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AUSTRALIAN GRAVITY NETWORK ADJUSTMENT, 1975

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SUMMARY

The Australian National Gravity Network, or Isogal Network, consists of fourteen east-west traverses joining places of almost equal gravity, and three north-south traverses. The north-south traverse along the east coast is the Australian Calibration Line (ACL) which provides the scale for the network.

The original gravity values assigned to the network (May 1965 Isogal values) were based on the datum Melbourne $A = 979\,979.00$ mGal, and the mean Australian milligal was defined by pendulum observations at Melbourne, Cairns, and Darwin. In 1973 a new datum Sydney $A = 979\,671.86$ mGal was adopted, involving a datum change of 13.88 mGal. A co-operative survey by the Bureau of Mineral Resources (BMR) and the Soviet Academy of Sciences along the ACL in 1973 established a new gravity scale to an accuracy of 2.5 parts in 10^5 , defining a milligal 5 parts in 10^4 larger than the mean Australian milligal. The new gravity values (Isogal-74 values) established for ACL stations by this survey are used here to adjust the National Gravity Network.

Intervals between base stations observed during the 1964-65 and 1967 Isogal surveys, corrected for earth tides and meter drift, are listed. These intervals are converted to intervals consistent with the 1973 gravity scale, and gravity values are determined for all Isogal stations by adjusting these intervals to remove loop misclosures. These values and their estimated accuracies are listed with the latitudes, longitudes, elevations, and informal station names. The Isogal-74 values have estimated uncertainties of the order of 0.1 mGal, while May 1965 Isogal values were estimated to have uncertainties of the order of 0.2 mGal. Isogal-74 values are compared with values computed by linear adjustment of the May 1965 Isogal values for the change of datum and scale. The largest differences are between 0.2 and 0.3 mGal and are found near Darwin, in Tasmania, and near Perth.

INTRODUCTION

Variations in the Earth's gravity field across the surface of the Earth are observed in order to determine geological structure, and for geodesy and metrology.

Because of their complexity, precise absolute gravity determinations have been made at only a few sites in the world. Gravity intervals to other sites can be measured using pendulum apparatus or gravity meters. Pendulums and tilt-type gravity meters directly measure the ratio of acceleration due to gravity at different sites, but they are slow to operate and have an accuracy of only 0.1-0.5 mGal. Gravity meters, which measure differences in gravity by means of micrometer screws and springs, such as the LaCoste & Romberg or quartz type gravity meters, must be calibrated along a gravity scale established using pendulums or tilt-type gravity meters. However, once calibrated, they can then measure gravity intervals quickly and with a high accuracy, thus enabling gravity surveys to be carried out rapidly over the earth's surface to the correct datum and scale.

The Australian gravity datum is derived from ties to world absolute sites. The Australian Calibration Line (ACL), a north-south traverse of stations, provides scale which has been measured by GAG-2 tilt-type gravity meters and pendulums. Scale has also been confirmed by ties to world absolute sites by gravity meters and pendulums. The scale and datum are carried across Australia by the Australian National Gravity Network, or Isogal Network, a grid of 200 sites with base stations and excentres on fourteen east-west traverses and three north-south traverses.

The coverage of Australia by regional gravity surveys is now complete, with a station density of better than one station per 130 km^2 . All the surveys are tied to Isogal stations. For small surveys Isogal station values provide the datum, for larger surveys they provide both datum and scale. In this report field data from the 1964-65 and 1967 Isogal surveys are adjusted to the Australian datum and scale adopted in 1973, and Isogal-74 gravity values are computed.

