THE POLAR TIMES

AT THE END OF THE EARTH: The American flag flies over the south geographical pole enclosed by a ring of oil barrels. The circle is 200 feet in diameter. In the foreground are Dr. Paul A. Siple, left, the scientific leader, and Lieut. John Tuck Jr., the military leader of the U. S. International Geophysical Year base at the South Pole.

National Oceanic and Atmospheric Administration

The Polar Times

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Dr. Paul A. Siple, left, receives scroll as honorary member of the American Polar Society from Palle Mogensen at the South Pole.

The Polar Times

No. 45. DECEMBER 1957.

Dr. Siple Receives Honor at South Pole

SOUTH POLE, Dec. 1 — An Erie native, Dr. Paul A. Siple of Arlington, Va., today will receive a scroll at the South Pole in recognition of his contribution to polar exploration.

Palle Mogensen, Alexandria, Va., a member of The American Polar Society, will present the scroll on behalf of the organization.

The scroll states that Dr. Siple has been elected an honorary member of the society. The Erie native has been scientific leader of the South Pole International Geophysical Year base for one year.

Mogensen will take over the leader's post for the forthcoming year.

Rear Admiral Robert A. J. English of San Gabriel, Calif., USN, retired, signed the scroll as president of the society. He was on the second Byrd Antarctic Expedition, 1933-1935.

Dr. Siple is in Antarctica for the sixth time and has lived more than six years on the barren continent—longer than any other person.

While a resident of Erie, Pa., he was chosen to represent the Boy Scouts of America on Admiral Byrd's first Antarctic Expedition, 1928-30. Dr. Siple was chief biologist on the second Byrd trip, 1933-35. He was leader at Little America during the government's U. S. Antarctic Service Expedition, 1939-41. During the Navy's "Operation Highjump", 1946-47, he was the Army's senior observer. On the current IGY "Operation Deepfreeze" explorations, Dr. Siple was Deputy to the late Admiral Richard E. Byrd who was in charge of U. S. Antarctic Programs.

ANTARCTIC EXPERT HONORED BY ARMY

WASHINGTON, Dec. 12 (AP)— Dr. Paul A. Siple, antarctic explorer, received the Army's Distinguished Civilian Service Award today for his scientific leadership at the South Pole.

Wilber M. Brucker, Secretary of the Army, presented the highest award given by the Army to a civilian employe.

Dr. Siple returned this morning from the antarctic, where he had been serving since October, 1956, as deputy to the officer in charge of the United States antarctic programs.

In an interview, Dr. Siple said that although the Soviet Union had launched earth satellites first, the United States had succeeded in a major polar feat where Russia had not.

During the same time, he said, the Russians failed in their objective of establishing stations at the geomagnetic pole and at the "pole of inaccessibility." The pole of inaccessibility is the center of the continent, farther inland than the magnetic pole.

Dr. Siple has participated in six expeditions to Antarctica, the first when he was a 19-year-old Boy Scout chosen to accompany the late Admiral Richard E. Byrd in 1928. He has spent four years in the South Polar regions.

POLAR SOCIETY SCROLL

Siple to Be Cited for Antarctic Role

Dr. Paul A. Siple

The American Geographical Society's David Livingstone Centenary Medal has been awarded to Dr. Paul A. Siple, explorer, geographer, lecturer and author, it was announced on Dec. 9 by Dr. Walter A. Wood, society president.

Dr. Siple is on the way back from a year in Antarctica as scientific leader of the International Geophysical Year base established by the United States at the South Pole. The award is for his contributions to the I. G. Y. effort in Antarctica.

The Livingstone Medal is given periodically by the society for scientific achievement in the field of geography in the Southern Hemisphere. It will be presented to Dr. Siple Jan. 30 at a dinner of the American Geographical Society Fellows and members of the society's council.

Five earlier honorary members were: Brig. Gen. David L. Brainard, last survivor of the Greely Arctic Expedition of 1881-84, on his 80th birthday in 1936; Admiral Byrd in 1938; Dr. Vilhjalmur Stefansson in 1940; Dr. Lincoln Ellsworth in 1944 and, in 1949, Professor Frank Debenham, founder of the Scott Polar Research Institute at Cambridge, England.

Siple on Way Home

McMURDO SOUND, Antarctica, Dec. 2—Dr. Paul A. Siple, scientific leader at the South Pole station, returned with four aides yesterday after a year's stay at the bottom of the world.

Dr. Siple turned over direction of the scientific post to Palle Mogensen before his party was flown here by Lieut. Comdr. Conrad S. Shinn in a Navy R-4-D.

With Dr. Siple, of Arlington, Va., were Edwin C. Flowers of Kensington, Md., meteorologist; William S. Hough, Boulder, Colo., an ionosphere physicist; Herbert L. Hansen of Nebraska City, a meteorologist, and Melvin C. Havener, Navy construction mate 3/C.

Dr. Siple and his party left later by an Air Force Globemaster for Christchurch, N. Z., on the way to the United States.

After a Christmas leave, Dr. Siple will head a new Army office under Gen. Gavin. It will be called the Office of Polar Affairs.

U. S. Scientists Enter Winter on Ice Island

By THOMAS R. HENRY

THULE, Greenland.—The ice island, T3, on which 22 American scientists, soldiers and airman are now entering their first winter, is a kidney-shaped mass of very thick ice drifting about in the Arctic ocean in an irregular circle around the North Pole. It has been watched since its discovery in 1950 and was occupied by an Air Forces observation group between 1952 and 1954.

The general direction of its travels is known. It moves slowly through pack ice—the frozen, rough surface of the sea. It is certainly not itself sea ice. Its surface generally is above that of the surrounding pack by 20 to 25 feet. Its drift now is estimated about 1.2 miles a day.

This long-range drift is in a clockwise direction—southwestward from its present position about 400 miles south of the pole into the Beaufort Sea north of Alaska, then west and then northerly to the vicinity of the pole where it was discovered.

Just now it is in the most favorable position for occupation. The ice is from 140 to 150 feet thick—a notable difference from a mass of pack ice which seldom would exceed 10 feet in thickness. It is exceptionally hard ice, such as would be formed in fresh water.

From the air it presents a washboard like appearance, due to parallel ridges and troughs the cause of which has not been determined.

The island is 9 miles long and more than 4 miles wide. It is believed to have been part of the thick ice shelf bordering the northern coast of Ellesmere Island about 20 years ago.

Caribou antlers, fragments of plants and great quantities of rock and gravel on the ice indicate that it has not always been afloat in the Arctic. This island was picked from among 60 or more similar floating ice masses. It is larger than most of the others and has considerable stability. It does not crack in mid-summer like the sea ice that surrounds it for hundreds of miles.

It is somewhat smaller than T ONE first of the ice islands to be discovered about ten years ago, and is not as flat. T ONE disappeared six years ago. Arctic experts think it was caught in an ocean current near the North Pole and carried out to the east coast of Greenland where it eventually melted in the North Atlantic shipping lanes.

Air Force personnel learned by experience in 1952 not to build their camp in the valleys. Melting snow in midsummer creates lakes in the lower pockets and small streams that flow swiftly to the sea. Fresh water is obtained by melting snow.

There are not any very good data on the temperatures to be expected, owing to the short period during which the island has been occupied. This data can, therefore, be only an indication of what can be expected. Generally speaking, T3 has unusually cold winter temperatures, especially when the extent of the area is considered.

It has been suggested that the snow cover of the surrounding ice pack insulates the surface air from the heat of the ocean, thus giving the place a close approach to a continental climate.

March Is Coldest Month

During the coldest month, March, the mean temperature is —39, or 35 degrees colder than the mean at the Thule air base. The coldest day on record was —60 in February, 1954. In general, it is believed freezing conditions can be expected from the middle of August to the middle of June. During one year 252 freezing days were recorded.

The island has a mixmum of clear days during the winter. Visibility, however, often is restricted by blowing snow. The limit is quite closely related to the speed of surface winds. Usually visibility does not decrease below one mile until there are wind speeds in excess of 15 knots. Summers generally are characterized by increased cloudiness, rain or snow, and fog.

During the coming winter, night will last between three and four months, depending on the latitude reached by the moving island. Winter moonlight in the high Arctic, however, is brilliant and prolonged. The air generally is clear and the moon so bright that outside activities are little curtailed

Some concern is being felt about the psychological effects of the long night on persons unfamiliar with polar conditions.

Special precautions are being taken not to include in either the scientific or military parties persons with signs of neurotic tendencies.

"About the only danger from animal life to be expected," an Air Force officer familiar with animal life on the island says, "is a visit by a polar bear. "These animals are dangerous, unpredictable and usually fearless. They will be attracted to the camp from long distances by scent and hunger.

"Keep a rifle handy at all times and make sure every person knows how to use it. And keep one or more dogs to warn of the approach of bears."

The scientists, who will be joined by others later when air landings become possible with the quickly advancing winter, are carrying out various projects associated with the American geophysical year program. The 16 airmen are a supporting party of technicians. The scientists now there are Drs. R. Murray of the United States Weather Bureau; S. Appolonio, R. E. Leblanc and Bryan Isaacs of the Cambridge Research Center of the Air Forces.

Two Signal Corps soldiers with long experience in Arctic weather observations at Thule, Sergts. Nash and Dirkensen, are carrying out meteorological observations. The IGY plans call for a total of 12 scientists on the island at various times during the next 18 months.

Ski Landings Planned

Just now the men are isolated. A 5,000-foot air strip, built on the ice by Army Engineer and Air Force technicians last spring has melted to a point where landing on it would be dangerous. In the next four weeks a ski landing may be possible.

It still is bright, hot summer here in Thule, the temperature seldom falling below 40 during the 24-hour day of sunshine. But on Ice Island T-3, now more than 400 miles nearer the pole, winter already has started with a vengeance. On July 30 for example, there was fog, rain and snow, with a temperature of 30 F. There is unlikely to be any let-up before next June.

Still the conditions of living are not uncomfortable for the marooned men. Their camp consists of 14 stainless steel trailers flown in by the Air Force.

There will never be any danger of shortage of food. There will be few days even in the worst of weather, say Air Force officers here, when an air drop will be impossible. The men on T-3 radio their precise position to Thule every day and the island can be spotted quite easily from the air 50 miles away.

Three Russian parties are reported on similar ice islands on the other side of the Pole. There has been no communication with them here or on T3 itself.

The scientists on the ice island are carrying out research in eight major fields, all of which are of major significance in the IGY program.

Arctic in Warming Trend

These include:

Evidences of changing weather in the Far North: Previous studies of the ice structure indicate the Arctic is undergoing a warming trend. What this means in terms of future possibilities for trans-polar ocean travel—or, conversely, the build-up of the Greenland ice cap and its influence on weather—may be answered in part.

Ocean currents in the polar region: They are keeping an accurate track of the island's drift which is constantly in an approximate circle between the North Pole and North America. Theoretically it should drift across the ocean bottom Lomonosov mountains into the Russian orbit of the Arctic.

The ocean floor: Sample cores of the floor will help form a better idea of what polar regions previously held in type of climate and natural life.

The sun's radiation and its effects on polar ice.

The Northern Lights which play havoc with radio communications throughout the northern hemisphere.

Gravity in the Arctic: It is known that the North Pole is slightly nearer the center of the earth than is the equator. Consequently, it is pointed out, a 2,000-pound weight in Brazil would weigh about 2,010 pounds at the pole. There are, however, no extensive measurements of the ocean depths in polar regions. In general, the deeper the sea floor, the less effect gravity has on any given object.

Tiny Fish Abound

Life in the Arctic Ocean: Tiny fish, generally less than five inches long, abound in the water below the ice, as do many other forms of marine life.

Survival in the Arctic: The northward press of aviation, which flies across the pole itself—is making necessary an immediate answer to survival problems

"In any case," says Dr. James A. Peoples of the Cambridge Air Forces Laboratory, "the more we know about the polar regions the better off we will be in case we must go to war again. The Arctic is already important in this nation's defense.

Sled Dogs Still Vital

Despite the more modern planes and snow tractors, sled dogs are still the most important form of travel in the Arctic regions.

ICE-FLOE OUTPOST GETS OUT OF RANGE

U. S. Arctic Station Melting and Cannot Land Plane Except in Emergency

By WALTER SULLIVAN

FAIRBANKS, Alaska, July 27—The arctic ice floe bearing a United States scientific outpost has drifted beyond the point of no return for the Air Force planes that are its only direct link with the outside world.

Likewise summer melting has made the station's ice runaway almost unserviceable. The Air Force does not expect to make any more flights to the floe until freezing has restored the smoothness of the strip, probably in late September or early October.

Meanwhile, Air Force officers say, no landings are to be made except on an emergency basis. Last Saturday a twin-engined Douglas transport landed on wheels to bring in four men and lift out another four. The combined Air Force and scientific personnel constitute a party of less than a score.

The station is one of several set on drifting ice in the Arctic Ocean by the United States and Soviet Union to make observations at the top of the world during the International Geophysical Year.

The floe is 725 miles north of the Alaskan coast. This means it has drifted 125 miles farther offshore since the camp was established this spring.

Thus on Saturday the floe was already beyond the round-trip range of the C-47 twin-engined Douglas transport that has been landing men and delicate instruments there.

The orders to the pilot on Saturday were to check by radio when he was 500 miles out to make sure that changeable weather at the floe was still good. It was, and he landed on a strip that had been hurriedly pumped free of melt water.

Similar conditions are said to exist at the other American drifting station on the Arctic Ocean. It is on a substantial piece of coastal shelf ice that has broken adrift. It is known as Ice Island T-3. The other runway is said to be under a foot of water and the camp area is a mire of slush and ponds.

As often happens in polar areas, those in camps at the drifting stations are longing for freezing weather.

The location of the nearest Soviet station is not known. But it is probably within 200 miles of the American station north of Alaska. The other United States station, on T-3, is off Ellesmere Island.

There are said to have been informal radio exchanges between the American and Soviet drifting stations. But has apparentlyl been no official exchange of information. Under the provision of the International Geophysical Year, scientific data collected by all such outposts is to be pooled.

An earlier plan for systematic Soviet-American aerial photography of the arctic ice pack fell through. The plan was for transpolar flights between Murmansk and Alaska, and possibly other points, to observe the extent and movement of polar ice.

Negotiations to this end came to a halt, according to American sources, with the deterioriation of relations between the two countries following Soviet suppression of the Hungarian revolt.

The United States is carrying out its own studies of polar ice. For example, a camera at Barter Island has been mounted to photograph the drifting ice every half minute. When screened at full speed this gives an accelerated picture of the movement.

The drift of the floe station toward the North Pole seems to have halted. The movement in the past week or two has been haphazard. If the floe does not come back toward Alaska the Air Force may stage its supporting planes through T-3, once the runway there has frozen. That ice island is only about 400 miles from the floe.

The floe has stood up well under the buffeting of other pieces of ice and is still about four miles square. If it drifts toward Siberia, the men on it may have to be evacuated.

ESKIMOS TRY MINING

Canadian Concern Reports They Are Good Workers

North American Newspaper Alliance.

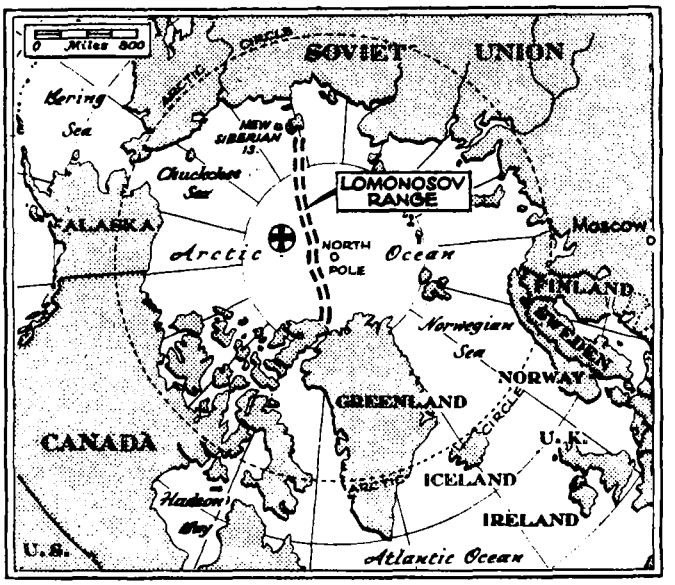
TORONTO, Nov. 1—Walrus and caribou, drum dances and semantics are among the problems of the world's strangest mining community.

This is a nickel-copper-producing concern at Rankin Inlet, on the northwest coast of Hudson Bay, 1,000 miles north of Winnipeg, where a Canadian concern has made the successful experiment of employing Eskimos as miners for the first time in history.

Just back in Toronto from the arctic, Wilfred Weber, vice president of North Rankin Nickel Mines, Ltd., says after its first year of trial his company considers the experiment fully justified. "The eskimo is an excellent worker, endowed with natural artisan skills. We are very happy with results and hope to increase the number of our Eskimo employes at the mine."

Since recruiting for mine work began early this year, Eskimos have come in from great distances, some by husky-drawn sleds. The labor force on the mine is ninety-five whites and seventy-five eskimos.

Scientists Adrift in Arctic Find An Underwater Mountain Range



Underwater mountain range (cross) believed to be the parallel to the Lomonosov range (broken line).

Ten Columbia University scientists stationed on a drifting Arctic ice pack have discovered an underwater mountain range that rises 5,000 feet above the ocean floor. The range was discovered about 900 miles northwest of Point Barrow, Alaska, 400 miles from the North Pole.

The scientists are staff members at Lamont Geological Observatory engaged in research for the International Geophysical Year.

The scientists and ten workers began their Arctic expedition in the spring on Project Iceskate. They expect to float to the pole sometime during the I. G. Y. year.

Maurice J. Davidson, geophysicist in charge of the project, has radioed that first soundings of the mountain range were taken at Lat. 49:15 N. Long. 165:10 W. All results indicated water depths of nearly 10,000 feet.

Since then, the ice station of the geophysicists has floated over a "topographic feature" at Lt. 83:51.5 N. Long. 168:43 W. Depths were reported as shallow as 4,971 feet. This indicated Mr. Davidson said, an underwater mountain range that rises at least 5,000 feet. It was not possible for the scientists to obtain further details on the length and width of the range.

Mr. Davidson's message revealed that the range was parallel to the Lomonosov range in the central Arctic. The Lomonsov extends from Greenland across the Arctic Ocean toward the New Siberian Islands.

The Lomonosov has an average height of about 10,000 feet. It goes a long way toward Ellesmere Island, which lies to the west of Greenland, and forms a series of massifs divided by saddles. The tops of peaks are only about 3,000 feet below the surface of the water. The circulation of the water about the range has a considerable effect on the weather in the Arctic and in Europe.

He said also that the newly found range probably was not a continuation of the underwater peninsula extending north ward from the Chukchi Sea. The Chuckchee Sea is between Alaska and the Soviet Union and extends from the Bering Strait to the Arctic Ocean.

SURVEYING JOB SPEEDED

Device Using Radio Waves Has Test in Aleutian Islands

WASHINGTON, Oct. 5 (UP)—The Coast and Geodetic Survey announced today that, through use of an electronic device known as a "tellurometer," it had completed in fourteen days an Aleutian island surveying job that normally would take four months.

The tellurometer measures by radio waves distances between a master unit and a remote unit and was developed by scientists of the Union of South Africa.

Setting for the surveying was barren Atka Island, far out in the Aleutian chain.

NAUTILUS CRUISE NETS ARCTIC DATA

Skipper of Atom Submarine Terms Scientific Findings a Boon to U.S. Strategy

GROTON, Conn., Oct. 29—The atomic submarine Nautilus, back from a tour that set several records, has gathered "100 times more information" of a scientific nature than all previous Arctic expeditions, her skipper said today.

The skipper, Comdr. William R. Anderson, said that this country's first atomic underwater craft, which ended a sixty-seven-day tour here yesterday, had made "discoveries" under the ice near the North Pole that "give the United States an advantage in the use of the polar regions strategically."

The Nautilus went to within 180 miles of the North Pole, at Lat. 87 — the farthest north any ship has penetrated. She spent five-and-a-half days under the ice on the Arctic leg of the cruise. The Navy also said that the Nautilus had traveled faster through Arctic waters than any previous ship, but it did not disclose the speed.

The Nautilus participated in the NATO exercises in the North Atlantic, during which it set an underwater endurance record of 14 days 3½ hours and 5,007 miles. On her homebound voyage she logged, last Thursday, her 100,000th mile on nuclear propulsion since her launching on Jan. 21, 1954.

Commander Anderson said today, at his home in near-by Mystic, that the most significant thing about the 1,000-mile Arctic cruise had been the amount of scientific data collected by a team under the direction of Dr. Waldo B. Lyon of the Naval Electronic Laboratory in San Diego.

The Nautilus came back with a crack in the plastic shield over her nose. The shield protected sonar equipment that enabled the vessel to avoid obstructions as it threaded its way through the under-ice blackness. Officers said the crack had been caused by the "rigors of the sea" and not by any accident.

During part of her underwater exploration, the Nautilus was accompanied by the Trigger, a conventional submarine, the Navy said. The Nautilus obtained data on under-ice profiles and the scientific team made bathymetric studies and measured water masses and currents. Data were collected also on cold weather operations of machinery and equipment.

The Nautilus and Trigger surveyed 30,000 square miles of ice-packed area. The Trigger made "a similar excursion under the ice, but of shorter duration," the Navy reported.

Cold weather discomfort apparently was the least of the problems of the officers and crew. Lieut. W. G. Lalor Jr. said the temperature inside had been a constant and comfortable 72 degrees. He said:

"I wouldn't want to explore the Arctic any other way."

Despite its other records, the Nautilus could not claim the distinction of being the first vessel of that name to cruise under the polar ice. The expedition of Sir Hubert Wilkins and Lincoln Ellsworth made the first submarine trip under Arctic ice in 1931 in a craft also named Nautilus.

The Polar Times

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AUGUST HOWARD, Editor

THE POLAR TIMES highly recommends "The Polar Record," published by the Scott Polar Research Institute, Cambridge, England.

The American Polar Society was founded Nov. 29, 1934, to band together all persons interested in polar exploration. Membership dues are one dollar a year, which entitles members to receive THE POLAR TIMES twice a year.

Back issues are 50 cents each. Bound volumes, covering five years, are $8.00 each.

SUBMARINE RANGE CALLED UNLIMITED

Rickover Says Atomic Craft Can Cruise Under Ice to North Pole and Beyond

United States atomic submarines can—and, before long, probably will—cruise under the ice to the North Pole and beyond, Rear Admiral Hyman G. Rickover declared Dec. 5

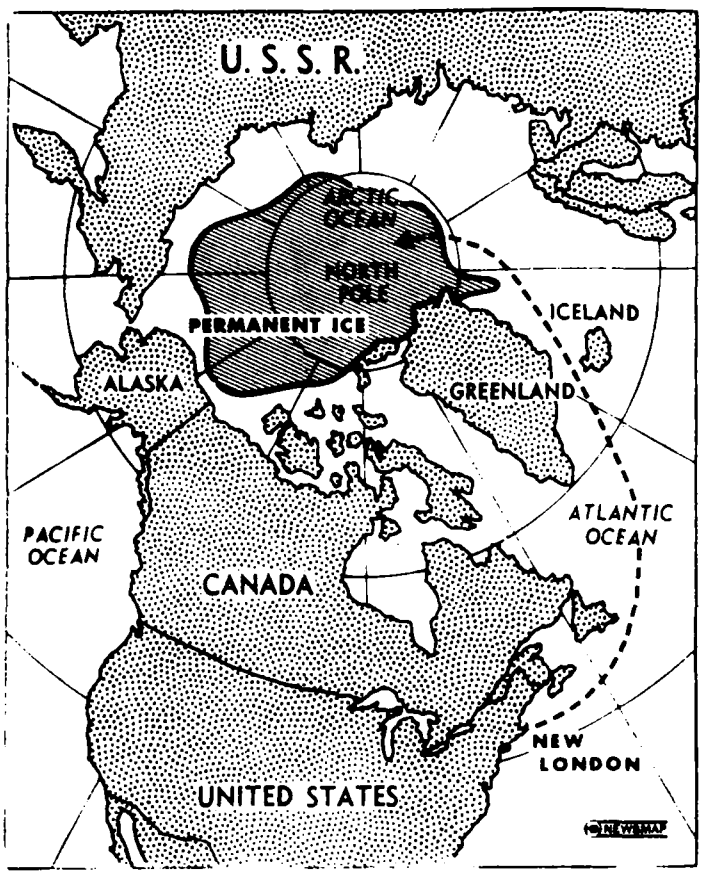
The admiral, who is often caled the "Father of the Atomic Submarine," also saw no reason why United States nuclear submarines could not now transit the frozen Arctic Ocean between the Atlantic and Pacific.

Admiral Rickover spoke at a luncheon of 250 members of the Overseas Press Club, 35 East Thirty-ninth Street. He is assistant chief of the Navy's Bureau of Ships for Nuclear Propulsion and naval reactors chief for the Atomic Energy Commission.

The admiral called the recent 1,383-mile cruise of the atomic submarine Nautilus to 180 miles south of the North Pole "one of the greatest feats of exploration" that "is not fully appreciated." The cruise was made under ice.

Electric failure in the gyrocompass prevented the Nautilus from cruising under the Pole. Admiral Rickover said. But the trip proved "we can go anywhere in the Arctic Basin in a nuclear submarine," he said.

"The way is now open for exploration of the Arctic Basin by our submarines," the admiral declared. "A submarine can chart the Arctic incomparably faster than can be done by landings from aircraft on ice. We must learn all about this area quickly to be able to counter any threats in that region."



PROBABLE COURSE of atomic sub Nautilus through Arctic waters and under permanent ice cap to withinn 180 miles of the North Pole is traced by broken lines on map above.

Eskimos Kin to Indians

Eskimos are believed to be descended from the same stock as American Indians. There is a similarity in their languages and culture.

I.G.Y. TEAM TAKING PULSE OF CLIMATE

Hope to Cut Through Frozen Mass and Read Story of Weather in Past Ages

By WALTER SULLIVAN

McCALL GLACIER, Alaska, July 23—Four men are encamped here, near the summit of the northernmost mountain range of this continent, to feel the pulse of changes in the earth's climate.

Theirs is probably the loneliest vigil among the hundreds of Americans manning remote outposts for the International Geophysical Year. It is almost impossible to reach them except in a small, ski-equipped plane that can fly into the jagged amphitheatre at the head of this glacier and make a nimble landing.

