

SECOND (1948) U.S. NAVY ANTARCTIC DEVELOPMENT PROJECT

By Commander David C. Nutt, USNR*

THE Second (1948) Antarctic Development Project was the second post-war U.S. Navy expedition to the Antarctic and was in reality in part a continuation of the previous year's "Operation High-Jump". The general plan of the expedition was that two "wind-class" ice-breakers should penetrate the belt of ice pack at various points along the antarctic coasts and land parties by boat, overland transport, or by aircraft to enable them to fix geographical points. In addition a program of research in the various sciences was undertaken, as well as extensive testing of naval equipment and operational procedure.

Commander G. L. Ketchum, USN, was in command of the expedition, officially known as Task Force 39. The ice-breaker U.S.S. *Edisto* (AG-89), under the command of Commander E. C. Folger, USN, departed Norfolk on 6 November 1947 and proceeded via the Panama Canal to American Samoa to join U.S.S. *Burton Island* (AG-88), commanded by Commander E. A. MacDonald, USN, and with the Task Force Commander and staff on board. Final departure for antarctic waters took place from Samoa at 0800 on 5 December and both ships headed south on parallel courses to make lines of deep sea soundings.

Ice pack entered

The antarctic ice pack was met on 15 December some 100 miles north of Scott Island and the ships skirted its edge to the westward until reaching a point near longitude 92° East, directly north of the Davis Sea. A southerly course was shaped into the pack, and soon very heavy and close-packed, but broken, ice was encountered. After three days bucking this ice an entrance was forced into Davis Sea at the unusually early date of 27 December. Davis Sea is an ocean area lying to the westward of the Shackleton Ice Shelf where, during the summer season at least, a considerable amount of open water is usually found. Here the ships parted company, the *Edisto* working in the area to the westward toward Mount Gauss, and the *Burton Island* along the western margin of the Shackleton Ice Shelf.

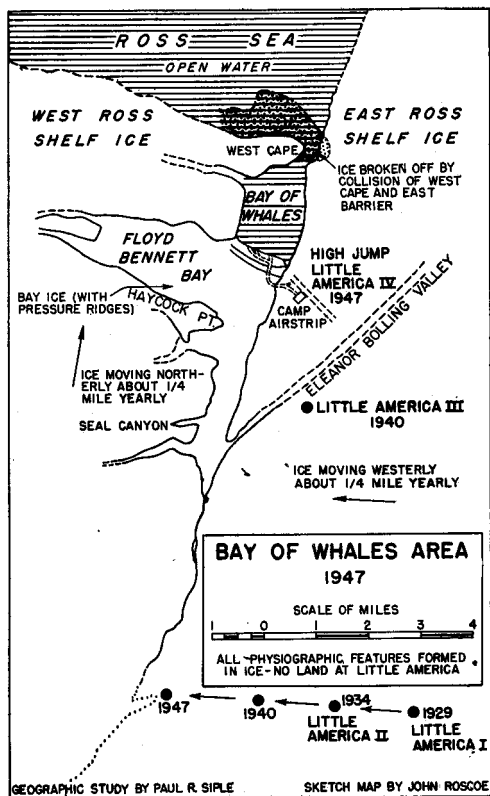
A landing was made on Haswell Island, a small island lying off the edge of the continental ice, where a large number of antarctic birds nest. It was discovered in 1912 by the western party of Sir Douglas Mawson's Australian Expedition, and is one of the few known nesting places of the Emperor Penguins. They breed during the depth of the antarctic winter laying their eggs on the sea ice near Haswell Island in temperatures of

*The opinions expressed in this article are the author's and should not be construed as official Navy Department opinion.

-50° to -60° F. Ornithologists explain this seemingly odd breeding habit by the fact that the summer season is too short for the eggs to hatch and for the young of so large a bird to reach maturity. Accordingly the eggs are laid and hatched in the winter time when they can be incubated by the adults, thus allowing the young birds time to mature during the relatively mild summer that follows. It was in the Davis Sea area that a group of fine specimens of this largest penguin, which weighs from fifty to eighty pounds and stands erect to a height of from three to four feet, were captured alive under the direction of Mr. Malcolm Davis of the National Zoological Park, Washington, D.C. The crowning moment was the capture of two Emperors by helicopter on a return flight from the continent.

"Bunger Lakes"

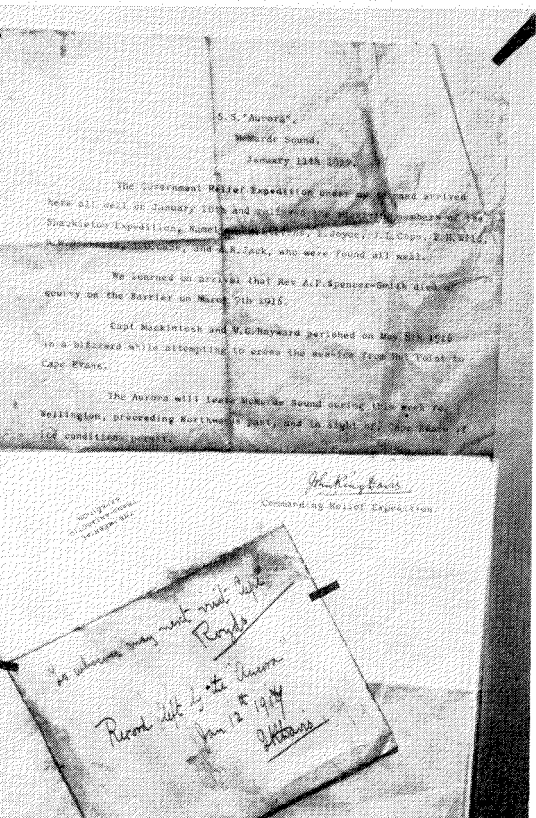
The next part of the program called for an investigation of the famous "Antarctic Oasis" more commonly known as "the Bunger Lakes area" discovered on "High-Jump" in 1946-47. This was the mysterious ice-free land with open water on which a PBM flying boat had landed a little less than a year earlier. The Shackleton Ice Shelf was skirted to the eastward and for a while it appeared as if the area was completely packed with heavy and impenetrable ice. After continued reconnaissance and probing by ship and aircraft the *Edisto* on 12 January 1948 finally penetrated the pack to a low area of shelf ice some forty miles distant from the "Oasis". This was probably some of the heaviest and most difficult ice ever navigated by ship. Aircraft flights located the ice-free area but no open water at all existed this year. This illustrates how ice conditions can change from year to year in the polar regions. Helicopters from the *Burton Island* which had remained outside the pack, flew into the *Edisto* and a small air operating base was set up on the shelf ice. This was the first expedition on which helicopters were used as a primary means of air transport. They proved themselves admirably adapted to this type of operation and expeditiously transferred the exploring party to the shore forty miles away.