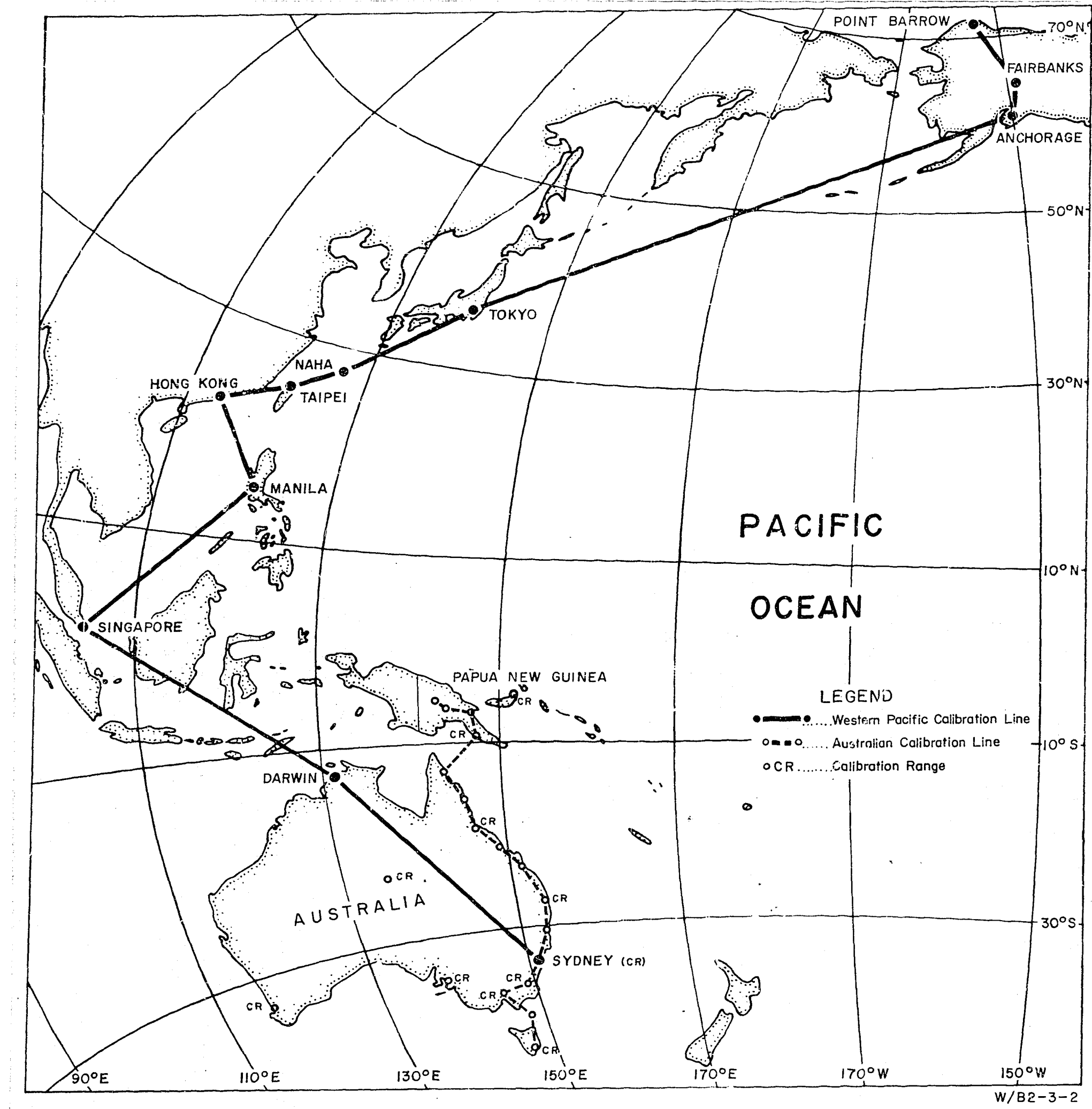


Fig. 1. Location of Western Pacific Calibration Line, Australian Calibration Line, and calibration ranges.