Apart from this link the four scientists have no direct contact with the outside world. Food, fuel and material for their hut were air-dropped to them. Occasionally a plane drops mail.

The mission of these men constitutes one of the prime goals of the International Geophysical Year: to determine the relationship between glacier growth, or shrinkage, and weather changes.

Hundreds of annual layers of snow and ice lie beneath this camp like the pages of a book, waiting to be opened. By boring a hole through the glacier, and by other experiments, this scientific team hopes to learn of past climates and be able to make predictions.

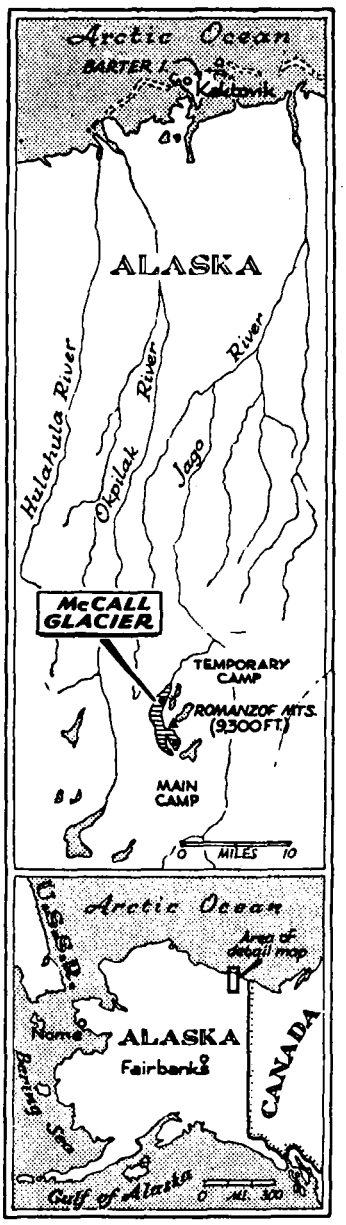
The Brooks Range forms a barrier across northern Alaska, with glacier-draped mountains at its eastern end. Less than a year ago the McCall Glacier and its surrounding peaks were unnamed and virtually unknown.

Last August Dr. Walter A. Wood, director of the United States branch of the Arctic Institute of North America, flew over the range and selected this glacier for the project. Dr. Wood is in charge of the studies, under the National Academy of Sciences.

With him was Dr. Richard C. Hubley of the University of Washington, who now leads the group on the glacier.

The camp has been placed at 8,200 feet elevation in a cirque at the head of the glacier. To land here in a plane is breathtaking.

The camp's visitors — Dr. Wood, Max C. Brewer, director of the Navy's Arctic Research Laboratory, and this correspondent — arrived yesterday in a small plane equipped with a combination ski-wheel landing gear. We flew in across soggy coastal plains of tundra from Barter Island in the Arctic Ocean.



Location of glacier and temporary and permanent camps.

The upper glacier and the highest peaks, that reach close to 10,000 feet, were above the clouds. The plane had to climb through several layers to reach the level of the cirque. Our arrival seemed like flying into Bowling Green, at the bottom of New York's Broadway, at treetop level.

Merrill Wien of the well-known Alaskan bush-piloting family, banked his single-engine plane almost vertically to keep within the rock walls, then swooped down to land on a patch of up-hill snow.

Dr. Hubley and Robert W. Mason of Kansas City, Mo., who graduated from Yale last year, greeted us. Soon after, John E. Sater of Columbus, Ohio, a 1954 graduate of Ohio State, and Charles M. Keeler of Williamsville, N. Y., who finished at Yale this year, came up from a temporary camp at the 6,000-foot level.

The four told of the many problems in placing a camp "in the sky." The first one was bears. Barrenland grizzlies last year created havoc in a cache of fuel and food placed alongside a nearby lake. Five-gallon fuel cans were grooved and punctured by their powerful claws. Food cans were bitten into and sucked clean.

This spring, to frustrate the bears, the first air drops of rations were sealed inside heavy oil drums.

Other outposts established for the International Geophysical Year are more isolated than this one—notably those at the South Pole and on an ice floe in the Arctic Ocean. However, they are larger, staffed by more men and much more elaborately equipped.

Air Force Tests Pill to Help Man Keep Warm Under Icy Conditions

By WALTER SULLIVAN

FAIRBANKS, Alaska, July 19 —A pill that may increase resistance to cold is being tested at the Arctic Aeromedical Laboratory near here.

The pill contains glycine, an amino-acid that causes the body to generate more heat than it can otherwise produce. It is hoped it might enable a man to stay alive longer in icy water, and hasten the warming of a man who has been chilled to a critical point of exposure.

At the laboratory, operated by the Air Force at Ladd Air Force Base, volunteers are taking the pills with no evidence of ill effect. If the tests are successful, the pills could be included in survival kits.

Glycine also may make possible a technique of heart surgery in which the heart can be chilled to the point where it stops for an hour or more without suffering damage. According to scientists working at the Air Force laboratory, the heart suffers ventricular fibrillation when its temperature is lowered to about 78 degrees Fahrenheit.

This is a loss of rhythmic beat, which causes death. Hence, in heart surgery, the organ can be chilled only enough to stop its beating for six or eight minutes. There is evidence that glycine in the bloodstream may enable the heart to be chilled past this critical temperature.

Extensive research has been carried out at the laboratory with Negroes, Eskimos and whites to find out why some ethnic groups seem more resistant to cold than others. During the fighting in Korea the incidence of frostbite among Negro troops was seven times greater than among other soldiers.

It was suspected that an emotional factor was involved and tests are being made to find out if this is true. Some evidence has been found that bodies of Negroes chill more easily.

Among Negroes who agreed to act as subjects in the experiments, basal metabolism—that is, their rate of energy production—fell more rapidly than in white men. The experimenters are still not certain what role, if any, emotion plays in this phenomenon.

Similar studies of Eskimos produced no evidence that their bodies were better equipped for the cold than those of the white men who are infiltrating their domain. The Eskimos' ability to endure extremely low temperatures seems to be based solely on acquired skills and excellently adapted clothing and diet.

Parallel research has been carried on to find out what enables some animals to endure cold far better than others. The bodies of animals that hibernate, such as woodchucks and hedgehogs, can be chilled almost to the freezing point without injuring them. Other animals, such as dogs and cats, die when their temperature lowers to the high sixties.

These animal experiments are being carried on by Dr. Raymond J. Hock, who is best known in these parts for his studies of hibernating bears.

He keeps his bears, as well as his smaller animals, in a remote and wooded part of the air base.

Experiments are also being carried out on isolated hearts from various species. The hearts continue to beat when placed in a device that furnishes them with a form of blood plasma. This makes it possible to study the effect of lowered temperature with and without glycine in the plasma.

The laboratory is under the direction of Col. Howard Currie, a physician in the Air Force medical corps. The director of research is Dr. Kaare Roedahl.

Opening Up Alaska

WASHINGTON — Interior Secretary Fred A. Seaton told a press conference here that 20,000,000 acres of hitherto closed Federal lands will be opened for public mineral, oil and gas exploration beginning next year. The area lies roughly 150 miles above the Arctic Circle, and could have rich potentialities, according to preliminary surveys. No rush of prospectors like the turn of the century gold craze is expected because gas and oil are expected to be the chief prizes, not gold. Alaska's current population is about 159,000.

SEA-LEVEL SHIFTS IN ARCTIC STUDIED

Scientists of East and West Hunt Cause of Frequent Rise and Fall of Ocean

By WALTER SULLIVAN

POINT BARROW, Alaska, July 25—Water in the gigantic basin whose center is near the North Pole slops back and forth and oscillates in a manner that baffles scientists of both East and West.

Here, near the northernmost community on the North American continent, continuous observations of sea level have shown that, for as long as a day at a time, the Arctic Ocean rises and falls at intervals of fifteen or twenty minutes.

There are also surges that occur every three to four days, as well as seasonal variations in sea level. These are all independent of normal tides, which are governed primarily by the gravitational pull of the sun and moon.

The continuous tracing of sea level on a moving roll of paper began here about a year ago. Similar strange fluctuations in sea level have been reported by Soviet scientists on the opposite side of the Arctic Basin.

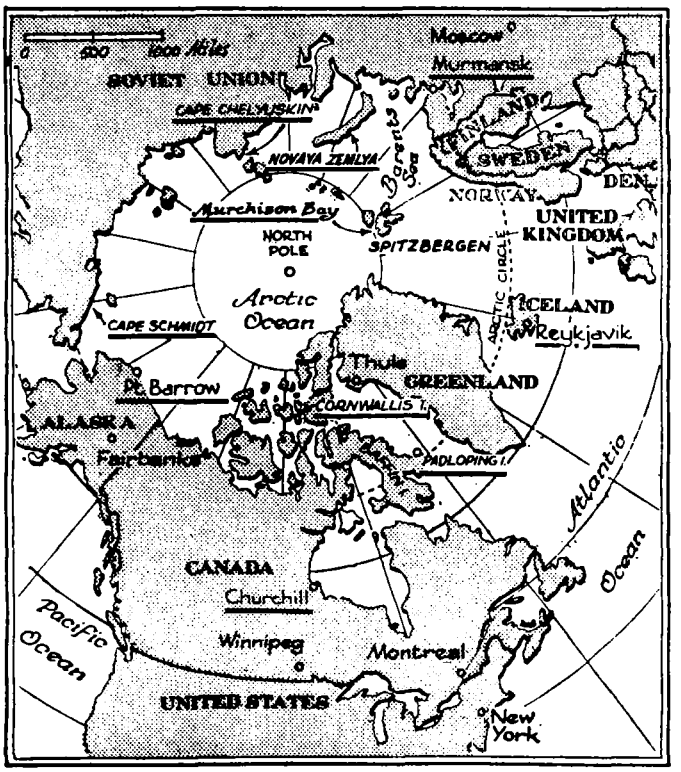
In an effort to solve this mystery four nations have agreed to make continuous observations of water level at ten points around the fringes of the Arctic Ocean. These will be continued throughout the International Geophysical Year.

The studies here are being carried out by the Navy's Arctic Research Laboratory under supervision of Allan Beal of the Scripps Institution of Oceanography at La Jolla, Calif.

Dr. Roger Revelle, director of the latter institution, believes that the rises at intervals of three or four days may depend on the time it takes for surges of water, slopping back and forth in the Arctic Basin, to cross to the Soviet side and return.

This may be demonstrated when observations from here are compared with those from the other stations on the Arctic Ocean. The Soviet Union has four such points. The nearest is at Cape Schmidt south of Wrangel Island in Siberia. The others are at Cape Chelyuskin, the northernmost point of Eurasia, Russian harbor on the island of Novaya Zemlya and Murmansk.

Canada has agreed to make continuous sea-level observations at seven points. Three of these are on waters of the Arctic Basin at Padloping on Baffin Island, Resolute on Cornwallis Island and Churchill on Hudson Bay. Finland has undertaken to operate a tide gauge at Murchison Bay in Spitzbergen. Iceland is doing the same at Reykjavik.



POLAR WATER MYSTERY: Movements of Arctic Ocean are being studied at observation points (underlined) during the International Geophysical Year.

Continuous observation of sea level in the Arctic Ocean is made difficult at many points by the inexorable drift of ice floes along the coast. They sweep away tide gauges and any other such obstacles in their path. Likewise, midwinter cold halts the recording devices and freezes seawater, immobilizing the gauge floats.

Tricks have been used here to counter these difficulties. Additional salt is dumped into the surrounding sea water to keep it fluid. A tide gauge has been rigged "inland" in porous ground, where the water level changes with that of the near-by ocean.

A sister tidal station at Cape Prince of Wales, on the American side of Bering Strait, has been washed away by heavy seas. But it is to be reinstalled shortly.

The variations of sea level at fifteen to twenty-minute intervals involve changes of about one inch. Normal tides here are only from six to eight inches, being a remote extension of the Atlantic tidal system.

On the moving roll of paper, the curving line, representing daily changes in sea level, goes up and down in a smooth, symmetrical wave pattern until one of the oscillation periods begins. Then the line, while still displaying waves, becomes jagged.

Analysis of the results is complicated by changes in sea level due to wind and barometric pressure. In a severe storm the water level along this coast rises as much as ten feet.

ARCTIC CAMERAS MAPPING AURORA

At Least 76 Taking Pictures in International Plan to Record the Night Sky

By WALTER SULLIVAN

COLLEGE, Alaska, July 27—At one-minute intervals, cameras sprinkled over the top of the world have been photographing the night sky and the northern lights.

Over the northern United States, the cameras have been located so as to give complete coverage of the sky from coast to coast. Even over desolate reaches of the Arctic Ocean, more than half the sky will be covered once it becomes dark enough there to see the northern lights, or aurora borealis.

At present there is constant daylight in the vicinity of the North Pole.

The program is a phase of studies being carried out through cooperation between the United States, the Soviet Union and other nations in the International Geophysical Year.

At least seventy-six cameras have been allocated to the northern sky: Eight are in Scandinavia, two in Britain, four in Greenland, eleven in Canada, thirteen in the northern United States, six in Alaska and two are at drifting stations placed by the United States on ice of the Arctic Ocean.

The Soviet Union is said to have assigned thirty or more all-sky cameras to its northern coasts and drifting stations.

Aurora displays in the Antarctic, at the opposite end of the world, are being photographed by a similar network. The cameras are more widely spaced, because stations there are fewer.

The resulting photographs are expected to total seventy-five miles of sixteen-millimeter film.

From these photographs it is planned to construct world-wide maps of the aurora at three-hour intervals throughout the eighteen months of the I. G. Y. During Special World Intervals, called when proton bombardments from the sun create massive aurora displays, such maps may be produced to show the changes at fifteen-minute intervals.

This, at least, is the hope of Dr. C. T. Elvey, director of the Geophysical Institute. As the first series of weather maps in the nineteenth century showed the paths of storm migration, so the aurora maps should show how the showers of sun protons rain upon the earth.

It will also be possible, for the first time, to see the majestic scope of the displays. The aurora takes many forms—arcs, curtains and rays of light that appear in the region from sixty to 400 or more miles overhead. Each all-sky camera is expected to record any display within 300 miles or more.

Preliminary studies, according to Dr. Elvey, have traced auroral arcs across the 600-mile width of Alaska. As a result of the work, they may be found to be 1,000 miles or more in length. It should also be shown whether the aurora throbs simultaneously at both poles.

This university town lies on the belt of maximum aurora occurrence. The displays are sometimes as bright as moonlight. Through analysis of their changing colors here and elsewhere it is hoped to learn more about the processes that take place when streams of solar protons strike the high atmosphere.

Auroral maps for the Western Hemisphere will probably be prepared at Cornell University, under the direction of Dr. Carl W. Gartlein.

New Alaska Map Published

WASHINGTON, Dec. 23 (U.P.)—The Geological Survey announced today the publication of a new geologic map of a 4,000 square mile area of the Koyukuk Basin in Alaska. Copies of the map, entitled "Preliminary Geologic Map of the Nulato and Kateel River Area, Alaska," can be purchased from the Geological Survey at 75 cents each.

CUTTERS CONQUER ARCTIC PASSAGE

BOSTON, Sept. 24 — Two Coast Guard cutters were saluted in Boston Harbor today at the end of a successful mission to find a practical Northwest Passage—a route around the top of the North American Continent.

A third cutter, the Spar, proceeded directly to her home port at Bristol, R. I., to be welcomed there as the first United States vessel to circumnavigate the continent.

The cutters Storis, from Juneau, Alaska, and the Bramble, from Miami, Fla., put in here for their welcoming. They will continue their homeward voyages later in the week.

The three cutters were the first United States vessels to make the passage.

The shrill sirens of water-spouting fireboats and the deeper-throated whistles of other craft sounded a "well done" as the two bulky cutters made their way up the harbor.

Ranking Coast Guard officers and civil officials joined with members of families of the crews in a dockside welcome as the cutters tied up at Constitution Base, headquarters of the First Coast Guard District.

A telegram of congratulations from President Eisenhower cited the nation's pride in the "courageous performance" of the Coast Guardsmen.

The transit of the Northwest Passage was completed officially on Sept. 7, when the three United States vessels, led by the Canadian ice patrol ship the Labrador, cleared Bellot Strait, key link in the route from the Arctic Ocean to the Atlatnic.

The Labrador had completed the last previous transit in 1954.

The search for a Northwest Passage began shortly after the discovery of the New World.

Only a handful of the many craft that have attempted the passage succeeded in crossing the ice-filled waters at the top of the world.

The first to accomplish the feat was Roald Amundsen, the Norweigian explorer, in the seventy-foot schooner, the Gjoa, in 1906.

The Royal Canadian Mounted Police schooner, the St. Roch, made a round-trip in 1942. It also made a single transit in 1945. Then came the Labrador.

Bays and other geographical landmarks in the Arctic bear the names of many others, who failed in the major effort, but added to general knowledge of the region. They include Cabot, Frobisher, Hudson, Baffin, Bylot and Davis.

The Storis, Bramble and Spar were members of a task unit convoy operating for the Military Sea Transport Serivce.

They set out in June to seek an alternate route to the east that vessels supplying the Distant Early Warning line radar outposts might use.

Capt. Charles W. Thomas

Coast Guard Officer To Leave the Service

Oct. 5

A Coast Guard officer who is a veteran of World War II and of polar expeditions will retire Nov. 1. He is Capt. Charles W. Thomas, deputy commander of the Eastern Coast Guard Area here.

Upon retirement as a rear admiral, Captain Thomas will become Administrator and Coordinator of Arctic Operations for the United States National Committee, International Geophysical Year. He is an authority on Arctic and Antarctic ice-breaking and logistics and the author of a book, "Ice Is Where You Find It."

In World War II Captain Thomas commanded a cutter on the Northeast Greenland patrol. He commanded an icebreaker in the 1946-47 Byrd Antarctic Expedition and in 1955-56 he took part in Operation Deep Freeze, the support force for American bases in the Antarctic.

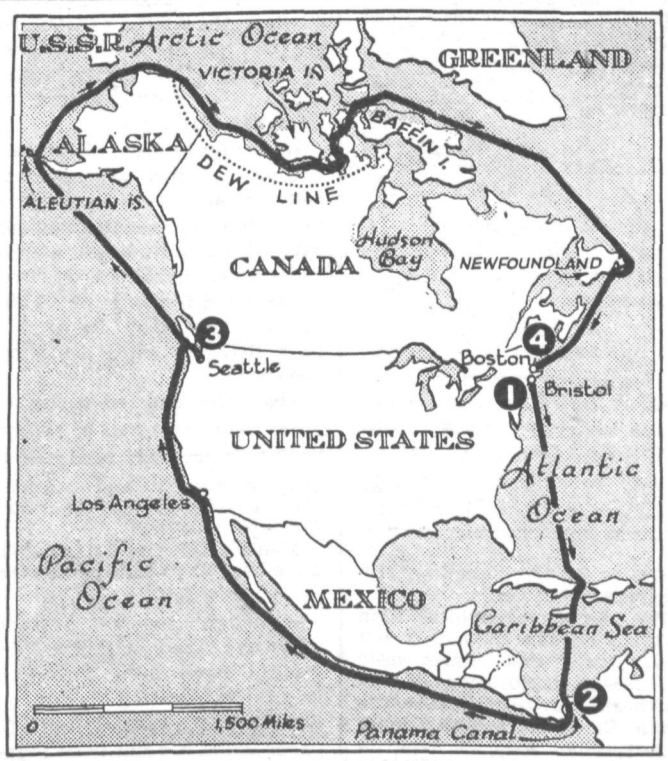
The supply ships usually enter and leave the Arctic Ocean through Bering Strait in the west. Some of them have come near being trapped in the Arctic over the winter.

Comdr. Harold L. Wood, skipper of the Storis, was commanding officer of the task unit.

At a press conference after the ceremonies today, he emphasized that the success of the voyage was the result of an organized effort by many units of the forces of the United States and Canada.

But he said this should not detract from the performance of the crews of the three cutters.

The commander's son, Timothy J. Wood, 13 years old, was permitted to make the voyage. He is to fly home with his mother soon to resume classes in the eighth grade at Juneau.



ROUND TRIP: Coast Guard cutter Spar returned to Bristol, R. I. (1), after circumnavigating North America by way of Panama Canal (2). The Spar was joined by the cutters Bramble and Storis in sailing from Seattle (3) to find a practical passage across the top of the continent. The Bramble and Storis arrived at Boston (4).

D.E.W. Radar Line Formally Accepted By the Air Force

POINT BARROW, Alaska, Aug. 13 (AP)—The Government formally took possession today of the $500,000,000 Distant Early Warning line.

The ceremony included a demonstration to show how the line would flash an alarm of approaching enemy bombers.

Brig. Gen. Stanley Wray, chief of the United States Air Force's electric defense system, arrived yesterday at this outpost on the Arctic Ocean to accept the D. E. W. line in behalf of the Air Force.

The Western Electric Company, prime contractor in construction of the 3,000-mile line across the rim of the continent, turned it over to the Air Force. The Air Force immediately delivered control of the line to the Federal Electric Corporation.

Civilian technicians of the Federal Electric Corporation will operate the line under a contract with the Government.

General Wray's plane, named the Dewziak, flew out over the Arctic Ocean and then headed back south over the top of the North American continent as an enemy bomber might do in using the polar route to deliver their bombs to targets in the United States.

The penetration of the line by General Wray's plane touched off an alarm system. Test messages were flashed to the United States Continental Air Defense Command headquarters at Colorado Springs, Colo., and the Royal Canadian Air Force at St. Hubert, near Montreal.

Canada to Test Arctic Tides

OTTAWA, Aug. 4 (AP)—Government scientists are building tidal recording stations at two points in the Canadian Arctic, Brevoort Island and Resolute. Special instruments will reach beneath the ice crust to record ocean movements as part of Canada's contribution to the International Geophysical Year.

PASSAGE TO AVOID ARCTIC ICE FOUND

17-Mile Bellot Strait Has Deep Channel Suitable for DEW Supply Ships

By GEORGE HORNE

Aug. 27

A Canadian patrol ship has found a new Northwest Passage in the Arctic for deep-water vessels.

Last Saturday the Labrador moved through Bellot Strait, preceded by the tiny sound boat Pogo and two helicopters, navigating the seventeen-mile waterway in two hours. The echo-sounding equipment found a good channel with a minimum depth of fifty feet.

United States and Canadian navigators had been searching for the passage to provide an escape route for ships that each year supply fifty Distant Early Warning sites strung across the northern fringe of the continent.

The route could be used in case the Beaufort Sea ice pack suddenly moved back onto the Alaskan shore, imprisoning the supply ships in Arctic waters.

Bellot Strait runs east and west between Boothia Peninsula at the top of the North American continent, and Somerset Island. Escaping ships in Franklin Strait could slip through Bellot into Prince Regent Inlet and proceed to Baffin Bay through Lancaster Sound.

Vice Admiral John M. Will, commanding the Military Sea Transportation Service, inspected the route by air earlier this year and urged exploration because of bad ice conditions farther north. The service's ships supply the DEW sites.

Acording to a Canadian Press dispatch from Ottawa, Capt. T. C. Pullen, skipper of the Labrador, reported to Canadian Navy headquarters that most of the passage was clear of ice.

Two other discoveries that will require changes in Arctic charts and maps have been announced by the M. S. T. S.

A sea channel has been found leading to Frobisher Bay, Baffin Island, which will make this major air and sea base more accesible to supply ships. The new air strip and Canadian-United States military installations at Frobisher get most of their supplies by ship. Until recently, vessels had to use a twisting, treacherous channel.

The new channel has a minimum depth of 138 feet. It is only fifteen miles long, compared with the old passage's 27 miles. The new entrance was discovered by Lieut. Neil Norton of the Canadian Navy and Michael Bolton, senior representative of the Canadian Hydrographic Office.

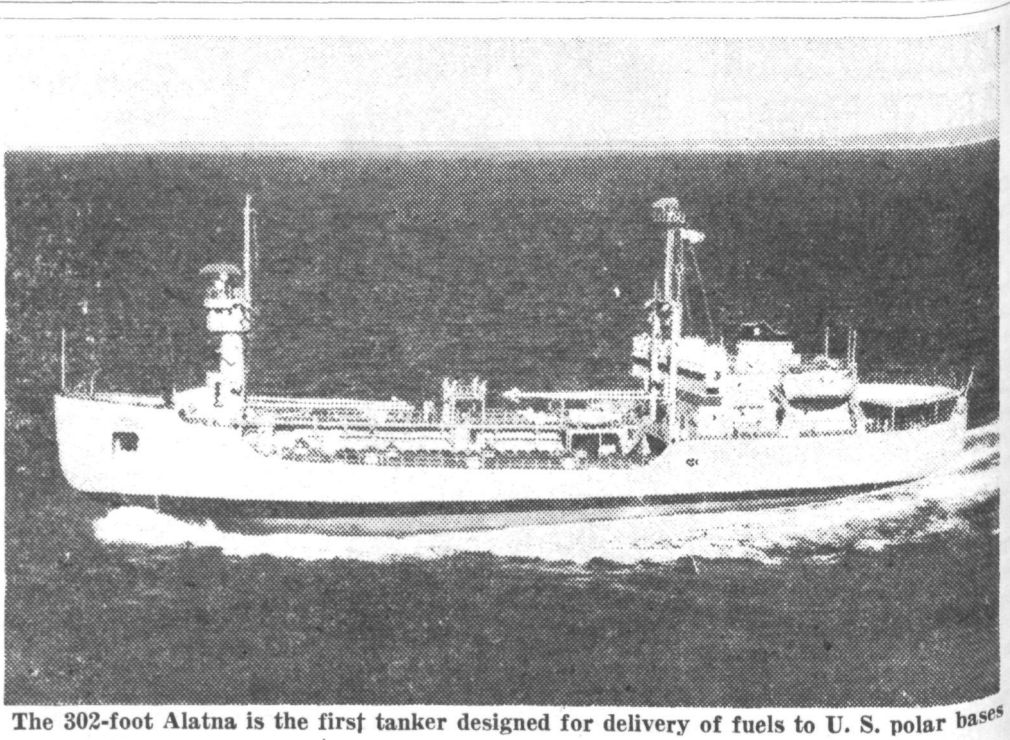
The third geographical item involves an island that is not there. Maps and charts used in current exploration of the Northern Territories above the Arctic Circle show Hall Island, a forty-mile body of land in the northern section of Boothia Bay, just west of Hecla and Fury Strait.

Canadian and United States Navy officers who have examined the area carefully agree there is no Hall Island. They have notified the National Geographic Society and commercial cartographers of their findings.

Mention of the island may have been the result of an error in early Arctic charting.

