

THE MAPPING OF BRITISH ANTARCTIC TERRITORY

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THE new Index (D.O.S. (Misc.) 101) published in May 1964 by the Directorate of Overseas Surveys shows current British map coverage of British Antarctic Territory, South Georgia and the South Sandwich Islands.

The Index shows the areas mapped, but it does not differentiate between the first and subsequent editions of a particular sheet. A large number of sheets has been published during the last twelve months. These include two maps at 1 : 10,000 scale (one coloured and one black and white), one 1 : 100,000 sheet, twelve 1 : 200,000 sheets drawn from the compilations of the Commonwealth Trans-Antarctic Expedition and six 1 : 200,000 sheets of Graham Land between lat. 68° and 70°S. The latter are second editions and they incorporate the new features recorded by the surveyors working from Stonington Island between 1957 and 1961. The new 1 : 500,000 maps are derived from the larger scale ones and work is at present in hand on sheet 13. Two small-scale maps are also worthy of note: D.O.S. 813 at 1 : 3,000,000 is the first coloured map of Graham Land, South Georgia and the South Sandwich Islands showing relief features, and D.O.S. (Misc.) 135 is the first official British map of the whole of Antarctica. It was compiled from all the material available to the Directorate at 31 March 1963, and the source material is listed in detail on the map. In addition, a number of small maps has been drawn to accompany particular reports, but these do not form part of the regular map series and therefore they are not indicated on the Index.

The Directorate of Overseas (formerly Colonial) Surveys, now part of the Department of Technical Co-operation, first became associated with Antarctic mapping in 1946, when it was invited to assess all the existing material relating to the then Falkland Islands Dependencies. Agreement was reached with the Hydrographer on the projections to be used for maps and charts of the Antarctic, and regular sheet lines and numbers were devised so that future mapping would provide systematic coverage of the whole territory. Between 1948 and 1950 the first series of maps at a scale of 1 : 500,000 was produced (they are shown in green on the Index). The series incorporated all available material affecting the land north of lat. 75°S. They were, therefore, based on a few systematic surveys and also on the reports and sightings of many early sailors and explorers; a reliability diagram on each sheet indicates the relative accuracy of its component parts. Later work has shown that much of this series is inaccurate and the sheets are mainly superseded by even the first edition of the 1 : 200,000 series.

Twenty-two provisional 1 : 200,000 sheets were produced before 1951, but the first regular sheets at this scale were published in 1954. They were compiled by the surveyors on their return from the Antarctic; they show survey stations and selected traverses, and bear a note on the type of survey on which they are based, so that the user can more easily assess the accuracy of any part of the map. These were printed in two colours—black and blue. In 1959, the series number was changed from D.O.S. 601 to D.O.S. 610 and the new maps were drawn to a more elaborate specification using three colours—black, blue and brown. In the same year, the first 1 : 200,000 sheet was plotted from air photography and the surveyors who had put in the ground control were able to assist the Directorate's cartographers in interpreting the features of ice and rock appearing on the photographs. In 1963, the 1 : 10,000 maps of Arthur Harbour and of the Argentine Islands were plotted from air photography on a stereo plotting machine; at this scale it was possible to plot accurately many of the major crevasses, but again it was very necessary to have the assistance of surveyors and of others who had visited the areas to assist in interpretation. It is often not possible to determine from photographs alone such features as rock coastlines overlain by ice cliffs and the elusive boundary between exposed rock and permanent ice, which often appears different on the air photographs and on subsequent ground photographs because it may be partially obscured by recent snowfalls. Surveyors returning from stations in areas that have been photographed

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from the air spend their time at the Directorate of Overseas Surveys computing their control and interpreting the photographs rather than drawing up compilations in the manner of their predecessors.

The most elaborate maps of the Antarctic produced by the Directorate are those at 1 : 25,000 of Deception Island, Hope Bay and Horseshoe Island. In these hill-shading is combined with contouring to enhance the depiction of mountain and glacier, rock outcrop and ice.

On all maps the place-names shown are those recommended by the Antarctic Place-names Committee and approved by the High Commissioner for British Antarctic Territory. They are the names recorded in the *Gazetteer of the British Antarctic Territory, South Georgia and the South Sandwich Islands* and its supplements published by H.M. Stationery Office. These names may, therefore, differ from those used provisionally by the surveyors in the field.

In 1959, the Directorate became the British National Antarctic Mapping Centre and it provides the United Kingdom representative on the Working Group of Geodesy and Cartography of the international Scientific Committee on Antarctic Research (S.C.A.R.). This body has formulated an international specification for all maps of Antarctica, so that there may be some uniformity between those produced by all nations. The latest British maps, therefore, using now four colours—black, brown, ice blue and sea blue—show the blue-grey ice shelf symbol and, in places, the “conjectural” contours recommended by S.C.A.R. The member nations of the Working Group freely exchange information on mapping and survey, and automatically distribute their new maps to each other. In this way, the Directorate is building up a collection of maps of all parts of the Antarctic and information on these acquisitions is distributed regularly to interested bodies in this country.

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