| Elliott Rock | 54 00 S | 38 05 W |
| *Emperor Island | 67 52 S | 68 43 W |
| Ems Rock | 54 10 S | 36 35 W |
| Ephraim, Mount: see Ephraim Bluff | | |
| *Ephraim Bluff | 62 34 S | 59 43 W |
| Ernesto Pass | 54 01 S | 37 44 W |
| Estay Rock | 63 20 S | 57 59 W |
| Eternity Mountains: VACATED | 70 57 S | 63 35 W |
| Eubanks Point | 73 27 S | 93 38 W |
| Exum Glacier | 73 30 S | 94 13 W |
| Eyres Bay | 66 29 S | 110 28 E |
| Fagerli, Mount | 54 20 S | 36 43 W |
| False Bay: VACATED | 64 33 S | 62 51 W |
| *False Island | 64 31 S | 62 52 W |
| Farrington Ridge | 73 36 S | 94 18 W |
| Ferguson Peak | 54 47 S | 35 50 W |
| Fidase Peak | 63 23 S | 57 33 W |
| *Fitzroy Island | 68 11 S | 66 58 W |
| Fitzroy Point | 63 11 S | 55 07 W |
| Fivemile Rock | 63 29 S | 57 03 W |
| Flask Glacier | 65 47 S | 62 25 W |
| Flatcap Point | 64 07 S | 58 07 W |

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|---|---|---|---|---|---|
| *Flensing Islands | 60°42'S, | 45°41'W | Griffith Island | 66°20'S, | 110°29'E |
| *Fletcher Island | 66 53 S | 143 05 E | *Grosvenor Mountains | 85 40 S | 176 00 E |
| Fliess Bay | 63 12 S | 55 10 W | Grosvenor Range: see Grosvenor Mountains | | |
| Forbidden Rocks | 73 36 S | 94 12 W | *Guébriant Islands | 67 48 S | 68 24 W |
| *Foreland Island | 61 55 S | 57 36 W | Gulbrandsen Lake | 54 12 S | 36 44 W |
| *Fort Point | 62 34 S | 59 34 W | Gutiérrez Reef | 63 18 S | 57 55 W |
| Fort Rock: see Fort Point | | | Haddon Bay | 63 18 S | 55 44 W |
| *Fort William | 62 23 S | 59 43 W | Hahn Island | 78 15 S | 164 58 E |
| Foster Bluff | 66 25 S | 110 37 E | Hamilton Bay | 54 48 S | 35 54 W |
| Foster Glacier | 78 25 S | 162 55 E | Hammerstad Reef | 54 13 S | 37 25 W |
| Fothergill Point | 63 35 S | 60 12 W | Hampton Bluffs | 64 25 S | 59 18 W |
| Fraser, Mount | 54 37 S | 36 21 W | *Hannam Islands | 66 55 S | 142 57 E |
| Freberg Rocks | 54 30 S | 36 42 W | *Hanson Hill | 63 35 S | 58 48 W |
| Fritsche, Mount | 66 00 S | 62 42 W | Harmer Glacier | 54 46 S | 36 15 W |
| Gamma Hill | 63 34 S | 56 47 W | *Harp Island | 66 00 S | 65 41 W |
| Gándara Island | 63 19 S | 57 56 W | Harpon Bay | 54 16 S | 36 37 W |
| *Gaston Islands | 64 29 S | 61 50 W | Harrigan Hill | 66 19 S | 110 29 E |
| Gaston Islet: see Gaston Islands | | | Harris Rock | 62 57 S | 56 19 W |
| Gaul Cove | 67 49 S | 67 11 W | *Harry Island | 64 07 S | 61 59 W |
| Gavin Ice Piedmont | 63 44 S | 59 00 W | *Hash Island | 54 49 S | 35 59 W |
| Georges, Cape: see Georges Point | | | Haskell Glacier | 73 34 S | 94 11 W |
| *Georges Point | 64 40 S | 62 40 W | Haslum Crag | 64 22 S | 56 59 W |
| *Gerd Island | 60 40 S | 45 44 W | *Haswell Island | 66 31 S | 93 00 E |
| Gervaize Rocks | 63 21 S | 58 06 W | *Haswell Islands | 66 32 S | 92 59 E |
| Gibson Bay | 63 19 S | 55 53 W | *Hatch Islands | 66 50 S | 109 13 E |
| *Gillies Islands | 66 32 S | 96 24 E | Hauge Strait | 54 28 S | 36 53 W |
| *Girdler Island | 66 00 S | 65 40 W | Haunn Bluff | 66 23 S | 110 33 E |
| Gjelstad Pass | 54 17 S | 36 57 W | *Hayrick Island | 68 42 S | 67 32 W |
| Globus, Mount | 54 19 S | 37 00 W | Hector, Mount | 64 36 S | 63 25 W |
| *Gnome Island | 67 33 S | 66 50 W | Heine, Mount | 78 06 S | 167 30 E |
| *Gnomon Island | 61 06 S | 54 52 W | Hektoria Glacier | 65 03 S | 61 31 W |
| Goldenberg Ridge | 66 28 S | 110 35 E | Helen, Mount | 64 32 S | 63 38 W |
| González Anchorage | 63 19 S | 57 56 W | Helland Glacier | 54 29 S | 36 37 W |
| Gopher Glacier | 73 28 S | 94 00 W | Helms Bluff | 78 29 S | 164 22 E |
| *Gossler Islands | 64 42 S | 64 22 W | Hemphill Island | 66 23 S | 110 34 E |
| *Goudier Island | 64 50 S | 63 31 W | *Henkes Islands | 67 44 S | 69 10 W |
| Gould Coast | W. side of Robert Scott Glacier to Siple Coast | | Henningsen Glacier | 54 28 S | 36 44 W |
| | | | Henriksen Buttress | 54 23 S | 36 33 W |
| | | | *Henry Islands | 66 50 S | 120 40 E |
| *Gourdin Island | 63 12 S | 57 18 W | *Herbert Sound | 63 55 S | 57 40 W |
| Gourdon Peninsula | 64 24 S | 63 12 W | Hesse Peak | 54 02 S | 38 00 W |
| Graae Glacier | 54 49 S | 36 11 W | Hestesletten | 54 18 S | 36 31 W |
| Graham Land | Prime Head to line between Capes Jeremy and Agassiz | | *Heywood Island | 62 20 S | 59 41 W |
| | | | Heywood Islands: VACATED | 62 18 S | 59 36 W |
| | | | Hiegel Passage | 66 23 S | 110 27 E |
| Granite Spur | 73 30 S | 94 24 W | Hillary Coast | Minna Bluff to Cape Selborne | |
| Grant, Mount | 54 15 S | 37 07 W | | | |
| *Greater Mackellar Island | 66 58 S | 142 39 E | Hill Bay | 64 11 S | 62 08 W |
| *Greaves Peak | 62 28 S | 59 59 W | Hindle Glacier | 54 34 S | 36 05 W |
| Greene Inlet | 54 03 S | 38 01 W | *Hippo Island | 66 25 S | 98 11 E |
| Green Glacier | 64 58 S | 61 52 W | Hobbs Glacier | 64 18 S | 57 26 W |
| Greenstone Point | 73 30 S | 94 18 W | *Hodgeman Islands | 67 01 S | 144 15 E |
| Gregory, Cape: see Gregory Point | | | Hollin Island | 66 19 S | 110 24 E |
| *Gregory Point | 62 56 S | 62 33 W | Holluschickie Bay | 63 59 S | 58 16 W |
| *Gremlin Island | 68 16 S | 67 12 W | Holt Nunatak | 64 17 S | 59 21 W |
| *Grey Island | 60 45 S | 45 02 W | Holt Point | 66 17 S | 110 30 E |

