

THE 1939 AUSTRALIAN MAP OF ANTARCTICA

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In 2008 the Australian Antarctic Division issued a special edition facsimile copy of the 1939 map of the whole of Antarctica, together with an original accompanying handbook and names index. The original map was a very significant publication for Australia in 1939, and was to become the first of a continuing series of 1:10 million maps as improved information on the topography of the Antarctic continent became available. The 1939 map however had a very chequered production with political overtones between Commonwealth Government Departments before it was finally published after a gestation period of ten years.

The release of the facsimile was to celebrate the 75th Anniversary of the Antarctic administrative events in 1933, which resulted in Australian making a formal claim to territory in East Antarctica. But no adequate map of this massive claim to 40% of the Antarctic continent existed to show the geographical extent of the claimed territory or even a definitive chart of its coastline. Historically the need for a definitive map originated when the question of Antarctic imperial territories was placed on the agenda of the 1926 Imperial Conference in London. At that conference a committee headed by the Stanley Bruce, the Australian Prime Minister, reviewed the Antarctic discoveries and possible territories, which might be claimed for the British Empire.

But apart from expedition reports from the heroic era of Antarctic exploration there was little information of the ice continent available, particularly from East Antarctica. The review however listed the imperial sightings on which ambitious claims might be made over East Antarctic lands, it included:

- Areas covered by the Falklands Islands Dependencies (claimed in 1908)
- The Ross dependency (transferred to new Zealand in 1923)
- Kemp land
- Enderby Land
- Queen Mary land
- The are west of Adelie land known as Wilkes land
- King George V land
- Oates land

As an outcome from this 1926 review the British New Zealand and Australian governments reached an agreement to arrange a jointly funded expedition to East Antarctica to be known as

the British Australian and New Zealand Antarctic Research Expedition (BANZARE). The objective of this expedition was to sufficiently define the geographic coastline of east Antarctica for an extensive British claim to be made based on discovery.

In 1929 the Survey Branch of the Australian Department of the Interior attempted to collate available exploration information in a map to assist the forthcoming BANZAR expedition. Information was scarce and consisted of the recorded sightings from past expeditions as below:

- The Enderby whalers Biscoe, Kemp Balleny 1830s
- The magnetic pole hunters, Wilkes, Dumont Durville, James Clark Ross 1837-1843
- Borchgrevink 1899
- Drygalski 1904
- Mawson Australasian Antarctic Expedition (AAE) 1911-12

Rather than being useful as a working geographic document, the 1929 map showed just how little was known about the 5000 km of the Antarctic coastline south of Australia. But at that time Antarctic exploration took a massive technology leap with introduction of the aircraft for viewing the landscape and aerial photography to record detail. This aviation activity commenced in 1928 when Sir Hubert Wilkins first flew over the Antarctic Peninsula region. This was followed by Lars Christensen flights in 1929, and Sir Douglas Mawson flights in 1929-31. The American Richard Byrd expanded Antarctic aerial activity with flights from Little America, which included a flight over the South Pole in 1929. These expeditions produced a plethora of instant information although much of it unreliable in position, needing extensive processing of material and supplementary fieldwork. None of this wave of information was available when the 1929 map was produced, and it was very soon obsolete.

The 1929 map was of little use for the BANZAR expeditions, which went ahead in the austral summers 1929/31 and 1930/31. The BANZARE voyages achieved limited success in reaching the continent to raise the flag at four sites whilst large gaps remained in the charting of the continuous coastline. However the results were considered definitive enough to identify the Antarctic continent as an entity and suitable for registering a consolidated British claim over the area. In 1932 the Attorney General, Sir John Latham, undertook negotiations in London with British government about Antarctic Territories. In February 1933 a British Order-

Council formalised a consolidated British claim to East Antarctica, and notified the transfer of this claim to the Commonwealth of Australia, pending appropriate legislation. This claim then became the responsibility of Australia through passing of the Australian Antarctic Territory Acceptance Act in June 1933.

The Department of External Affairs then requested the Department of the Interior to revise the 1929 map. A preliminary compilation was prepared in June 1935 for comment and sent to Department of External Affairs but it was returned a year later in May 1936 and was considered unsuitable, lacking access to current information. However the need for a map continued unabated and that year the Department of Commerce also requested a map for official purposes. Collection of information in the Survey Branch continued with preliminary compilations prepared in 1936 but these again were rejected as unsuitable. It was not until the beginning of 1938 that a more intensive study of cartographic information for Antarctica was commenced. In this study it was recognised that John Cumpston, Department of External Affairs would work closely with the chief cartographer Edward Bayliss of Department of the Interior, to gather and cross check each piece of information for inclusion. This involved intensive information gathering from the Australian Embassies in London and Washington.

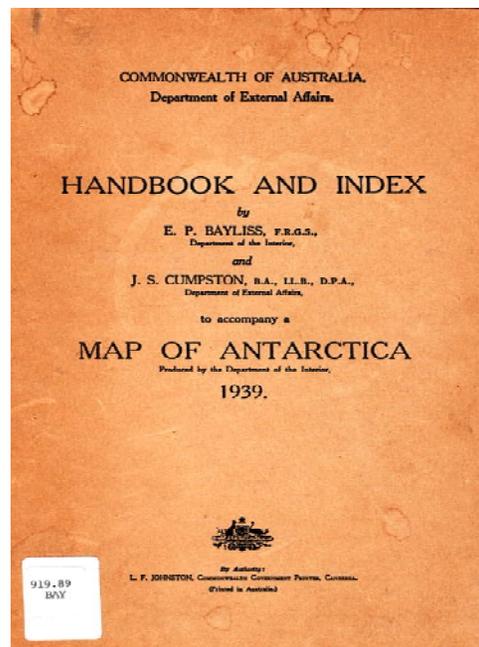


Figure 1 Handbook and Index

The map was then produced as a joint publication between the Department of External Affairs and the Department of the Interior, and was accompanied by a 90-page explanatory Handbook and Index (see figure 1) which contained background on the information gathered. It also

included separate account by the cartographer Bayliss and the historian Cumpston and a double preface with statements from each respective Minister. The map is a masterpiece of information gathering and careful presentation supplemented by the well-prepared handbook, which list names, gives details of claims and accepted boundaries of Lands named by explorers and a history of recent Antarctic expeditions

