

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES,
GEOLOGY AND GEOPHYSICS.

RECORDS
1956, No.88

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PRELIMINARY REPORT ON
AIRBORNE RECONNAISSANCE SCINTILLOGRAPH
SURVEYS IN TASMANIA,
JANUARY & MARCH-APRIL, 1955

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by

F.W. WOOD

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- Plate 1. Map showing areas surveyed using
an Auster aircraft.
- " 2. Map showing radioactive anomalies
detected by airborne scintillograph
(D.C.3 reconnaissance).
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1. INTRODUCTION

Late in 1954 there were discussions between officers of the Bureau of Mineral Resources and the Tasmanian Department of Mines regarding the possibility of making airborne reconnaissance scintillograph surveys over selected portions of Tasmania to assist in the search for uranium in that State.

The rugged terrain in Tasmania is unsuited to low-level (500-feet) flying in a D.C.3 aircraft and it was therefore agreed that airborne operations could best be carried out in an Auster aircraft which can fly safely at 100 feet above ground in such country. It was, however, decided to make a preliminary reconnaissance flight by D.C.3 aircraft to assess the problems that might arise in making the Auster surveys.

After an examination of the positions of available landing grounds and a review of the areas of greatest promise in the search for uranium, the Tasmanian Department of Mines requested surveys over the areas outlined in Plate 1. The request was received in October 1954 and the Bureau arranged to make the surveys early in 1955.

2. PRELIMINARY INSPECTION FLIGHTS BY D.C.3 AIRCRAFT

It was agreed between the Bureau and the Department of Mines that surveys of the south-western portion of the State were desirable, but that area presents many difficulties because of its rugged terrain and difficulty of access. Therefore, before planning any systematic surveys there, it was decided to make a brief preliminary reconnaissance by D.C.3 aircraft including some scintillograph surveys at 500 feet above ground along the relatively flat coastal strip between Macquarie Harbour and Port Davey.

These flights were made in aircraft VH-MIN, under Dr. W.D. Parkinson (party leader), during the period 12th to 14th January, 1955. The party included Mr. P. B. Nye (Director), Mr. R. F. Thyer (Chief Geophysicist) and Mr. R. J. de Groot (geophysicist) of the Bureau, and Mr. J. G. Symons (Director of Mines) and Mr. Everard (geologist) of the Tasmanian Department of Mines.

Only two areas were surveyed with the scintillograph at 500 feet above ground level, (i) the south-west coast from Cape Sorell to Cape St. Vincent and (ii) the coastline of King Island (see Plate 2).

Four traverses were flown in the south-west coastal area, the first following the coastline from Cape Sorell to Low Rocky Point. The second and third traverses were approximately parallel to the first at distances of two and four miles inland respectively. The fourth traverse commenced on the Lewis River at a point four miles from its mouth, followed the river to the coast and then followed the coastline to Cape St. Vincent.

The radioactivity in this coastal area is generally low. Three anomalies only were recorded, one near Gorge Point and two near Low Rocky Point. It is known that Low Rocky Point is occupied by granite.

King Island was circumnavigated, along a flight line as close as practicable to the coastline, and four anomalies were recorded. One is about two miles south of Whistler Point, another about three miles north of Currie and a third about midway between Surprise Point and Stokes Point. The western coastline is otherwise inactive except for several small radiation maxima between Whistler Point and Currie Harbour and between Cataraque Point and Stokes Point.

On the east coast of King Island one large anomaly was recorded near Narracoopa. This corresponds to the known beach sand deposit of ilmenite containing monazite.

No photography was taken for positioning purposes on this survey and locations given are, therefore, approximate only.

3. LOW-LEVEL RECONNAISSANCE BY AUSTER AIRCRAFT

Seven areas in the north-west, north and north-east of Tasmania were selected by the Department of Mines for scintillograph survey by Auster aircraft, and these surveys were made during March and April, 1955. Two additional small areas (Commonwealth Creek and Royal George district) were added in the course of the survey. The Auster party was under L.E. Howard (geophysicist) who was assisted first by R. Underwood (university vacation student) and later by J.E.F. Gardener (geophysicist). The aircraft (VH-GVC) was on charter from Goulburn Valley Air Services Ltd. and was piloted by T. Dearden.

