

BRITISH NAVAL HYDROGRAPHIC SURVEYS IN THE ANTARCTIC, 1948-64

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ABSTRACT. A brief chronological record is presented of the hydrographic surveys carried out by British naval units in the Antarctic between 1948 and 1964. These surveys covered numerous areas along the west coast of the Antarctic Peninsula and its offlying islands, the South Shetland Islands, South Orkney Islands, South Georgia and the South Sandwich Islands. References are given to the successive editions of Admiralty charts in which the results of this work were published.

A NUMBER of Royal Navy hydrographic survey units have operated in the Antarctic since World War II, supplementing the work of the Falkland Islands Dependencies Survey and the British Antarctic Survey. Successive editions of Admiralty charts and sailing directions bear witness to the importance of this work. All have made substantial contributions to knowledge of submarine topography and the improvement of existing charts and sailing directions. Some have also resulted in major corrections to coastal topography, and hence revision of the place-names given by earlier expeditions and the need for many new names. A number of Royal Navy vessels employed on other duties were also able to contribute hydrographic information.

After the initial administrative problems of the Falkland Islands Dependencies Survey had been solved, it was possible for the Hydrographer of the Navy to arrange for hydrographic surveyors to accompany the Royal Research Ships supplying the stations. Notes on these activities are given for each season.

1947-48. H.M.S. *Snipe* (Capt. J. G. Forbes) and H.M.S. *Nigeria* (Capt. B. L. Moore) made sounding runs and other observations in the vicinity of the South Shetland Islands and off northern Graham Land (Admiralty chart 3205, 23.ix.1949).

1948-49. H.M.S. *Sparrow* (Cdr J. V. Waterhouse) and R.R.S. *John Biscoe* (Cdr H. Kirkwood) made numerous sounding runs and other observations in the South Orkney Islands and South Shetland Islands. *John Biscoe* also supplied data from Antarctic Sound and Neumayer Channel. The most important information resulting from these voyages was incorporated in the relevant Admiralty charts by current *Notices to Mariners*. In this season Deception Island was re-surveyed by Lt-Cdr D. N. Penfold (Admiralty chart 3202, 23.ix.1949).

1951-52. Lt-Cdr D. N. Penfold surveyed Port Lockroy and King Edward Cove, whilst Lt-Cdr F. W. Hunt carried out surveys in Hope Bay, South Georgia, the South Shetland Islands and South Orkney Islands. Lt-Cdr Hunt also made taut-wire measuring runs in Bransfield Strait to connect the South Shetland Islands with the mainland (Admiralty charts 3213, 25.iv.1952; 1774, 5.ii.1954; 3205, special red overprint 12.ii.54).

1953-54. H.M.S. *Nereide* (Cdr P. R. H. Harrison) and H.M.S. *St. Austell Bay* (Cdr B. C. Ward) made surveys in South Georgia, the South Shetland Islands, South Orkney Islands and in Bransfield Strait (Admiralty charts 3597, 23.v.1958; 3205, special red overprint 29.iv.1955). H.M.S. *Bigbury Bay* (Cdr A. W. F. Sutton) made observations at Deception Island (Admiralty chart 3202, 30.ix.1955), and H.M.S. *Snipe* (Cdr D. G. D. Hall-Wright) made observations in the South Shetland Islands.

1954-55. H.M.S. *Burghead Bay* (Capt. P. D. Hoare) surveyed Queens Bay, Signy Island, and made numerous sounding runs off the South Orkney Islands (*Notice to Mariners* correcting Admiralty chart 1775). The same season Lt R. D. Johnston of H.M.S. *Veryan Bay* (Cdr L. R. P. Lawford) surveyed Potter Cove, King George Island, and ran numerous lines of soundings in Bransfield Strait and in Cumberland Bay, South Georgia (Admiralty charts 1774, 14.ix.1962; 3589, 27.xi.1959).

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Fig. 1. Royal Navy hydrographic survey launch in dense brash ice. (Photograph by L. Fox.)