Although several passages between the Atlantic and Pacific have been forced by small exploration craft, a feasible northwestern route for cargo ships has not been found. Every strait inlet and gulf north of Bellot Strait is blocked by ice. Even the passage now known to be practical can be used only in summer, and only with the support of ice breakers.

Interest in the Northwest Passage as a trade route goes back to the sixteenth century. Roald Amundsen, the Norwegian explorer, was the first to complete the passage, in 1906, in his seventy-foot schooner Gjoa.



The 302-foot Alatna is the first tanker designed for delivery of fuels to U. S. polar bases

NEW ROUTE: Arctic passage charted through Bellot Strait (cross) as escape route for vessels carrying supplies for the Dew Line.

Ice-Breaking Tanker Saluted by Navy

The ice-breaking tanker Alatna has won a "well done" from the Navy after her first bout with the ice fields and bergs of the Arctic.

Only eight days after she was delivered to the Navy's Military Sea Transportation Service last summer, the Alatna sailed north as part of the fleet assigned to supply the early-warning radar bases strung across the Canadian Far North.

In her tanks were 26,000 barrels of jet fuel consigned to Harmon Air Force Base, Newfoundland. After unloading her cargo, the Alatna began a shuttle service, reloading from large tankers and ferrying the oil into shallow, ice-filled inlets and bays that big ships could not penetrate.

The 3,450-deadweight ton Alatna, alone or as part of various groups of a ninety-six-ship task force, visited Hudson Strait, Frobisher Bay and Foxe Basin. In Foxe Basin, the Alatna cracked ice five to six feet thick.

Vice Admiral John M. Will, commander of the Military Sea Transportation Service, praised the Alatna and noted that she had delivered urgently needed fuel in waters inpenetrable to conventional tankers.

He said that the Navy long had needed vessels of this type.

The Alatna has a specially reinforced hull to withstand heavy ice. The vessel is 302 feet long and is powered by two sixteen-cylinder Diesel engines built by ALCO Products, Inc., of Schenectady, N.Y. Each engine generates 2,400 horsepower.

The Alatna has a cutaway bow that rides up on the ice and crushes it with the weight of the ship. She has twin propellers that push her along at twelve knots.

TV Travels 2,485 Miles

LONDON, Nov. 10 (AP)—Soviet scientists at a drifting station near the North Pole reported freak reception of television transmissions from Vladivostok, 2,485 miles away, the Moscow radio said today. It added that it was "probably explainable by the high degree of ionization of the ionosphere at this time of the year, the period of maximum solar activity."

SHIPS PLY ARCTIC TO SUPPLY BASES

M.S.T.S. Commander Visits Fleet on Annual Mission to Remote Radar Line

Aug. 3

Vice Admiral John M. Will, commander of the Military Sea Transportation Service, flew to the Far North last week to make a personal survey of the annual problem of supplying defense bases strung along the top of the continent.

His service is charged with providing the oil, machinery, food and other items necessary to maintain the bases the year round in the frigid temperatures of the Arctic.

Only during the summer months is it possible to force the ice-locked bays and straits that dot the northern coast of Canada. This year an unusually severe winter has produced the worst ice conditions of the last fifty years.

Led by icebreakers, a fleet of 102 ships carrying 12,300 men is thrusting through heavy ice floes toward the isolated radar bases of the Distant Early Warning (D. E. W.) line.

The fleet consists of two task forces. One segment of forty-six vessels, probing the Arctic from the west, reached Point Barrow, Alaska, last Wednesday. It then was deployed for a move south and east that will take some ships 1,500 miles to the most isolated base.

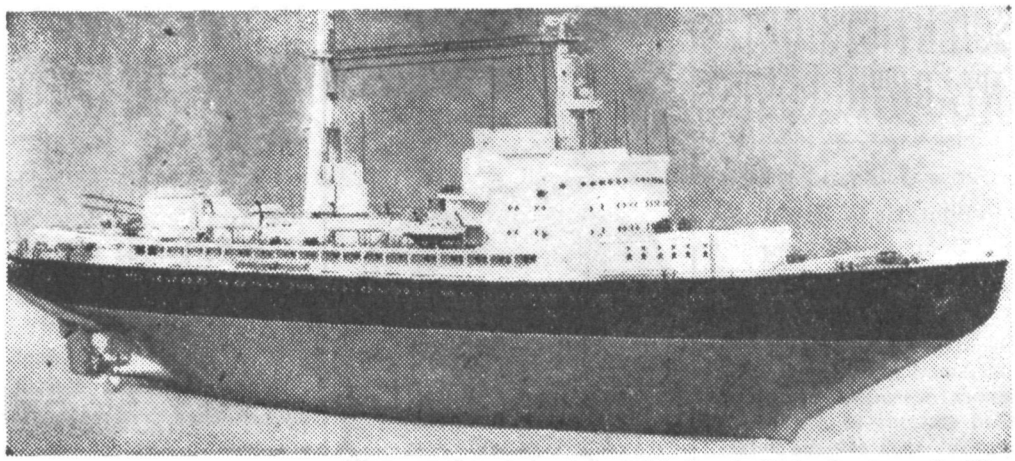
At Point Barrow Admiral Will greeted Rear Admiral Henry S. Persons, commander of the M. S. T. S. Pacific Area, and Rear Admiral Frederick C. Stelter, commander of the supply fleet. He then made an aerial survey of the entire chain of bases before returning to Washington.

The second segment of fifty-six ships has been supplying eastern bases in Greenland, Labrador and Baffin Island for several weeks. It already has unloaded more than 35,000 tons of cargo.

Befort leaving Washington for the Arctic, Admiral Will said:

"Operating in some of the world's severest weather in one of the last of the legendary frontiers, men from diverse military and civilian agencies are engaged in sea lifting the material that will fashion the defense screen that can provide the advance warning which may well save millions of lives.

"Much of this sealift delivery is made over the same centuries-old water routes which enchanted and confounded European explorers and adventurers seeking a passageway to China. Despite the progress of civilization, operations in the Arctic still require that same sense of adventure."



SOVIET ATOMIC ICEBREAKER: The design of vessel being built in Leningrad. The ship, at 16,000 tons, will have almost twice the weight of biggest U. S. icebreaker.

Soviet Data Reveals 5 Layers in Arctic Ocean

By THOMAS R. HENRY

TORONTO, Sept. 7.—The area now covered by the Arctic Ocean once was an eighth continent.

There are two north magnetic poles. The Arctic is a five-story ocean.

These were among the novel concepts reported before the International Union of Geodesy and Geophysics here today by Soviet delegates. Russia in recent years has conducted far more research in the far north than any other country.

The concept of the Russian geologist V. N. Sax is based on analysis of bottom sediments gathered by Soviet expeditions and on the relief of the sea floor. The sinking, Sax holds, took place not later than the cretacious geological period about 200 million years ago.

Analysis of microscopic animal remains in the bottom sediments, show Sax and other Russian geologists claim, there have been periodic invasions of the Arctic basin by warm water pulses from the Atlantic. It is recognized that at the time of first Norse settlements in Greenland about a thousand years ago the climate was much more temperate than today. There probably have been many such temperate interludes, the Russian geologists believe. The warm periods come during the Atlantic influxes. The alternating periods last from 8 to 12 thousand years and follow each other in definite order.

There are five main types of water occupying different layers of the northern ocean, the Soviet scientists say. The surface Arctic water reaches down to about 50 yards. Below is an intermediate cold layer to 200 yards. The third layer at present is a strong current from the Atlantic with a temperature considerably above freezing and very salt. Below this is the bottom layer which has a temperature of slightly below zero centigrade. The fifth layer identified by the Russian scientists penetrates the Arctic basin from the Pacific through Bering Strait, at a depth of from 75 to 100 yards. It is warm, like the Atlantic water. Each "story" of the ocean contains its own kind of life.

Magnetic Pole Claims

Evidence for the Russian claim of two magnetic poles is considerably more theoretical. One pole, which has shown considerable shifting of late, presumably due to changes in the earth's magnetic field, is certainly located in the Queen Elizabeth Islands of the Canadian Archipelago. But, the Russians reported, "analysis of data from a large number of magnetic stations makes it possible to conclude that in Northeastern Siberia there is a second zone where approximately the same magnetic phenomena take place. These conclusions are in good agreement with observations of disturbances in the ionosphere and of aurorae."

Altogether, the Soviet scientists reported, Russia is maintaining 26 Polar stations, two drifting ice island stations and four observatories in Polar regions to carry out its part in the International Geophysical Year program.

SOVIET FLOATS HULL OF ATOM ICEBREAKER

MOSCOW, Dec. 5—The Soviet Union launched today in Leningrad the hull of its atomic icebreaker, the Lenin, Tass announced.

The atomic reactor that will indirectly power the icebreaker's powerful engines will be installed later. The ship's superstructure also remains to be attached.

The Lenin is more than 435 feet long and about ninety feet wide. Tass said when completed the ship would be as high as a six-story building. She has a displacement of 16,000 tons and is expected to travel at a speed of 18 knots in clear water.

The engines of the icebreaker will generate an estimated total of 44,000 horsepower. The designers say the vessel will have enough power to navigate easily through ice more than six feet thick.

Tass said that the Lenin would have a total of about 1,000 rooms and compartments. The designers were said to have provided for "an absolutely reliable" system of protection againt radiation.

Soviet to Launch 125 Rockets

LONDON, Dec. 15 (Reuters)—Soviet scientists will launch 125 meteorological and geophysical rockets as part of their International Geophysical Year program, the Moscow radio reported tonight. Of these, seventy will be launched from the Soviet mainland, twenty-five from Arctic bases and thirty from a survey ship. The meteorological rockets are launched to a height of about fifty-five miles. Geophysical rockets can reach about 125 miles.

Soviet Plans Arctic Outpost

LONDON, July 25 (Reuters)—The Soviet Union will set up its northernmost polar observatory on Franz Josef Land, a remote Russian archipelago in the Arctic Ocean, the Soviet news agency Tass reported today.

6 SCIENTISTS GET ANTARCTIC POSTS

Five From U. S. and a New Zealander Head Stations for Geophysical Year

By BILL BECKER

DAVISVILLE, R. I., Sept. 17 —Five Americans and one New Zealander were named today to head stations in Antarctica throughout 1958 for the International Geophysical year.

Albert P. Crary, 46 years old, of the Air Force Cambridge Research Center, will continue as station scientific leader at Little America.

New experts were appointed to direct scientific work at the United States' other stations. They are:

Palle Mogensen, 49, who will assume direction of the Amundsen-Scott station at the South Pole.

Dr. Willis Tressler, 54, of the Navy's Hydrographic Office, Washington, who will direct Wilkes station.

Stephen S. Barnes, 42, of the United States Bureau of Standards, Anchorage, Alaska who will head the Byrd station.

Dr. Matthew Brennan, 40, Professor of Biology at New York State Teachers College at Fitchburg, who will lead Ellsworth station.

Kenneth Salmon, 35, electronics instructor at Wellington Technical College in New Zealand, new director of Hallet station.

Mr. Salmon succeeds James Shear as head of Hallet station, which is jointly operated by the United States and New Zealand.

Mr. Mogensen was executive officer of the Army-Navy trail party that earlier in 1957 made the first foot traverse of more than 650 miles from Little America inland to Byrd station. Mr. Mogensen soon will leave the Army as a major. He succeeds Dr. Paul Siple as leader at the South Pole station.

Mr. Mogensen and Mr. Barnes will take up their duties before Jan. 1. Dr. Tressler, Dr. Brennan and Mr. Salmon will assume their posts about Jan. 15.

The appointments were announced by deputies of Dr. Laurence M. Gould, director of the Antarctic program of the National Academy of Science during the I. G. Y. The eighteen-month study of the earth and its environment began last July 1 and will extend through 1958.

Dr. Harry Wexler will continue as chief scientist for the program, with headquarters at Little America. His chief deputy will continue to be Mr. Crary, who has been on the Antarctic ice for much of the past two years.

All of the other station leaders, together with their staffs, are undergoing a four-day briefing at the Naval Construction Battalion Center here. Nearly 100 scientists are in attendance.

The scientists, seventy of whom will stay in the Antarctic at least a year, heard experts of previous expeditions outline problems of communications, air and ship supply and construction.

The United States has seven I. G. Y. stations in Antarctica. The new group of scientists will relieve those who began research this year.

Investigation of scientific phenomena is scheduled to reach a peak during the Antarctic summer of November, December and January. The new group was selected by the United States and the National Committee for the International Geophysical Year after examinations testing their professional and physical ability.

The biggest contingent — forty in all — is headed for Little America. Twenty-one men were selected for various duties at Byrd Station, thirteen at Wilkes Station, nine at Ellsworth Station, four for McMurdo Base, one for Hallett Station and seven for the 10,000-foot-high station at the South Pole.

They will continue studying polar weather, glaciers, upper air phenomena, geomagnetism, geology and cosmic rays. The stations are widely scattered and many of the men may not have an opportunity to discuss their research programs, except by shortwave radio.

Dr. Harry Wexler, chief scientist for the I. G. Y. Antarctic program, urged the men to hold weekly radio scintific sessions once they get on the ice.

Hugh Odishaw, of Washington, executive director of the national committee, reviewed the broad United States program. International aspects of the scientific year were traced by A. H. Shapley, of the Bureau of Standards, Boulder, Colo. Mr. Shapley is a member of the International I. G. Y. Committee.

John Jones, communications chief of the national committee, said that expanded shortwave and radio teletype networks had raised morale and bettered operating conditions.

At McMurdo Sound I. G. Y. base, reporter Bill Becker flashes a parka-framed grin to home folks.

All Antarctic dispatches in this issue are by Bill Becker, the New York Times reporter on Operation Deepfreeze III, except those otherwise credited.

U. S. UNIT TO STUDY ICE IN ANTARCTICA

I.G.Y. Team Hopes to Find Data to Permit Prediction of Berg-Free Waters

By BILL BECKER

DAVISVILLE, R. I., Sept. 18 —Antarctic waters present an icy challenge that oceanographers hope to meet in the International Geophysical Year.

Dr. Willis Tressler, oceanographer, told scientists here today:

"Ice conditions in Antarctica are still variable and unpredictable. We hope that the work we are planning will lay the foundations for some sort of ice prediction system."

Right now, Dr. Tressler said, all hydrographers can do when asked to forecast ice-free waters is "throw up their hands."

Dr. Tressler, Antarctic specialist of the Navy's Hydrographic Office, will head scientific personnel during 1958 at Wilkes Station in Antarctica. Ocean studies will be conducted there, at Little America and aboard heavy vessels plying to and from Antarctica.

The activities will be part of the eighteen-month geophyical "year," which began July 1. In the period, scientists the world over will study the earth and its environment.

The studies will include further probing into the four types of Antarctic ice: free-floating icebergs, pack ice, bay ice and shelf ice. Currents, water temperatures and salinity also will be investigated.

The United States Antarctic oceanography program has been "hit or miss up to now," Dr. Tressler said. The Russians probably have the most intensive water-study program, with Argentina and Great Britain also active, he said.

Antarctic waters are as deep as 4,000 fathoms (24,000 feet), although in the Ross Ice Shelf region they are less than 500 fathoms, Dr. Tressler reported.

The waters are transparent to a depth of about 110 feet of Sulzberger Bay. But for the most part, the grayish-green waters are not usually clear, the expert added.

Most of the waters, he said, are low in organic content. This, combined with their coldness, drives most fish other than seals and killer whales to warmer waters, where feeding is better.

Glaciology and ice depths will be studied by many scientists now preparing to leave for United States stations on the subcontinent. They were briefed on these subjects by Dr. George Rigsby of the Navy Electronics Laboratory, San Diego, Calif.

Dr. Rigsby said that the discovery of 10,000 feet of ice under Byrd Station had caused glaciologists to revise previous estimates that the Antarctic ice average about 2,000 feet in thickness.

"The average," he said, "may be closer to 6,000 feet."

A team of glaciologists will drill holes 1,000 feet deep at Byrd Station and take ice-core samples to determine how long it has taken the ice sheet to form.

NEW POLAR EXPEDITION

WASHINGTON, Aug. 19 (UP) —The Navy said today that the largest Antarctic expedition in history would get under way late this month when ten ships begin leaving East and West Coast ports to start for the Polar region.

The icebreakers, cargo vessels, a tanker and a destroyer escort will be the first wave in Operation Deep Freeze III. Some 4,147 persons and forty-four Navy and Air Force aircraft will also take part.

Operation Deep Freeze II last year involved 3,525 personnel, and 1,805 persons took part in Deep Freeze I in 1955.

Japan Whalers

KOBE, Japan, Oct. 20 (AP.)— Japan sent a vanguard fleet today to the twelfth annual international whaling olympics in the Antarctic. In all, Japan will send six fleets into the competition. The whaling season begins Jan. 7 and ends April 7.

Norway won last year, being the first to catch the 1957 limit of 6,247 blue whales. Japan was second.

Other nations competing this year are Britain, with three fleets, and the Soviet Union and the Netherlands, with one fleet each.

ANTARCTIC CAIRN OF SOVIET FOUND

Note in Vodka Bottle Claims 'Discovery' of Area U. S. Explored in 1947-48

By WALTER SULLIVAN

Oct. 28

A note found in a vodka bottle indicates that Soviet explorers camped only a few miles from the present site of Wilkes Station, one of the American bases in Antarctica for a month last year.

The Soviet note, according to Carl Eklund, scientific leader of Wilkes Station, claimed "discovery" of the region. It said the Russian party arrived by air in October and remained until November, 1956, carrying out mapping and research.

Two months later a three-ship task unit of the United States Navy arrived to set up Wilkes Station. The latter has been carrying out observations for the International Geophysical Year. The station lies in Vincennes Bay, which was discovered in 1947 by a United States Navy seaplane.

In 1948 a party of American surveyors was landed there to shoot the sun and record ground control points that would tie down the locations of aerial photos for mapping purposes.

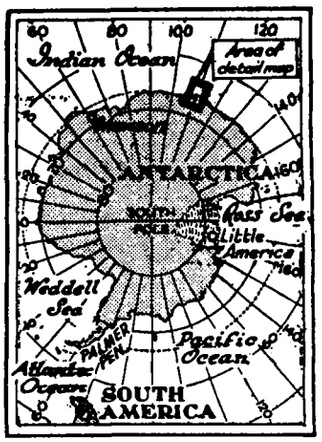
In a radio interview yesterday, in which he reported on the activities of his base, Mr. Eklund said that the Soviet note had been photographed and returned to its bottle.

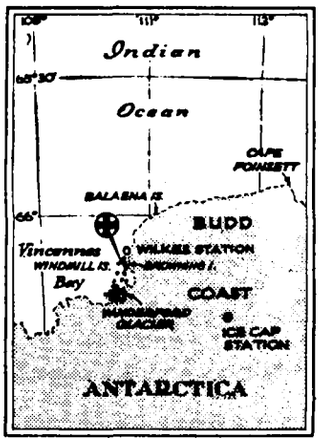
This was then placed in the cairn built by the Russians, but with the addition of a map of the area published in the United States a short time before the Soviet party landed there.

Mr. Eklund reported that the climate at Vincennes Bay had proved remarkably mild during its first winter of inhabitation. The lowest temperature was 27° below zero, Fahrenheit. This is only one degree colder than the record low for Albany.

The scene at Wilkes Station is, nevertheless, a far cry from that in upstate New York. It rests on a rocky peninsula jutting out from a continent that otherwise is almost completely buried under an ice sheet. The only vegetation consists of a few mosses and lichens that cling among rocks polished and rounded by earlier ice flow.

The camp, yesterday, was still buried under snow drifted over it by winds of the past winter. The seasons in Antarctica are the reverse of those in the North, winter coinciding with the Northern summer. The top wind to date was almost 105 miles an hour, Mr. Eklund reported.





SOVIET CLAIM: Note found in bottle in cairn in Antarctica reported the "discovery" by Russians of South Pole area explored by U. S. in 1948. Site is near U. S. Wilkes Station.

He said that glaciologists from his base had chopped and blasted a pit 115 feet deep in the ice sheet at another station, built early this year fifty-one miles inland.

This station is at an elevation of 4,000 feet and has been manned by at least one weather observor ever since May. Richard L. Cameron of Laconia, N. H., the chief glaciologist, estimated that the diggers had reached ice formed from snow laid down in 1837.

The purpose is to learn what information this ancient ice can provide on former climates and the behavior of glacier ice in general.

Another study, carried out with stake markers on Vanderford Glacier, at the head of the bay, has shown that at its center the glacier flows at the remarkable speed of six feet a day. This, the men at Wilkes Station believe, is the fastest recorded in the Antarctic.

An attempt was made to reach Cape Poinsett to the north by traveling over the sea ice in two weasels—small tracked vehicles. It might have ended in disaster, for a storm blew up, threatening to tear the ice from the coast. By the time the racing weasels reached the base, the wind was blowing at 65 miles an hour and soon the entire apron of ice along the coast had gone to sea.

Twenty-six seals have been branded to make possible a study of their longevity and migration. Billie R. Lilienthal, a Navy aerographer from Ashland, Neb., put to good use his youthful experience in roping and branding steers.

Mr. Eklund, whose home was originally in Tomahawk, Wis., said that, on a dogteam journey a few days ago, he found the Soviet cache on Bailey Island in the Windmill group. Wilkes Station leis near the northern end of the Windmill Island. The cache contained a box of herring and some Russian sausage, he said.

The cairn was on a small rock outcrop between Bailey and Mitchell islands. Near-by was an empty hydrogen bottle. The note in the vodka bottle listed those of the Soviet party and their jobs. Several were surveyors.

It was signed by Dr. Mikhail M. Somov, over-all leader of the Soviet expedition, which is based at Mirny, 485 miles to the west. Mr. Eklund believes the Russian plane landed on the sea ice alongside the islands.

In the southern summer of 1955-1956 Soviet explorers landed by ship on the Balaena Islets and left a note there, as did American and Australian explorers. Neither of the case Soviet notes made any territorial claim. The region is claimed by Australia, which maintains bases 870 and 1,265 miles further west.

The interview was made through the facilities of Jules Madey, an amateur radio operator of Clark, N. J.

DUFEK TAKES OVER ANTARCTICA POST

Weather Turns Much Milder as Admiral Flies in to Aid U. S. With I. G. Y.

CHRISTCHURCH, N. Z., Oct. 1—Three Navy planes flew into Antarctica today for Operation Deep Freeze III. They were the first aircraft to fly into McMurdo Sound from New Zealand since last March.

The landings at the McMurdo icestrip were reported smooth, Navy officers here said. Thirty men were aboard the three planes.

First to land was an R5D Skymaster piloted by Lieut. Comdr. Harold G. Hanson of Inglewood, Calif. It touched down after a flight of 11 hours 50 minutes. Twenty-one minutes later, Comdr. Jack Coley of Oakland, Calif., put his P2V Neptune on the 5,000-foot strip. A half-hour later an R4D piloted by Comdr. Edward J. Frankiewicz, of Warwick, R. I., landed.

The distance from Christchurch to McMurdo is about 2,400 miles. A fourth plane, another R4D, failed to take off because of a faulty hydraulic system.

Cheering the big planes back to McMurdo were more than 100 men who had wintered over at the naval supply base. The planes had aboard 550 pounds of mail, the first to be delivered in Antarctica in six months.

McMURDO SOUND, Antarctica, Oct. 13—Rear Admiral George J. Dufek arrived on a Navy Skymaster yesterday to take over command of Operation Deep Freeze 3d in Antarctica.

After a twelve-hour trip from Christchurch, New Zealand, the plane made a smooth landing. It was piloted by Lieut. Comdr. Henry G. Hanson of Inglewood, Calif. The weather was sunny and clear for the landing at McMurdo icestrip, with the temperature nine degrees below zero Fahrenheit. The men who have spent the winter at this base described the day as the best in more than nine months.

Five correspondents, three American and two New Zealanders accompanied Admiral Dufek. Also aboard was Sir Hubert Wilkins, Australian-born explorer who is now an adviser to the United States Army on Polar equipment. It was Sir Hubert's ninth trip to Antarctica.

DUFEK SOUTH POLE CHIEF

Eisenhower Appoints Retired Admiral to Byrd Post

WASHINGTON, July 17 (UP)—President Eisenhower has named Rear Admiral George Dufek, retired to replace the late Admiral Richard E. Byrd as supervisor of United States South Polar programs.

Admiral Dufek, a veteran explorer of both the Arctic and Antarctic, has commanded the Navy's Antarctic task forces for the last three years.

Admiral Dufek is the only retired officer of the Navy who is authorized to exercise command at sea. Congress passed an act granting that authority in July, 1955.

Defense Secretary Charles E. Wilson, in notifying the Admiral of his appointment, said his new assignment was "in addition to Dufek's Navy Antarctic operations.

AIRLINER IS FIRST IN DEEP ANTARCTIC

Lands Navy Men for Outpost Roles—2 Stewardesses Set Farthest South Mark

McMURDO SOUND, Antarctica, Oct. 15 (UP)—An American stratocruiser touched down on an icy Antarctica airstrip here tonight to complete the first commercial flight to the bottom of the world.

Two American stewardesses aboard the chartered Pan American World Airways plane became the first American women to come so close to the South Pole.

Caut. Ralph Savory, a veteran of twenty-three years of Arctic flying, landed the airliner here at 8:14 P. M. (2:14 A. M., E. D. T.). It made the 2,400-mlie hop from Christchurch, New Zealand, in 9 hours 49 minutes.

The plane brought from San Francisco thirty-six United State Navy personnel who will man lonely Antarctic outposts in Operation Deepfreeze III.

The United States Ambassador to New Zealand, Francis H Russell, and the New Zealand Labor Minister, J. K. McAlpine, were passengers on the last leg of the trip.

The stewardesses, Patricia Hepinstall, former San Francisco model, and Ruth Kelly, former school teacher in Holyoke, Colo., received the red carpet treatment from Rear Admiral George Dufek, commander of Deepfreeze, and the men stationed on the edge of McMurdo Sound.

The girls were entered immediately in a United States-New Zealand dog sled race, but it was declared no contest when the stop-watch froze in temperature of 15 degrees below zero.

The stewardesses judged the finish of a beard-growing contest among the men stationed here.

About fifty men, a third of the base complement, turned out for the event.

Admiral Dufek led the reception and offered an appraised of the event.

"This is a historic occasion," he told the stewardesses. "You are about 500 miles closer to the South Pole than any American women have been before."