The weather became unsuitable for low flying before the survey could be completed and not all the areas were surveyed fully. Those portions of the areas surveyed are shown by appropriate colouring on Plate 1.

The aircraft was flown at a height of 50 to 100 feet above the ground and navigation and positioning were done by reference to aerial photographs. The average spacing between flights was about half a mile but the spacing in each area was chosen to suit the local topography. In some areas flights were made at intervals of 200 feet and in others at intervals of a mile.

A total area of 1,500 square miles was surveyed along about 2,700 miles of traverses. Details of the areas covered by the survey are as follows:-

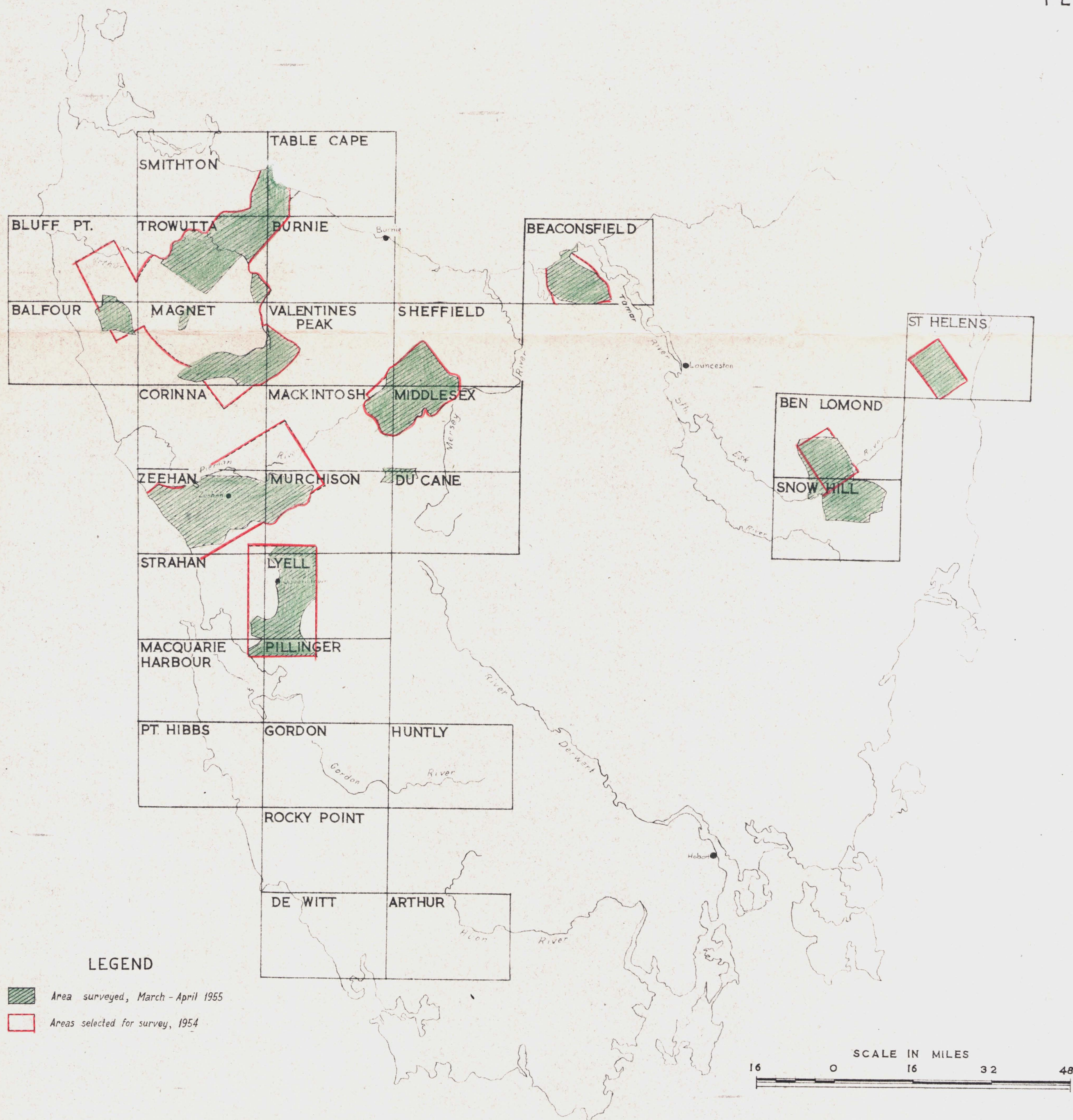
District	B.M.R. Map No.	Area flown Sq.Miles	Miles of traverse Miles	Hours of flying Hours
Smithton-Table Cape	G202	21	36	5
Trowutta-Burnie	G203	224	391	12
Beaconsfield	G204	81	163	8
Balfour	G205	52	184	10
Magnet-Valentine's Peak (Waratah District)	G206	140	191	10
Moina District	G207	195	445	31
St. Helens	G208	80	100	7
Ben Lomond-Snow Hill (Avoca District)	G209)	165	394	22
Royal George District	G212)			
Zeehan-Murchison	G210	308	382	27
Queenstown District	G211	235	367	26
Commonwealth Creek	G213	4	20	1
T o t a l s:		1,505	2,673	159