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|---|---|---|---|---|---|
| Hooper Crags | 78°25'S, | 162°43'E | Labbe Rock | 63°17'S, | 57°56'W |
| Hooper Glacier | 64 44 S | 63 36 W | Lacaze-Duthiers, Cape: see Duthiers Point | | |
| Hope Valley | 54 01 S | 37 56 W | Lafond Bay | 63 27 S | 58 10 W |
| Hornaday Rock | 54 00 S | 38 02 W | Laggard Island | 64 49 S | 64 02 W |
| Hornsby, Mount | 64 14 S | 59 15 W | *Lagoon Island | 67 35 S | 68 15 W |
| Horten | 54 17 S | 37 07 W | Lagrange, Cape: see Lagrange Peak | | |
| Hughes Point | 73 30 S | 94 16 W | *Lagrange Peak | 64 28 S | 62 26 W |
| *Hugo Island | 64 59 S | 65 46 W | Lainez, Cape: see Lainez Point | | |
| Humble Island | 64 46 S | 64 06 W | *Lainez Point | 67 41 S | 67 49 W |
| *Hum Island | 67 22 S | 59 40 E | Lancing Glacier | 54 20 S | 36 56 W |
| Hummock Island: see Heywood Island | | | Larsen Bank | 66 16 S | 110 32 E |
| *Humps Island | 63 59 S | 57 25 W | Larsen Ice Shelf | E. side of Antarctic Peninsula from Cape Longing to Cape Mackintosh | |
| *Hunt Peak | 67 18 S | 68 02 W | | | |
| Hunt Point: see Hunt Peak | | | | | |
| Iliad Glacier | 64 27 S | 63 26 W | | | |
| *Inner Lee Island | 54 02 S | 37 15 W | Larssen Peak | 54 19 S | 36 46 W |
| Inspiration Rocks | 73 26 S | 94 05 W | Larvik | 54 22 S | 36 54 W |
| Intrusive Spur | 73 30 S | 94 25 W | Larvik Cone | 54 22 S | 36 52 W |
| *Invisible Island | 54 01 S | 37 19 W | Launch Channel | 66 17 S | 110 30 E |
| Ishmael Peak | 65 53 S | 62 25 W | Laurie Point | 54 03 S | 37 59 W |
| Isolation Point | 78 13 S | 167 30 E | *Låvebrua Island | 63 02 S | 60 35 W |
| Jacobsen Bight | 54 25 S | 36 50 W | Leal Bluff | 63 53 S | 57 34 W |
| Jade Point | 63 36 S | 57 34 W | *Leith Cove | 64 52 S | 62 50 W |
| Janus Island | 64 47 S | 64 07 W | Leith Harbor: see Leith Cove | | |
| *Jason Island | 54 10 S | 36 30 W | Le May Range: see LeMay Range | | |
| Jefford Point | 64 24 S | 57 41 W | *LeMay Range | 70 55 S | 69 20 W |
| Jenkins Glacier | 54 46 S | 36 06 W | *Léonie Island | 67 36 S | 68 22 W |
| Johan Harbor | 54 03 S | 37 59 W | Leppard Glacier | 65 58 S | 62 30 W |
| Johannessen Harbor | 65 26 S | 65 25 W | *Lesser Mackellar Island | 66 58 S | 142 39 E |
| Johns Hopkins Ridge | 78 09 S | 162 27 E | Levassor Nunatak | 63 40 S | 58 07 W |
| Johnston, Mount | 64 44 S | 61 48 W | *Lewis Island | 66 06 S | 134 22 E |
| Jonassen Rocks | 54 41 S | 36 22 W | *Limpet Island | 67 38 S | 68 19 W |
| Jordan Cove | 54 00 S | 38 03 W | Lion Glacier: VACATED | 64 38 S | 63 11 W |
| Jorum Glacier | 65 14 S | 62 03 W | *Lion Island | 66 39 S | 140 01 E |
| Jossac Bight | 54 16 S | 37 11 W | Lisicky, Mount | 78 27 S | 162 04 E |
| *Joubin Islands | 64 46 S | 64 25 W | Litchfield Island | 64 46 S | 64 06 W |
| Juncal, Cape | 62 58 S | 56 27 W | Lombard, Mount | 64 28 S | 59 38 W |
| *Kay Islands | 74 00 S | 167 20 E | *Lonely Rock | 64 06 S | 57 03 W |
| Keilhau Glacier | 54 16 S | 37 05 W | Lone Rock: see Lonely Rock | | |
| *Keltie Head | 63 47 S | 57 41 W | Longing Gap | 64 25 S | 58 57 W |
| Kendall Terrace | 62 55 S | 60 42 W | Lönnberg Valley | 54 23 S | 36 17 W |
| Kenney Glacier | 63 25 S | 57 02 W | Loudwater Cove | 64 46 S | 64 05 W |
| *Keyhole Island | 68 47 S | 67 20 W | *Louise Island | 64 36 S | 62 23 W |
| Kilby Reef | 66 17 S | 110 32 E | Loweth, Mount | 73 26 S | 93 31 W |
| King Point | 63 09 S | 55 27 W | Low Reef | 54 30 S | 37 00 W |
| Kirkby Shoal | 66 15 S | 110 31 E | *Lynch Island | 60 39 S | 45 36 W |
| *Kirkwood Islands | 68 22 S | 69 00 W | Lynsky Cove | 66 19 S | 110 27 E |
| Kjellstrøm Rock | 54 16 S | 37 26 W | *Mabel Island | 60 40 S | 44 42 W |
| Kjerulf Glacier | 54 21 S | 36 51 W | *Mackellar Islands | 66 58 S | 142 39 E |
| Kling, Mount | 54 30 S | 36 18 W | Mackemer Point | 66 27 S | 110 29 E |
| Knobble Head | 63 09 S | 56 32 W | Macklin, Mount | 54 45 S | 36 03 W |
| Knowles Passage | 66 26 S | 110 28 E | Madder Cliffs | 63 18 S | 56 29 W |
| Koerner Rock | 63 19 S | 57 05 W | Magnet Hill | 63 22 S | 57 22 W |
| Kopaitic Island | 63 19 S | 57 55 W | Mahogany Bluff | 63 53 S | 57 14 W |
| Kotick Point | 64 00 S | 58 22 W | *Mamelon Island | 67 19 S | 64 49 W |
| Kupriyanov Islands | 54 45 S | 36 19 W | *Manoury Island | 64 26 S | 62 50 W |

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|---|---|---|
| Mapple Glacier | 65°27'S, | 62°25'W |
| Marble Hills | 80 17 S | 81 50 W |
| Marescot Point | 63 29 S | 58 35 W |
| Marikoppa | 54 19 S | 36 42 W |
| Marsh, Cape | 65 15 S | 59 29 W |
| Marshall Valley | 78 05 S | 164 10 E |
| Mason Spur | 78 33 S | 164 25 E |
| Massey Heights | 63 58 S | 57 58 W |
| Mast Hill | 68 11 S | 67 00 W |
| Mast Point | 66 22 S | 110 26 E |
| Matkah Point | 63 58 S | 58 19 W |
| McCalman Peak | 63 37 S | 57 47 W |
| McCarthy Island | 54 10 S | 37 26 W |
| McGrady Cove | 66 16 S | 110 34 E |
| McNeish Island | 54 09 S | 37 28 W |
| Medea Dome | 66 11 S | 62 03 W |
| Medley Rocks | 62 58 S | 56 01 W |
| Melania, Mount | 78 07 S | 166 12 E |
| Melville Glacier | 65 28 S | 62 10 W |
| Menelaus Ridge | 64 35 S | 63 40 W |
| *Merritt Island | 66 28 S | 107 11 E |
| Meyer Hills | 79 45 S | 81 00 W |
| *Mica Islands | 69 20 S | 68 36 W |
| *Mickle Island | 77 34 S | 166 13 E |
| *Middle Island | 61 57 S | 57 36 W |
| Midgley Reefs | 66 19 S | 110 22 E |
| Miers, Lake | 78 07 S | 164 00 E |
| *Miers Bluff | 62 43 S | 60 27 W |
| Miers Point: see Miers Bluff | | |
| *Mikkelsen Islands | 67 38 S | 68 11 W |
| Miles Bay | 54 04 S | 37 39 W |
| Miller Crag | 73 41 S | 94 42 W |
| Minaret, The | 64 46 S | 63 39 W |
| Minaret Peak | 80 15 S | 82 06 W |
| Minnesota Glacier | 79 07 S | 83 00 W |
| Mitchell Island: see Mitchell Peninsula | | |
| *Mitchell Peninsula | 66 20 S | 110 32 E |
| Moberly, Mount | 64 44 S | 63 41 W |
| Moider Peak | 65 55 S | 63 09 W |
| Molar Peak | 64 41 S | 63 19 W |
| Molholm Shoal | 66 16 S | 110 33 E |
| *Mollyhawk Island | 54 01 S | 37 19 W |
| Mondor Glacier | 63 28 S | 57 09 W |
| *Monk Islands | 60 40 S | 45 55 W |
| *Morency Island | 71 02 S | 61 09 W |
| Moreno Island: see Moreno Rock | | |
| *Moreno Rock | 64 05 S | 61 18 W |
| Morning, Lake | 78 21 S | 163 51 E |
| Morris, Cape: see Fort William | | |
| Morsa Bay | 54 03 S | 37 44 W |
| *Motherway Island | 66 27 S | 110 31 E |
| Motherway Rock: see Motherway Island | | |
| Mott Snowfield | 63 20 S | 57 20 W |
| Moxley, Mount | 78 25 S | 162 20 E |
| *Moyes Islands | 67 01 S | 143 51 E |
| Müller Point | 54 41 S | 35 55 W |