Ruth Kelly **Patricia Hepinstall**

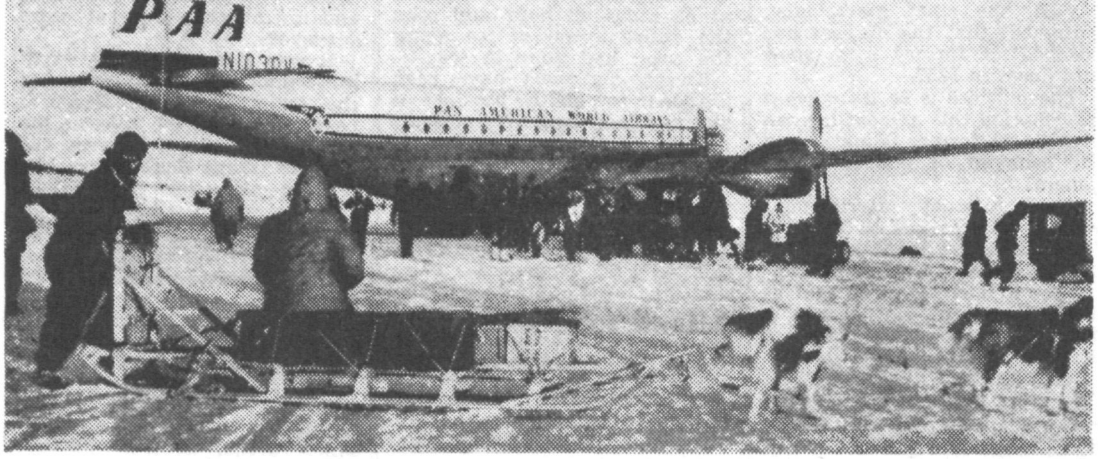
These pretty gals became the first commercial airline stewardesses to set foot within 750 miles of the South Pole—and to prove it they displayed a "Deepfreeze" certificate during interview in San Francisco following their return from a trip as Pan American World Airways stewardesses.

Congressman Flies Over Pole

WASHINGTON, Nov. 17 (UP)—Republican John P. Saylor, Republican of Pennsylvania, has become the first Congressman to fly over the South Pole, the defense Department said today.

Mr. Saylor made the flight yesterday in a C-124 Globemaster of the Military Air Transport Service. The plane was on a routine drop mission over the polar station.

Mr. Saylor, a member of the House Interior Committee, is scheduled to visit the Scott Base at Antarctica before returning to the United States.



COMMERCIAL DEBUT: Pan American Airways Stratocruiser "America" shown at McMurdo Sound, Antarctica, after landing Oct. 15 to mark the first commercial airline flight into the south polar region. The plane made the flight under contract to the United States Navy.

6 CONGRESSMEN FLY OVER SOUTH POLE

McMURDO SOUND, Antarctica, Nov. 24—Six high flying Congressmen soared over the South Pole today exactly two weeks after they had crossed the North Pole.

The members of the House subcommittee on transportation and communications were in Air Force C-124 Globemaster, which dropped supplies to a South Pole station.

Oren Harris, Arkansas Democrat and chairman of the group, chatted on the radio with Dr. Paul A. Siple, the station's scientific leader. "I can assure you this committee will take your problems before Congress when we return," Mr. Harris said. Th oldest member of the group was Representative Robert Hale, Maine Republican, who is sixty-eight.

Lieut. Col. Dixon J. Arnold, the plane's pilot, reported a three-ton weasel vehicle suspended from three 100-foot parachutes was dropped neatly. The load also included 7,000 pounds of food and clothing.

Other subcommittee members were Representatives Steven B. Derounian, Republican of Nassau County, New York, John J. Flynt Jr. of Georgia, Samuel N. Friedel of Maryland and Torbert H. MacDonald of Massachusetts, all Democrats. The group is the first bipolar committe in Congressional history.

Representative Oren Harris, Democrat of Arkansas and subcommittee chairman, said the party had traveled 20,000 miles since leaving New York on Nov. 7.

One of the purposes of the subcommittee's visit to Antarctica is to inspect the proposed Marble Point site for an ice-free United States airfield. The Representatives also will visit the Little America base during a stay of several days.

Dr. Laurence M. Gould, chairman of the National Academy of Sciences' Antarctic Committee, accompanied the group.

The subcommittee is part of the House Committee on Interstate and Foreign Commerce, one of the most traveled groups in Congress. Mr. Harris estimates that the entire trip will cover more than 33,000 miles, a record for his committee at least.

Mr. Harris said that the advent of jet commercial flights next year increased the possibilities of flight lanes over the South Pole. Both Scandinavian Airlines System and Pan American Airways operate flights over the North Polar region at present. Each line has a representative traveling with the subcommittee; Pan American will fly the Representatives home from New Zealand.

3 HURT IN CRASH OF POLAR COPTER

Navy Chaplain and 2 Others Burned in Takeoff From a Supply Icebreaker

LITTLE AMERICA, Dec. 2—Three men were injured, one seriously, when a helicopter crashed and burned on the takeoff from the flight deck of the U. S. S. Atka yesterday.

Dr. Paul W. Reigner, Navy chaplain, of Quonset Point, R. I., suffered third-degree burns on his hands and lower legs and second-degree burns on his face.

Comdr. William F. Flynn of Dedham, Mass., Seabee commander at McMurdo Sound, suffered third-degree burns on his right hand and slight facial burns. Ensign Samuel E. Walling, the pilot, also suffered minor facial burns.

Chaplain Reigner, who was due to assume his duties here, was reported in serious condition in the Atka sick bay.

The icebreaker Atka is waiting to be unloaded at the edge of Ross Ice Shelf with the U. S. S. Glacier and the United States Navy's Greenville Victory.

The three ships had arrived in the Antarctic to help resupply American bases during the International Geophysical Year.

The Glacier, 8,600-ton icebreaker, spent three hours Saturday battering at the ten-foot ice. At the end of that she had plowed through only half a mile and was still two miles from the designated unloading spot off the Ross Ice Shelf.

Rear Admiral George J. Dufek then gave the order to a demolition team to dynamite the rest of the Kainan Bay ice. A crew headed by Army Maj. Merle Dawson used more than 1,600 pounds of explosives.

The Navy hoped today that the two icebreakers could complete the job on their own and reach the unloading zone.

The Greenville Victory is carrying most of 5,000 tons of cargo for the Antarctic bases established by the United States for the Geophysical Year.

The glacier broke a propeller blade plowing through the ice on the Ross Sea fringe three days ago.

Helicopters, however, landed some forty scientists and Navy men who will serve here and at other United States stations.

The newcomers included three foreign meteorologists, Jean Alt of France, Harry van Loon of South Africa and Keith Morley of Australia. All will serve at the Little America Weather Central.

Eight New Zealanders will report for duty at Hallett, the joint U. S.-New Zealand station.

Half of the cargo is earmarked for Little America, the major United States scientific base. The total of 125 men, scientists and Navy personnel, will work here during the coming year.

Capt. Pat Maher, Antarctic area commander, said he though the ships could be unloaded in three days once the ice was broken.

TEN INJURED MEN LEAVE ANTARCTICA

CHRISTCHURCH, N. Z., Oct 4—Ten Navy men injured or stricken ill in Antarctica were flown back to New Zealand today for hospitalization.

The trip back in a Navy Skymaster took slightly more than fourteen hours for the 2,400 miles from McMurdo Sound. Most of the patients said it was a good trip.

They included Lieut. (j. g.) Vernard Fridovich, son of Mr. and Mrs. Louis Fridovich of 1680 Vyse Avenue, New York. Lieutenant Fridovich, 26 years old, was encased in a body cast and his hands were swathed in bandages. He and a passenger, Lieut. Richard E. Anderson, 31, North Little Rock, Ark., were injured in a helicopter crash July 12 near McMurdo Sound.

Lieutenant Anderson suffered a broken right leg.

Most of the others, hurt in various duties, were able to walk. They were taken to Christchurch Public Hospital to await removal to Tripler Military Hospital in Honolulu.

The helicopter crash killed Nelson Cole, aviation machinist's mate 2/C of Dearborn, Mich. His body will be brought back soon.

Injured Chaplain Gives His Only Polar Sermon

McMURDO SOUND, Antarctica, Dec. 13 — The Rev. Paul J. Reigner preached today his only sermon of Operation Deep Freeze III.

Lying on a stretcher with only his face visible, the chaplain recited the Twenty-third Psalm and gave a short talk. His hands and legs were swathed in bandages. He was burned severely in a helicopter crash at Little America Dec. 1.

Lieut. Comdr. Reigner, of Quonset Point, R. I., was scheduled to be senior chaplain for the Navy support forces in Antarctica. He is a Presbyterian.

After the special service Chaplain Reigner was flown to Christchurch N. Z., whence he will go to the United States.

Crippled Plane With 12 Aboard Outlasts Blizzard in Antarctica

WASHINGTON, Nov. 1 (UP)—The Air Force reported today that a crippled C-124 Globemaster plane with twelve men aboard had battled an Antarctic snowstorm on three engines for hours before breaking through a 10,000-foot overcast to land safely on the ice at McMurdo Sound.

The plane lost one engine while returning from a 1,600-mile round trip to Byrd Station, northeast of McMurdo.

The pilot, Capt. James Thomas of Masury, Ohio, reported that his No. 1 engine had failed only twenty-five miles from the base. When he reached McMurdo minutes later, he discovered the strip was blanketed under a 10,000-foot overcast.

He descended to 7,000 feet before a heavy coating of ice formed over the plane and threatened to bring it down.

A second storm thwarted an attempt by Captain Thomas to fly to Hallett Station, 400 miles to the north.

The Defense Department said a blizzard with thirty-mile-an-hour winds was raging when the plane first tried a landing. Visibility had been reduced to 200 feet.

The storm had let up somewhat by the time the Globemaster returned to McMurdo. The pilot put the plane down safely on his third try at the runway.

The plane had three hours of fuel left when it landed. It had been in the air thirteen hours.

First Landing at Hallett

HALLETT STATION, Antarctica, Nov. 1—The first plane-landing on Hallett Station's two-mile ice strip was made today by a Navy R-4D piloted by Lieut. Comdr. Edward J. Frankiewicz of Rutland, Vt.

Seventeen persons, including two newsmen, made the 400-mile flight north from McMurdo.

The plane brought the first mail received since last March by the fourteen men here.

Comdr. Frankiewicz called the strip "the best ice runway I've ever seen." Heretofore the strip, labeled an emergency runway, was never used.

ENGINE AFLAME, 17 LAND SAFELY

Tragedy in Little America Averted as Ski Buckles—Craft Skids in on Wing

LITTLE AMERICA, Nov. 30—A skillful crash landing last night brought Rear Admiral George J. Dufek and sixteen others in safely on a ski and a prayer.

Tragedy was averted just before midnight as Comdr. Jack Coley, pilot, and Comdr Edward J. Frankiewicz, co-pilot, put down a Navy R4D with one engine aflame after a 450-mile flight from McMurdo Sound.

A faulty starboard ski buckled over on landing but the right wing dug into soft snow on the fringe of the runway and held fast as the plane skidded more than a quarter of a mile before coming to a halt.

All aboard hopped out with cheers for the pilots. The fire in the right engine of the two-motor craft was brought under control by the use of hand extinguishers aboard the plane.

Little America field equipment rushed up to secure the job but the plane was so severely damaged that it was probably lost to the Navy for the balance of this Antarctic flying season.

The twelve passengers and five crew members were flying to Little America for the arrival of the first ships this season. The U. S. S. Glacier, Greenville Victory and Atka are due here today, a full day ahead of schedule because of advantageous ice conditions.

The successful crash landing came after the right ski had dropped point down about a half hour before. The engine caught fire just as the plane completed circling the field to use up as much fuel as possible.

The Douglas plane bounced once as the faulty ski snagged in the snow, then pivoted to rest on the left ski and the right wing. The passengers were shaken up only mentally.

Others aboard included:

The Rev. Daniel J. Linehan, seismologist of Boston College; Comdrs. William F. Flynn, Dedham, Mass., Roger G. Witherell and Merele MacBain, Navy Public Information Officer; Capt. E. E. Hedblom, Colorado Springs, area medical officer; Lt. Comdr. George W. Porter, Brownwood, Tex.; R. R. Conger, Milwaukee, photo officer; Marine Sergt. Tom Southweck, Quonset Point, R. I.; Alton L. Lishness, Portland, Me., radioman; Lester H. Ackman, Lincoln, Nebr., mechanic; Lt. Robert Bolling, Fort Crook, Nebr.; Bill Becker, the New York Times, and Rennie Taylor, Associated Press reporter.

SOUTH POLE SETS RECORD FOR COLD

102.1° Below Zero Reported by I.G.Y. Group Impresses Group on Way There

DAVISVILLE, R. I., Sept. 19—A world's record low temperature of 102.1 degrees below zero, Fahrenheit, at the South Pole was reported today by officials of the International Geophysical Year.

The marrow-chilling drop came on Tuesday. Dr. Paul Siple and his crew at the I. G. Y. pole station wired the news to officers here.

The new mark is 1.7 degrees colder than the minus 100.4 recorded at the South Pole last May 11. It came as a surprise to I. G. Y. officials because the Antarctica winter season is drawing to a close.

The sun is scheduled to reappear at the bottom of the world next Monday.

The announcement was made by Dr. Harry Wexler, chief scientist of the United States' Antarctic program during the I. G. Y. year. It was the high point of the fourth and final day of briefings for Antarctic-bound scientists at the Naval Construction Battalion Center here.

Dr. Wexler also read the following from the message:

¶Temperatures of minus 90 or lower had been registered for ninety-three hours, apparently consecutively.

¶The warmest it had been for the seven days preceding Tuesday was minus 83 degrees.

¶At thirty feet above the surface, a temperature 27 degrees higher (about minus 75) was reported. At 1,400 feet, it was reported to be about minus 80 degrees.

The time when the mercury dipped to the new low was not given in the message.

It has been characteristic of South Pole temperatures that surface readings are lower than those taken at a higher elevation.

Thus the United States polar station has again established the Antarctica as the coldest continent. Until this year the official world minimum was 90 degrees below zero, recorded at Verkhoyansk in northern Siberia, in February, 1892.

SOUTH POLE GETS MAIL

First in 8 Months Dropped to Isolated Americans

SOUTH POLE, Oct. 17—Eight months of isolation ended today for eighteen men at the United States South Pole station.

Into their world flew a giant harbinger of Antarctic spring—an Air Force C-124 Globemaster—to drop their first fresh supplies and mail since Feb. 17.

You look nice and big and beautiful," Lieut. (j. g.) John Tuck radioed as the Globemaster passed over after a 730-mile flight from McMurdo Sound.

Nearly 17,000 pounds of Diesel fuel and about 1,000 pounds of food, mail and miscellaneous supplies were parachuted in two later passes over the tiny base.

The plane was piloted by Col. William G. Forwood of Spokane, Wash. Capt. Victor G. Stianchi of Lansford, Pa., was co-pilot.

Average Cold Set Mark of 73° Below At the South Pole

By WALTER SULLIVAN

The average temperature at the United States South Pole station during the winter that has just ended there, was 73 degrees below zero Fahrenheit.

This makes it the coldest place ever inhabited by man. To the amazement of weather specialists, the lowest temperatures were recorded at the beginning and the end of the winter.

A record low for the surface of the earth was established on Sept. 17 when the mercury fell to 102.1 below zero. The previous low at the pole—100.4 below—was on May 11.

The constant winds have been another surprise to weather men there. During the entire winter—which in the Antarctic coincides with the northern summer—there were only twenty-five hours of calm. The average was sixteen miles an hour, which is bitterly biting at such low temperatures. Gusts reached fifty-three miles an hour.

An analysis of weather conditions on the lofty plateau at the bottom of the world has been prepared by the United States National Committee for the International Geophysical Year. This committee, under the National Academy of Sciences, is in charge of all American I. G. Y. scientific work.

Another startling feature of the weather has been the markedly higher temperature only a short distance above the surface. At the time of the record low, the air thirty feet overhead was 27 degrees warmer. At 1,400 feet above the surface the temperature was 72 degrees higher.

From there on up the temperature went down again.

The report suggests that even lower temperatures may be recorded when the Soviet Union establishes an I. G. Y. station near the Pole of Inaccessibility. This is the point in Antarctica farthest from the sea and is on an ice dome estimated to be about 14,000 feet above sea level. The United States pole station is at 9,200 feet.

Summer Bows at Pole With High Temperature

McMURDO SOUND, Dec. 27 — Summer is making its bow at the South Pole. A new temperature high of 2 degrees below zero has been reached.

Kirby Hanson, chief weather man at the United States pole station set the official figure. It was recorded Dec. 15 and exceeds the previous mark of —2.2 Fahrenheit set on Nov. 22. Mr. Hanson said the "heat wave" had followed a storm from the Ross Sea. "When the air clears temperature drops here," he added.

At summer solstice Dec. 22 it was clear and the sun was at its South Polar zenith. But the high temperature was minus twelve.

Another polar high occurred yesterday when a hydrogen balloon rose to 105,223 feet — virtually twenty miles. This is the highest ascension of any American weather balloon in Antarctica, eclipsing by several hundred feet the previous record here and at the Byrd station.

SOUTH POLE DEPLANED

Last Craft, Disabled Oct. 26, Flies Back to McMurdo

McMURDO SOUND, Antarcticia, Dec. 7—For the first time in six weeks the South Pole was free of airplanes today.

Comdr. Jack Coley of Oakland, Calif., flew back yesterday to McMurdo in the P2V that had been stranded by engine failure at the South Pole on Oct. 26.

The engine was replaced by navy mechanics who worked in temperatures averaging 30 below zero.

Comdr. Coley's plane was one of three navy planes that returned yesterday, a record flight day at the bottom of the world.

10° Below 20 Miles Over Pole

McMURDO SOUND, Antarctica, Dec. 26 (AP)—Temperatures on the ground here and about twenty miles up were just the same today, 10.2 degrees below zero Fahrenheit. The high altitude reading was recorded by a weather balloon that reached 105,223 feet above sea level.

SCIENTIFIC LEADER JOINS POLAR TEAM

Mogensen Arrives to Take Charge of I.G.Y. Studies at Antarctic Station

McMURDO SOUND, Antarctica, Nov. 20—Palle Mogensen arrived at the South Pole today to take over the scientific leadership of the United States station for the remainder of the International Geophysical Year.

He was greeted by Dr. Paul A. Siple, whom he will succeed. Dr. Siple has been in charge of the scientific work at the station since last December and is scheduled to leave soon.

Mr. Mogensen and three other new members of the I. G. Y. team flew from McMurdo in a Navy P2V piloted by Lieut. Comdr. Daniel A. Miller Jr. Seattle.

Returning on the plane was Lieut. (j. g.) John Tuck Jr. of Auburn, Mass., who is believed to be the first American to spend two consecutive years in the Antarctic. Lieutenant Tuck was the military leader of the pole station this year; in 1956 he served at McMurdo Sound.

A meteorologist member of the scientific staff, John F. Guerrero of Sunnyvale, Calif., also left the pole. The evacuation of the 1957 staff should be completed within the next few weeks, according to I.G.Y. plans.

The scientists who arrived with Mr. Mogensen are DeWitt M. Baulch of Covington, Ky., and Arthur H. Jorgensen of Roselle, N. J., both weathermen, and J. B. Burnham of Washington, a seismologist.

The Danish-born scientific chief, 49 years old, was executive officer of the tractor-train trip from Little America to Byrd Station last year. He left the Army as a major recently.

Lieutenant Tuck, 25, a handsome, bearded geographer, said working relations at the Pole had been smooth all year.

Lieutenant Tuck's successor, Lieut. Vernon Houk, arrived at the Pole several weeks ago. Lieutenant Tuck said he was sorry to leave Bravo, the station's husky mascot, but he said he thought it best for the dog to stay at the camp. The lieutenant had been the dog's caretaker.

Three more supply drops by Air Force Globemasters in the last twenty-four hours have brightened the polar picture. Fifty-four more tons of equipment, food and other supplies were parachuted safely, the Air Force reported.

The C-124's now have delivered nearly 200 tons to the polar station, about 75 per cent of the season's consignment to be brought in.

SOUTH POLE FOUND HEALTHFUL PLACE

Men Spent the Winter With Little Illness and Then Visitors Brought Colds

McMURDO SOUND, Antarctica, Nov. 18—The South Pole was one of the most healthful places in the world until spring brought in visitors.

This is the report of Lieut. Howard C. Taylor 3d, Naval medical officer for the last year at the United States station at the pole.

Dr. Taylor, of 30 East Seventy-first Street, New York, had a surgical sinecure—not a suture all year.

"The health of the eighteen men at the station was almost perfect," Lieutenant Taylor said. He prescribed a narcotic only once, for dermatitis.

Doubling as dentist, the doctor filled one tooth all year. "Maybe it was luck as much as anything," he said. "Medically, the year was unprofitable."

But fortune changed when an aircraft engine failure kept a group of visitors at the pole for three weeks.

Although most of the newcomers had been immunized against flu, Asian or otherwise, an epidemic laid the camp low this month.

"It was not flu," Lieutenant Taylor said. "It apparently was a cold virus or combination of viruses."

The infection hit twenty-seven of thirty-four persons at the pole in a three-week period and the rest appeared to be coming down with it when Dr. Taylor left yesterday.

He and his successor, Lieut. Vernon Houk, used aspirin and cough medicine and put their patients to bed for several days.

Until the virus siege, the doctor's main problem was what is known in the Antarctic as "the big eye," that is, insomnia brought on by either total night or total day.

At the pole sleeplessness came during the long winter night. It was caused mainly by lack of exercise, Dr. Taylor believes.

In general, most of the men slept less than the normal seven or eight hours, but it did not seem to impair their efficiency.

Psychologically, the 28-year-old New Yorker found the year rewarding. There were some differences of opinion among the nine scientists and nine Navy men stationed at the Pole for International Geophysical Year observations.

"A fellow who lost his temper would remove himself for an hour or so until he cooled off," he said. "That way any unpleasantness was temporary."

Thomas Abercrombie

BELOW THE BOTTOM OF THE EARTH: Glaciologist Edward W. Remington descends ladder into snow mine at U. S. International Geophysical Year base in Antarctica. Mine is major source of water supply for the base.

2 Endure in Cold Close to 100 Below In South Pole Test

SOUTH POLE, Nov. 17—Properly protected—by twenty-six or twenty-seven pounds of clothing—man can endure temperatures of 100 degrees below zero for several hours.

Two volunteers at South Pole Station proved this one mid-winter "day" last July 29.

It was winter then because of the reversal of seasons in the Southern Hemisphere.

One of the men remained outside three hours, lost no weight and only 4 of a degree in body heat. The other, out 4 hours, lost two pounds and one degree of heat.

The volunteers were Herbert Hansen, 30 years old, Nebraska City, Neb., a weather observer, and William MacPherson, 28, a Navy radioman from Longmeadow, R. I. Both were members of the first United States team here for the International Geophysical Year.

Each man weighed 158 pounds before putting on four or five layers of clothing. Mr. Hansen stayed out three hours in temperatures ranging from —94 to —97 and came back weighing the same. Mr. MacPherson was out four hours in —94 to —98 and lost two pounds, because he had to walk more to keep warm.

Winds of 12 to 16 knots sharpened the cold. "It was plenty cold and you knew it," Mr. Hansen recalled last week, "but it wasn't as bad as you might think it would be."

The only ill effect noted was that both men complained of feeling dizzy after they had slept. Mr. Hansen slept poorly and woke up with a headache.

Dr. Paul A. Siple, station scientific leader who supervised the experiment, said the after-effects suggested that "perhaps their oxygen consumption went down a bit below requirements."

Mr. Hansen wore underwear of 50 per cent wool and 50 per cent cotton, light and heavy socks and felt boots in canvas mukluks, wool shirt, cotton frieze lined trousers, down vest, a wool head and face covering, wool lined parka with fur trim hood, and Arctic mittens with wool liners. The clothing weighed 26 pounds.

Mr. MacPherson wore cotton waffle-weave underwear, wool cushion sole socks in rubber insulated boots, two pairs of trousers (one wool-lined), a lined flying suit, leather gloves with wool liners inside Arctic mitts, wool scarf, fur trim parka hood over a wool pile cap. All this weighed twenty-seven pounds.

Both men wore a miner-style headlight, with batteries, to penetrate the Antarctic winter darkness. Mr. Hansen was out from 8:30 to 11:30 A. M.; Mr. MacPherson from 8:30 A. M. to 12:30 P. M.

They stood or walked near the station, which is 9,200 feet above sea level. Mr. Hansen reported his shoulders and arms felt cool within thirty minutes, and the big toe of his right foot was cold in forty-five minutes. In five minutes Mr. MacPherson's rubber boots were frozen; his wrists were cold within fifteen minutes.

While the two men were making their experiment, Dr. Siple conducted one of his own. For two and one-half hours he dug in the camp's snow mine, where the temperature of the ambient air is almost constant at minus 60 degrees. The leader found he lost one pound and three degrees in temperature. His hands and feet were first to get cold.

The snow mine provides the station's water

7 Stranded at South Pole Are Flown Out by Navy

McMURDO SOUND, Antarctica, Sunday, Nov. 17 (AP)—A Navy Neptune plane succeeded in landing at the South Pole and bringing back here today seven men stranded at the pole since Oct. 26 by plane failure.

The rescue plane, piloted by Lieut. Comdr. Donald C. Miller of Seattle, narrowly escaped being stuck at the United States South Pole station. Sixteen jet-assisted take-off bottles got it into the air.

Commander Miller's plane brought back Comdr. Vernon Jack Coley of Oakland, Calif., pilot of the stranded plane; Comdr. Roger Witherell, who will be the Navy construction chief in Antarctica next year; Rolla J. Crick, Portland (Ore.) Journal reporter, and Thomas Ambercrombie, National Geographic Magazine writer. Also, Lieut. Howard C. Taylor, New York City medical officer finishing an over-winter assignment at the pole; R. R. Conger, Navy photographer, and Earl Johnson, Middlebury Heights, Ohio, also finishing duty at the pole.

South Pole Land Above Sea Level

Scientist Says Earth Is Under 8,297 Feet of Snow and Ice

McMURDO SOUND, Antarctica, Dec. 6—There is land above sea level at the South Pole but it is buried under 8,297 feet of snow and ice.

That was the finding tonight of the Rev. Daniel Linehan of Boston College after three seismic echo soundings. He said that his tests had shown that there was bedrock under the pole at 903 feet above sea level.

Geographers have placed the elevation of the pole at 9,200 feet. This was the first attempt to measure the depth of the snow and ice and determine what underlies the vast polar plateau.

