Operations report—1988/89 helicopter gravity survey

by R. G. Richardson

Abstract
In a joint project between the Department and Soloriens Pty Ltd, an area in the Balfour region was covered with a gravity survey at a nominal reading density of one station per square kilometre.

INTRODUCTION
The total area now surveyed is shown in Figure 1. Survey techniques and philosophy were outlined in Richardson (1986). 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).

COSTS
Assume that a field assistant is paid $19,000 per annum spread over 260 working days, and that the daily travelling expenses rate is $76. Then the total daily cost of a field assistant is $149.03. Note that in the following calculations, days scheduled for flying but with bad weather impose both a machine and a labour cost.

Survey duration—14 days
Total helicopter charges—$37,109
Number of successful stations—546
Number of personnel—3
Cost per station—$79.43

From the above it is seen that in remote areas with poorly-developed road networks, a helicopter-supported operation remains much cheaper than a ground-supported operation (Richardson, 1987). The cost per station for helicopter acquisition has risen at a rate less than the inflation rate (Richardson, 1986; 1987; 1988).

It is worth noting that, for the last week of the survey when the weather was fine, the cost becomes:

Survey duration—7 days
Helicopter charges—$23,011
Number of successful stations—384
Number of personnel—3
Cost per station—$58.08

FIELD PERSONNEL
(a) Department of Mines
B. Cox; R. Richardson; M. Triffitt; J. Wright.
(b) Helicopter Resources Pty Ltd
L. Hornsby; N. Osborn

CONCLUSION
The 1988/89 survey in the Balfour area provided a cost-effective coverage. The proximity of a suitable field base resulted in a significantly lower than expected station cost.

REFERENCES


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APPENDIX 1

Helicopter survey statistics

<table>
<thead>
<tr>
<th>Period</th>
<th>Hours flown</th>
<th>Stations acquired</th>
</tr>
</thead>
<tbody>
<tr>
<td>09.3.89–15.3.89</td>
<td>17.5</td>
<td>162</td>
</tr>
<tr>
<td>16.3.89–22.3.89</td>
<td>35.6</td>
<td>384</td>
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</tbody>
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Figure 1.