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|---|---|---|
| Mulligan Peak | 77°11'S, | 160°20'E |
| Mural Nunatak | 64 59 S | 61 32 W |
| *Murdoch, Cape | 60 48 S | 44 41 W |
| *Murdoch Nunatak | 65 01 S | 60 02 W |
| Murphy Wall | 54 05 S | 37 24 W |
| *Murray Islands | 60 47 S | 44 31 W |
| Murray Snowfield | 54 09 S | 37 09 W |
| Muskeg Gap | 64 23 S | 59 39 W |
| Napier Birks, Mount: see Birks, Mount | | |
| Narval Bay | 54 02 S | 37 41 W |
| Nesos, Mount | 78 12 S | 167 05 E |
| Nestor, Mount | 64 25 S | 63 28 W |
| *Niles Island | 66 26 S | 110 24 E |
| Niles Rock: see Niles Island | | |
| Nilse Hullet | 54 10 S | 37 35 W |
| Nilsen Island | 54 39 S | 36 25 W |
| Nipha, Mount | 78 10 S | 167 25 E |
| *Niznik Island | 69 47 S | 68 30 W |
| Nodule Nunatak | 63 19 S | 56 05 W |
| Nodwell Peaks | 64 18 S | 59 47 W |
| Nomad Rock | 63 13 S | 57 42 W |
| Normann, Mount | 54 51 S | 36 04 W |
| Norsel Point | 64 46 S | 64 06 W |
| *Northstar Island | 68 11 S | 67 07 W |
| Northtrap Rocks | 62 54 S | 56 34 W |
| Notter Point | 63 40 S | 59 11 W |
| Nubian, Mount | 78 15 S | 166 25 E |
| Nuñez Peninsula | 54 15 S | 37 21 W |
| Nye Islands | 66 20 S | 110 25 E |
| O'Brien Bay | 66 18 S | 110 32 E |
| Ochre, Mount | 78 15 S | 166 32 E |
| *Oliphant Islands | 60 45 S | 45 36 W |
| Olsen Rock | 54 04 S | 38 00 W |
| Olsen Valley | 54 12 S | 36 41 W |
| Olstad Peak | 54 29 S | 37 05 W |
| *Omicron Islands | 64 21 S | 62 55 W |
| Ommundsen Island | 66 20 S | 110 22 E |
| Orne Harbor | 64 38 S | 62 32 W |
| Orne Islands | 64 40 S | 62 40 W |
| Ornen Rocks: see Ørnen Rocks | | |
| *Ørnen Rocks | 62 01 S | 57 35 W |
| Orton Cave | 66 23 S | 110 29 E |
| Orton Reef | 66 16 S | 110 33 E |
| Otter Rock | 63 38 S | 59 12 W |
| Outcast Islands | 64 49 S | 64 08 W |
| *Outer Island | 60 43 S | 45 35 W |
| *Outer Lee Island | 54 02 S | 37 15 W |
| *Pabellón Island | 64 19 S | 62 57 W |
| Palisade Nunatak | 64 04 S | 58 15 W |
| Palmer Land | Line between Cape Jeremy and Cape Agassiz to S. limit of Antarctic Peninsula | |
| Palmer Peninsula: see Antarctic Peninsula | | |
| Panhard Nunatak | 63 43 S | 58 16 W |

| | | |
|---|---|---|
| Papua Island | 63°07'S, | 55°57'W |
| Paradise Beach | 54 50 S | 36 10 W |
| Paris Peak | 64 30 S | 63 22 W |
| Paryadin Ridge | 54 02 S | 38 00 W |
| Patella Island | 63 08 S | 55 29 W |
| Paterson, Mount | 54 39 S | 36 08 W |
| Patroclus Hill | 64 28 S | 63 37 W |
| Paul Beach | 54 04 S | 37 24 W |
| Paul Block, Mount: see Block, Mount | | |
| *Paul Islands | 64 18 S | 63 40 W |
| *Peace Island | 64 18 S | 62 57 W |
| Peggotty Bluff | 54 09 S | 37 17 W |
| Peleg Peak | 65 51 S | 62 33 W |
| Pelias Bluff | 66 04 S | 61 23 W |
| Pemmican Bluff | 73 31 S | 94 22 W |
| Pennell Coast | Lillie Glacier Tongue to Cape Adare | |
| Penney Bay | 66 26 S | 110 36 E |
| Penney Landing | 66 23 S | 110 29 E |
| *Penola Island | 62 03 S | 57 52 W |
| Pequod Glacier | 65 30 S | 62 03 W |
| Percy, Mount | 63 15 S | 55 49 W |
| Petrel Cove | 63 28 S | 56 14 W |
| *Petrel Island | 54 02 S | 37 17 W |
| Pettus Glacier | 63 48 S | 59 04 W |
| *Phils Island | 64 30 S | 63 00 W |
| Phoenix Peak | 64 24 S | 59 39 W |
| Picnic Passage | 64 20 S | 56 55 W |
| *Pi Islands | 64 20 S | 62 53 W |
| Pillsbury Tower | 73 31 S | 94 21 W |
| Polaris Glacier | 64 14 S | 59 31 W |
| Pollux Nunatak | 65 05 S | 59 53 W |
| Pond Ridge | 73 25 S | 93 33 W |
| Porphyry Bluff | 64 27 S | 59 11 W |
| Postern Gap | 63 15 S | 55 59 W |
| Potter Glacier | 78 23 S | 162 05 E |
| *Powder Island | 69 32 S | 68 47 W |
| Priam, Mount | 64 34 S | 63 24 W |
| Price Glacier | 54 07 S | 37 29 W |
| *Prime Head | 63 12 S | 57 17 W |
| Prism Ridge | 73 33 S | 94 10 W |
| Prospect Point | 66 01 S | 65 21 W |
| *Psi Islands | 64 18 S | 63 01 W |
| *Puffball Islands | 69 03 S | 68 35 W |
| Punchbowl Glacier | 65 11 S | 61 55 W |
| Purvis, Cape | 63 35 S | 55 59 W |
| Pyke Glacier | 64 15 S | 59 36 W |
| Pyramid Trough | 78 22 S | 163 36 E |
| *Pyrox Island | 68 12 S | 66 41 W |
| Quandary, Mount | 64 52 S | 61 34 W |
| Queequeg, Mount | 65 39 S | 62 07 W |
| *Query Island | 68 47 S | 67 12 W |
| Quilmes, Mount | 63 14 S | 55 37 W |
| Rabot Point | 64 17 S | 57 20 W |
| Racovitza Islands | 64 31 S | 62 05 W |

