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MANN AREA AIRBORNE MAGNETIC AND RADIOMETRIC SURVEY.

SOUTH AUSTRALIA 1960

by

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ILLUSTRATION

Plate 1. Map showing area flown, flight lines, and tie lines (G370-1-1)

SUMMARY

An airborne magnetic and radiometric survey of the Mann 4-mile map area, South Australia, was made in October 1960.

Survey operations and equipment are described.

Survey results were forwarded to the Department of Mines, South Australia, for reduction and compilation.

1. INTRODUCTION

The airborne magnetic and radiometric reconnaissance survey of the Mann 4-mile map area was made at the request of the South Australian Department of Mines. The Bureau of Mineral Resources DC.3 aircraft VH-MIN, based at Giles Meteorological Station, Western Australia, was used to survey the area in two flights on the 24th and 25th October 1960. Eighteen flight lines were flown at 5 mile intervals on a north-south heading, and two tie-lines were flown on an east-west heading (Plate 1). These traverses totalled 1450 miles. The survey was flown at a nominal height of 500 ft above ground level. Navigation was visual along predetermined flight lines drawn on aerial photo-mosaics.

Bureau personnel in the survey were R. Wells (Party Leader) and M.J.W. Duggin.

2. EQUIPMENT

Changes in the intensity of the Earth's total magnetic field were continuously recorded by an MFS-4 fluxgate magnetometer at a sensitivity of 50 gammas/in. and displayed on a 'Speedomax' chart recorder.

A record of radioactivity was obtained from a scintillograph ↓ whose detector head was towed in a fibreglass shell approximately 300 ft below the aircraft. The output of the detector head was fed via the towing cable to a BMR-type ratemeter and a Kelvin & Hughes chart recorder.

An 'Aeropath' 35-mm strip-camera was used to photograph the flight path. The aircraft's air position was recorded by an air position indicator coupled to a 'Recti-riter' chart recorder. The air position co-ordinates were also recorded every 20 seconds by photographing two Veeder counters which displayed the air position in two components at right angles.

The height of the aircraft above ground level was recorded by an STR30B radio altimeter and displayed on a Kelvin & Hughes chart recorder.

All records were correlated by fiducial marks at intervals of 20 seconds.

3. RESULTS

The magnetometer record is disturbed generally, and suggests the presence of magnetic rocks at or near the surface. These rocks are probably Archaean granite and norite which crop out in parts of the survey area.

No radiometric anomalies were recorded.

By arrangement with the Director of Mines, the results of the survey were forwarded to the Department of Mines, South Australia, for reduction and compilation. Therefore no evaluation of the results of the survey can be made in this Record.