4. RESULTS

Radioactivity in excess of the normal background level was recorded over several granite outcrops in the Avoca district and also over the Royal George Mine where small quantities of uranium minerals had already been found. However, no other likely prospect was discovered in that district.

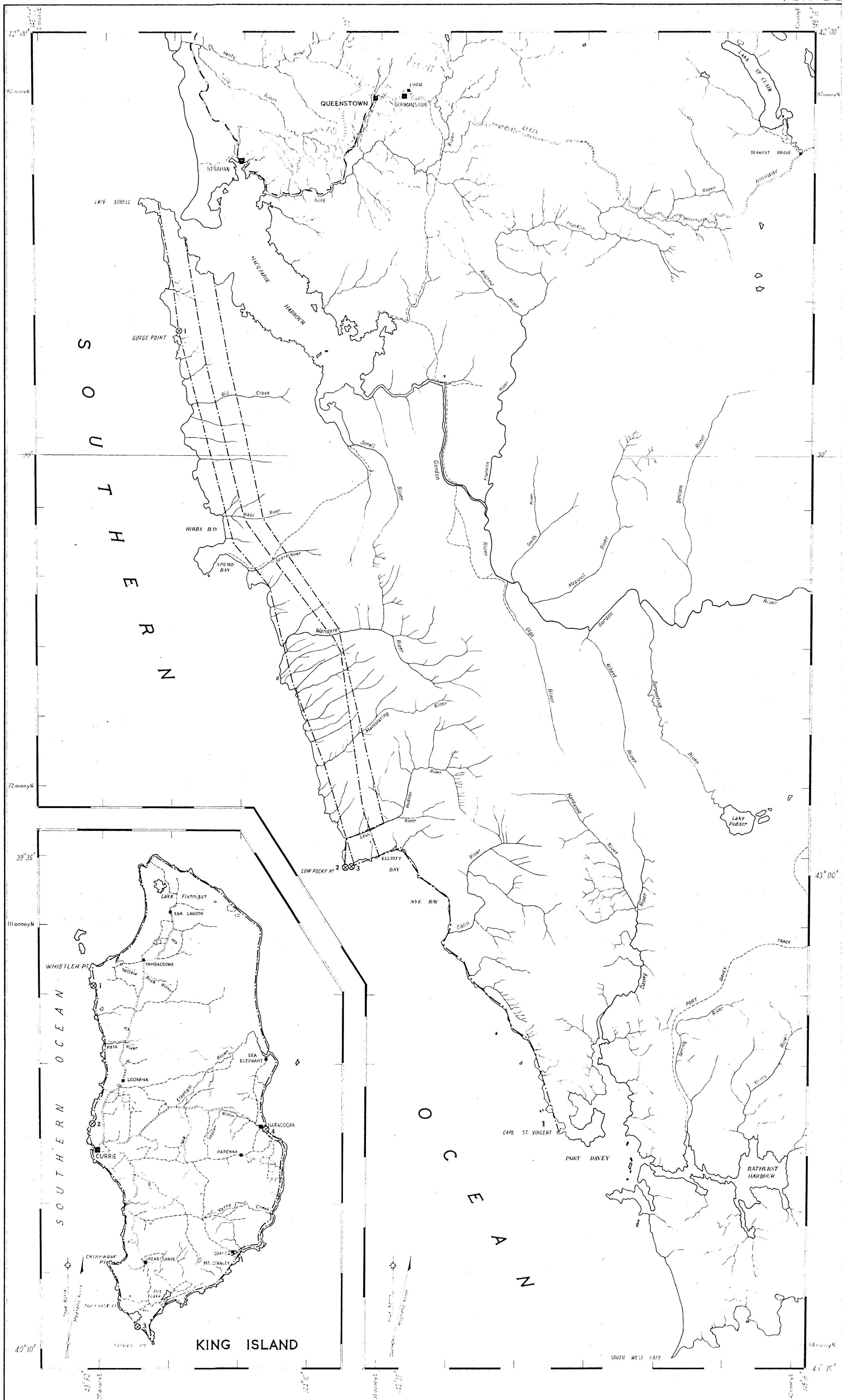
Radioactive anomalies were also recorded in several west-coast areas particularly around Zeehan, Moina and Balfour but in most places the anomalies appear to be due to outcrops of granite containing a little more than the normal amount of radioactive minerals. It is unlikely that these anomalies represent deposits of economic importance.