| | | |
|---|---|---|
| Radian Glacier | 78°15'S, | 163°08'E |
| Ranvik | 54 48 S | 36 15 W |
| Recess Cove | 64 30 S | 61 33 W |
| Reclus, Cape: see Reclus Peninsula | | |
| *Reclus Peninsula | 64 34 S | 61 47 W |
| *Reference Island | 68 12 S | 67 10 W |
| *Refuge Islands | 68 21 S | 67 10 W |
| Regulator, Mount | 54 00 S | 37 44 W |
| *Reid Island | 60 41 S | 45 30 W |
| Reindeer Valley | 54 18 S | 36 20 W |
| Relict Lake | 62 57 S | 60 36 W |
| Renagar Glacier | 78 22 S | 163 06 E |
| Rennie, Mount | 64 41 S | 63 35 W |
| *Rescapé Islands | 66 49 S | 141 22 E |
| *Rho Islands | 64 17 S | 63 00 W |
| *Rhyolite Islands | 69 40 S | 68 35 W |
| Rice Bastion | 64 27 S | 60 19 W |
| Rice Ridge | 73 27 S | 93 50 W |
| Rightangle Peak | 73 31 S | 94 25 W |
| Rink Point | 63 53 S | 58 11 W |
| Risting Glacier | 54 46 S | 36 06 W |
| Robertson Channel | 66 19 S | 110 29 E |
| Robertson Landing | 66 23 S | 110 29 E |
| Robison Peak | 77 12 S | 160 20 E |
| Rockfall Cliff | 73 26 S | 93 34 W |
| Rockpepper Bay | 63 08 S | 55 44 W |
| Roget Rocks | 64 20 S | 61 10 W |
| Romero Rock | 63 19 S | 57 57 W |
| Ronald Hill | 62 59 S | 60 35 W |
| Rosa Rock | 63 18 S | 57 54 W |
| *Rosenthal Islands | 64 36 S | 64 18 W |
| *Rowett Island | 61 18 S | 55 12 W |
| Rugate Ridge | 65 01 S | 61 56 W |
| *Runaway Island | 68 12 S | 67 07 W |
| *Russell East Glacier | 63 44 S | 58 20 W |
| *Russell West Glacier | 63 40 S | 58 50 W |
| Rustad Bay | 54 30 S | 37 05 W |
| Rutgers Glacier | 78 14 S | 161 55 E |
| Ryan Glacier | 54 03 S | 37 35 W |
| Saavedra Rock | 63 19 S | 57 56 W |
| Sabatier, Mount | 54 49 S | 36 08 W |
| *Sabrina Island | 66 53 S | 163 12 E |
| *Sack Island | 66 26 S | 110 25 E |
| Sack Rock: see Sack Island | | |
| Saddlestone, The | 63 26 S | 57 02 W |
| *Sáenz, Cape | 67 33 S | 67 39 W |
| Sáenz Peña, Cape: see Sáenz, Cape | | |
| Saint Martha Cove | 63 56 S | 57 50 W |
| Saint Rita Point | 64 15 S | 57 16 W |
| Sally Cove | 67 48 S | 67 17 W |
| Saluta Rocks | 54 03 S | 37 57 W |
| Samuel Islands | 54 11 S | 37 37 W |
| Sanctuary Cliffs | 64 27 S | 57 12 W |
| Sandefjord | 54 21 S | 36 58 W |
| San Telmo Island | 62 28 S | 60 49 W |
| Saunders Hill | 66 19 S | 110 32 E |

| | | |
|---|---|---|
| Saunders Coast | Cape Colbeck to cape at N. side of Paul Block Bay | |
| Saxum Nunatak | 63°10'S, | 56°02'W |
| Sayen Rocks | 73 41 S | 94 37 W |
| Scallop Hill | 78 13 S | 166 42 E |
| Scar Inlet | 66 00 S | 62 00 W |
| Schmidt Glacier | 79 15 S | 83 42 W |
| Schmidt Peninsula | 63 19 S | 57 54 W |
| Schott Glacier: VACATED | 54 07 S | 37 43 W |
| Schulz Point | 66 17 S | 110 29 E |
| Scott Coast | Cape Washington to Minna Bluff | |
| Scott Keltie, Cape: see Keltie Head | | |
| Scree Gap | 54 01 S | 37 48 W |
| Scud Rock | 63 23 S | 55 01 W |
| Semla Reef | 54 15 S | 37 25 W |
| Senderens, Mount | 54 50 S | 36 07 W |
| Sewing-Machine Needles | 62 58 S | 60 30 W |
| Shackleton Coast | Cape Selborne to E. side of Beardmore Glacier | |
| Shackleton Gap | 54 08 S | 37 12 W |
| *Shagnasty Island | 60 44 S | 45 38 W |
| Shallop Cove | 54 14 S | 37 20 W |
| Shelter Cove | 63 41 S | 57 57 W |
| Shirase Coast | Siple Coast to Cape Colbeck | |
| Shoesmith Glacier | 67 51 S | 67 13 W |
| Shortcut Col | 64 16 S | 59 13 W |
| Shults Peninsula | 78 52 S | 162 38 E |
| Sidney Herbert Sound: see Herbert Sound | | |
| Siffrey, Cape: see Prime Head | | |
| Siffrey Point | 63 14 S | 57 11 W |
| *Sigma Islands | 64 16 S | 62 55 W |
| *Sillard Islands | 66 40 S | 67 45 W |
| Silvia Rock | 63 18 S | 57 54 W |
| Simpson Nunatak | 63 58 S | 58 54 W |
| Siple Coast | 83 30 S | 154 00 W |
| | to 80 10 S | 152 00 W |
| Sjögren Glacier Tongue | 64 14 S | 58 38 W |
| Skep Point | 64 03 S | 57 18 W |
| *Skilling Island | 60 47 S | 45 09 W |
| Skilly Peak | 64 59 S | 61 16 W |
| Skontorp Rock | 54 30 S | 36 43 W |
| *Skua Island | 54 01 S | 37 15 W |
| Slossarczyk Crag | 54 51 S | 35 59 W |
| Smith Islands | 66 18 S | 110 27 E |
| Snowplume Peak | 73 32 S | 94 27 W |
| Snyder Peak | 73 31 S | 93 56 W |
| Sobral Peninsula | 64 30 S | 59 35 W |
| *Sögen Island | 65 04 S | 64 02 W |
| Soholt Peaks | 79 43 S | 84 12 W |
| *Somerville Island | 65 23 S | 64 20 W |
| Sörling Valley | 54 22 S | 36 18 W |
| Sørlle Buttress | 54 17 S | 36 50 W |

| | | |
|---|---|---|
| Sörn and Bernt: see Sørn and Bernt | | |
| *Sørn and Bernt | 53°59'S, | 37°55'W |
| Sotomayor Island | 63 20 S | 57 55 W |
| Soucek Ravine | 66 23 S | 110 29 E |
| Southtrap Rock | 62 58 S | 56 36 W |
| Spaaman, Mount | 54 16 S | 36 52 W |
| Spano Island | 66 24 S | 110 36 E |
| Sparkes Bay | 66 22 S | 110 32 E |
| Spenceley Glacier | 54 35 S | 36 19 W |
| Spigot Peak | 64 38 S | 62 34 W |
| *Spine Island | 60 36 S | 46 02 W |
| Spirit, Cape | 78 12 S | 166 44 E |
| Splettstoesser Glacier | 79 12 S | 84 09 W |
| Spouter Peak | 65 49 S | 62 23 W |
| Sprightly Island | 64 17 S | 61 04 W |
| Standring Inlet | 66 00 S | 61 03 W |
| Starbuck Glacier | 65 38 S | 62 09 W |
| Starbuck Peak | 54 44 S | 36 12 W |
| Stark Point | 64 02 S | 57 44 W |
| Stepup Col | 63 34 S | 57 51 W |
| Stina Rock | 54 00 S | 37 58 W |
| Stoneley Point | 63 52 S | 58 07 W |
| Stonethrow Ridge | 62 58 S | 60 44 W |
| Stratton Inlet | 66 18 S | 61 25 W |
| Stubb Glacier | 65 41 S | 62 10 W |
| *Sugarloaf Island | 61 12 S | 54 00 W |
| Sungold Hill | 64 23 S | 57 52 W |
| Sutley Peak | 73 39 S | 94 32 W |
| Sutton Crag | 54 23 S | 36 29 W |
| *Svenner Islands | 69 01 S | 76 51 E |
| Swan Point | 66 22 S | 110 30 E |
| Swift Glacier | 64 22 S | 57 46 W |
| Swinhoe Peak | 54 20 S | 36 32 W |
| Szielasko Ice Cap | 54 19 S | 36 18 W |
| Tait Glacier | 64 22 S | 58 02 W |
| Target Hill | 66 00 S | 62 57 W |
| Tashtego Point | 65 44 S | 62 09 W |
| *Tau Islands | 64 18 S | 62 55 W |
| Tawny Gap | 54 01 S | 37 36 W |
| Tay Head | 63 21 S | 55 34 W |
| *Taylor Islands | 66 09 S | 100 16 E |
| Taylor Nunataks | 63 15 S | 55 33 W |
| Teie Point | 54 16 S | 36 38 W |
| *Teigan Island | 66 27 S | 110 37 E |
| Teigan Rock: see Teigan Island | | |
| *Tern Island | 54 03 S | 37 20 W |
| Thanaron Hill: see Hanson Hill | | |
| Thanaron Point | 63 30 S | 58 40 W |
| Theodore, Mount | 64 58 S | 62 38 W |
| *Theta Islands | 64 19 S | 63 01 W |
| *Thil Island | 70 08 S | 72 34 E |
| Tholus, Mount | 63 16 S | 56 04 W |
| *Thule Islands | 60 42 S | 45 37 W |
| Tillberg Nunataks: see Tillberg Peak | | |
| *Tillberg Peak | 64 46 S | 60 53 W |
| Tongue Rocks | 63 38 S | 57 21 W |

