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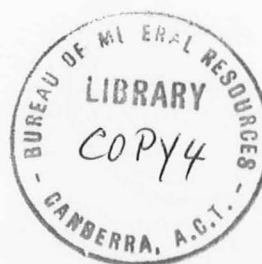
DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

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**Magnetic Test  
Moorabbin Airport Compass Swinging Site**



by

J. R. Wilkie and C. H. van Erkelens

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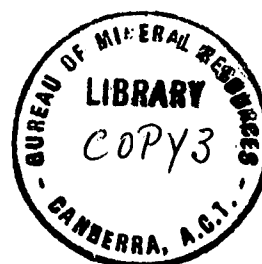
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MAGNETIC TEST  
MOORABBIN AIRPORT COMPASS SWINGING SITE

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J.R. Wilkie and C.H. van Erkelens

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PLATE 1 Moorabbin Compass swinging site and traverses

## SUMMARY

At the request of the Department of Civil Aviation the compass swinging site at the Moorabbin airport was tested for magnetic anomalies.

Declination observations indicate that there is no magnetic anomaly which would cause large differences in compass settings with aircraft position.

## 1. INTRODUCTION

As a result of complaints by aircraft operators at Moorabbin airport (latitude  $37^{\circ} 58.7'S$  longitude  $145^{\circ} 06'E$ ) the Department of Civil Aviation requested the Bureau of Mineral Resources to make tests at the compass swinging site. The purpose of this test, which was made on 11 August 1969, was to determine whether there were any magnetic anomalies present which would account for discrepancies up to  $10^{\circ}$  in compass settings using slightly different aircraft positions.

## 2. METHOD

The declination was measured at selected positions on the compass swinging site using Askania declinometer 580333. Plate 1 shows the approximate location of the observation positions on the compass swinging site, and indicates the direction of the reference marks.

Using mark D and beginning at the northernmost point on line B the declination with respect to the direction of the mark K was measured. This was then repeated at 20 foot intervals moving along the line BK across the site. The initial reading was taken as zero and the differences from this reading are marked at each observation point (plate 1). Differences less than 4 feet were measured.

Similar measurements were made along traverses A, C, and D, using 40-foot intervals, and differences less than 7' were measured. The differences are only meaningful along each line because AK, BK, CK, DK directions are not parallel and a separate zero is necessary for each.

Measurements were next made using mark Z giving an EZ direction approximately at right angles to A, B, C, and D. Again differences less than 4 feet were measured.

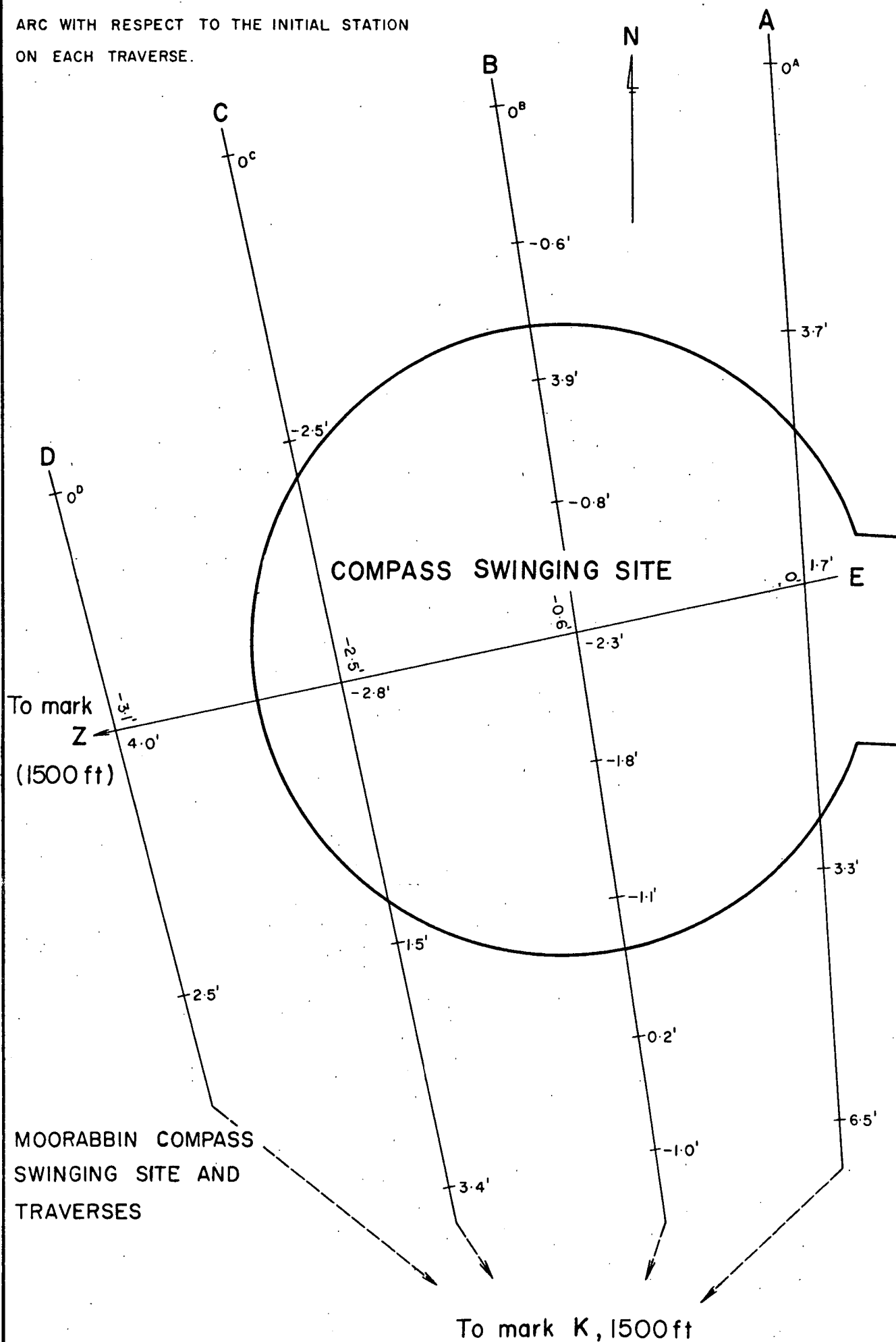
The proximity of the marks (approx. 1500 ft) and deviations of the observation points from a straight line (estimated maximum  $\pm 1$  ft) would cause a variation of approximately  $\pm 3$  feet along each line. As the declination measurements are accurate to  $\pm 0.2$  feet and the day was magnetically quiet, these deviations probably account for most of the differences.

## 3. CONCLUSION

The results indicate that there is no anomaly at the present compass swinging site which would account for the large discrepancies experienced.

VALUES ARE STATION DIFFERENCES IN MINUTES OF  
ARC WITH RESPECT TO THE INITIAL STATION  
ON EACH TRAVERSE.

PLATE I



MOORABBIN COMPASS  
SWINGING SITE AND  
TRAVERSES

SCALE : 20ft to 1inch