Father Linehan, twenty-one years a seismologist, was working under Rear Admiral George J. Dufek, commander of Operation Deep Freeze Three in conjunction with the International Geophysical Year program. Here is what the clergyman-scientist found:

¶A top layer of snow and ice, relatively compact, lies seventy-seven feet thick on the plateau surface.

¶An intermediate stratum of harder ice, twenty feet thick, underlies the primary layer of the plateau.

¶At the base is a huge mass of very dense ice 8,200 feet thick. This apparently rests on bedrock.

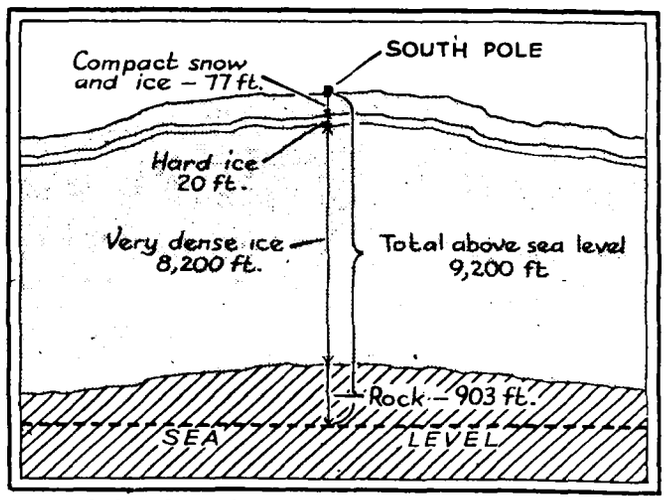
¶The total distance down is 8,297 feet.

"I am sure that it is rock under the ice—there is no indication of water," Father Linehan told newsmen at a conference at McMurdo Sound. Admiral Dufek's party returned from the pole after completion of the tests.

The seismologist said that the underlying rock might be of the simple sedimentary type found along the Beardmore Glacier on the approach to the polar plateau.

"We probably can assume the same type of rock keeps on going through the plateau," he remarked. The pole is about 300 miles from the southernmost tip or top of the glacier.

Asked how these findings might affect geographers' plateau conception, Father Linehan explained:



Bedrock has been found 903 feet above sea level at the South Pole. It is covered by 8,297 feet of ice and snow.

"Well, we have an ice plateau. It may not be a polar valley but it might be a polar basin for a fjord."

Further light may be shed on this question when Dr. Vivian Fuchs conducts seismic soundings elsewhere on the plateau during the current British-New Zealand trans-Antarctic expedition.

The seismologist declined to estimate the age of the polar ice. However, meteorologists say that snow is accumulating on the plateau at the rate of one inch a year. At that rate, it took a minimum of 100,000 years for the polar ice mass to build up.

Father Linehan used three TNT charges to obtain his seismographic charts. They were set off in the forty-eight-foot-deep crater left by a tractor that fell free from an Air Force supply plane in an intended parachute drop last month.

It took 0.4 seconds for the sound wave to reach solid rock under the ice and return to the seismographic equipment on the surface.

Earlier this year seismic soundings showed that Byrd Station, another United States outpost in Antarctica, rests on 10,000 feet of ice, although it is only 5,000 feet above sea level. Various parties are taking similar soundings throughout the continent.

The Byrd finding aroused much speculation as to the continental validity of Antarctica. Today's report did nothing to dispel the notion that at its heart the continent is solid. However, many more studies will be required to prove that Antarctica does not consist of strings of islands buried under the ice, as some scientists have theorized.

Father Linehan said that in his opinion the top layer of ice at the Pole was probably not hard enough to bear a runway for wheeled aircraft. Admiral Dufek said that he had received a similar analysis last year from Army experts. Only ski-equipped planes can land on the rippling polar surface at present.

Father Linehan was able to corroborate his findings in two ways. First, he checked the ninety-foot deep snow mine dug by South Pole station personnel during the year for water use. The snow at eighty feet was brittle as glass; lower than that it was too hard to dig. Therefore, the mine is being extended laterally at 25 feet deep.

The other confirmation came from a gravity specialist, James K. Sparkman of Dade City, Fla., Mr. Sparkman's gravimeter indicated the presence of rocks beneath the surface at an indefinite depth far exceeding readings at several other United States stations.

Father Linehan is now in Antarctica primarily to conduct tests on the practicability of installing an ice-free air field at Marble Point near McMurdo Sound. These tests will begin later this month.

The project was carried out at the direction of Rear Admiral George J. Dufek with the cooperation of scientists at the South Pole station. Admiral Dufek is commander of Operation Deep Freeze Three, the support program for the International Geophysical Year in the Antarctic.

The admiral raised a flag sent from the White House over the geographical pole, some 2,400 feet south of the scientific station. Participating in the ceremony were Palle Mogenses and Lieut. Vernon Houk, scientific and military leaders respectively of the pole station.

The new leaders for the 1958 I. G. Y. polar program led the party on an inspection tour of the base.

This was Admiral Dufek's first visit to the pole since he became the first American to set foot on it on Oct. 31, 1956, prior to establishment of the station. He was guest of honor at dinner.

The normal complement of eighteen men at the pole may never have a more bustling day. The two planes bearing twenty-three persons brought the population of the South Pole to a record of fifty-three humans. One of the planes brought in a dog, five-month-old Blizzard, a husky pup born last winter at McMurdo Sound.

Admiral Dufek, Father Linehan and the other visitors departed after a thirteen-hour stay. Remaining behind were the following additions to the pole station's scientific complement:

Paul C. Dalrymple, glaciologist of Cochituate, Mass., Dr. Herfried C. Hoinkes, meteorologist from Innsbruck, Austria, and James K. Sparkman, Dade City, Fla., gravity expert. The last two will be at the pole only temporarily.

The station's chief meteorologist, Kerby Hanson of Washington, D. C., celebrated the admiral's arrival by sending a radiosonde balloon aloft to an Antarctic record of 104,856 feet. This eclipsed the mark of 98,520 feet established at McMurdo earlier this year.

The hydrogen-filled neoprene balloon soared for one hour and forty-one minutes before bursting about 19.5 miles up. The temperature reading at that point was only 23 degrees below zero; at ground level it was 20 below.

The coldest temperature transmitted by the balloon's radio was 62 below zero. At five miles and at ten miles the reading had risen to 33 below and at fifteen miles 28 below.

All winds were under fifteen knots, which Mr. Hanson said was "fantastic." This meant it was a clear, calm spring day at the pole.

Researchers Chat From Pole to Pole

NEW YORK, July 29 (AP).—Two United States scientists encamped at opposite ends of the earth recently had a 11,200-mile radio chat.

One, Dr. Charles R. Bentley, is in the Antarctic. The other, Maurice J. Davidson, is in the Arctic. Both are working on research projects for the International Geophysical Year.

They reported that reception on their ham radios was as clear as a bell.

Dr. Bentley and Mr. Davidson, both 26, are on the staff of Columbia University's Lamont Geological Observatory. Columbia told of the radio chat yesterday.

Other scientists have also reported having Arctic-Antarctic radio talks recently.

Dr. Siple Calls Polar Life Challenge For the Brave, Madness for the Weak

By MICHAEL MOK
Washington (D.C.) Star

The Antarctic's deadly cold and bleak solitude have claimed the lives and sanity of brave men.

Its history is peopled by adventurers who have committed suicide, suffered mental deterioration, or who have become hopeless alcholics.

"Unless you were careful, you might walk outside and see the horizon—imagine it tilting and closing in on you. Suddenly you had some sort of idea of how far away you were from anyone," Paul Allman Siple said

Dr. Siple, who returned this month after 14 months in the land of 200-mile-per-hour winds and six-month nights, lives with his wife and three daughters at 131 North Jackson street, Arlington.

He is recognized throughout the world as foremost authority on the 5 million square miles of the ice cap of the South Pole.

"One of the best ways to keep from going rock happy is to throw up a mental barrier," he said. "All day long there are other people. But bedtime always comes, and then you are absolutely alone."

Inthe lonely hour before sleep came, Dr. Siple concentrated on the world "outside." He would think of his wife and pretty daughters until he finally dropped off to sleep.

"It was like pulling down a window shade—to separate the two parts of my day," he said. He credited this yoga-like ability to shut out the thousands of miles of ice as being vital in preserving his sanity.

As the explorer ambled about his living room, he recalled a European expedition when one man became so deranged that he hid near the bottom of a snow tunnel with an ice ax, waiting for another member of the party who had done him an imaginary wrong.

Because the Antractic is shrouded in darkness from March 22 to September 22, and the sun never sets for the other six months, the waking and sleeping mechanisms of some of the men break down completely, and they must wait for sheer exhaustion or medical alcohol to relieve them of insomnia.

But if there is madness and death for the unwary there is also startling beauty.

"No one who has not visited the Antarctic can understand the beauty of the place," Dr. Siple said. "White can be any and all colors—a sparkling which holds all of the colors of the spectrum."

The geographer speaks of his ice-bound home as a pilgrim might of Mecca. He becomes eloquent when describing the contrast of the dark blue of the sky with the eternal whiteness of the land.

"The surface of the snow is sculptured by the fierce winds to wonderful shapes, and even the most unfeeling of my men were moved," he recalled.

Not everyone participating in Operation Deepfreeze was able to "pull the mental window shade"—a trick which the scientist-adventurer has developed during almost six years in the Antarctic—more than any other man has lived through.

For the less hardy, there were other escapes. Every Saturday those who wanted it were issued medical alcohol or "Old Methuselah," as it was called down at the South Pole. Three times a week there were movies.

Despite the combination of psychological hazards and unrelenting physical danger, men volunteer to go to this bleak land, where temperatures sometimes plummet to 102 below zero.

"There is a feeling of being a pioneer. Day-to-day decisions become vital, because the Antarctic only allows one mistake.

"Living at the Pole intensifies the personality, for better or worse—when you leave, you have something that other people can feel. Maybe this is one of the reasons people go," declared the explorer, who celebrated his 49th birthday last week.

Because most of the men comprising Operation Deepfreeze were younger than Dr. Siple, many of them regarded him as a father. "But no one called me pop," the explorer added.

This might have been because the polar expert moved from job to job with an energy which left striplings exhausted in his wake.

Asked why he returned to the snow fields six times, Dr. Siple fell silent for a long time. His restless glance moved over the medal and curiosities he has brought back from all over the world.

"The first time (when he was selected from 60,000 applicants by Admiral Byrd) I was just a 19-year-old kid and would have stayed for 10 years if they had asked me. I had no emotional ties, and it was high adventure. Everything was new to me and I worked until I dropped," he recalled.

"When Byrd asked me to return with him the second time, I couldn't wait to go — I had nothing but happy memories of the South Pole.

"And the third time I was given full charge of one of the camps—for the first time I was granted considerable responsibility and I couldn't resist it."

"When I went back for those two summer trips, I guess my memory had screened out all of the unpleasant things that had happened to me down there, and I remembered only the happy parts.

"But the last time was different. I had a family, and the girls were growing so fast that it was hard to keep up with them. High adventure was not a factor, but the responsibility was greater than ever before.

"My friends were almost equally split between those who thought it would be lunacy to leave my family and the others who said refusing the assignment would be close to desertion.

"You might say that somewhere inside of me there was a small desire to return, and then I guess I responded to external pressure from a variety of quarters," Dr. Siple said.

He broke off his explanation to greet his daughters, who had just come home from school.

Mary, 11, Ann, 17, and Jane, 15, burst into the room. They greeted their father warmly, and then headed for the kitchen to find mother.

"It's kind of strange, living in a house with four women, after spending so long in exclusively male company," Dr. Siple said. "But I don't think it will take me long to get used to it."

U. N. Flag Raised at Pole

MCMURDO SOUND, Antarctica, Dec. 15—A United Nations flag was raised today at the South Pole for the first time. The emblem was hoisted next to the Stars and Stripes by Palle Mogensen, scientific leader, and Lieutenant Vernon Houk, military leader of the South Pole station. The flags will signify the joint effort of the International Geophysical Year.

18 AT SOUTH POLE HAIL YEAR'S WORK

Station Called Proof That Humans Can Live There —Ionosphere Studied

By The Combined American Press

SOUTH POLE STATION, Antarctica, Oct. 31—"We have proved that people can live here," Dr. Paul A. Siple, scientific leader of the South Pole Station, said today.

Dr. Siple and seventeen other men have been at the pole nearly a year. They appear little the worse for the long winter. The scientific leader also indicated that the period had produced some important work.

"We are on the threshhold of discoveries in the ionosphere," he declared. "It is too soon to go into detail."

However, W. S. Hough, ionospheric scientist of Boulder, Colo., disclosed that the ionosphere did not diminish in activity during the polar night. The energy of the upper air remained despite the absence of the sun, Mr. Hough said.

The results of these studies may benefit radio transmission and reception, it was indicated.

Dr. Siple reiterated his plea for keeping the United States station at the pole beyond the International Geophysical Year, which extends through 1958.

He said, "we need an inland station. This is the center of a large unknown area and at the pole of the world. It may be vital for winter satellite observations, too."

Other scientific work has included aurora observations by Arlo U. Landolt of Pocahontas, Ill., and weather studies by a four-man team headed by Edward Flowers of Kensington, Md.

Mr. Landolt took photographs of aurora australis, the Southern Lights display that might tell something about the composition of the upper air on a spectrum analysis. Some were red but most were "a dirty white," he said.

Mr. Flowers believes the Beardmore Glacier and particularly a mountain known as "the cloud maker" have a stabilizing influence on South Pole weather. Today the temperature rose to minus 51; for a week it had stayed within one degree of 60 below.

The warmer upper air is finally beginning to lower on the pole. Mr. Flowers reported one weather balloon recently had recorded a temperature of minus 15 degrees seventeen miles above the pole at a time when it was 60 below on the ground.

TRACTORS TO TOUR ANTARCTICA'S ICE

7 U. S. Expeditions to Study 7,500 Miles of Frozen Hinterland for I.G.Y.

By WALTER SULLIVAN

July 6

During the next eighteen months, seven American tractor parties are to cross about 7,500 miles of the little-explored hinterland of Antarctica.

The slow-moving vehicles will make a circuit comparable in distance to one from New York to Dallas to Los Angeles to Seattle and back to New York—without filling stations.

In most cases food and fuel will be delivered en route by aircraft.

This will not be possible on the 500-mile journey to be made from Wilkes Station this year. No planes are stationed there of within reach. In an attempt to spot crevassed areas and other obstacles along this route, an intensive study is planned of aerial photos on file in Washington, D. C.

The pictures were taken by planes of United States Navy expeditions that discovered the region in 1947 and 1948.

The program of tractor journeys was proposed by Albert P. Crary, the chief scientist at Little America. It has been approved by leaders of the United States program for the International Geophysical Year, an eighteen-month study of the earth that started last Sunday.

The purpose of the tractor trips is to find out more about the ice sheet that weighs heavily on the continent at the bottom of the world.

In addition to the journey from Wilkes Station, a tractor trip is planned for each of the next two seasons from three other American bases: Little America, Byrd Station in Marie Byrd Land and Ellsworth Station on the Weddell Sea.

The treks will be made in October and November so that the vehicles can be back at their bases in time to help unload the relief ships. The longest will cover a 1,500-mile triangle on the Ross Ice Shelf—a floating extension of the continental ice sheet, roughly the size of France.

An additional project will be a study of the heavily contorted ice surrounding Roosevelt Island fifty miles south of Little America. The chaotic patterns of crevasses make this region almost impassable. It is planned to use helicopters to lift the scientists in a leapfrogging survey of the area.

Both sea ice and shelf ice will be treated as rock formations in this study. Some believe a better understanding of mountain-building and other phenomena of the earth's crust can be gained through examination of what happens when the flowing shelf ice, 700 feet thick, is twisted, bent and split as it impinges on Roosevelt Island.

This study will be under James H. Zumberge of the University of Michigan. Once or twice men flying over the 1200-foot hump of Roosevelt Island have thought they saw bare land peeping through its icy mantle. An attempt will be made to find this spot and place a survey camp there.

Among the problems that scientists studying the ice shelf will try to resolve is whether the shelf grows on the bottom or dissolves there when the fresh-water ice slips off the land and comes in contact with sea water.

Last season an examination of ice in a crevasse near Little America produced salt and algae, a form of plant that lives in the sea, from layers twenty feet or more above sea level.

This seemed to support the view that the ice had grown from the bottom. The subject is one that has been discussed by scientists since the British expeditions of early in the century.

Another program under discussion is for an airborne survey of the ice sheet in the vicinity of the South Pole. A party would be landed at fifty-mile intervals along a line extending along the meridians of 60 degrees East and 120 degrees West, with four stops in each direction from the pole.

At each point explosives would be used to determine the ice sheet thickness by echo-sounding. Another line of soundings by airborne scientists has been proposed along the route followed by Capt. Robert F. Scott on his trek inland from the Ferrar Glacier in 1903.

The tractor journeys for the Antarctic summer of 1957-1958—which coincides with the Northern winter—are to be as follows:

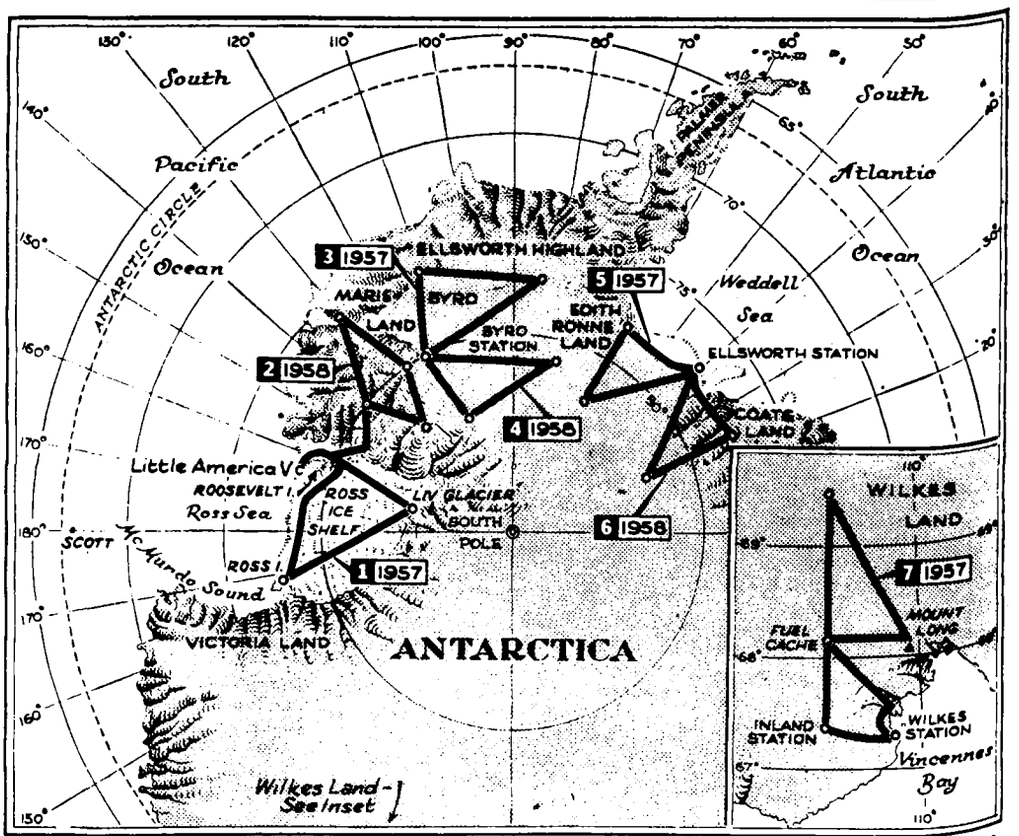
1. From Little America to McMurdo Sound, passing south of Roosevelt Island, and then to Liv Glacier (where an aircraft refueling depot was established by air last season) and back to Little America. A major obstacle on this route is the region of massed crevasses near 81 degrees South latitude, south of Little America. This blocked the tractors of the Second Byrd Antarctic Expedition in 1934.
2. From Byrd Station to the mountainous region near the coast, to the Sentinel Mountains and back.
3. From Ellsworth Station into Edith Ronne Land.
4. From Wilkes Station to the already established inland camp, then South to a point 192 trail miles from the coast, then to Mount Long, discovered by Navy planes and believed to be about 6,500 feet high, then to a fuel cache on the outbound route and from there back to Wilkes Station on a route skirting the coast.

Because this party will not have aerial reconnaissance it will have to move cautiously near the mountains and coastline. It is to bring a dog team as well as two weasels, which are small tracked vehicles. The dogs can be used to scout suspicious areas. The fuel depot will be established in advance.

Journeys for the season of 1958-1959 are planned as follows:

1. From Little America into western Marie Byrd Land.
2. From Byrd Station into the region south of Ellsworth Highland.
3. From Ellsworth Station into Coats Land.

Tractor journeys into other parts of the continent are planned by the Australian, British, French, New Zealand and Soviet expeditions.



ANTARCTIC TREKS: Seven journeys are to be made by American tractor parties in next eighteen months. In October and November, a party from Little America will travel 1,500 miles over the Ross Ice Shelf (1). A year later a group from Little America will go to Marie Byrd Land (2). In 1957, a party from Byrd Station will head toward the coastal mountains and Sentinel Range (3). The following year tractors from this outpost will explore South Pole region (4). From Ellsworth Station the journeys will be into Edith Ronne Land (5) and Coats Land (6). The journey into Wilkes Land (7), to begin in October, is shown on inset map.

POLE TEAM STARTS TREK ON ICE SHELF

To Gather Data on Floating Frozen Land on 100-Day Journey of 1,200 Miles

LITTLE AMERICA, Antarctica, Oct. 25—Five scientists and two Navy men left yesterday on the first leg of a 1,200-mile traverse across the vast Ross Ice shelf.

The party was led by Albert P. Crary, chief of the scientific station here. This team was headed for McMurdo Sound, about 425 miles away on the first part of its triangular trek.

Subsequent legs of the trip will go to the foot of Beardmore Glacier and then return to Little America. The trek is expected to take at least 100 days.

Mr. Crary's party had been scheduled to leave Oct. 15 but was delayed by storms. The seven men pushed off in three Tucker snowcats, towing three two and one half ton sleds loaded with scientific equipment and provisions. Their first day was marked by a broken universal joint on one of the snowcats.

The general purpose of the traverse is to obtain detailed information about the formation of the floating Ross ice sheet, which is fifty to one hundred fifty thick. It lies between Little America and McMurdo Sound.

The crevasses near Roosevelt Island will occupy the party in its first thirty miles. Later the group will study sastrugi patterns, which are snow formations carved by winds, and survey mountain peaks and ranges.

While on the first leg, the scientists also will measure water depths, ice surface elevation, magnetic field strength and compass variations.

The party expects to travel thirty miles every other day and set up twenty-four-hour camps for observations on alternate days. Navy ski planes will supply the team about every ten days

MISHAP IN ANTARCTIC

German Scientist Injured by Fall Into Crevice

McMURDO SOUND, Antarctica, Oct. 31—A German scientist working with an American ice traverse party was injured today when he fell into a sixty-foot crevasse.

Peter A. Schoeck of Karlsruhe suffered possible broken ribs and internal injuries, the trail party reported. The accident occurred about fifty miles west of Little America.

ROCKETS IN ANTARCTIC

Devices Fired From Balloons Gather Scientific Data

IOWA CITY, Iowa, Nov 26 (AP)—The Antarctic skies were penetrated by rockets for the first time early this month, two University of Iowa scientists said today.

James Van Allen and Laurence Cahill, physicists, reported firing nine rockoons above the Antarctic ice pack on an expedition in connection with the International Geophysical year.

Rockoons are rockets that are carried aloft by balloons and then fired. Instruments in the rockets record scientific data.

PLANE RESUPPLIES PARTY ON ICE TREK

Ski Craft Forced to Utilize Radar to Find Scientists on Antarctic Shelf

LITTLE AMERICA, Antarctica, Nov. 15—The Ross Shelf Ice is perhaps Antarctica at its flattest. But it is formidable and at times forbidding.

Albert P. Crary and his scientific traverse party can attest to that after three weeks on the trail. So can the persons aboard a Navy R-4D plane that resupplied the party 150 miles out on the ice barrier yesterday.

The ski-plane's landing was made by Lieut. Comdr. Ray E. Hall of Freelandville, Ind., in a near white-out on the deceptive barrier. For those receiving their first touch of white-out—the writer included—it was like landing in a white enamel pitcher full of milk.

Then followed a two-mile taxi on skis across the crusty snow barrier, luckily unmarked by crevasses. Suddenly out of the fog and haze loomed the lead snocat of the traverse party.

Mr. Crary hopped out of the cab to greet the plane that had spent the previous half hour trying to locate him. It finally had succeeded only through the use of radar.

The expedition leader from Oakford, Pa., appeared to be in good condition, as did his men who subsequently pulled up in two other snocats. Each snocat is pulling a sledload of fuel and provisions on the first leg of the traverse to McMurdo Sound.

Mr. Crary's lead tractor is equipped with electronic crevasse detectors. The party lost its chief glaciologist, Peter A. Schoeck of Karlsruhe, Germany, in a crevasse fall during its first week out from Little America. He is recovering in a New Zealand hospital from broken ribs and a punctured lung wall.

"I think we are through the worst," the leader said. "From now on we hope to set our own pace and make thirty miles on every traveling day."

"Thus far we have run across no major surprise in our soundings or other readings," Mr. Crary said.

Aside from the crevasse fields near Roosevelt Island, Mr. Crary said, the party experienced no difficulties. But it took ten days to get through a forty-mile area of treacherous gulches.

The crevasse into which Herr Schoeck tumbled sixty feet was similarly covered and only inches wide at the surface. When it opened it was large enough to house an apartment building.

ROSS ICE IS FOUND 1,000 FEET THICK

Antarctic Traverse Party's Soundings Also Record Varied Water Depth

McMURDO SOUND, Antarctica, Dec. 10—The Ross Ice Shelf is 1,000 to 1,200 feet thick throughout much of its 450-mile expanse between Little America and McMurdo Sound.

Albert P. Crary, leader of a scientific traverse party, announced this week that echo soundings gave this rather uniform reading at point fifty to sixty miles from the barrier edge.

The same soundings, Mr. Crary reported, showed that the depth of the water under the vast shelf varies widely. The water soundings ranged from a few hundred feet to 3,000 feet on the western side of the shelf near McMurdo Sound.

These were hte first extensive determinations of the thickness of the ice shelf. Mr. Crary, scientific leader of Little America Station for the International Geophysical Year, was interviewed as his party was being resupplied about ninety-five miles south of McMurdo Sound.