Top—The small ship in the distance is the Coast Guard's icebreaker, *Northwind*, breaking a passage for thin-hulled vessels, *Merrick*, *Yancey*, and *Mt. Olympus*. This photo was made from the *Northwind's* helicopter.

(U.S. Coast Guard photo)



Left—Record left by John King Davis on January 12, 1917 in Shackleton's old camp on McMurdo Sound. This was secured by U.S. Navy Project in 1948.

(U.S. Navy photo)

The ice-free area which is about sixty miles by twenty miles in extent is apparently high land which extends from a range of mountains in such a way that the continental ice flows to either side of it. The weather also seems to "flow" to either side, for perfect weather was encountered by the shore party throughout their two day visit, while virtual blizzards at times almost completely surrounded them. The ice-free area is made up of a series of islands and part of the mainland. It is best described as a desert with only scanty precipitation, as was shown by the occurrence of soluble salts on the ground, and the ponds of very brackish water. Very little life of any kind was observed. The open water encountered in 1947 was in salt water embayments and inlets, which in 1948 remained completely frozen over.

Continuing eastward on January 18th to 20th, landings for the first time were made on some unnamed islands along the Knox Coast. One of these was in an area of numerous ice-free islands where parts of the antarctic continent itself projected from its ice covering. It was one of the most attractive spots visited. A large Adelie Penguin rookery was discovered by helicopter, and mosses and lichens were observed on the islands.

Bases of earlier expeditions

On leaving this area the force skirted the outer edge of the pack ice eastward, entering the Ross Sea on 28 January 1948 after passing through no more than a few strings of scattered ice, a marked contrast to the three hundred mile battle a year before on "High-Jump". Both ships visited McMurdo Sound, the site of the heroic British efforts during the early part of this century. A helicopter party visited Cape Evans the site of Captain Scott's base. It was from there that he set out for the South Pole, only to perish on the return journey a few miles from his "One Ton Depot" on the great Ross Ice Barrier. The Sound was practically free from ice and this permitted a boat party to land at Cape Royds, the site of the 1908-09 Shackleton expedition. The hut used then is still standing, and would in an emergency be in usable condition. Sleeping bags and odd bits of equipment and material were lying about inside and outside the hut. Everything is well preserved in this climate, the main destructive force being the strong winds of winter blizzards which have torn off a corner of the roof. A keg of nails which had been dumped on the ground outside the hut showed only a few spots of rust and were as sound as the day they were unloaded from the SS *Nimrod* forty years ago! Matches were found in the hut and every one lit when it was struck.

"Little America" was then visited, and the Task Force remained in the Bay of Whales for about five days while the "operations" base set up on "High-Jump" was inspected. An interesting glaciological process was taking place right before our eyes. The entrance to the Bay of Whales is

rapidly closing. In 1948 it was little more than 100 yards wide, and will probably be closed completely within a relatively short time. It is believed that the cause of the indentation in the Ross Ice Barrier, known as the Bay of Whales, is that the shelf ice tends to flow around Roosevelt Land, which is either an island or a shoal on which the shelf grounds. As the whole front of the ice continues to move seaward, the entrance to the Bay is closing in to form an "ice-locked" basin. What will happen when the ice meets will be interesting. One possibility is that the pressure exerted by the closing of the entrance will cause a block of shelf ice to break off reopening the Bay of Whales to navigation. The next few years will unfold an interesting glaciological story.

Leaving "Little America" on 5 February the Task Force proceeded eastward, making two unsuccessful attempts to penetrate the exceedingly heavy ice to reach the coast and visiting Peter I Island in the Bellingshausen Sea briefly.

The last area visited was the magnificently scenic Marguerite Bay where contact was made with the Finn Ronne Expedition based at Stonnington Island, the site of the U.S. Antarctic Service eastern base during 1940 and 1941. After making brief investigations in this area and assisting the Ronne vessel to break out of the ice, the two ships of the Task Force in company with Ronne's *Port of Beaumont* left the Antarctic for home on the evening of 23 February 1948. The *Burton Island* proceeded to her home port on the United States west coast while the *Edisto* returned to the east coast, both to fit out for summer arctic operations. The Second (1948) Antarctic Development Project was a very interesting and worthwhile operation. The ice-breakers proved themselves capable and efficient ships for the work. Without them penetration to the antarctic coasts would have been long delayed, if not altogether impossible.

USS *Edisto* (AG-88) and USS *Burton Island* (AG-89) moored to bay ice, Bay of Whales. Sled and skis used in surface exploration are in left foreground. (U.S. Navy photo)