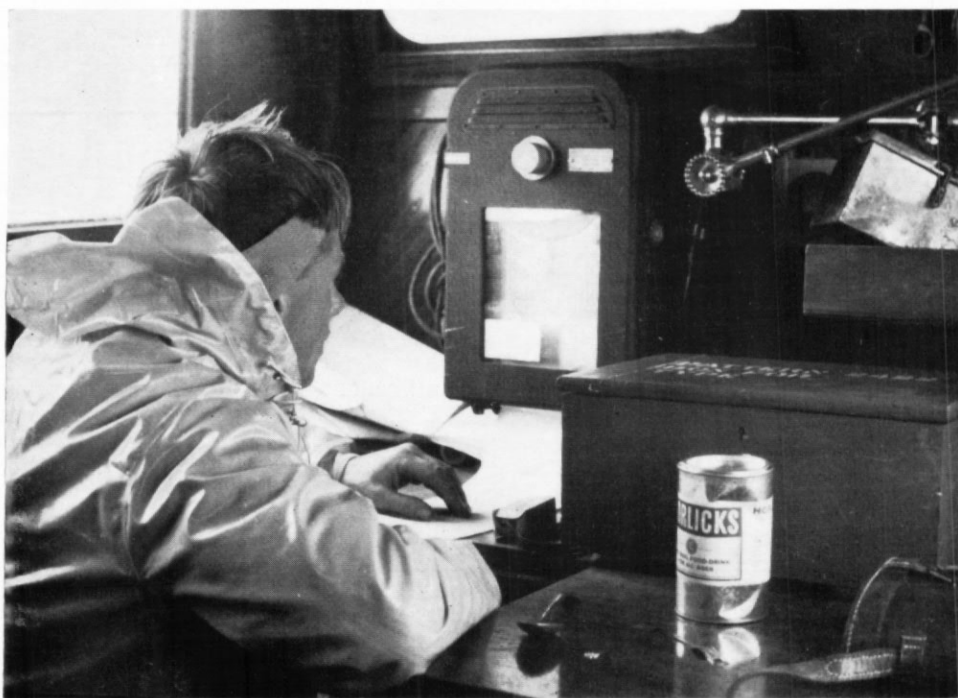


Fig. 2. Lt-Cdr C. J. C. Wynne-Edwards watching the echo-sounder in the cabin of the Royal Navy hydrographic survey launch. (Photograph by D. Kershaw.)

1955-57. In 1955-56 and 1956-57 H.M.S. *Protector* (Capt. J. V. Wilkinson) ran numerous lines of soundings along the north and west coasts of Graham Land (Admiralty charts 3205, 15.iii.1957; 3570, 27.xi.1957; 3571, 14.vii.1961).

1956-58. During the summers of 1956-57 and 1957-58 independent Royal Navy hydrographic survey units, under Lt C. J. C. Wynne-Edwards, working in co-operation with F.I.D.S. surveyors, operated in Bismarck Strait and then southwards to Grandidier Channel (Wynne-Edwards, 1959, 1960). Although shore-based, these units worked with their own specially adapted survey motor-boat (Figs. 1 and 2). They achieved a most successful technique which pointed the way for future work of this kind in Antarctic areas where there are safe anchorages for small boats (Admiralty charts 3213, 12.viii.1960; 3572, 25.vii.1958 and 12.viii.1960; 3573, 26.viii.1960).

1957-58. H.M.S. *Protector* (Capt. A. R. L. Butler) assisted F.I.D.S. ships and personnel in the triangulation of the South Shetland Islands, by landing survey parties at stations on Greenwich Island, Robert Island and Livingston Island. In November 1957 air photographs from helicopters were taken of the coast of South Georgia, and in March 1958 French Passage, west Graham Land, was photographed from helicopters. A party under Lt M. J. Stumbles carried out hydrographic surveys in Stromness Bay and Cumberland Bay, South Georgia (Admiralty chart 3589, 27.xi.1959).

1958-59. Cdr J. C. Grattan co-operated with the officers of R.R.S. *John Biscoe* (Capt. W. Johnston) in surveying Gold Harbour and Moraine Fjord, South Georgia, in making numerous sounding runs and compiling plotting sheets around the island. He also made surveys in west Graham Land of French Passage, Grandidier Channel, Antarctic Sound and the coast of Adelaide Island (Admiralty charts 3585, 27.xi.1959; 3205, 23.xi.1962; 3570, 29.ix.1961; 3571, 14.vii.1961). The same season, H.M.S. *Protector* (Capt. A. R. L. Butler) was again in Graham Land and the South Shetland Islands to provide logistic support for F.I.D.S. A survey party under G. F. Reid made tellurometer measurements to connect the triangulation of the South Shetland Islands with Graham Land across Bransfield Strait. The survey was co-ordinated from the ship, while helicopters transported the surveyors and their equipment to the survey stations.