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|---|---|---|
| Torgersen Island | 64°46'S, | 64°05'W |
| Toro Point | 63 19 S | 57 54 W |
| Tortoise Hill | 64 22 S | 57 30 W |
| Tracy Point | 66 18 S | 110 27 E |
| *Traversay Islands | 56 36 S | 27 43 W |
| Traverse Islands: see Traversay Islands | | |
| Trendall Crag | 54 48 S | 35 59 W |
| Trepassey Bay | 63 28 S | 56 58 W |
| *Trepassey Island | 68 12 S | 66 59 W |
| Trepassey Islets: see Trepassey Island | | |
| Trident, The | 54 10 S | 37 05 W |
| *Trigonia Island | 66 01 S | 65 42 W |
| *Trinity Island | 54 00 S | 38 13 W |
| *Tripod Island | 64 19 S | 62 57 W |
| Trojan Range | 64 32 S | 63 23 W |
| Trollhul | 54 49 S | 36 12 W |
| *Trump Islands | 66 03 S | 66 00 W |
| Tucker, Mount | 64 20 S | 59 16 W |
| Tufft Nunatak | 63 55 S | 58 42 W |
| Tumbledown Cliffs | 64 05 S | 58 27 W |
| *Tupinier Islands | 63 22 S | 58 16 W |
| *Turnabout Island | 66 06 S | 65 45 W |
| Turnbull Point | 63 03 S | 56 36 W |
| Turpie Rock | 54 07 S | 36 39 W |
| *Turtle Island | 66 04 S | 65 51 W |
| Ula Point | 64 05 S | 57 09 W |
| Unwin Cove | 63 19 S | 57 54 W |
| *Upper Island | 66 00 S | 65 40 W |
| *Useful Island | 64 44 S | 62 52 W |
| *Vahsel Bay | 77 48 S | 34 39 W |
| *Vedel Islands | 65 08 S | 64 15 W |
| Veier Head | 66 29 S | 61 42 W |
| *Verdant Island | 54 00 S | 38 13 W |
| Victor Hugo Island: see Hugo Island | | |
| Vidaurre Rock | 63 18 S | 57 56 W |
| Vincent Islands | 54 09 S | 37 16 W |
| Vision, Mount | 78 14 S | 166 14 E |
| Vogel Peak | 54 34 S | 36 14 W |
| *Vortex Island | 63 44 S | 57 38 W |
| Wales Head | 54°00'S, | 37°34'W |
| Walker, Mount | 64 48 S | 62 03 W |
| Walk Glacier | 73 38 S | 94 14 W |
| Wallend Glacier | 64 59 S | 62 13 W |
| Warburton Peak | 54 05 S | 37 34 W |
| *Warren Island | 67 23 S | 59 37 E |
| Watchtower, The | 64 23 S | 57 22 W |
| Waterboat Point | 64 49 S | 62 52 W |
| Weasel Hill | 64 15 S | 59 33 W |
| Webb Glacier | 54 32 S | 36 10 W |
| Webers Peaks | 79 26 S | 84 50 W |
| *Welcome Islands | 53 58 S | 37 29 W |
| West Russell Glacier: see Russell West Glacier | | |
| Whaleback Islet: see Whaleback Rocks | | |
| *Whaleback Rocks | 63 39 S | 59 04 W |
| Wheeler Glacier | 54 36 S | 36 22 W |
| Whitney Point | 66 15 S | 110 32 E |
| Wideopen Islands | 63 00 S | 55 52 W |
| Wilckens Peaks | 54 12 S | 36 57 W |
| William Block, Mount: see Block Peak | | |
| Williwaw Rocks | 63 20 S | 55 01 W |
| Will Point | 54 33 S | 36 01 W |
| Wilson Island | 66 27 S | 110 34 E |
| Wiman, Cape | 64 13 S | 56 38 W |
| Wirdnam Glacier | 78 25 S | 162 00 E |
| Wolseley Buttress | 64 12 S | 59 47 W |
| Woodward, Mount | 54 06 S | 36 54 W |
| Worsley, Mount | 54 11 S | 37 09 W |
| Wright Peak | 73 40 S | 94 32 W |
| Wright Point | 66 24 S | 110 30 E |
| *Wyatt Earp, Mount | 77 34 S | 86 25 W |
| Xanthus Spur | 64 33 S | 63 30 W |
| *Yalour Islands | 65 14 S | 64 10 W |
| Yalour Sound | 63 34 S | 56 39 W |
| Yingling Nunatak | 66 30 S | 110 37 E |
| Zeus Ridge | 64 35 S | 63 34 W |
| Zimmerman Island | 66 26 S | 110 27 E |

This list when added to the Gazetteer No. 14 and Supplement to the Gazetteer No. 14 comprises the complete list of U. S. approved Antarctic place names to date. Copies of the Gazetteer and Supplement may be obtained by writing either of the addresses listed below.

Board on Geographic Names
Department of the Interior
Washington, D. C. 20240

U.S. Antarctic Projects Officer
801 - 19th Street, N.W.
Washington, D. C. 20305

# Research

## RESEARCH AND DEVELOPMENTS IN POLAR ENGINEERING AT THE U. S. NAVAL CIVIL ENGINEERING LABORATORY

Earl H. Moser, Jr.

The U. S. Naval Civil Engineering Laboratory, located at Port Hueneme, California, is the research arm of the Navy's Bureau of Yards and Docks. The NCEL Polar Division is concerned with advancing the knowledge of engineering for polar regions. Its principal efforts are directed toward improving the habitability of polar camps, advancing technology of polar construction, and increasing knowledge of ice and snow as materials of construction for vehicle roads and aircraft runways. It performs for the Navy functions somewhat similar to those carried on by the Cold Regions Research and Engineering Laboratory for the Army.

These objectives require a broad scope of endeavor, ranging from feasibility studies, through exploratory investigations, to development of structures, camps, special equipment, techniques and design criteria for polar operations. The division is staffed with architectural, civil, mechanical, and structural engineers, geologists, and specialists in polar construction. It is equipped with a low-temperature ice and snow laboratory at NCEL and maintains the basic instruments, tools, and equipment for conducting experiments and field trials in polar regions. In addition, continental sites, such as the Sierras of California, the climatic test facilities at Eglin Air Force Base, Florida, and the Pacific Missile Range, Point Mugu, California, are used to test new and novel equipment before sending it to polar field sites.