The six-man team has now completed the longest leg of its 1,200-mile triangular course. The party is heading south toward the Beardmore Glacier.

The men hope to spend Christmas at Liv Station, one of the Navy's emergency air bases, at the foot of the glacier. Mr. Crary said that unless rough crevasses were encountered the group should arrive back at Little America by Feb. 15.

The ice shelf readings provide a contrast to the 8,300-foot ice depth recorded in soundings at the South Pole, 850 miles away.

The Ross shelf is at the edge of the Antarctic continent and faces toward New Zealand.

Mr. Crary, who is from Oxford, Pa., has in his group two seismologists, William V. Cromie of Long Island City, Queens, and Hugh F. Bennett of Stevens Point, Wis.; two glaciologists, Walter W. Boyd of Bethesda, Md., and Edward S. Robinson of Saginaw, Mich., and a mechanic, Frank Layman of Pittsburgh.

They stop every second day and dig a ten-foot pit. The seismologists place their TNT charges and record the echo of the explosions. The glaciologists take ice samples down thirty feet with a hand auger. These cones will be analyzed for possible determination of the age of the ice.

Thermometers are lowered into these shafts. The ice temperature thirty feet down on the day the party was visited near Minna Bluff was about 20 below zero Fahrenheit. On the surface it was about 15 above zero.

Mr. Crary said the average surface temperature had been above zero most of the time since the safari started Oct. 25. Winds also had been comparatively mild, with only one day lost by blizzard.

The Crary traverse is one of three such expeditions by United States scientists. One of the others has moved 180 miles northeast of Byrd Station on its wa yto the Sentinel Mountains; the third has worked its way out of a heavily crevassed area about 120 miles south of Ellsworth Station on the Weddell Sea.

The Ellsworth and Byrd parties plan to check the exact location of mountain ranges. The Ellsworth group wants to verify the existence of mountains near the Pensacola Range sighted earlier from the air.

The Byrd group will check a 10,000-foot dormant volcanic peak sighted by pilots. Other flights have indicated that both the Kohler and Sentinel ranges may need remapping.

ADMIRAL DUFEK CITED

WASHINGTON, Aug. 28 (UP)—Vice President Richard M. Nixon presented the Distinguished Service Medal to Rear Admiral George J. Dufek today for his "exceptionally meritorious service" in commanding Operation Deep Freeze in Antarctica.

Admiral Dufek was in charge of two expeditions that led to establishment of seven bases in Antarctica for the International Geophysical Year studies in the South Polar region.

The citation said Admiral Dufek "was instrumental in large measure in solving the numerous complex and unprecedented problems incident to the establishment of these bases."

PLANE COMPLETES ANTARCTIC FLIGHT

One of Two C-47's Reaches Ellsworth Station—Second Craft Ran Out of Fuel

By WALTER SULLIVAN

Nov. 24

One of two Air Force planes attempting a 2,000-mile flight from South America to Ellsworth Station in Antarctica has reached there after dwindling fuel reserves forced the fliers to abandon the other aircraft.

The twin-engined C-47 transports exhausted their fuel reserves after being forced once to turn back when only an hour's flying time from their goal on the south coast of the Weddell Sea. Because the weather had suddenly closed in at Ellsworth Station they flew back about 550 miles to Steele Island.

They had already made one landing at this point on the east coast of Palmer Peninsula, presumably to wait for better flying conditions. On their second attempt to make the hop from Steele Island to Ellsworth Station they ran low on gasoline and landed on virgin continental snow fields about 500 miles short of their destination.

Ellsworth Station is one of seven outposts established by the United States in Antarctica to join in the world-wide scientific observations of the International Geophysical Year. It is commanded by Capt. Finn Ronne, U. S. N. R.

Once the two planes left Robert Island, north of Palmer Peninsular, they were on their own. There were no other I. G. Y. bases along the remaining 1,350 miles of their route.

Dec. 1

Four men and their Air Force plane have been down on a remote Antarctic island for more than a week. They have tents and food for four months.

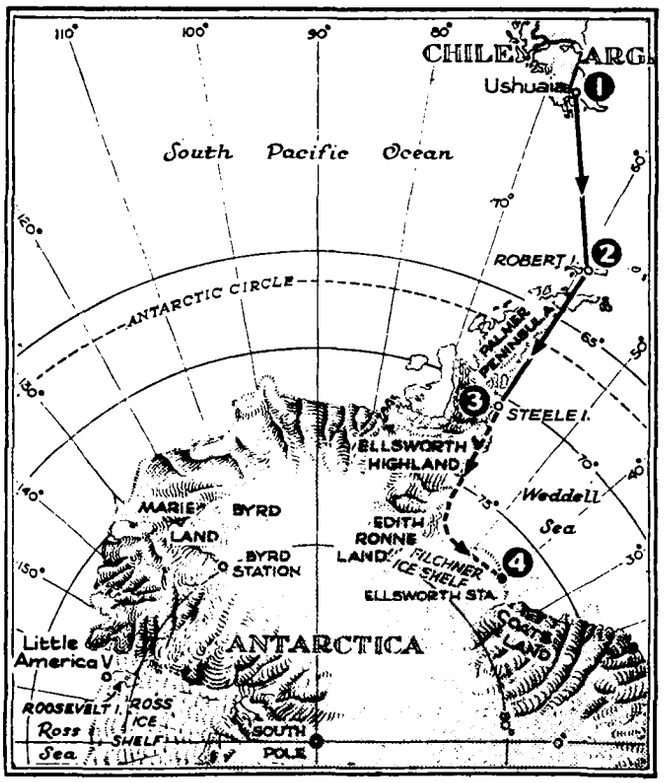
According to radio reports from the area the companion plane, which was to bring additional fuel to enable the stranded aircraft to complete its journey, caught fire. The flames were extinguished and the damage repaired, but poor weather has prevented a relief flight.

The two C-47 transports were pioneering a 2,000-mile air route from South America. They had almost reached their destination when they were forced to turn back by clouds.

They returned to the place where they had made their last landing en route with their fuel reserve apparently so depleted that both planes could not complete the journey on the next attempt.

Hence one plane was tanked up and flew to Ellsworth Station, leaving behind all but the pilot of the companion craft, Capt. David Roderick.

There is some uncertainty as to the exact position of the stranded plane. Early reports identified it as Steele Island, but a message received here over the week-end spoke of it as Dolleman Island. The two places lie close together off the east coast of Palmer Peninsula and may be hard to tell apart.



Two Air Force planes pioneering a route to Antarctica took off from Ushuaia (1) in Argentina, stopped over at Robert Island (2) and were forced down later at Steele Island (3), 700 miles short of goal at Ellsworth Station (4).

Dec. 3

Four Americans stranded on a remote Antarctic island are well and may be relieved within a few days when fuel is delivered for their Air Force plane.

This was reported by Maj. James Lassiter, commander of the flight consisting of this and one other C-47 transport that flew in successive stages from the United States to the Weddell Sea at the bottom of the world. In a radio interview he said that a fuel cache had been laid in recent days midway between the plane and its destination.

Major Lassiter also reported that a tractor party, which headed inland from the Weddell Sea, had escaped from the maze of crevasses into which it had strayed and was now rumbling over the continental plateau. This means that all three major American trail parties are well into the field.

They are carrying out studies of the vast and little-explored Antarctic ice sheet and of the mountain ranges that subdivide it. The program is part of the world-wide studies being carried out during the International Geophysical Year.

Major Lassiter is at Ellsworth Station, the base commanded by Capt. Finn Ronne, U. S. N. R., on the southern shore of the Weddell Sea. He said the plane stranded on Dolleman Island, 700 miles to the northwest, had 300 gallons of fuel—ample to keep the generator going to supply its radio.

Hence daily contact has been possible. He noted that the men would have to camp, as they are now, at a number of points in Antarctica during the operation for which they have flown south. They are testing the feasibility of using Raydist equipment for survey work in the Antarctic.

The gear is somewhat similar to loran, which is in wide use as an aid to navigation. Raydist has been used for precise determination of off-shore oil well positions in the Gulf of Mexico.

Major Lassiter said that 750 gallons of gasoline had already been cached four miles north of Cape Adams but that it had not been possible to bring fuel to Dolleman Island because of poor weather there.

The tractor party from Ellsworth Station was halted when the rear of one vehicle fell into a crevasse. Resulting damage and discovery that the party was in the midst of lightly bridged crevasses halted the journey until aircraft came to assist. This group hopes to reach the vicinity of Mount Hassage in Edith Ronne Land.

Another tractor party is en route to this area from Byrd Station in Marie Byrd Land. If both reach the same point their sounding of the ice sheet thickness will provide a transcontinental profile of the continent beneath its icy mantle. They are using dynamite blasts to obtain echo-soundings off the rock beneath the ice.

A third tractor party is covering a triangular route over the Ross Ice Shelf from Little America, to McMurdo Sound, to Liv Glacier and back to Little America. The Ross shelf, roughly the size of France, is the largest floating piece of freshwater ice in the world. The mysteries of its formation are being assaulted during the I. G. Y.

The party from Ellsworth Station may digress 120 miles from its planned route to obtain rocks from a newly-discovered range of mountains, estimated to rise to 11,000 feet south of the Weddell Sea. The range lies about 400 miles north of the South Pole.

ICEBREAKER SAILS TO THE ANTARCTIC

Westwind With 221 Aboard Is Off on 5-Month Trip of 25,000 Miles

The big Coast Guard icebreaker Westwind left Nov. 27 on a 25,000-mile, five-month voyage to the Antarctic.

Her mission will be to crush tough Weddell Sea ice to permit a naval supply ship to re-stock a United States International Geophysical Year base at Ellsworth.

The base is one of seven United States installations maintained on the continent for the scientific effort. The Westwind is one of ten ships taking part in the supply effort, known as Operation Deep Freeze III. She will return April 1.

Seventy-five relatives and friends of the 221-man crew stood on the New York Naval Shipyard pier in Brooklyn as the vessel pulled away at 11 A. M.

The 6,315-ton vessel returned here in September from four months of icebreaking duty up north while escorting naval supply ships off Greenland and East Baffin Island.

She will meet her companion vessels of Task Force 43, participating in Operation Deep freeze III, off Dakar, French West Africa to begin the long voyage south.

Capt. Ronne Discovers New Island And More Mountains in Antarctica

The following article was written by Capt. Finn Ronne, leader of the Weddell Station expedition of the United States National Committee for the International Geophysical Year. He reports from the base that his expedition established early this year in Antarctica.

North American Newspaper Alliance.

ELLSWORTH STATION, Antarctica, Dec. 27—Our recent exploratory flights have resulted in what we consider several major geographical discoveries.

After several weeks of painstaking air and surface exploration we are able to announce that a huge island exists off the Antarctic Continent to the west of the Weddell Sea coast, below Cape Horn.

On present maps this expanse bears the name of Filchner Ice Shelf. From the west cape of Gould Bay the island extends 200 nautical miles to Lat. 80 degrees S.

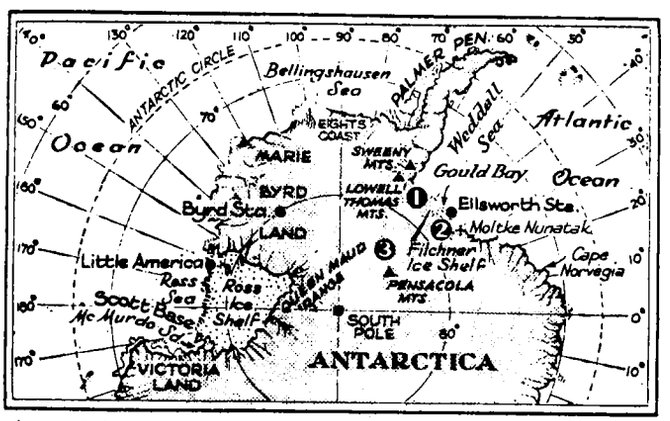
The island's eastern escarpment near the Cape of Gould Bay at Long. 43 degrees W. has three embayments, the largest about fifty miles in depth. The snow-covered island extends to the west along the Weddell Sea coast for about 180 miles.

Its highest inland elevation, at Lat. 80 degrees S. and Long. 48 degrees W., has been recorded to be 3,200 feet above sea level.

When our five-man traverse party crossed the island their seismic soundings proved land underneath the ice shelf to be hundreds of feet above sea level. Many of the other contours of the island have still to be fully delineated farther westward. But they seem to tie in with the land in Catherine Sweeney and Lowell Thomas Mountains groups which Maj. James W. Lassiter and I first saw ten years ago at the base of Palmer Peninsula.

This huge new island discovery seems to limit the extent of the Filchner Ice Shelf from Moltke Nuntaks to the east cape of Gould Bay, where the wide shelf terminates.

In many ways our other recent discoveries are even more challenging because they remain for the moment controversial. In major flights on March 16, 1957, and Oct. 25, 1957, piloted by Lieut. Comdr. Charles McCarthy of New Richmond, Wis., and recently on flights piloted by Major Lassiter of Falls Church, Va., we have seen several new mountain range groups.



Area (1) reported by Capt. Finn Ronne to be an island makes up major portion of Filchner Ice Shelf. The discovery limits the extent of the ice shelf to smaller area to east (2). Mountains were sighted to southwest (3).

We feel certain they are not part of the Pensacola Range sighted by Navy pilots two years ago under Admiral George Dufek, commander of all Antarctic operations, because our flights for reconnaissance and traverse-party resupply have not taken us in that direction.

The mountains, which we first saw on Oct. 25, and where our traverse party camped for four days recently, lie 325 miles south of Ellsworth Station. They stretch in an east-west direction for thirty miles between Long. 51 and 55 degrees W. and Lat. 82 degrees 30 minutes S., and form a 5,000-foot-high escarpment on their southern side. Another group lies sixty miles farther south. Several days ago we sighted a third group 120 miles southwest of the first.

We photographed the mountains and placed them between Long. 60 and 70 degrees W. and Lat. 83 and 84 degrees S., in the heart of Edith Ronne Land. There are certainly many groups of mountains in this general area, and when plotted on the map alongside those previously discovered and plotted by the Navy's flight in 1956 it leads me to speculate that they are all part of the Queen Maude Land Mountains, which would then completely cross the Antarctic Continent from Cape Norvegia at the eastern entrance to the Weddell Sea to meet the long range of mountains which extends along the edge of the Ross Ice Shelf to the tip of Victoria Land south of New Zealand.

If this be the case, the seismic information being assembled this year and next by the three traverse parties from Little America, Byrd and Ellsworth Stations may give light at last to the possibilities of more large islands or low polar troughs, where thousands of feet of ice have depressed the land beneath to below sea level between parallel coastal and inland mountain ranges.

In any case we feel that the scientific studies being carried on by the International Geophysical Year are helping to solve major geophysical features and outlines of the Antarctic Continent which have been hidden since the beginning of time.

WHALES' EAR 'PLUGS'

They May Stop Hole in Study of Sea Mammals' Ages

LONDON (Reuters)—It may be possible to estimate accurately the ages of whales as the result of a study being made by the National Institute of Oceanography.

The institute says that the layers that form the ear plugs of whales are believed to be a direct index of their ages. It is almost certain that two layers are formed each year.

A large collection of ear plugs from whales is being built up for study.

The research is expected to yield information on the whale's life cycle and reproductive capacity.

ANTARCTIC FLIGHT FINDS NEW PEAKS

Air Survey Shows Pensacola Range Extends Farther to West Than Thought

McMURDO SOUND, Antarctica, Oct. 28—An Antarctic mountain range probably extends beyond its present mapped position, it was reported today by Capt. Finn Ronne.

Captain Ronne, scientific and military leader of Ellsworth Station, told of a seven-hour exploratory flight that disclosed high peaks extending westward and perhaps southward from the group known as the Pensacola Mountains. These are located southwest of Edith Ronne Land and the Weddell Sea, where Ellsworth Station is situated.

The captain said that "the mightiest peaks appeared to be between 48 and 51 degrees west longitude."

He placed their height at 11,000 feet. Some were bare and some snow-covered, he said. The range spreads a hundred miles or more in an east-west direction to "less than 400 miles from the South Pole."

Recent maps show the Pensacola Mountains extending from about 38 to 48 degrees west longitude and running mainly north and south, from about 81 to 84 degrees south latitude.

After an exploratory flight in January, 1956, the Navy gave the names of Forrestal and Neptune to two ranges in the Pensacola group.

Mount Hawkes was the highest, estimated at 12,000 feet.

Captain Ronne's report indicates there might be more peaks about as high running many miles to the westward. Captain Ronne made the flight Friday in a single-engine Otter plane piloted by Lieut. Comdr. Charles McCarthy of New Richmond, Wis. Others aboard included Lieut. (j.g.) William Sumrarl, of Meridian, Miss., navigator, and Dr. Edward Thiel of Wausau, Wis., seismologist. Ellsworth is one of seven United States stations set up in Antarctica for the International Geophysical Year.

The report of the flight was received at McMurdo Sound Station, more than 1,500 miles across the Antarctic continent.

Captain Ronne is a veteran Navy Antarctic expedition leader. He named Edith Ronne Land for his wife in 1947.

World Quota on Whales

Under an international treaty, the catch of whales by all countries of the world is now limited. And the quotas have been decreasing in recent years.

POLAR TEAM ENDS TREK OF 650 MILES

Little America Tractor Party 21 Days on Snow-Packed Trail to Byrd Station

McMURDO SOUND Antarctica, Oct. 23—A nineteen-man tractor train has completed the 650-mile trek over snow from Little America to Byrd Station in twenty-one days.

The six-tractor team left Little America on Oct. 1 over the trail opened and filled in by a pioneer party last December. That crevasse-marked trip took forty-two days.

The present party brought 145 tons of supplies. This included food, gear and scientific equipment for the inland station. Lieut. (j.g.) Robert K. White, Navy engineer from Glens Falls, N. Y., led the group of Navy and Army men.

A report of the team's safe arrival was made by an Air Force Globemaster crew that dropped more fuel at Byrd Station yesterday. The tractoring party arrived about noon yesterday. It is scheduled to start back to Little America later this week.

Planes also have dropped fuel at two places along the trail for the party's return trip. The trail is expected to be open for several more trips during the summer.

CARGO PLANES DROP FUEL IN ANTARCTIC

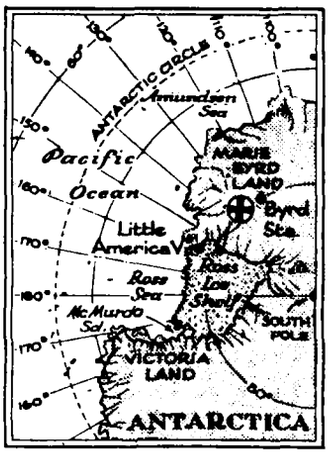
McMURDO SOUND, Antarctica, Oct. 18—Two Air Force Globemasters made the first air drops of the season—58,000 pounds of diesel fuel—at Byrd station today.

One of the big cargo planes made three-fourths of the 1,600-mile round trip on three engines. It was the same C-124 that made the drop yesterday on the South Pole station.

The lead ship escorted it safely home to McMurdo ice strip and both landed safely. The crippled ship was piloted by Capt. Victor G. Stianchi of Lansford, Pa. Capt. Jack H. Wringle of Spokane, Wash., piloted the lead plane.

Twenty-three men have been wintering at Byrd station since it was set up as an International Geophysical Year post early this year.

Other supplies and mail are reported en route to the station via a tractor train now less than 200 miles out. The tractor team left Little America Oct. 1 on the trek of 650 miles.



STERN TEST: The men who stayed at Byrd Station (cross) endured worst weather in the Antarctic.

FIRST RADAR AIRDROP MADE IN ANTARCTICA

MC MURDO SOUND, Antarctica, Oct. 20—The first radar drop of supplies in the Antarctic was made today at Byrd Station.

An Air Force Globemaster crew at Byrd Station did the job. Lieut. Eugene Egnot of Connellsville, Pa., the pilot, found visibility reduced to a quarter-mile. The plane's radar set was used to locate the station after an 800-mile flight from here. Seven passes were required to drop Diesel fuel, mail and food, a load of 30,000 pounds.

Scientists Find Jet Streams Over Antarctica

LITTLE AMERICA, Antartica, Dec. 12 (AP)—Weather scientists have found a pattern of jet streams above Antartica that should help high-flying planes of the future to link the continents with new routes.

These air streams, in some instances reaching hurricane force, travel in gently curving paths 50,000 feet or more above the frozen continent.

Between June and October, which is Antartica's long winter night, the winds move from west to east. Then there is a short period of transition during which they take no well defined direction. During November and perhaps even later they blow east-west at lower velocity.

Air lines using the proper timing and routing could ride these currents for operations between southern Africa and southern South America to Australia, New Zealand and the southernmost regions of Asia.

BYRD LAND ROCKS TO COOL LULLABY

Swept by Frigid Winds, It Is Said to Be Sternest of U. S. Outposts

BYRD STATION, Antarctica, Dec. 14—The winds howled a dismal lullaby at Byrd Land.

Twenty-three men who stayed the year at inland Byrd Station had the roughest assignment of the first part of the International Geophysical Year. This is the consensus of scientific and Navy officials who have inspected United States stations in Antarctica.

"They did a remarkable job just living through the winter," Rear Admiral George J. Dufek, commander of Operation Deepfreeze III, commented after visiting Byrd Station. He described the base as substandard and very austere.

The scientists who wintered over had these complaints:

¶A confused supply situation. Enough soap was on hand for two years, but canned vegetables ran out in several months. The daily dinner was beef and potatoes for the last month of the winter and beyond.

¶Living quarters were in the same hut with working apparatus, making sleep difficult.

¶The weather was the worst in the Antarctic. Neutral observers report Byrd had less sunshine, stronger winds and storms than the South Pole station and was second only to that base in coldness. The low at Byrd was —70.4 degrees. At the pole, it reached —102.1

Deepfreeze support officers concede there is not much that can be done about the weather, but they have gone to work to correct the supply and space problems.

Two new buildings, including separate barracks for twelve scientists, have been constructed for the new I. G. Y. group. The food imbalance has been leveled by supplies arriving by tractor-train and air drops. The incoming scientists are optimists.

There are indications that the morale problem hampered the scientific program at the station. Byrd's reports have been something less than expected, reviewers have found. In some cases, such as aurora observations, the fault was mainly mechanical, it was said. But I. G. Y. officials are making every effort to get their Byrd house in order by Jan. 1.

The atypical situation here was caused by several factors. The base was created at Lat. 80 degrees South, Long. 120 West early this year after a tractor-train pioneered a route 650 miles inland from Little America. Construction was hurried because of the lateness of the season.

Winter closed in before a balanced food supply could be dropped by planes. There apparently was no over-all food shortage, but after several months an appalling lack of variety set in.

The location—on an ice plateau 5,000 feet above sea level—was chosen because it was believed to be a storm center. This had yet to be proved—meteorologically.

The station's scientific leader, George R. Toney of Washington, D. C., was with a traverse party and unavailable for comment. The Byrd military leader and physician, Navy Lieut. Brian C. Dalton, said it had been a rugged year but that most of the men took deprivation in good stride.

There was a small group of malcontents, he said, but no violence occurred although "there were some tense moments."

The morale of eleven Navy men remained good generally, he said.

The health of all of the men was good, he said, despite a lack of fruit and vegetables.

The doctor's work was commended by two investigating officers. Lieutenant Dalton, 26 years old, is an Irish citizen who now makes his home in Boston.

Admiral Dufek has visited five of seven United States stations in the past month, all but Wilkes and Ellsworth. He said improvements were planned at all bases by February.

"We are not satisfied with what we have and we are going to improve it," the admiral said. This includes McMurdo Sound, primary supply base, where overhead wiring, a new control tower and a half dozen new buildings are planned. Among these will be a garage replacing one destroyed by fire last winter.

One problem confronting the Navy support task force is how permanent to make construction. Admiral Dufek says he is planning to evacuate all American bases in Antarctica on Dec. 31, 1958, unless "we get the word from I. G. Y. leaders that the program is going to continue."

Dr. Laurence M. Gould, chairman of the United States Antarctic Committee, favors such extension but no official action has been taken.

During 1958 there will be 337 men at the seven stations; this year there were 318. The groups are divided almost equally between civilian scientists and Navy personnel except at McMurdo, an all-Navy installation.

Algae in Ice and Torrid Water

Algae, primitive water-loving plants, have been found growing in ice and snow above the Arctic Circle and in hot springs where water reaches 200 degrees Fahrenheit, says the National Geographic Magazine.

POLAR JOB DRAWS SCOUT TO SCIENCE

Upstate New Yorker Is Set for Physics Career After Year's Work in Antarctic

LITTLE AMERICA, Antarctica, Dec. 19 — Another Boy Scout has become converted to science, if not Antarctica, by his experiences here.

Richard Chappell, 19-year-old Eagle Scout from Eggertsville, N. Y., says he intends to switch to the study of physics after spending a year as a general utility aide on work for the International Geophysical Year. He had expected to become an engineer.

Dick Chappell, first Boy Scout since Paul Siple to be selected for Antarctic duty, is not sure whether his new interest will bring him back to the Antarctic. But he admits he might follow the example of Dr. Siple, whom he admires greatly.

Dr. Siple, leader of the first United States scientific party at the South Pole this year, developed his polar interest when he was chosen to accompany the late Admiral Richard E. Byrd's expedition to Antarctica in 1928.

Young Chappell was selected by a national committee including Dr. Siple and was assigned to the I. G. Y. program at Little America.

When given a chance to participate in various phases of the I. G. Y. work here, Dick found his interest in science developing sharply. He plans to enter Princeton University in the fall of 1958 under a four-year scholarship from the Naval Reserve Officers Training Corps.

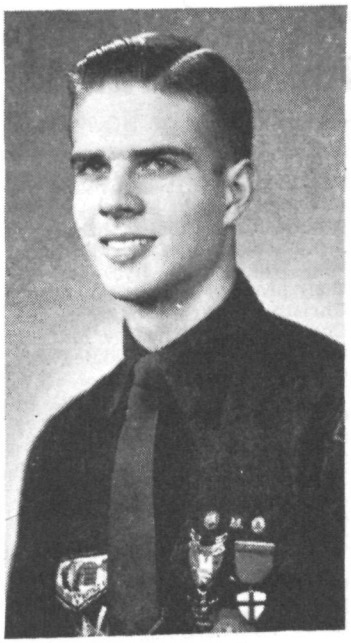
The Scout arrived by ship last Jan. 31. The lanky, handsome lad has been a popular man of all work at this station under the snow. Here's an indication of the variety of his services:

He helped take pictures and spectograms of the aurora australis, the famed Southern Lights; plotted maps for the Weather Central, helped maintain ionosphere equipment, took temperatures of shelf ice, and played the organ for church services on Sunday.