1959-60. The following season was less productive, because the visit of H.M.S. *Protector* (Capt. D. N. Forbes) was limited to a brief visit in bad weather. The ship gave logistic support to F.I.D.S. and participated in the tellurometer survey of Bransfield Strait. Air photographs were also obtained from helicopters of parts of the north coast of South Georgia, and a visit was made to the South Sandwich Islands. In 1959-60 Cdr J. C. Grattan worked with the officers of R.R.S. *Shackleton*, making extensive surveys in Gerlache Strait and its northern approaches, around South Georgia and in the South Shetland Islands (Admiralty charts 3560, 7.iv.1961; 3566, 25.viii.1961; 1774, 15.ix.1962).

1960-61. The Hydrographer sent a surveying ship, H.M.S. *Owen* (Capt. G. P. D. Hall) to operate in South Georgia for two months (Hall, 1963). Priority was given to a thorough survey of the waters surrounding the western extremities of the island in order to facilitate the shortest passage between the whaling grounds to westward and the whaling stations on the north-east coast. An advance survey party, under Lt J. B. Dixon, was taken to the island by H.M.S. *Protector*, and established sufficient ground control to permit full exploitation of the ship's potential as soon as she arrived. This visit also offered an opportunity for general improvement of the existing charts, with particular reference to the coastal shipping routes (Admiralty charts 3585, 7.ix.1962; 3592, 7.ix.1962; 3596, 15.iii.1963; 3597, 14.ix.1962).

The same season, H.M.S. *Protector* (Capt. D. N. Forbes) again gave logistic support to F.I.D.S. at all its stations in Graham Land, the South Shetland Islands and South Orkney Islands. In particular she assisted F.I.D.S. ships and personnel in the survey of the Joinville Island group. This was a new venture in co-operation with R.R.S. *Shackleton*. Unusually favourable ice conditions allowed penetration southwards to Marguerite Bay.

1961-62. H.M.S. *Protector* (Capt. R. H. Graham) continued logistic support of F.I.D.S. (now called the British Antarctic Survey). The range of scientific investigations was extended well beyond earlier routine hydrographic surveys and other duties. Several selected areas dangerous to navigation were investigated. In March 1962, *Protector* visited and made possible substantial additions to knowledge of the South Sandwich Islands, where Lt B. N. Wilson surveyed a seamount north of Zavodovski Island, near the epicentre of the earthquake of 5 March 1962 (Holdgate, 1963).

1962-63. The inclusion of a Royal Navy hydrographic survey party in the complement of H.M.S. *Protector* (Capt. R. H. Graham) was re-instituted in 1962. The survey team of nine officers, ratings and Royal Marines led by Lt-Cdr J. B. Dixon transferred with their specially adapted survey motor-boat at Port Stanley to *John Biscoe* and arrived in the area for the main survey off the south coast of Adelaide Island in mid-December. This was a combined British Antarctic Survey and Naval Survey achievement. Ice conditions were exceptionally favourable. The boats worked from *John Biscoe* or from a shore camp on Avian Island. During two visits by *Protector*, each lasting a week, all efforts were concentrated on triangulation work, using her two helicopters. Air photographs, taken from British Antarctic Survey aircraft during the survey, were used for the delineation of the ice walls and offshore islands and rocks. By the end of March this survey of the hazardous approaches to the station on Adelaide Island had been completed (Graham, 1964; Dixon, 1964; Admiralty chart 3577, in press).

1963-64. A Royal Navy hydrographic survey party went south with H.M.S. *Protector* (Capt. M. S. Ollivant). There were nine officers and ratings, again led by Lt-Cdr J. B. Dixon. Helicopter transport assisted the work of linking together the two existing survey schemes north and south of Bismarck Strait by theodolite and hydrodist observations. However, ice conditions prevented completion of this work, and the very intricate island systems south of Bismarck Strait still require detailed attention. The chart of Gerlache Strait was improved. Airborne hydrodist was used effectively to fix the position of many soundings; also rocks and shoals. The main work of the season was a detailed survey of Discovery Bay, South Shetland Islands, and was carried out by conventional methods. Lt-Cdr C. J. C. Wynne-Edwards, temporarily attached to H.M.S. *Protector*, fixed the absolute and relative positions of most of the islands in the South Sandwich Islands. Numerous lines of soundings were run in this group and in the vicinity of Bouvetøya.

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