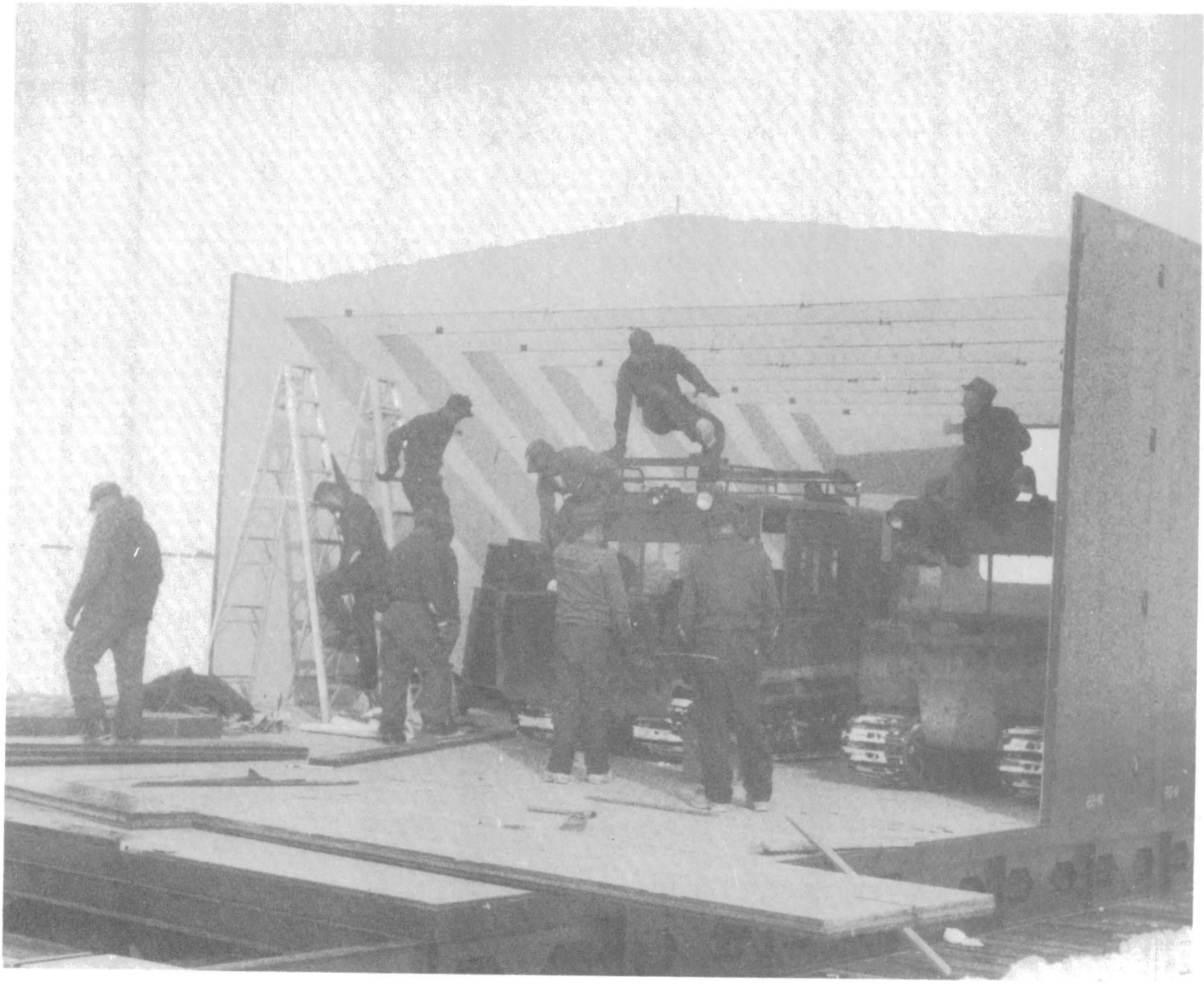
Between 1950 and 1960, NCEL used Arctic sites for its field trials in polar areas. During this period, trials were conducted on the sea ice offshore at Point Barrow, Alaska; the icecap near Thule, Greenland; the freshwater ice shelf off Ellesmere Island, Canada; and the sea ice in North Star Bay at Thule, Greenland. Since 1960, field trials have been conducted at ice and snow locations in the vicinity of McMurdo Station, Antarctica.

Even though NCEL did not conduct field work in Antarctica until 1960, it was no stranger to this area. In 1946, a predecessor of the Laboratory, the Advanced Base Proving Ground, assisted in outfitting the Navy's Operation HIGHJUMP, and sent an observer to Little America IV Station to evaluate the performance of the equipment it contributed to this operation. During the 1954-55 season, a member of the Laboratory staff participated in the station site surveys conducted by USS ATKA in the Ross and Weddell Seas preliminary to Operation DEEP FREEZE. This is the expedition that discovered the disappearance of the Bay of Whales, the original Ross Ice Shelf site of Little America, and made a detailed survey of Kainan Bay, the Ross Ice Shelf site where Little America V was established in the austral summer of 1955-56.

During the summer of 1955, the Laboratory assisted in outfitting the Mobile Construction Battalion Unit that built the United States International Geophysical Year stations; Little America, McMurdo, Byrd, and Amundsen-Scott South Pole. Its principal contributions were specialized pieces of construction and transportation equipment, snow-melting equipment, and some knowledge of mechanized polar construction. Most of these contributions were used as intended; others were used to solve unforeseen problems.

NCEL sled-mounted messing and sleeping wanigans were used in the first sled-train operation between Little America V and Byrd Stations in 1956. Later, these same wanigans were used on the 1960-61 sled trek from Byrd Station to the South Pole. In all, these units have been used for nearly 5,000 miles of travel in the Antarctic with only minor repairs and maintenance.

In 1953 and 1954, the Laboratory conducted experimental winter-construction operations on the Greenland Icecap near Thule. Air transportation and air support were used for these operations. The Laboratory's reports on these two operations, which were called HARD TOP I and



Erecting the prototype T5M maintenance shelter at the NCEL Camp on the Ross Ice Shelf. (Photograph furnished by author.)

HARD TOP II, were used as planning guides for establishing Amundsen-Scott South Pole Station.

No snow compaction was attempted during the early DEEP FREEZE operations. Even so, the NCEL snow mixers, snow rollers, and snow planes that were furnished for this work filled an unforeseen equipment need. They were used to surface and maintain the Williams Field sea-ice runway at McMurdo. Similar equipment is still used for this purpose.

An NCEL observer who visited McMurdo and Little America in the summer of 1956-57, confirmed the need for better facilities for polar operations. In response to this need, the Laboratory initiated a series of investigations which have resulted in several improvements for pioneer and temporary polar camps. The standard Jamesway building has been made more habitable for pioneer operations, and a 28-foot wide by 56-foot long, T 5-type building with a 9-foot ceiling, has been developed for temporary camps and stations. Also, a portable maintenance shelter has been developed for equipment repair at isolated field sites and a temporary maintenance shelter has been developed for use in larger camps and stations. Prototypes of all four structures are presently under evaluation in Antarctica, or scheduled for evaluation in the near future.

The Jamesway improvements include: 2-foot wall extensions to permit comfortable use of double bunks; curtained partitions to provide some degree of privacy for the occupants; and a forced

C-47 take-off on wheels on the NCEL experimental compacted-snow runway on the Ross Ice Shelf. (Photograph furnished by author.)

air heating system with an intake for fresh air, and fans to reduce stratification. A 9-bedroom prototype of this structure was erected at McMurdo during the austral summer of 1961-62. Since then it has served very satisfactorily as officers' quarters for the Mobile Construction Battalion units operating in Antarctica.

The Laboratory has developed a packaged camp for pioneer polar operations around the improved Jamesway. The basic increment for this camp will house 25 to 50 men depending upon the density of occupancy. It is expandable in 25- to 50-man increments, up to 100 to 200 men. Currently, the galley-mess hall and the utility building, complete with water supply and sanitary facilities for the pioneer camp, are being tested and evaluated at the NCEL surface camp on the Ross Ice Shelf near McMurdo Station. This camp was established in 1963 to support Laboratory sea-ice and snow-compaction investigations in that area. It is occupied during the austral summer by Laboratory technical personnel and military construction personnel engaged in these investigations. In addition to the two prototype pioneer camp buildings, the camp includes two 9-bedroom Jamesway quarters, an office wanigan, and prototypes of the portable maintenance shelter. The principal camp buildings form a "V" with the lead building oriented with the prevailing storm winds. This arrangement was chosen to investigate drift problems and their control at surface camps on deep snow.

A prototype of the 28-foot wide T 5-type building outfitted as a 10-bedroom quarters was shipped to Hallett Station this season for in-service test and evaluation. This building is also being used as the basic structure for a 50- to 300-man temporary polar camp being developed by the Laboratory.

The portable maintenance shelter and its companion repair-wanigan, which were evaluated last season at the NCEL Ross Ice Shelf camp, have been modified for improved performance. It is currently planned to move this facility to an Antarctic Support Activity work center for further evaluation.

Following the successful application of snow compaction for the 12,000-car parking lot and 1-mile snow road at the VIII Olympic Winter Games at Squaw Valley, California, in 1960, the Laboratory was requested to provide technical consultation for the construction of a compacted snow road between McMurdo Station and Williams Field.* This road, which was built in early November 1960, on a 4-foot snow pack covering the sea ice between these two points, was 4-miles long. When completed, the 25-foot-wide roadway was depressed about 10 inches below the natural snow surface.