He also found time to learn the Morse code, work in the radio ham shack and grow a beard—a curly, wispy, red-tinged one.

"It was a great year," Dick exuded in an interview. "I had a chance to work with some wonderful men and got some real insights into important fields."

The scientists he aided found



Dick Chappell

him lively, eager and quick to learn. He was a favorite of many Navy men as well. Capt. W. M. Dickey, area commander, called Dick "an outstanding lad and shipmate."

The record young Chappell compiled at Amherst Central High School in Eggertsville presaged his year here. He was president of the student body, member of the national honor society, and letterman in tennis, swimming and soccer. He was president of the Buffalo district chapter of the Methodist National Youth Fellowship.

In six years of scouting he earned forty-six merit badges.

About his imminent return to civilization he has no misgivings—except possibly about working days, rather than nights. Most of his scientific chores down here required him to be up in the early hours. He snatched sleep easily whenever he could.

His ability to fall asleep embarrassed him one recent Sunday morning when services were held two hours earlier than usual. He was called to play the organ at a time he usually took to his bunk.

The chaplain's sermon seemed long that morning to Dick. When the minister turned to give the cue for the next hymn, the young organist was sound asleep.

Blow to Whaling Industry

One of the biggest blows to the whaling industry in the Mid-Eighteen Hundreds was when the whalebone corset went out of fashion.

Whales Do Not Drink Water

Whales will not drink water, not even as a chaser. They get enough water out of their diet.

RUSSIAN TO LEAVE U.S. POLAR STATION

Antarctic Weatherman Calls Americans 'Hokay'—And the Feeling Is Mutual

LITTLE AMERICA, Antarctica, Dec. 23 — The Russian weatherman who has worked all year at this United States base thinks that Americans are "hokay." His American coworkers feel much the same, apparently, about Vladimir Rastorguev.

Mr. Rastorguev, completing twelve months in the Weather Central here, is scheduled to leave next month. He is one of three foreign observers who have added an international flavor to the meteorological clearing house.

The 32-year-old Muscovite enjoyed his first year in the Antarctic. "It was interesting to see how Americans work," he said. "Your weather - gathering methods are about the same as ours. In some ways, you are better. In others, we are more efficient."

But as for camp life in general—"the Russians are better organized and I think the food and living accommodations are also superior."

Mr. Rastorguev spoke from eight years of experience as a meteorologist at Russian stations in the Arctic. In that period, he said, the number of Soviet weather installations in the frozen north rose from about fifteen to more than a hundred.

The farthest north he served was on Novaya Zemlya, an island between the Barents and Kara Seas between 70 and 80 degrees north latitude. Little America is at 78 degrees south latitude.

"The thing I have missed most is fish," the Russian added. The dietary staple at United States bases here is beef. Canned tuna and salmon appear on Friday only.

His friends categorize Mr. Rastorguev as "a chow hound." He has not lost weight, they say, and he appeared quite robust at 180 pounds. He is six feet tall.

His sense of humor and quick pick-up of English made him what Capt. W. M. Dickey, military leader here, termed "a real fine shipmate." He studied English for five years as a schoolboy but was quite rusty when he arrived in Antarctica. His command of slang and Navyese is now certainly as complete as polite society requires.

Mr. Restorguev found that the code designation "fox trot" was used for morale matters. For days thereafter he solicitously inquired of his Navy and scientific friends: "How is your fox trot today?"

The Soviet sky scanner was graduated in 1948 from the Leningrad Hydrometeorological Institute. He went directly into the Russian Northern Seas Route Administration, which has jurisdiction over the Arctic coast from the Barents to the Bering Seas.

At Little America, he has been the liaison between the Weather Central and the Russians' principal base at Mirny. He is the interpreter on the weekly radio conversation, usually one to two hours, between Russian and United States weathermen.

His closet friend here is the Argentine representative, José Alvarez. Together they have worked out many new synoptic charts of Antarctica, utilizing data from more than forty reporting stations representing at least nine countries. A synoptic weather chart is compiled from observations taken in various places at or near the same time.

The third foreign observer here was Dr. Herfried C. Hoinkes of Innsbruck, Austria.

Mr. Rastorguev's replacement is due to arrive here from the Soviet Union in January. The International Geophysical Year Station will also have representation from Argentina, Australia, South Africa and France.

Mr. Rastorguev plans to go directly home to Moscow. He is anxious to see his wife, one son and one daughter. His fox trot couldn't be better.

SIGNALS IN ANTARCTICA

Six Stations Near South Pole Hear Soviet Satellite

Signals from the Soviet earth satellite have been heard at six of the seven stations established by the United States in Antarctica.

All of the stations, including that directly at the South Pole, have heard it except for that on the Weddell Sea. Some of the stations are close to Latitude 65 South, which is presumably the southernmost reach of the satellite in its orbit.

News of the recordings of satellite passages were collected from the Antarctic stations by Jules Madey, amateur radio operator in Clark, N. J., who regularly "works" the Antarctic.

Norway Honors Explorer

A drive has been opened in Norway to collect funds for the erection of a national monument to Fridtjof Nansen, according to the Norwegian Information Service. The sculpture will be unveiled on Oct. 10, 1961, the one hundredth anniversary of the birth of the Norwegian explorer.

Seals Tireless Swimmers

Northern fur seals in the Pacific are inexhaustible swimmers, and can migrate 5,000 miles at sea all winter.

M'MURDO IS HUB OF A MAN'S LAND

Women Have Touched Base on Sound, but Antarctica Seems Built for Males

McMURDO SOUND, Antarctica, Nov. 1—The age of tourism may appear to have arrived in Antarctica but it's still a man's continent.

Nowhere is this more evident than at the United States Navy facility at McMurdo Sound, hub of American activity during the 1957-58 International Geophysical Year.

A couple of venturesome airline stewardesses flew in here not so long ago to become the first women to invade this male dominion. The reaction to their arrival was mixed; their departure met with universal relief.

To state it bluntly, many of the men are here to get away from women—and because they delight in doing a tough job.

Just living in the Antarctic is a tough proposition, correspondents have learned in a hurry.

The eighty-six men who wintered through the long Antarctic night put up a transmitter station, strung miles of communications lines, scraped an improved airfield. If some are hard-bitten, it is with good reason.

This is a Navy installation without frills and few of the comforts of home. But the chow is good and plentiful, water runs hot, and movies of uncertain vintage play in the mess hall almost every night. There are even automatic washers and showers.

The life is rough, and so is the humor. But it is the humor that keeps the men going when the wind blows at twenty-five miles an hour, just average here, and the mercury sinks to forty-two degrees below zero. The men console themselves with the thought that it dropped to minus 102 at the South Pole.

And they dream up such whimsies as snow toads. The men of Flight Squadron VX6—the ski-plane boys—have taken to wearing fluorescent pink patches on their boots to keep the snow toads from snapping at their heels.

McMurdo Campus, as some refer to it, has its Beverly Hilton, Ye Olde Sack Inn, Suite Sixteen and Bullheim. Bullheim was headquarters for the press in a prior year. The others are officers' and enlisted men's quarters.

There are forty structures on this bituminous-like segment of Ross Island. Most of them are clustered on the main drag of the campus—Burke Avenue, named for Admiral Arleigh A. Burke, Chief of Naval Operations.

At the far end of Burke Avenue stands Nimitz Hall, administrative headquarters. The nerve-center of the base, the Air Operations Dome, is at the end of Honeybucket Lane.

Here one meets a scholarly aerologist named John Mirabito of Hyde Park, Mass.; thee prophet-bearded camp commander, Scott W. Marshall of Miami, and a bustling ex-boxer from Boston, Comdr. William F. Flynn, chief of the construction battalion.

Commander Flynn and his crews put in many 16-to-20-hour days keeping the 5,000-foot ice runway in shape for the Air Force C-124 Globemasters as well as Navy planes. It is a constant battle against high winds and swirling snow.

In all, the eighty-six men who wintered over are a cross-section of American maledom, with a little extra dash of adventure and guts. But this writer has yet to find a person on the base who won't be happy to go home when his year is up.

Most Men Who Spent 1957 in Antarctica Reached Home in Time for Christmas

M'MURDO SOUND, Antarctica, Dec. 23—"Home for Christmas" became a reality for a large percentage of the Navy men and scientists who spent the year at the United States station in Antarctica.

An informal check of the seven United States bases showed that about 90 per cent of the 318 men on duty here this year were released in time to get home for the holiday—if they went directly home.

The unloading of supply ships was finished last week at Little America and is being completed here this week. Navy men had been told that they would have to work through the unloading, yet all but a handful of the old-timers were released early.

So, in effect, the Navy kept a half-promise it had made inadvertently in a newsletter to dependents several months ago.

Virtually all of the 337 men who will winter here are at their proper stations. For them, Christmas carol songfests on Christmas Eve, hearty dinners and parties are scheduled for Christmas Day.

McMurdo will play host to cargo handlers of the three ships that are currently unloading six to ten miles outside the McMurdo Sound ice. They include men of the U. S. S. Glacier, the U. S. S. Atka and the U. S. N. S. Greenville Victory.

Three ten-foot Christmas trees were flown in for the McMurdo, Little America and South Pole stations.

Antarctic's Dog Surplus Real Problem

McMURDO SOUND.—(AP)—Antarctica is threatened with an over-supply of dogs, says U.S. Rear Admiral George Dufek.

The problem arises from a decreasing need for dogs and a prospective increase among the 11 males and 10 females in the McMurdo kennels. Females can produce two litters a year with seven or eight pups to the litter.

The dogs are staked in the snow on separate leashes that sometimes fail to hold. They mix occasionally despite the efforts of George N. Gagnon, from New Bedford, Mass., the dogs' handler.

Dufek said the dogs will not be destroyed and expressed the hope some way will be found to distribute them somewhere outside Antarctica.

SANTA VISITS MEN AT THE SOUTH POLE

SOUTH POLE, Dec. 25—Christmas joy extended to the very bottom of the world today.

Eighteen men at the United States scientific station here and a half dozen guests attended a Christmas eve party. They attended a chapel service today.

Even the traditional North Pole Santa Claus was present. On closer inspection he proved to be Stephen Fazekas, a weatherman from De Funiak Springs, Fla.

He distributed gifts from a pack in the gaily decorated mess hall. Gifts exchanged were largely of the gag variety, most of the men had received Christmas parcels from home earlier.

There was even a special steak for Blizzard, the station's husky mascot.

A Christmas tree, and lights strung throughout the hall, brightened the festivities.

Charles Greene, ionosphere spacialist, played a new electric piano as the men gathered to sing "Silent Night" and other songs of the season.

The sun shone around the clock and the temperature hovered about 10 below.

AN ICE-FREE AIRFIELD SOUGHT IN ANTARCTIC

MCMURDO SOUND, Antarctica, Dec. 21—A Navy survey of a proposed icefree airfield at Marble Point began this week with seismic soundings.

The Rev. Daniel Linehan, Boston College seismologist, and Dr. Robert Nichols, Geologist of Tufts University, are blasting to determine bedrock characteristics of the rough terrain about forty-five miles northwest of the Navy's present base at Mcmurdo Sound.

Lieut Comdr. Henry Stephens Fairburn of Georgia is in charge of the operation that may take several weeks. Twenty-eight men are involved in the operation, five of them civilians.

Three engineers from the Boston firm of Metcalf and Eddy are advising on the project. They are John J. Schoures Jr., John Davis and Donald Ball.

Correspondents who visited the site by helicopter yesterday found it free of snow and ice but heavily covered with rocks, some of them of a soft marble type.

The latest D9 tractors will be used to dig up rocks and level the area if the scientists and engineers say the runway plan is feasible.

The hope is to carve at least a two-mile runway out of the approximately ten square miles that might be usable in the Marble Point area.

7 PENGUINS DIE ON COAST

Fear Voiced for 29 Others Now at Portland Zoo

PORTLAND, Ore., Dec. 27 (AP)—Seven penguins flown here from the Antarctic were dead today and zoo officials expressed concern that the remaining twenty-nine here may die.

Three other penguins captured by Jack Marks, Portland zoo director, on the Antarctic expedition also have died, one at Vancouver, B. C., and two at Baltimore.

All were victims of a lung disease known as aspergillosis, Dr. Clifford A. Bjork, Portland zoo veterinarian, said the disease has killed virtually all penguins taken from their natural habitat. There is no known cure for the disease.

Dr. Bjork said the penguins could have picked up airborne spores of aspergillosis from the ventilation system of the plane that brought them on the 30,000-mile flight to Portland.

Soviet Whaler's Total Is 1,351

VLADIVOSTOK, U. S. S. R., Nov. 10 (Reuters)—The Soviet whaler Aleut is returning to port here from its Pacific whaling season after killing 1,351 whales, totaling more than 43,000 tons, the Soviet news agency Tass reported today.

RUSSIANS HEADING INTO ANTARCTICA

LONDON, Dec. 27 (AP)—The little-explored interior of Antarctica took on some aspects of a traffic jam today. The Moscow radio said a Soviet convoy was headed for two of the frozen continent's poles.

The Soviet expedition, with thirty heavily laden vehicles, pulled out of the Russian base at Mirny in Eastern Antarctica yesterday. Its initial destination is another research station at Komsomolskaya, deep inside Antarctica.

Moscow radio said the expedition would split there into two sections. One will head for the geomagnetic pole 1,500 miles from the South Pole. The other will go to the pole of relative inaccessibility. The latter approximates the geographical center of Antarctica.

The Moscow radio gave no indication as to when the Soviet convoy expects to arrive at its polar destinations. But the thirty-two scientists in the expedition clearly expected to remain for some time.

The broadcast said the convoy included twenty metal sleighs, each capable of transporting twenty-five tons of materials. The tractors rounded out the expedition, which was laden with five prefabricated houses, diesel oil and scientific huts and equipment.

I. G. Y. Studies Indicate Antarctica May Be Isles

LONDON, Aug. 29 (Reuters)—Soviet scientists believe Antarctica is not an ice-capped continental land mass but a group of islands, according to Prof. G. A. Avsyuk, in charge of the glaciological investigations of the Soviet International Geophysical Year Committee.

He told a correspondent of Tass, the official Soviet news agency, that this was one of the most interesting results of the study of the ice cap.

Exchanges with American, British, Norwegian and Swedish expeditions in other parts of the antarctic have confirmed that the ice cap in several places was below sea level, he said.

Island a Whaling Station

South Georgia, an island in the South Atlantic, is a whaling station with a population of about 360.

2d D. C. Area Man to Aid Russians in Antarctic

CAPETOWN, South Africa, Nov. 5 (AP).—Gordon D. Cartwright, formerly of Washington, D. C., the only American with the Russian Antarctic Expedition, is going to get his first mail in 11 months—and there's plenty of it.

Mr. Cartwright, 47-year-old chief of the United States Weather Bureau Division of observations and stations, is assistant to the chief scientist of the United States program for the International Geophysical Year.

His colleague, Dr. Morton J. Rubin, 40, of 3522 Manorwood drive, Hyattsville, Md., sailed from Capetown this week for the Antarctic to relieve him.

"I'm taking down plenty of mail for Cartwright," Mr. Rubin said. "Also newspapers, magazines, cigars and cigarettes. We will probably be at Mirny for a month or two before Cartwright returns to the United States."

Dr. Rubin said Mr. Cartwright has had a successful year with the Russians, but is anxious to get home. First, though, he may visit advanced Russian stations nearer the South Pole.

Dr. Rubin will spend 16 months at Mirny carrying on IGY work begun by Mr. Cartwright.

Dr. Rubin sailed Sunday on Russia's largest icebreaker and polar research ship, the Ob. The 12,000-ton Ob carried 142 scientists and 4,000 tons of equipment for Mirny.

Capt. Ivan Man, master of the Ob, said a party of 100 Soviet scientists, engineers, mechanics and airmen soon will try to establish a base 800 miles inland from Mirny.

He said their destination will be Sovietskaya, 13,000 feet above sea level and deep in the Antarctic hinterland. Dr. Evgeny Ivanovich Tolstikov, a leading Soviet scientist and Arctic explorer, will lead the expedition.

The Ob will return to Russia next April or May after survey work in the South Pacific.

Belgians Put Sled Dogs on Antarctic 5f

CALLING attention to its Antarctic Expedition of 1957-58, Belgium issued a 5f + 2.50f engraved stamp on Oct. 10. The design, by M. Severin of Brussels, shows half a dozen sled dogs resting on an ice bank before the camp.

Commanding the expedition is Gaston de Gerlache, son of Capt. Adrien de Gerlache, whose 1897 Antarctic expedition was commemorated with two Belgian stamps in 1947. The captain died in 1934 when his son was 14.

BELGIAN EXPEDITION OFF

16-Man Team Sails for I.G.Y. Research in Antarctic

ANTWERP, Belgium, Nov. 12—A scientific expedition left today for the Antarctic. It is part of Belgium's contribution to the International Geophysical Year.

The leader of the sixteen-man team is Gaston de Gerlache de Gomery, 38-year-old wartime flier.

The group sailed on the 600-ton Polar Sirkel, which expects to reach base at Breid Bay late next month. The men will stay in the Antarctic until January, 1959.

Research work will be done on atomic radiation along the Princess Ragnhild coast and in Queen Maud Land. Breid Bay has never been reached by sea or overland, but the area has been mapped from the air.

Antarctic Peak Scaled

TOKYO, Nov. 13 (Reuters)—The Japanese Antarctic expedition on Ongul Island radioed here today that three members of the team climbed 4,854-foot Mount Botnnuten for the first time in history.

Area of Antarctica

Antarctica covers about 5,500,000 square miles, with an altitude of 9,200 feet above sea level at the South Pole.

SHIP LEAVES FOR POLE

Japanese Icebreaker, With 50 Aboard, Off for Antarctic

TOKYO, Oct. 21—Japan's second Antarctic expedition of the International Geophysical Year departed today for an observation post near the South Pole.

The 2,700-ton icebreaker Soya, carrying fifty scientific observers, is expected to reach her frozen destination Jan. 8. The party of eleven men who have spent the long Antarctic winter at the Japanese base on Ongul Island in Lutzow-Holm Bay will be relieved by twenty men from the icebreaker.

The leader of the Soya expedition is Dr. Takeshi Nagata, 43-year-old expert on geomagnetism from Tokyo University. The group to remain at Ongul will be led by Prof. Nasami Murayama, 39, of Yokohama University.

The icebreaker's equipment includes two helicopters, a light plane, eleven snowmobiles, one tractor and thirty kinds of surveying equipment.

Ice Halts Japanese Icebreaker

TOKYO, Dec. 26 (Reuters)—The Soya, the Japanese Antarctic Expedition's 2,700-ton ice-breaker, is trapped in pack ice in the Indian Ocean off the Prince Harald Coast of the Antarctic continent, the expedition headquarters said here today. Ice packs ten feet deep brought the Soya to a standstill early Wednesday morning.

ANTARCTIC CAIRN FOUND

Left by Sir Douglas Mawson Claiming Area for Britain

CANBERRA, Australia—Richard G. Casey, Minister for External Affairs, announced that members of the 1957 Australian National Antarctic Research Expedition had found a cairn and a message left by the veteran Australian explorer Sir Douglas Mawson twenty-six years ago when he was leader of a British, Australian and New Zealand Antarctic research expedition.

The cairn was found near Cape Bruce, about sixty miles west of Mawson, the headquarters of the present expedition, according to the Australian News and Information Bureau. It was surmounted by a pole and a plaque, which bore the inscription: "The British flag was hoisted and British sovereignty asserted on the eighteenth day of February, 1931."

A handwritten message also asserting sovereignty over the area was found in the cairn inside a copper cylinder.

Mr. Casey said that the cairn had been found by a party that had landed the expedition's Beaver aircraft on the sea ice nearby on July 3.

4 OFF FOR GLACIER NEAR SOUTH POLE

Conquerer of Everest Leads New Zealand Trek

SCOTT BASE, Antarctica, Oct. 15—Sir Edmund Hillary and three companions left here yesterday on a trek across at least 700 miles of relatively unexplored Antarctica.

The New Zealand party is headed for rendezvous with Dr. Vivian Fuchs and his British party working across the continent from Shackleton Base near the Weddell Sea.

It will rely mainly on three tractors and a weasel half-track to cover the first one-hundred-seventy miles. Then it will use dog teams to be flown out to it at the foot of the Skelton Glacier.

The eighteen dogs will take the four men up 120 miles of the glacier to the 8,000-foot plateau explored previously only by air.

Sir Edmund, the conqueror of Mount Everest, drove one of the tractors out of Scott Base. His companions are Murray Ellis, engineer; Peter Mulgrew, radio operator, and Ronald Balham, meteorologist.

The party expects to reach the glacier in a week or less. There Dr. George Marsh and Bob Miller will join it by air for the two-week assault on the ice slope.

Rear Admiral George J. Dufek came over from the American McMurdo Sound Base two miles away to see Sir Edmund and his party off. The Americans and the New Zealanders are cooperating closely in the activities of the subcontinent.

With the American and New Zealand stations concentrated in the Ross Sea area, it has been tacitly understood that any help the Commonwealth expedition needs it can have from the Americans, but the New Zealanders are determined to make at least 700 miles without assistance. That would take them to within 300 miles of the South Pole.

"You have to hand it to Sir Edmund and his men," Admiral Duek commented. "They are operating in the finest tradition of the old explorers."

Hillary Pushing Ahead

WELLINGTON, New Zealand, Oct. 25 (Reuters) — The man who conquered Mount Everest tackled today the tough "lower staircase" of the Antarctic's Skelton Glacier.

Sir Edmund Hillary, co-conqueror of the world's tallest mountain, and others in his tractor-riding party resumed their journey yesterday after having been pinned down by blizzards.

He reported good progress, it was announced here.

The Hillary group is now 208 miles inland from Scott Base, which it left ten days ago.

Sir Edmund Hillary

HILLARY CLIMBS GLACIER

New Zealand Party Makes 100-Mile Trek in Antarctica

McMURDO SOUND, Antarctica, Nov. 5—Sir Edmund Hillary's New Zealand party has climbed the 100-mile-long Skelton Glacier.

Sir Edmund returned to this base yesterday to supervise air-lefting of supplies to the party. The seven-man team is now at mile 280 of its 700-mile trek to meet Dr. Vivian Fuchs and his British expedition en route from the Weddell Sea.

The Hillary party climbed the glacier with the aid of dog teams and tractors. It reported it had encountered only one bad crevasse. The team plans to survey much of the polar plateau running at elevations from 8,000 to nearly 10,000 feet.

Hillary Speeds on Land Toward South Pole

WELLINGTON, N. Z., Dec. 24 (Reuters)—Sir Edmund Hillary of New Zealand, conqueror of Mount Everest, was reported making progress today in his efforts to reach the South Pole by New Year's Day.

A dispatch today from Sir Edmund's base on the Ross Sea said "all indications are" that he would try to reach the pole. At present, Sir Edmund is reported to be about fifty-seven miles southwest of Depot 700, the post that he and his party set up last week 350 miles from the pole.

AUCKLAND, New Zealand, Dec. 26 (AP).—Sir Edmund Hillary was reported driving toward the South Pole today. If he reaches the bottom of the world, he will be the first explorer to make it overland since 1912.

Sir Edmund radioed today that he is "hell bent for the South Pole—God willing and crevasses permitting." The conqueror of Mount Everest and his small party have about 325 miles to go.

A message received here indicated Sir Edmund had abandoned earlier plans to link up with Dr. Vivian Fuchs at Depot 700, but is leaving supplies there for him.

Sir Edmund reported that his tractor party has covered 100 miles in the last two treks and is now crossing a large, featureless snow plain. He added that the weather is good with only occasional breezes and no heavy winds.

"The march two nights ago was the first for some time we had not seen or fallen into any crevasses," Sir Edmund reported.

Dispatch of The Times, London.

SCOTT BASE, Antarctica, Dec. 29—The New Zealand tractor expedition under Sir Edmund Hillary was less than 200 miles from the South Pole today.

If present progress is maintained, Sir Edmund and his four companions will reach the Pole in five marches. Last night's run covered 40.2 miles, and brought the party to Latitude 87 degrees 2 minutes South and Longitude 140 degrees East. The ground continues to rise gradually and the party is now at 10,400 feet.

Sir Edmund described the run as "superb," saying the weather was "warm and windless."

For the first half of the run the surface was soft and the work for vehicles and men laborious. However, it later improved.

Dispatch of The Times, London.

SCOTT BASE, Antarctica, Dec. 30—The New Zealand tractor party, led by Sir Edmund Hillary, is now less than 150 miles from the South Pole.

Sir Edmund told Scott Base today that during last night's run his party had progressed 44.5 miles farther. Their present position is latitude 87 degree 40 minutes south and longitude 141 degrees east.

Sir Edmund said the party's altitude was around 11,000 feet; the temperature was dropping and the going was getting more difficult.

Sir Edmund radioed: "We are holding our own with the fuel" and said that one of the party's tractors was giving trouble.

Dispatch of The Times, London.

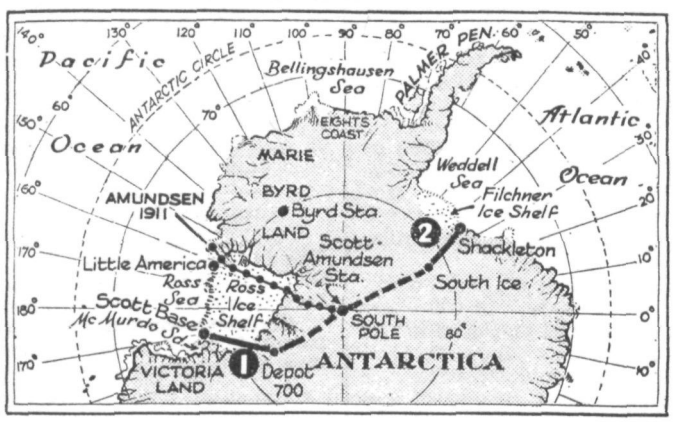
SCOTT BASE, Antarctica, Dec. 31—Gasoline consumption is now the greatest concern of Sir Edmund's party, which is 120 miles from the South Pole. Last night the party advanced an additional 36.2 miles. It is at Lat. 88.11 degrees S. Long. 141 degrees E.

Sir Edmund reported today that fuel consumption was increasing and that it required careful watching.