Maps showing the details of the survey flights made and the radioactive anomalies recorded have been prepared with the titles and numbers listed above. Copies of the maps are available on application to the Director of the Tasmanian Mines Department, Hobart or the Director of the Bureau of Mineral Resources, Melbourne. The maps are not included with this preliminary report but will accompany the full report, prepared by L.E. Howard, which will be issued soon.

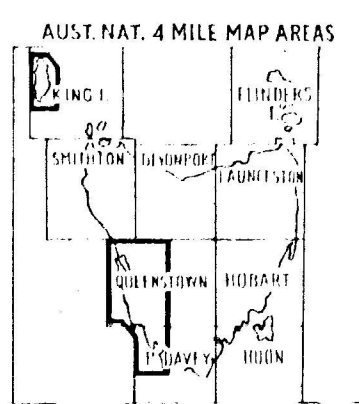


AIRBORNE SCINTILLOGRAPH SURVEYS, TASMANIA, 1955

MAP SHOWING
AREAS SURVEYED USING AN AUSTER AIRCRAFT



LOCATION DIAGRAM



LEGEND

- | TOPOGRAPHICAL | RADIOACTIVE |
|------------------------------|---|
| ----- HIGHWAY | --- FLIGHT LINE |
| --- ROAD OR TRACK | ⊗ RADIOACTIVE ANOMALY |
| --- RAILWAY | A place at which the recorded radioactivity is substantially greater than average |
| ++++ TRAMWAY | |
| --- H.E.C. TRANSMISSION LINE | |
| --- RIVER OR CREEK | |

The map is based on a 4 mile to 1 inch Tasmanian State Maps.

SCALE



MAP SHOWING
RADIOACTIVE ANOMALIES

DETECTED BY AIRBORNE SCINTILLOGRAPH
(DC 3 RECONNAISSANCE AT 500' A.G.L.)