The road was used continuously by heavy trucks for a 10-day period in late November before a storm covered it with 10 inches of drift. This drift was removed and the road was reopened to traffic; however, berms up to 2 feet high were thrown up along each side of the road. Two days after the road was reopened to traffic, a 3-day blizzard almost filled the roadway with drift to the top of the berms. When this occurred, the road was abandoned. The work showed that the snow on the McMurdo Sound sea ice could be compacted sufficiently to support traffic, but for continuous use the compacted area should be elevated above the natural surface in order to minimize the accumulation of drift.

In October 1961, the Laboratory initiated a study to develop an elevated, compacted-snow runway on the Ross Ice Shelf near McMurdo.** This runway, which was 150 feet wide and 5,000 feet long, was completed in January 1962. At that time the compacted mat was 36 inches thick and it was elevated about 12 inches above the natural snow surface; but, because of the relatively warm temperatures during construction, the compacted snow was not sufficiently hard to support aircraft on wheels. Following the break-up of the sea ice on McMurdo Sound in late January, it was used as a skiway for the resupply operations to the inland stations during February.***

*See "Compacted Snow Roadways," Bulletin, February 1961, page 22.

**See "Special Projects," Bulletin, October 1961, page 16.

***See "Snow Compacted Runways," Bulletin, February 1962, page 24.

As a skiway, it was found that a C-130 with a 10-ton payload could take-off in 4,000 feet on skis. This was the same as the payload and take-off-run for the C-130s when they were operating on wheels on the sea-ice runway. It was much better than the 7,000-foot take-off required for a C-130 on skis on an unprepared snow skiway with only a 7-ton payload. No wheeled taxi tests were made on the runway during this period of use even though the colder February temperatures caused considerable hardness-growth in the compacted snow. The demonstration did lead to the construction of a better skiway at Williams Field in 1962-63.*

In October 1962, the elevated runway was covered with only 3 to 4 inches of drift, but construction equipment prevented aircraft wheeled taxi-tests on the runway until early February 1963. By that time, the packed drift on the runway was 8 inches deep. Successful taxi tests were made with a C-47 and a P2V and wheeled take-offs were made with a C-47, but the packed snow caused too much drag on the P2V wheels for a wheeled take-off. The runway is currently being improved for additional testing.

The Laboratory has been engaged in sea-ice studies at McMurdo since 1960. It participated in improving the surface of the sea-ice runways at Williams Field in 1960-61. In 1962 it initiated a long-range study on the characteristics of the various types of sea ice in the McMurdo Sound area. This work is continuing this year. **

In the austral winter of 1962, Williams Field was moved to a more stable location, but the rough ice in the new location necessitated deep flooding in order to level the surface. This work was not completed until early spring (September) at which time rising temperatures prevented complete freezing of the flood water. The Laboratory is making a study of this runway and the problems associated with flooding the ice in this area. Test plots using different techniques of flooding are planned this year for detailed study this coming Antarctic winter.

*See "Special Projects for the Department of Defense," Bulletin, December 1962, page 3.

**See "DEEP FREEZE 64 Special Department of Defense Projects," Bulletin, October 1963, page 33.

# Science

SCIENTIST SEES POSSIBILITY THAT VIOLENT FLOOD ONCE CREATED STRANGE LANDSCAPE IN ANTARCTICA

Dr. H. T. U. Smith, Chairman of the University of Massachusetts Geology Department, observed signs which indicate that a massive, violent flood may have occurred long ago in one of the ice-free valleys of Antarctica. This could be a possible explanation for the unique labyrinth area of the upper Wright Valley near the denuded eastern coast of Victoria Land.

Pieces of cracked bedrock cover the ground of the 20-mile square labyrinth, discovered many years ago but paid little attention and seldom visited. Crisscrossing channels up to 100 yards wide separate buttes averaging about 100 yards high and several hundreds of yards in diameter. Bowl-shaped depressions, hundreds of feet across and equally deep, occur in the undulating bottoms of the channels. The pattern of the site, as seen in aerial photographs, resembles alligator hide.

According to Dr. Smith, there is only one other known place in the world like it, the so-called "channelled scabland" of eastern Washington. "This," he said, "was formed by repeated, catastropic innundations from a 500-cubic-mile lake bursting through an ice tongue that periodically dammed it in a valley during the ice age. Perhaps similar events caused the Wright Valley labyrinth."

Dr. Smith offered the following explanation on the unusual phenomena:

"There is an extensive ice fall—essentially a frozen waterfall—at the head of the valley, where the Wright Glacier spills off the great continental icecap. Torrents of water might have poured over it at one time and churned up the ground bedrock. The source of the water would now be buried under hundreds of feet of ice and snow and might never be located.

"The situation is puzzling, the labyrinth must have been carved after the buildup of the continental icecap, because older rock surfaces would not be so well preserved in this zone, where erosion is rapid. Yet if the climate were as cold as it is now, there would ordinarily be little free water. However, the labyrinth must have existed before the more geologically-recent advance of the Wright Glacier, because the pattern appears to continue beneath it.

"We know this glacier has been retreating slowly. A similar advance in the distant past, followed by a much more extensive retreat due to warming of the local climate, might have bared the area and allowed a drainage basin to be filled with water. This reservoir could suddenly have broken through its dam and rushed through the Wright Valley, gouging out the labyrinth.

"But this is purely speculative and far from definite. It calls for much greater deglaciation in Victoria Land during the ice age than has been supposed, and might require drastic revision of geological history of the territory. A flood would also have had to occur before the presence of the large glacier now plugging the lower end of the valley.

"Another hypothesis is large-scale melting of ice by volcanic action under the icecap, a process which has caused floods in Iceland. Antarctica is in a volcanic belt, and the active volcano, Mt. Erebus, is on an island only 90 miles away. In fact, underground thermal action has been independently suggested as the cause of unfrozen water in Lake Vanda, in lower Wright Valley. The rock structure farther down the valley is much more solid so that draining water would not have had the same effect."

Before reaching a final conclusion, Dr. Smith said a careful, detailed analysis of data and photographs, and comparison with evidence from the Washington scabland must be done at the University of Massachusetts.

Dr. Smith, who has studied the Washington scabland intensively, first noticed the similarity of the labyrinth while pouring over thousands of aerial photographs of Victoria Land in preparation for research in Antarctica. The eastern coast of Victoria Land has the only extensive bare ground at a latitude where most other land is buried under ice—an unexplained situation.

Since then, he has thoroughly explored the labyrinth and adjacent territory, on foot and by Air Development Squadron SIX helicopter flights.

He discounts glacial action as a major force in creating the labyrinth, though he said it may have somewhat modified the bizarre landscape. He pointed out that the channels form a network and are not straight and parallel, as they would be if caused by the scraping of a huge ice mass.

"This peculiar place is very unlike other glacially-eroded surfaces, and would remain one of the more unusual spots on earth even if glaciation should eventually prove to have been more important than I now suspect. The process whereby creeping ice could leave such baffling 'architecture' would still demand explanation," he said.

Dr. Smith was in Antarctica for the first time this year to evaluate the effectiveness of aerial photography done especially for geologists rather than cartographers. He said that up to 90 per cent of reconnaissance can sometimes be done in the laboratory with proper pictures by a person trained in geological photo interpretation, or "photogeology," if topography, climate, and facilities are suitable.

Dr. Smith's research was performed under a National Science Foundation grant.* His observation in the labyrinth area were a by-product of his research grant, which he terms successful.

*"Feasibility Study of Photogeologic Mapping of Ice-Free Areas."