WELLINGTON, NZ, Dec. 31. — (Reuters) —

The New Zealand expedition's surveying party, working near Mount Markham, reported today that it has discovered two new Antarctic mountain ranges.

A message from Scott base said the party, working with dog teams in totally unexplored area more than 800 trail miles from the base, found ranges believed to run for at least 80 miles.



Dec. 23, 1957

Solid and broken lines show the routes of Sir Edmund Hillary's New Zealand party, proceeding from Depot 700 (1) and of the British expedition, moving from Shackleton (2).

EXPLORERS START ACROSS ANTARCTIC

British Commonwealth Unit Seeks to Be First to Make the Journey Overland

LONDON, Nov. 25 (Reuters) —Messages from the Antarctic today signaled the start of a British Commonwealth bid to make the first overland crossing of the world's last unexplored continent.

Dr. Vivian Fuchs, leader of the attempt to travel the 2,100 miles across "the bottom of the world," cabled the London headquarters of the Commonwealth Trans-Antarctic Expedition:

"Six vehicles left Shackleton 2145 G. M. T. Nov. 24 (2:45 A. M. Eastern Standard time Nov. 25)."

The second message a few hours later said, "The main party departed in grand style" with "three snowcaps, two weasels, one muskeg [snow vehicles] pulling twenty-nine tons.

Setting out from Shackleton Base on the Vahsel Bay of Weddell Sea, the Commonwealth group hopes to complete its journey by February. The distination is New Zealand's Scott Base, located two miles from McMurdo Sound—site of a United States Antarctic camp.

Queen Elizabeth, the expedition's patron, sent a message to Dr. Fuchs, a 49-year-old geologist, and the other eight men in his party.

The Queen said:

"As you start on your journey across Antarctica, my husband [Prince Philip] and I wish every success to you and your companions."

The expedition of men, dogs and tracked vehicles hopes to find some clue of any mineral wealth that may lie hidden under the great mass of ice. It also will gather meteorological data.

The expedition must complete its journey before the brief polar summer ends in about three months.

Waiting for Dr. Fuchs and his party 170 miles away at South Ice are Dr. Hal Lister, a British glaciologist, and Johannes La Grange, a South African meteorologist.

They will join the party in its advance toward the pole, which Dr. Fuchs hopes to reach by Christmas.

Then the group will set out for a rendezvous about Jan. 10 with another group led by New Zealand's Sir Edmund Hillary, conqueror of Mount Everest.

The Fuchs party expects to travel twenty to thirty miles a day.

Dr. Vivian E. Fuchs

2 in Antarctic Crevasse Saved

LONDON, Dec. 2 (UP).—The leader of a British team trying to trek across the Antarctic and one of his companions almost perished in a 60-foot ice crevasse, it was learned today.

Expedition chief Vivian Fuchs and an unidentified man plunged into the ice hole last Thursday and were saved by the ropes tied to them. They hung over the side of the chasm for five hours until a snow-cat—a vehicle designed for travel on snow—hauled them to safety.

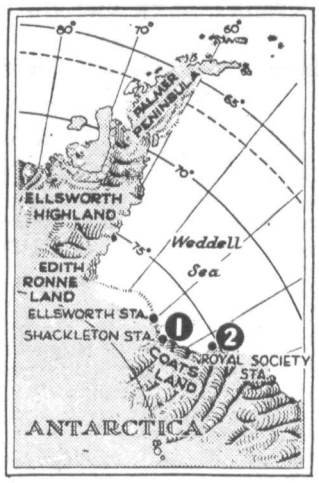
Fuchs and his party set out Nov. 24 on a 2,000-mile trek across the frozen continuent. By last Saturday they had covered only 50 miles.

ANTARCTIC NAVAL TRUCE

Pact Renewed by Britain, Chile and Argentina

LONDON, Nov. 25 (Reuters) —Britain, Chile and Argentina renewed today the eight-year-old naval truce in the Antarctic for the duration of the coming Antarctic season, the Foreign Office announced today.

The announcement said that assurances renewing the undertaking that warships of the three powers would not be sent south of Latitude 60 degrees during the coming Antarctic summer were exchanged at the Foreign Office here today.



Plane was flying to Halley Bay(2)from Shackleton(1).

2 ON ICE SHELF SAVED

British Pilot and Physician Rescued in Antarctio

LONDON, Oct. 2 — A pilot and a physician stranded for eleven days on an antarctic ice shelf were rescued yesterday.

Flight Lieut. Gordon Haslop and Dr. Allan Rogers were themselves on a rescue mission when their aircrafts' fuel ran low and they were forced to land on the ice shelf.

Lieutenant Haslop and Dr. Rogers were flying from the British Transantarctic Expedition base at Shackleton on the Weddell Sea to give medical attentioin to Lieut. Col. Robin Short, leader of the Royal Society's expedition at Halley Bay, two hundred miles up the coast. Colonel Short had sustained internal injuries by falling on a camera.

The stranded men radioed that they had landed safely. A second plane brought fule to them yesterday and both planes were reported to have proceeded to halley bay.

ANTARCTIC STUDY SPED

French I.G.Y. Team Steps Up Activity as Spring Arrives

ADELIE LAND, Antarctica, Sept. 25 (Reuters)—The French Antarctic expedition here has stepped up its activities with the start of the first ten-day meteorological "season" in the International Geophysical Year.

With the coming of spring to the frozen continent, shorter nights will interrupt observers who are making telescopic studies of the Southern Lights with the aid of high-power spectographs.

But the longer twilights will provide exceptional opportunities for the radar study of radiation in the higher atmosphere.

FUCHS PARTY SET FOR PUSH TO POLE

Britons at South Ice Base —Race With Hillary's Expedition Doubted

LONDON, Dec. 23 (UP)—A twelve-man British expedition has reached the jumping-off point in an attempt to make the first trip across the Antarctic Continent.

Ahead of the group was a 500-mile expanse of snow and ice never before traversed by human beings.

Dr. Vivian Fuchs, leader of the expedition, reported by radio that he reached South Ice Base yesterday and would spend two or three days resting and overhauling tractors.

About 1,000 miles away on the other side of the frozen continent, Sir Edmund Hillary of New Zealand, the conqueror of Mount Everest, is leading four men from Scott Base in an attempt to join Dr. Fuchs at the pole.

The two treks are classified as one operation under the direction of Dr. Fuchs. Officials denied press reports of a race to the Pole. They said any attempt to try for speed on that dangerous and crevasse-pocked terrain would be foolhardy.

Dr. Fuchs' message said that "all vehicles arrived South Ice at 6 A. M., Sunday, Dec. 22."

The group is using Sno-Cats, three-ton tracked vehicles especially adapted for snow travel. The going has been slow and dangerous over sheets of hard-packed snow and ice that sometimes hides deep crevasses.

To reach South Ice Dr. Fuchs and his party had to traverse 280 miles of dangerous territory from Shackleton, the British International Geophysical Year base on the Weddell Sea. They actually have covered 400 miles since their departure on Nov. 24.

Sir Edmund started out from the Ross Sea area. His party had better luck and good weather, which carried him to his main objective, Depot 700, about 700 miles inland.

Dr. Fuchs and his men face the added danger of traversing ice fields that never have been explored. But scouting planes have mapped part of it and report that it may not be as dangerous as some of the ice and snow the group already has crossed.

Caribou Carries Own Food

A barren-ground caribou carries his sustaining food with him all winter. A solid slab of tallow, often six inches thick at the rump, is used by the caribou for energy throughout the winter and often is used up by spring.

BRITISH I. G. Y. SHIP RAMS AN ICEBERG

58 Aboard Holed-In Vessel Heading for Repairs at South Atlantic Isle

LONDON, Nov. 30—The British survey ship Shackleton was wallowing in the icy South Atlantic tonight, badly holed in by a collision with an ice floe.

One of her holds was filled with water, cargo was floating between decks and her boats were slung out, ready for immediate use.

The Shackleton's mission was connected with British research in the International Geophysical Year. The Geophysical Year, which began in July, is an eighteen-month study of the earth sciences.

Early reports reaching London said the ship was in danger of sinking. But a later message said the 1,100-ton vessel was returning to South Georgia Island to make temporary repairs.

The Shackleton said some cargo had been jettisoned and that the remainder was under water.

Two whaling craft were speeding to the Shackleton to stand by her.

The Shackleton carries fifty-eight persons, a crew of thirty and twenty-eight scientists. The scientists were to be landed at various bases in the Antarctic.

According to naval reports the Shackleton hit the ice at full speed early today near the South Orkney Islands. No casualties were reported.

She was reported to have struck an ice floe or iceberg off Coronation Island some twenty miles from the South Orkneys.

The story reached London in a series of messages from various sources, including the Argentine Navy.

A report that reached Buenos Aires tonight from an Argentine base in the South Orkneys said the Shackleton was seven miles away and carrying out emergency repairs under difficulty because of ice pressure against her hull.

After the collision, the Shackleton dumped part of her cargo in Uruguay Cove, Laurie Island, near where she had rammed the ice at 5:46 A. M. This is 400 miles north of the Antarctic Circle.

The Shackleton, a Norwegian ship purchased by the British Government in 1955, left Southampton on Oct. 1 to carry out scientific work and to transport supplies and relief personnel.

SOVIET BASE SET UP

Expedition Reaches South Geomagnetic Pole

MOSCOW, Dec. 17 (AP)—Tass reported tonight that a thirty-three-man Soviet expedition had raised the Soviet flag over a new Antarctic station, called Vostok, at the South Geomagnetic Pole.

The Geomagnetic Pole lies 791 miles from the South Pole. Still farther away, near the George V Coast, is the South Magnetic Pole. The North and South Geomagnetic Poles, distinct from the more familiar geographic and magnetic poles, mark the axes of the earth's magnetic field.

Fire Hits Japan's Polar Base

TOKYO, July 26 (AP)—Fire struck Japan's antarctic base camp at the South Pole yesterday, burning down one hut and destroying files of observation data, radio reports from Ongul Island said today. The hut, ignited by a heating stove, was mounted on a sled for mobility. There were no casualties and the functioning of the camp was not affected, the radio message said.

Argentine Dies in Antarctic

BUENOS AIRES, Aug. 21 (Reuters)—A member of the Argentine Antarctic expedition, Lieut. Evaristo Rodriguez Argumedo, died of injuries after falling down a 180-foot crevasse on Mount Taylor near the Esperanza base, it was announced here today. The officer was rescued unconscious seven hours after his fall. The Argentine Navy asked a near-by British base for medical assistance but the officer died before help could be given.

Admiral Lord Mountevans Dies

OSLO, Norway, Aug. 21 (AP)—Admiral Lord Mountevans, British naval hero, died yesterday at his moutain cottage at Golaa in central Norway. He was 75 years old.

The former Edward Ratcliffe Garth Russell Evans, Lord Mountevans was best known as "Evans of the Broke." The Broke was a British warship in World War I whose crew—led by Lord Mountevans—figured in a hand-to-hand fight with German raiders.

Lord Mountevans, whose life was packed with high adventure and heroism, ran away from home at the age of 8 with a boyish plan to sail the Spanish Main in a Thames River barge. He was caught—and spanked. But his love of the sea persisted.

Sent to train for the Merchant Navy, he won Queen Victoria's cadetship and went into the Royal Navy. He soon saw action—in the Boxer Rebellion in China.

In 1909, having had experience in Antarctic adventures, Lord Mountevans joined Capt. Robert Scott as second in command of the ill-fated trip to try to reach the South Pole. He and two companions were sent back to the ship Terra Nova when Captain Scott's supplies ran short during his overland dash for the Pole.

Lord Mountevans and the sailors trudged 900 miles through blizzards and subzero temperatures. After long suffering and near death, they reached the ship. With Captain Scott dead, Lord Mountevans took the ship back to England.

For his heroism with Captain Scott he was advanced two ranks and made a commander.

Admiral Lord Mountevans

The son of a lawyer, Frank Evans, Lord Mountevans joined the Navy in 1897. He was aboard a rescue ship, the Morning, sent to the Antarctic to assist the Discovery in a British polar expedition of 1902-4. Thus he obtained a foretaste of his later harrowing experiences as second in command to Captain Scott.

While struggling through hundreds of miles of Antarctic wastes Lord Mountevans and his two companions for a time appeared fated for certain death. When they were 500 miles from their food base, Lord Mountevans, suffering from scurvy and exposure, became unconscious for a time and later paralyzed from the waist down. Twice he asked that his companions abandon him to save themselves but, as he put it later, "they insisted on strapping me to a sled and hauled me over the ice."

In World War I, Lord Mountevans took part in the bombing of the right wing of the German Army in Belgium in 1914. In the course of the war he crossed the English Channel many times as a destroyer commander.

Twice in one day in 1921, Lord Mountevans plunged into raging seas off China, once to extend a lifeline to Chinese on a wrecked ship and the second time to pry loose wreckage of the ship from his motorboat's propeller.

Later, after his World War II Civil Defense service, he was rector of Aberdeen University for a period. He held high honors from many governments and was the author of several books on polar explorations and of many boy's books.

Capt. Frederick Anderson Is Dead at 88; Headed Canadian Hydrographic Service

OTTAWA, Sept. 23—Capt. Frederick Anderson, who headed the Canadian Government's Hydrographic Service from 1920 until his retirement in 1936, died in a hospital here on Saturday after a brief illness. He would have been 89 years old today.

Captain Anderson led several expeditions responsible for establishing harbor facilities at Port Nelson and Churchill, in Hudson's Bay.

The first vessel specifically designed for hydrographic work was placed in commission under his supervision in 1913. It was during this time that electronic sounders and air photography were first employed in Canadian hydrography. Captain Anderson had the distinction of being a hydrographic surveyor qualified to handle his own ship.

During his Arctic voyages he became acquainted with many explorers. Among them was the late Capt. Bob Bartlett, Admiral Robert E. Peary's pilot on the first expedition to the North Pole.

Captain Anderson was a member of the Royal Ottawa Golf and Rideau clubs. He was a life member of the Engineering Institute, the Geographic Board, the Lighthouse Board and the Royal Astronomical Society, all of Canada.

Captain Anderson was born in Charlottetown, P. E. I. He married the late Caroline Florence Sweetland in Ottawa in 1904. In 1926 he remarried.

Survivors are his widow, the former Florence Wilson, and a son, Frederick David Anderson of Greenwich, Conn., a member of The New York Times staff.

PETER FREUCHEN, EXPLORER, 71, DIES

Adventurer Ranged North of Arctic Circle, Lived With Eskimos of Greenland

Peter Freuchen, Danish explorer and author, died at Elmendorf Air Force Base, Alaska, on Sept. 2 of a heart attack. His age was 71.

He had left New York Saturday with Sir Hubert Wilkins, Admiral Donald MacMillan and Col. Bernt Balchen to take part in a movie recalling their explorations of the Arctic. Lowell Thomas, producer of the adventure film for a television series, accompanied them.

Mr. Thomas said that Mr. Freuchen insisted on carrying his own luggage up the steep stairway to the officers' club at the base. He collapsed at the top and was pronounced dead by a Navy physician.

Mr. Freuchen lived at 444 East Fifty-seventh Street. He also had a home in Noank, Conn., where Mrs. Freuchen, the former Miss Dagmar Mueller, received word of her husband's death.

Lorenc Peter Elfred Freuchen was a modern Viking, a character out of Conrad, a giant of a man with a Rabelaisian verve for living.

He was one of the world's great explorers, yet he found time to conduct many other successful careers—as a newspaper man, novelist, author of travel books, lecturer and expert whale fisherman.

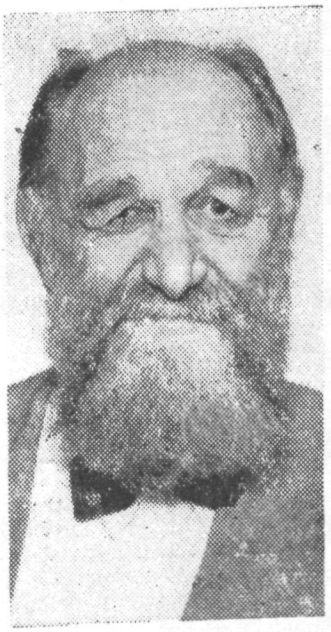
Since he was 20 years old, he had rushed off to incredible adventures north of the Arctic Circle. He came to love and understand the Eskimos. And the Eskimos loved him.

Six feet three inches tall, with a thick beard, a booming voice, a peg leg and piercing eyes beneath beetle brows, he was a warm-hearted, cantankerous, high-spirited man.

Mr. Freuchen was born on the Danish island of Flaster on Feb. 20, 1886. His father was a sailor, but in 1904 the son enrolled at the University of Copenhagen to study medicine.

He went out sailing now and then. Adventure beckoned, and in 1906 he went to Greenland on a ship as a stoker.

In 1910, with his friend, the late Knud Rasmussen, he made the first crossing of north Greenland and set up a trading post, which has since become known as Thule. The Danish Government appointed him Governor of the Thule colony in 1913, a post he held for seven years.



Peter Freuchen

He married an Eskimo named Navarana, "a finer and better person than anyone I have known." They had two children, still living in Greenland. He planned to spend the rest of his life with the Eskimos. But in 1921, just before he went on the fifth Thule Expedition to Arctic Canada, his wife died of influenza.

On an expedition to Hudson Bay in 1926, his left foot was frozen so badly he had to knock off the toes with a hammer. And when he got back to camp, the leg had to be amputated at the knee. His face was so frozen he never afterward was able to shave.

Mr. Freuchen went home to Denmark, but life for him was discovery and adventure. He traveled to Alaska and Lapland to make films; to the remote regions of Arctic Siberia; to the jungles of Brazil—he found it easier to keep warm in the Arctic than to keep cool in the tropics.

On his island farm in Denmark he was a leader of the underground during the German occupation in World War II. Twice he was arrested, twice he escaped.

He wrote twenty-five books, including "Ivalu: The Eskimo Wife," "It's All Adventure," "Eskimo," "White Man," "Arctic Adventure" and "Vagrant Viking," his autobiography. His last book, "The Legend of Daniel Williams," was published a year ago.

He married two more times. The third marriage was in 1945, when he was 59 years old.

In July, 1956, he identified seven strange nautical objects, including a species of fish 300,000,000 years old, to win the top prize on the television quiz show "The $64,000 Question." He added $16,000 to that on the "$64,000 Challenge."

He held the Danish Royal Order of Merit with two bars.

Arctic Geologist Called a Suicide Victim By Freezing to Death in Glacier's Snow

FAIRBANKS, Alaska, Nov. 2 (AP)— A 31-year-old scientist who died Monday night high on a glacier was reported today to have lain in the snow "seeking self destruction."

Dr. Richard C. Hubley's death was called a suicide by Col. Howard F. Currie, commander of the Arctic Aeromedical Laboratory at Ladd Air Force Base here.

After an investigation, Colonel Currie said the geologist had simply walked away from the glacier camp wearing only the lower part of a suit of winter underwear and some arctic footgear.

Two hundred yards from the hut where he and three fellow scientist have lived since April, Dr. Hubley stayed in the snow until he froze to death, Colonel Currie said.

Colonel Currie said others in the camp had not seen Dr. Hubley leave and had no advance warning of any suicidal tendencies.

Dr. Hubley, a University of Washington graduate who had been living in Washington, D. C., was coordinator of all the United States glacial research in the Northern Hemisphere as part of the International Geophysical Year.

The Geophysical Year, which extends through 1958, is an eighteen-month investigation of the earth and its environment.

The 8,200-foot high camp is on McCall Glacier on Romanzof Mountain in the Brooks Range.

Colonel Currie said an inquest probably would be scheduled by United States Commissioner Ladessa Nordale of Fairbanks.

The lonely camp where Dr. Hubley died is only sixty miles south of Barter Island, in the Arctic Ocean, and sixty-seven miles west of the Canadian boundary.

HARALD SVERDRUP, METEOROLOGIST, 69

OSLO, Norway, Aug. 21 (Reuters)—Harald Ulrik Sverdrup, a distinguished Norwegian oceanographer and meteorologist, died here tonight of a heart attack. He was 69 years old.

Professor Sverdrup, who won international fame by his scientific achievements, had been director of the Norwegian Polar Institute since 1948.

After scientific experience with Arctic expeditions, he was appointed director of the Scripps Institute of Oceanography in California in 1931. He held this post until 1948, when he was appointed director of the Norwegian Polar Institute.

From 1928 to 1939 Professor Sverdrup was research associate at the Carnegie Institution in Washington. From 1926 to 1930 he also was Professor of Meteorolgy at the Geophysical Institute in Bergen.

Professor Sverdrup published many scientific reports and received several Norwegian and foreign medals and orders for his work.

Professor Sverdrup was in charge of scientific work on the Maud expedition to the Arctic commanded by Capt. Roald Amundsen. The Maud sailed from Norway in 1918 in an unsuccessful attempt to drift from the North Siberian Islands across the North Pole.

In 1931 Professor Sverdrup served in a similar capacity on the Wilkins-Ellsworth Arctic expedition in the submarine Nautilus.

Dr. Sverdrup was a sponsor of the British-Swedish-Norwegian Antarctic expedition in 1949, organizing the entire Norwegian part of the venture. He later helped set up Norway's participation in the International Geophysical Year. He had long been prominent in polar exploration. He was president of the American Summer School in Norway.

JOSEPH T. RUCKER, NEWSREEL MAN, 70

SAN FRANCISCO, Oct. 22 (AP)—Joseph T. Rucker, whose newsreel caught forty years of world history, died at his home here yesterday. He was seventy years old.

Mr. Rucker, who retired two years ago, joined the old Universal Newsreel Company in 1914.

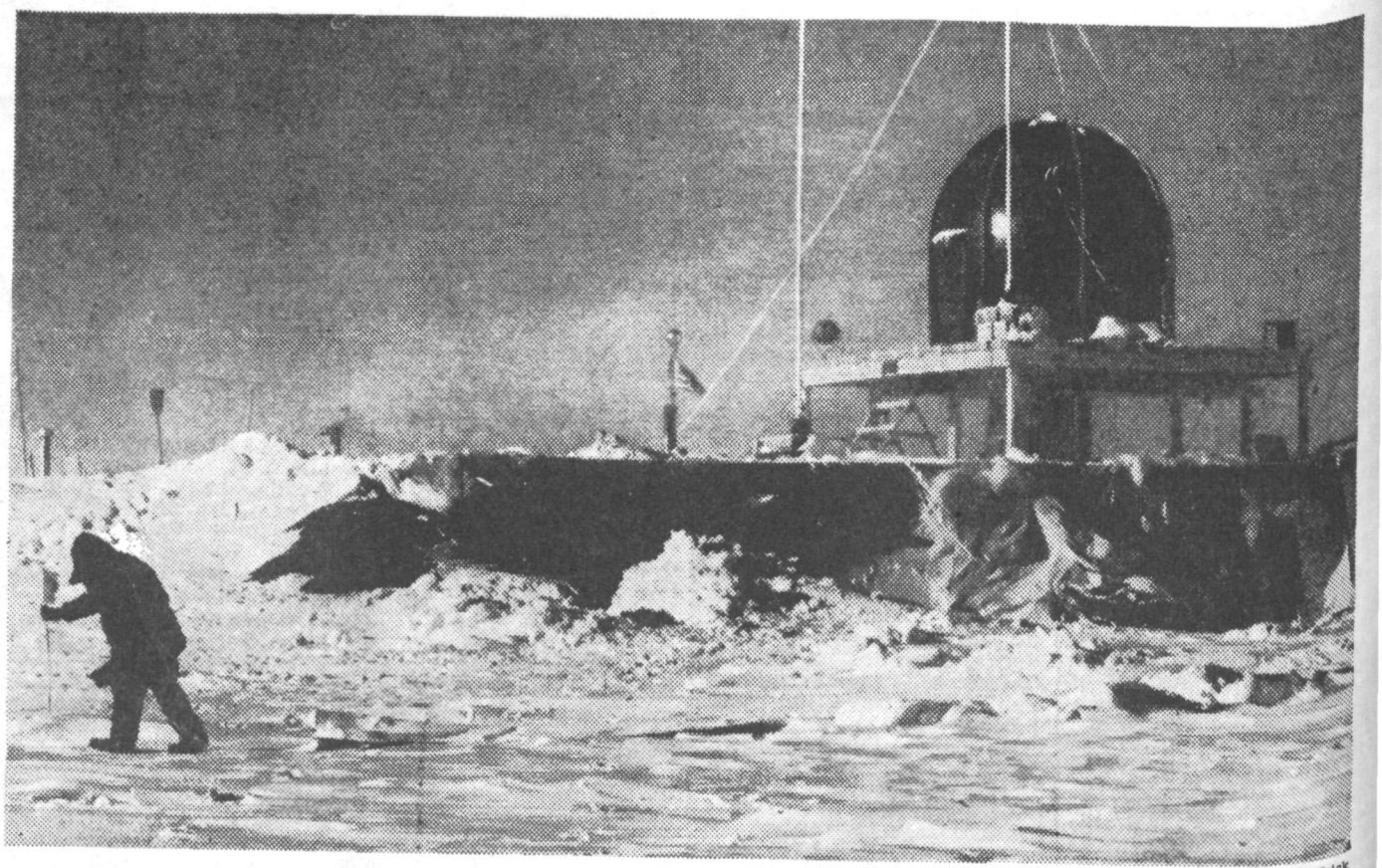
He filmed the opening of the Panama Canal in 1915, covered the 1923 Tokyo earthquake, went to China for the civil war in 1927, was in the Antarctic with Admiral Richard E. Byrd from 1928 to 1930, and went aboard the Enterprise with Admiral William F. Halsey for the World War II strikes against the Gilbert and Marshall Islands.

15 Months With Byrd

Mr. Rucker and Willard Van Der Veer spent fifteen months with Admiral Byrd in Little America during the 1928-1930 expedition. They filmed "With Byrd at the South Pole." The picture won them an annual award (later called an "Oscar") of the Motion Picture Academy of Arts and Sciences.

In 1929 Messrs. Rucker and Van Der Veer cabled a full account of their experiences as camera men in Little America to The New York Times.

Bleak, windswept mountain forms the background for the tiny chapel fashioned out of a Quonset hut at the Navy facility at McMurdo Sound. The interior of the chapel is finished in smooth pine. McMurdo Sound, the scene of Operation Deep Freeze Three, is the center of American activity during 1957-58 International Geophysical Year.



Rolla Crick

PICTURE FOR A SUMMER AFTERNOON: Weather station at U. S. International Geophysical Year base in Antarctica. Despite 100-degree-below-zero temperatures, volunteers could stay outdoors for hours without ill effects.