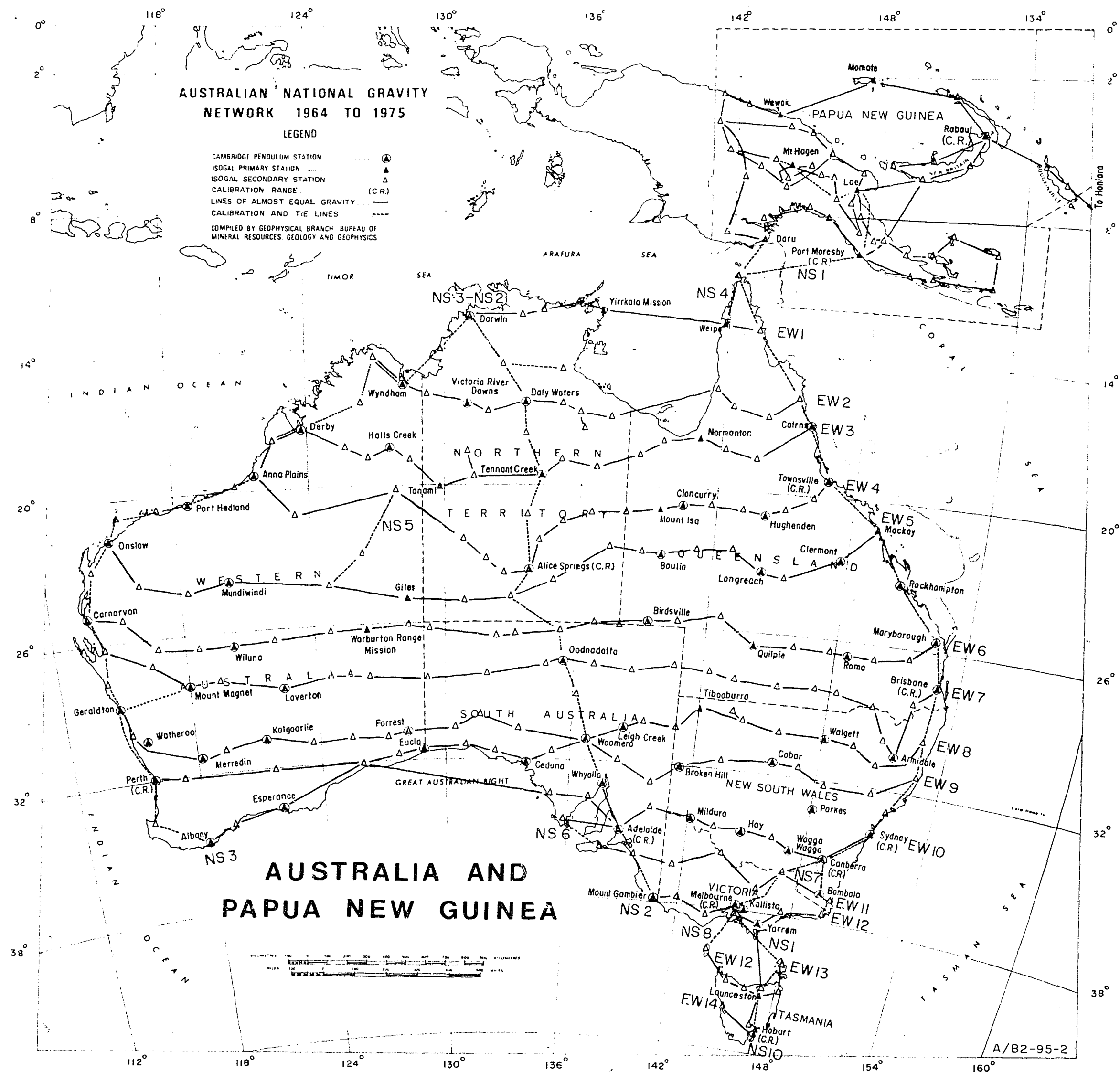


Fig. 2. Australian National Gravity Network

ESTABLISHMENT OF THE AUSTRALIAN NATIONAL GRAVITY NETWORK

A National Gravity Network usually consists of a national base station and a regional coverage of base stations in a network of high scale-accuracy, and high network-precision. The network is used to reduce gravity surveys within a country to a consistent scale and datum.

The Australian National Gravity Network was established during the period 1950-51, by ties between 59 sites, using Cambridge pendulum apparatus (Dooley and others, 1961). All observations were made relative to the station Melbourne A (BMR No. 5099.9901). This station was adopted as the National Gravity Base Station with a datum value of 979 979.0 mGal (Cook, 1957). The scale adopted was that of the pendulums (Dooley and others, 1961). The mean standard deviation of the pendulum measurements was estimated to be 0.6 mGal.

In 1962, the network was adjusted to take into account ties made by BMR and overseas observers since 1950 (Dooley, 1965). This adjustment substantially improved the accuracy of the network. The 1962 values for Melbourne, Cairns and Darwin were based on several pendulum and gravity meter observations and were among the more accurate of the 1962 values.

In 1965, observations along the Western Pacific Calibration Line (WPCL, Fig. 1) were made by the United States Air Force (USAF) using four LaCoste & Romberg gravity meters (Whalen, 1966). BMR co-operated in the work within Australia, and a calibration line along the east coast of Australia between Cairns and Melbourne was established by observations with the four USAF LaCoste gravity meters and one BMR LaCoste meter (Shirley, 1966). Observations were made along the traverse of stations ABCD.....in the sequence ABCD.....DCBA (ladder sequence), and were converted from intervals on the scale defined by the LaCoste manufacturer's tables to intervals in 'mean Australian milligals' by multiplying by the factor 0.999675. This factor was obtained by comparing the Melbourne-Cairns and Melbourne-Darwin intervals in Australian milligals (based on the 1962 adjusted values) with the same intervals in 'LaCoste' milligals.