Extensive use was made of the publications of the British Admiralty Hydrographer, and the Scott Polar Institute in Cambridge. Cumpston explains:

“Frequent references has been made to the Royal Geographical Society’s journal and also the Polar record and the Geographical Journal. Mr Lincoln Ellsworth has willingly given the Commonwealth Government details of his famous Antarctic flights, while the works of Professor Hobbs from University of Michigan have been of value in elucidating the problems relating to the early discoveries in Graham Land, although his conclusions have not been accepted in all cases”

In discussing the background material Cumpston explains the difficulty with conflicting secondary information:

“ A detailed examination was accordingly made of a considerable amount of material and it was found that the charts published by the British Royal Geographical Society and by the American Geographical Society of new York were in serious disagreement, and it became obvious that it would need necessary to refer to the original sources wherever possible”

Records from previous Australian involvement in Antarctica were carefully examined in the National and Mitchell libraries as well as official records in departmental files. Bayliss comments on the material examined.

“About 250 documents including books original reports and charts have been consulted as well as departmental files. The material information resulting from this examination has been correlated and incorporated into the new map. Additional first hand information has also been obtained through personal contact with prominent explorers”.

However Cumpston also notes in this regard “ while this map may be said to represent accurately the information which has been supplied by the explorers, it must be

remembered that even this information in itself cannot always be trusted to be absolutely exact". The topographic work of John Rymill in exploring the Antarctic Peninsula is acknowledged and Cumpston writes a good appreciation of that expedition's fieldwork. The question of names is specifically addressed by Cumpston who comments: " One main difficulty that had to be resolved was the confusion arising through the use of overlapping names and differing names for the same geographical feature". This of course is still an ongoing problem in Antarctica in the 21st century.

In addition to his section describing the production of the map, Cumpston gives an excellent historical summary of recent exploratory work in Antarctica particularly:

- The work of the Discovery Committee from 1923 to 1939 which provide a wealth of soundings from the oceanographic voyages of both Discovery and Discovery II vessels
- The BANZAR expeditions 1929-31
- The Norwegian expeditions 1926-1937
- Byrd's expeditions 1928-30 and 1933-35
- Sir Hubert Wilkins and Mr Lincoln Ellsworth expeditions 1928-1938
- British Graham land Expedition 1934-37 (John Rymill)
- The German Antarctic Expedition 1938-39

Bayliss as responsible for the cartography broke new ground in selecting the azimuthal equidistant projection for the map and explains his choice of projection as.

"...Somewhat of a mean between Stereographic and equal area projections. It also has the advantage that all great circles pass through the centre of the map and are represented by straight lines intersecting each other at true angles. Distances along these lines are true to scale"

Bayliss notes with regret that the information from Lars Christensen most recent voyage was not available for use in the compilation. However Christensen's earlier exploration work is included and Norwegian names are intertwined with those of Mawson from BANZARE in the western part of AAT as is shown along the coast of Mac.Robertson land in Figure 2. The changing position of the south magnetic pole is

shown in a tabulated form and Bayliss gives acknowledgement to the New Zealand magnetician, Coleridge Farr of the Canterbury University, for this work.



Figure 2 Section of the 1939 map of the coast of Mac.Robertson land

Printing run was for 2000 copies and it was freely distributed to politicians and government overseas posts. It was offered for sale in two versions

- The single sheet at scale of 1:10,000,000 for 5 shillings
- The two sheet at a scale of 1:7,500,000 for 7 shillings and six pence

The map received very good reviews in polar journals and invited information for intended revisions to add to or correct errors. However despite its shortcomings in detail it was not until extensive exploration by aircraft that a revised version was produced in 1956. This 1939 map however was the start of the Australian 1:10 million series of Antarctica, which has won Australia much prestige amongst Antarctic nations.

The subsequent editions are listed below:

- Provisional edition 1929
- First edition 1939
- Second edition 1956
- Third Edition 1960

- Fourth edition 1969
- Fifth edition 1977
- Sixth edition 1979
- Seventh edition 1986

The reproduction of the original map and release by Australian Antarctic Division is commended and the role of people at the Antarctic Division is applauded such as Tony Press Director, Henk Broksma, mapping officer Andrew Jackson, policy officer and the research done by Marie Kawaja at the National University for the introductory brochure folder is excellent and explains the genesis of the project as

“ The Australian Antarctic division has for many years held in it store a carton containing a number of original unopened copies of the Handbook and Index prepared by Cumpston and Bayliss to accompany the 1939 map. One hundred and fifty copies of the original Handbook have been made available for sale, to accompany the facsimile map. The Handbook and maps are numbered accordingly”

In summary the 1939 map of Antarctica was a very significant cartographic production at the time. It demonstrated and furthered Australian interest in the icy continent and promoted the Australian Antarctic Territory claim. It is a fine record of the knowledge gleaned from early explorers reports and 75 years later it contains no glaring errors, as other contemporary maps contain.

Acknowledgment

I acknowledge use of the text from the Handbook, and the introductory folder issued with the facsimile map.

References

Department of External Affairs (1939). Hand Book and Index to accompany a Map of Antarctica. Commonwealth of Australia, Canberra