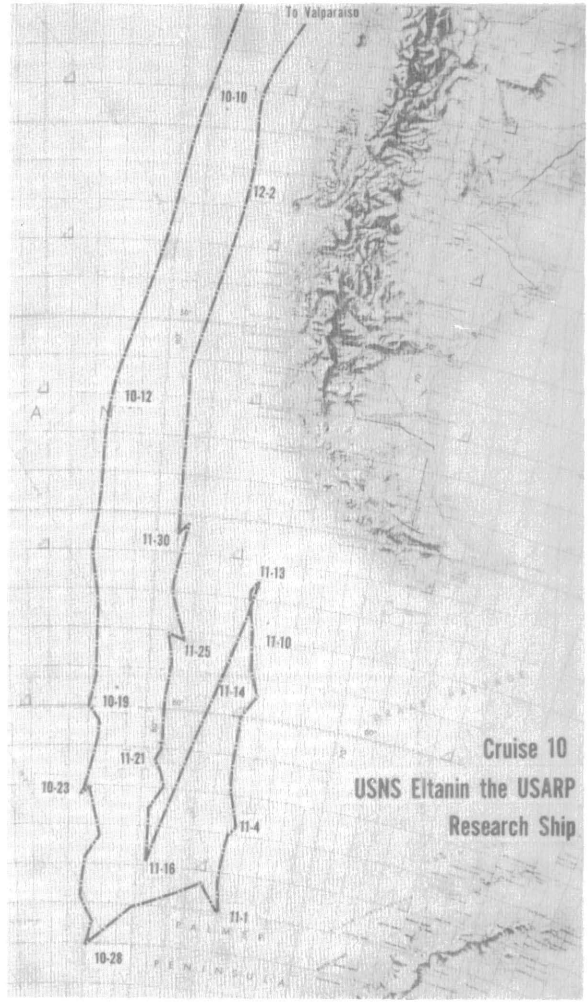
## U.S. GEOLOGICAL SURVEY VICTORIA LAND PROJECT CANCELLED.

The planned geodetic control in the mountains of northeast Victoria Land, by the U. S. Geological Survey, was cancelled after the damage to the two UH-1B helicopters at Hallett Station in November.* Replacement helicopters from the United States were unable to arrive in Antarctica in time to complete both the University of Wisconsin geology programs in the Ellsworth Mountains and the USGS Victoria Land survey. It is contemplated that this program will be reactivated in the 1964-65 summer season.

*See "Storm Causes Damage at Hallett Station," Bulletin, December, 1963, page 2.

## USNS ELTANIN COMPLETES TENTH CRUISE

The research ship USNS-ELTANIN left Valparaiso, Chile, on 6 October 1963, on her tenth




cruise, the seventh in Antarctic waters. Thirty-three oceanographic stations were taken south at 55° South Latitude. Additional work included intermediate plankton sampling between stations in the pack ice, two hydrographic casts and plankton samplings at the north and south boundaries of the Antarctic Convergence, and the investigation of a sub-marine slide area off the coast of Chile at 39°25'S., 73°53'W.

Stations were taken at standard 60-mile intervals along the 83°, 79°, and 75°W. Meridians with the southernmost stations at 66°, 65°, and 64° S. Latitude respectively. A brief search for the Pactolas Banks in the area bounded by 56°20'-57° S. Latitudes and 74°-75°40'W. Longitudes was unsuccessful.

The cruise ended on 6 December after the completion of a 7,000-mile voyage lasting 61 days.

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# Chronology

20 Feb 64 - Last flight to Eights Station for DEEP FREEZE 64. Station officially on winter status. Population: 6 support and 4 civilian personnel.

22 Feb 64 - USNS CHATTAHOOCHEE arrived at McMurdo.

LTJG. M. Chiogioji, CEC, USN, relieved by LT. C. H. Andrus, MC, USN, as Officer in Charge at Byrd Station.

USS HISSEM arrived at Timaru en route to Dunedin, New Zealand.

USNS WYANDOT departed McMurdo for Port Lyttelton, New Zealand.

24 Feb 64 - USNS CHATTAHOOCHEE departed McMurdo for United States.

USS HISSEM departed Timaru and arrived at Dunedin.

Fourth C-135 redeployment flight departed Christchurch, New Zealand.

25 Feb 64 - Disassembly of Beardmore Weather Station begun.

Byrd Station officially on winter status. Population: 17 support and 11 civilian personnel.

Post-season LC-130F flight to Amundsen-Scott South Pole Station. (See article on page 4.)

26 Feb 64 - Rear Admiral James R. Reedy returned to Christchurch from McMurdo.

Fifth C-135 redeployment flight departed Christchurch.

DEEP FREEZE special mission C-124 departed Christchurch for United States.

27 Feb 64 - USS ATKA completed oceanographic survey and arrived in McMurdo Sound.

27 Feb 64 - USS HISSEM departed Dunedin for Hobart, Tasmania.

HMNZS ENDEAVOUR arrived at Port Lyttelton from McMurdo.

28 Feb 64 - USS BURTON ISLAND departed McMurdo for Port Lyttelton.

C-121J completed its final turn-around flight from Christchurch to McMurdo for DEEP FREEZE 64.

29 Feb 64 - USS ATKA departed McMurdo for Port Lyttelton. Will occupy ice-forecast stations en route.

All DEEP FREEZE 64 scheduled flights between Antarctica and New Zealand completed.

McMurdo Station officially on winter status. Population: 205 support and 10 civilian personnel.

USNS WYANDOT arrived at Port Lyttelton.

Commander, Task Force 43, Representative, McMurdo, disestablished at 1200 hours.

Sixth C-135 redeployment flight departed Christchurch.

1 Mar 64 - USS HISSEM arrived at Hobart. (Final Report.)

HMNZS PUKAKI departed Ocean Station. Operational control transferred to New Zealand. (Final Report.)

2 Mar 64 - Seventh C-135 redeployment flight departed Christchurch.

USNS CHATTAHOOCHEE operational control transferred to COMSTSPAC. (Final Report.)

USS ATKA operational control transferred to Commander, U. S. Naval Support Force, Antarctica.

2 Mar 64 - LTJG. B. P. Karcher, USN, relieved Lt. T. H. Pope, USN, as Commander, Antarctic Support Activities, Representative, Christchurch.

3 Mar 64 - USNS WYANDOT operational control transferred to COMSTS. Departed Port Lyttelton for United States. (Final Report.)

Four LC-130Fs departed Christchurch for United States.

4 Mar 64 - USS HISSEM departed Hobart, Tasmania for Adelaide, Australia. Operational control transferred to COMCLANTFLT. (Final Report.)

C-121J departed Christchurch for United States on turnaround mission.

Eighth C-135 redeployment flight departed Chrischurch.

USS ATKA completed ice forecast stations and departed Ross Sea for Port Lyttelton.

USS BURTON ISLAND operational control transferred to Commander, U. S. Naval Support Force, Antarctica.

USS GLACIER departed McMurdo Station for Hallett Station.

Summer season officially ended and winter season begun.

5 Mar 64 - CDR. Joseph L. Reilly, Jr., USN, assumed duties as Commanding Officer, Antarctic Support Activities Detachment ALFA, and Officer in Charge of McMurdo Station, relieving CAPT. J. B. Elliott, USN.

An uncontrollable fire destroyed two science buildings at Hallett Station. (See article on page 3.)

6 Mar 64 - USS GLACIER arrived at Hallett Station to assist in resupplying and recovering equipment after fire damage.

6 Mar 64 - Air Development Squadron SIX operational control transferred to COMFAIR, Quonset Point, R. I. (Final Report.)

7 Mar 64 - USS GLACIER departed Hallett Station for Sabrina and Balleny Islands to make surveys and take oceanographic stations.

Hallett Station officially on winter status. Population: 11 United States and 2 New Zealand personnel.

USS BURTON ISLAND departed Port Lyttelton for Auckland, New Zealand.

8 Mar 64 - USS GLACIER completed surveys at Sabrina Island.

9 Mar 64 - USS BURTON ISLAND arrived in Auckland.

Ninth C-135 redeployment flight departed Christchurch.

10 Mar 64 - USS ATKA arrived at Port Lyttelton, on-loaded necessary equipment, departed Port Lyttelton and arrived at Wellington for an operational visit.

USS GLACIER completed survey at Balleny Island and departed for Antipodes and Bounty Islands.

11 Mar 64 - USS ATKA in Wellington for repairs to damaged forefoot.

All ships and redeploying aircraft of Task Force 43 are now north of 60° South Latitude.

13 Mar 64 - USS GLACIER arrived at Antipodes Island and departed for Bounty Island.

14 Mar 64 - USS GLACIER arrived at Bounty Island and departed for Port Lyttelton.

15 Mar 64 - USS BURTON ISLAND departed Auckland. (Final Report.)

Rear Admiral James R. Reedy departed Christchurch, New Zealand aboard VX-6 C-54Q and arrived in Melbourne, Australia.