Between 1964 and 1967, a more accurate national gravity network was established by measuring intervals along a further two north-south traverses and fourteen east-west traverses (Fig. 2). The east-west traverses were planned to join places of almost equal gravity. For this reason the Australian

National Gravity Network is referred to as the Isogal Network. Since the variation in gravity along any one of the east-west traverses is restricted to 50-100 mGal, the error in the intervals due to errors in calibrating the gravity meters is minimized. The north-south traverse along the east coast defines the scale of the network, while the other two north-south traverses, one through central Australia (NS2) and one along the west coast (NS3), provide a means of finding large errors.

At the majority of places a main Isogal station, subsequently referred to as a base station, was established at an airstrip and directly tied to other base stations, using air transport. Generally, one or more excentres were established to protect this station. It is desirable to establish at least two airport stations in different buildings and one town station, since demolition of station sites is a continual problem. Stations at locations considered suitable for pendulum or absolute measurements (including the Cambridge pendulum stations) were designated as primary stations, and the remaining stations were designated as secondary stations. These are not differentiated in this study. Most stations were established on existing concrete, and a numbered brass disc, 6 cm in diameter, was glued to the concrete to mark the station. A quiet site, sheltered from sun, wind and rain, is preferable. Station description diagrams were prepared and are available on request. Photographs of the stations, both distant and close-up, were taken.

The majority of air tie intervals along east-west traverses were observed during 1964 and 1965. In 1967 observations were made along the remaining east-west traverses (after suitable landing strips had been constructed in desert areas: van Son, 1969) and along the western and central north-south traverses.

On north-south and east-west traverses, direct flights were made between base stations spaced at intervals of about 150-250 km. A traverse of stations ABCD.....was observed in the sequence ABABCBCDCD.....(full drift control). The time between repeat readings was of the order of $2\frac{1}{2}$ hours.

Observations were made with three meters of different types, since the meters would be expected to react to various disturbing effects (such as vibration) in different ways. During the 1964-65 survey, a thermostatic metal-type meter LaCoste & Romberg G20, a thermostatic quartz-type meter Master Worden

MW548, and a 'cold' quartz-type meter Sharpe S145 or World Wide WW35 were used. In 1967, air tie intervals were observed with three or four of the meters LaCoste & Romberg G20, Master Worden MW548, Sharpe S145, and Worden W140.

Most Isogal excentres were established and tied in at the time of these surveys. Ground tie intervals were observed in conjunction with the air tie intervals during the 1964-65 survey, using the same meters. In 1967, the ground tie intervals were observed during a separate survey, using the meters G20, G132, W140 and S145.

Quartz gravity meters used in this work have been calibrated on calibration ranges of 50-60 mGal (Fig. 1). Eight ranges were established in major towns in 1960 (Barlow, 1967) and a further range was established in 1965 (Barlow, 1970). The adopted gravity intervals on all these ranges are based on the interval for the Melbourne range, Ferntree Gully-Kallista, which had an adopted interval based on Cambridge pendulum results.

Calculation of May 1965 Isogal Values

Details of the computational procedures carried out on the 1964-65 Isogal survey were as follows. Gravity intervals in scale divisions were computed after corrections had been made for meter drift, but not for Earth tides. These intervals were changed to milligal equivalents, accepting the makers' calibration for the LaCoste meter, and using calibration constants determined from measurements on calibration ranges during the survey for the quartz-type meters.

The 1965 USAF-BMR gravity values for stations along the eastern calibration line (computed on Melbourne A datum and the scale of the mean Australian milligal) were adopted, and gravity values were determined for the stations along the east-west traverses by taking the arithmetic means of the air tie estimates. (In a very few cases an estimate was rejected because of erratic meter drift.). These adopted gravity values are the May 1965 Isogal values.

Observations made during the 1967 survey were treated in a similar way, and May 1965 Isogal values were computed for the remaining stations of the network. Intervals calculated from observations along the north-south traverses NS2 and NS3 were used to determine misclosures around loops.

These were generally of the order of 0.1 mGal and the maximum loop misclosure was 0.29 mGal (around the loop Hamelin Pool - Oodnadatta - Woomera - Geraldton). The north-south traverse results indicated that slight adjustments should be made to the May 1965 Isogal values.

