

UR198745

1987/45. Operations report - 1986/87 Mt Read gravity survey.

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Abstract

An area between Birchs Inlet and the Lower Pieman damsite, and an area between Burnie and Waratah were covered with a gravity survey at a nominal reading density of one station per square kilometre. Approximately 60% of the 2380 stations were read during helicopter-supported operations.

INTRODUCTION

The total area now surveyed is shown in Figure 1. Survey techniques and philosophy are outlined in Richardson (1986). Ground operations were almost entirely centred in the Burnie area, while helicopter operations were divided between the Waratah-Loyetee-Loongana area and the West Coast. Appendix 1 details the hours flown and number of stations acquired during the helicopter operations. The gravity base stations used were those of Richardson and Dix (1986, 1987).

COST COMPARISON

A cost comparison between helicopter and ground-supported operations shows clearly that in remote areas or areas with difficult access, the helicopter supported operation is cheaper.

Assume that a field assistant is paid \$16,000 per annum spread over 260 working days and that the daily travelling expenses rate is \$60. Then the total daily cost per field assistant is \$121.54. Assume also that the total cost of a four-wheel-drive vehicle is \$40 per day. Note that in the following calculations, days scheduled for flying but with bad weather impose both a machine and labour cost.

(a) Helicopter operations

- Survey duration - 63 days
- Total helicopter charges - \$131,627
- Number of successful stations - 1449
- Number of personnel - 3
- Cost per station - \$106.69

(b) Ground-supported operations in Yolla-Riana area

- Survey duration - 115 meter days
- Number of vehicle days - 115
- Number of successful stations - 634
- Number of personnel (with each meter) - 2
- Cost per station - \$51.35

(c) Ground-supported operations in other areas

- Survey duration - 180 meter days
- Number of vehicle days - 180
- Number of successful stations - 297
- Overall cost per station - \$171.56

From the above it is seen that in remote areas with poorly-developed road

networks, a helicopter-supported operation is very much cheaper than a ground-supported operation. Helicopter access offers much faster station acquisition in all except forested areas.

FIELD PERSONNEL

(a) Mines Department

M. Dix	P. Ruzicka
V. Gala	R. Sedgman
R. Hooke	K. Sherry
P. Olubas	M. Triffett
R. Richardson	J. Wright

(b) Helicopter Resources Pty Ltd

C. Hardiman	R. Piacenza
S. Lodge	D. Pullinger

CONCLUSION

The 1986/87 Mt Read gravity survey successfully combined ground and helicopter support to provide a cost-effective coverage of the area between Burnie and Waratah and the area between Birchs Inlet and the Lower Pieman damsite.

REFERENCES

- RICHARDSON, R. G. 1986. Operations report - 1985/86 Mt Read gravity survey. *Unpubl. Rep. Dep. Mines Tasm.* 1986/74.
- RICHARDSON, R. G.; DIX, M. J. 1986. West Coast gravity tie stations (Revision 1). *Unpubl. Rep. Dep. Mines Tasm.* 1986/79.
- RICHARDSON, R. G.; DIX, M. J. 1987. Burnie area gravity tie stations. *Unpubl. Rep. Dep. Mines Tasm.* 1987/11.

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APPENDIX 1

Helicopter Survey Statistics

<i>Period</i>	<i>Hours flown</i>	<i>Stations acquired</i>
2.2.87 - 20.2.87	67.6	340
9.3.87 - 22.3.87	47.0	403
28.3.87 - 5.4.87	23.7	139
6.4.87 - 12.4.87	17.5	141
27.4.87 - 11.5.87	49.2	426

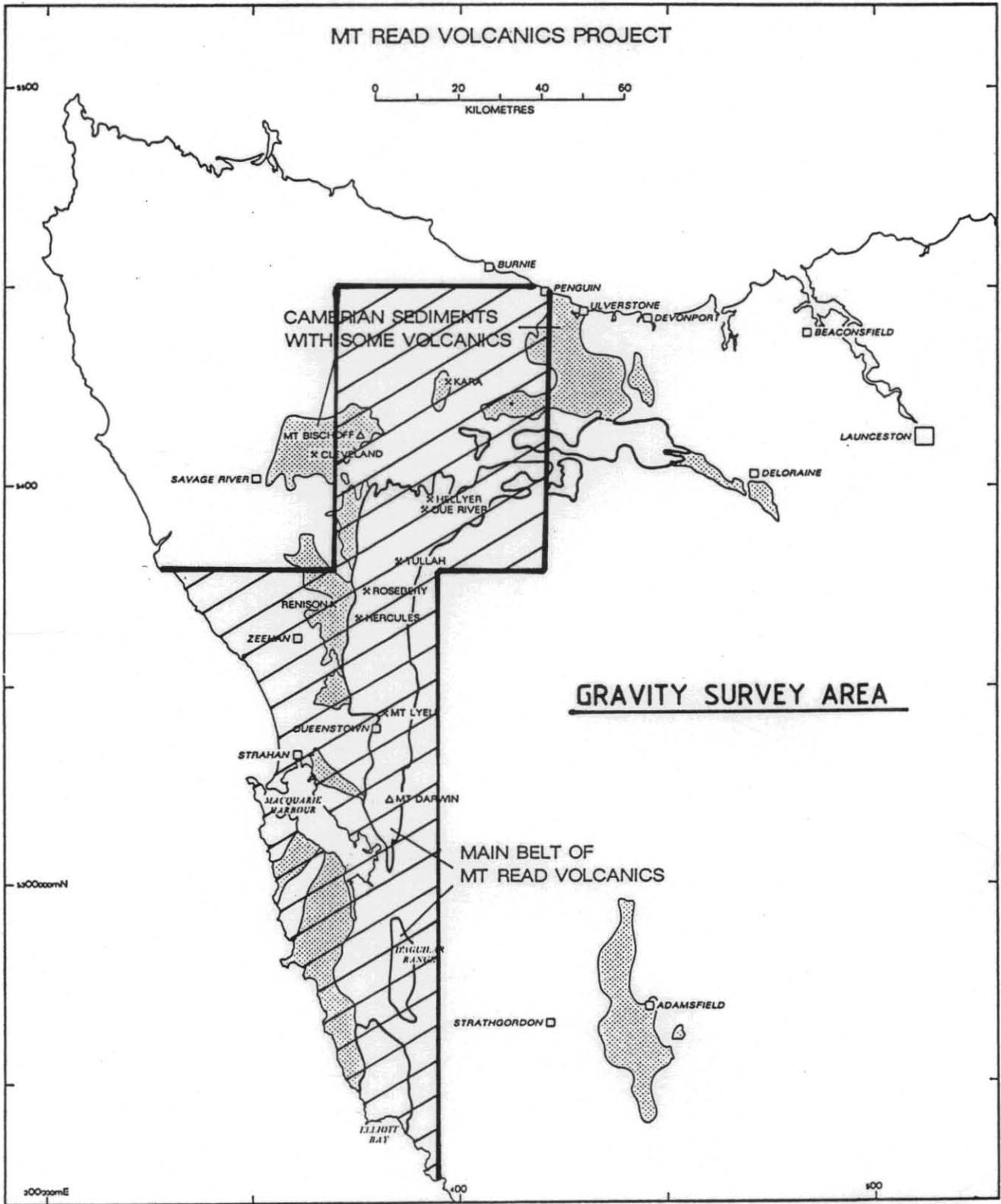


Figure 1.