NATIONAL GRAVITY BASE STATION AND AUSTRALIAN CALIBRATION LINE

A new National Gravity Base Station, Sydney A (BMR No. 5099.9905), was adopted in 1973 in place of the previous base station, Melbourne. Sydney is the main international airport in Australia so it has been strongly tied to stations in other countries. In addition, Sydney A is next to the site of an absolute determination of gravity, which was made by the Australian National Standards Laboratory in 1971, using the symmetrical rise and fall method. This observation gave a value for Sydney A of $979\,672.0 \pm 0.2$ mGal (Bell and others, 1973).

In 1971 the International Association of Geodesy calculated gravity values (IGSN71 values) for the more important world gravity stations using absolute determinations, pendulum, and gravity meter results (Morelli and others, 1971). The IGSN71 value for Sydney A was $979\,671.86 \pm 0.02$ mGal. In 1972 Soviet scientists using five OVM pendulums measured the gravity interval between Sydney and Moscow after tying Moscow to other European absolute sites. Their measurements gave an expected gravity value of $979\,671.84 \pm 0.08$ mGal for Sydney A (Gusev, 1973). In 1973, the IGSN71 value of $979\,671.86$ mGal for Sydney A was adopted as the new datum for Australia (Boulanger and others, 1973).

The Australian Calibration Line (ACL) is a set of airport gravity stations that extends along the east coast of Australia from Hobart to Thursday Island, and north into Papua New Guinea (Fig. 1). There have been four major surveys along the ACL since the USAF-BMR survey in 1965 established a calibration line of 1.5 Gal between Cairns and Melbourne (Whalen, 1966). In 1966 the Canadian Dominion Observatory made observations in ladder sequence, using two LaCoste & Romberg gravity meters (Morelli and others, 1971). In 1970 the ACL was extended to 3 Gal (Cooke, 1970), when BMR made observations between Hobart and Laiagam (PNG) with three LaCoste & Romberg gravity meters and six quartz-type gravity meters, using full drift control. Further observations (listed by Wellman and others, 1974) were made in ladder sequence in 1971, using four LaCoste meters and in 1972, using one LaCoste meter.

In 1973 a co-operative survey was carried out by Soviet scientists and BMR (Boulanger and others, 1973). Nine Soviet GAG-2 gravity meters and four LaCoste & Romberg gravity meters were used to make observations with full drift control. As a result of this survey, a new gravity scale was established for Australia in place of the mean Australian milligal. The new scale has an accuracy of about 2.5 parts in 10^5 , and is 5 parts in 10^4 larger than the mean Australian milligal. In 1974, the new scale was confirmed to 2 parts in 10^5 by OVM pendulum measurements at Port Moresby and Hobart (Gusev, 1975; Wellman, 1975).

ADJUSTMENT OF THE AUSTRALIAN NATIONAL GRAVITY NETWORK

The 1973 Australian gravity datum and scale were used here to adjust the Australian National Gravity Network. The Isogal-74 values of observed gravity determined by Wellman and others (1974) for stations along the ACL were adopted to define scale, and Isogal-74 values for the remaining stations in the network were determined relative to these. All available data were taken into account in the adjustment.

Air Ties

The field readings observed at base stations during the 1964-65 and 1967 surveys were corrected for earth tides using a computer program by A.S. Murray (1974). Another computer program (GRVHTS: Murray, 1974) computed gravity intervals from the tide corrected readings and the initially assumed meter scale factors. The program calculates meter drift as follows. During a tie between stations A and B, observations A_1, B_2, A_3, B_4 , for example, are made at times t_1, t_2, t_3 and t_4 respectively. The computer program assumes a drift $D_1 = (A_3 - A_1)/(t_3 - t_1)$ between times t_1 and t_2 , a drift $D_2 = (B_4 - B_2)/(t_4 - t_2)$ between times t_3 and t_4 , and the arithmetic mean of these drifts between times t_2 and t_3 . The drift corrected intervals are listed by the computer program, with drift rates and any deviations of the tide corrected field readings from the drift curves. These deviations are small unless the drifts D_1 and D_2 are widely divergent.

Air tie intervals and relative behaviour of meters. Initially, gravity intervals were calculated using the makers' calibration for G20 (see Wellman and others, 1974) and the following scale factors (s.f.) for the other meters.

	MW548	S145	WW35	W140
1964-65	0.10955	0.10643	0.11551	-
1967	0.10943	0.10652	-	0.10182

The estimates of the air tie intervals for each meter, corrected for Earth tides and meter drift, are listed in Appendix 1, for the 1964-65 survey, and Appendix 2, for the 1967 survey. Also listed for each tie are the maximum drift over the period of the tie, the mean deviation of the observations from the calculated drift model, the mean of the interval estimates given by the meters, giving unit weight to each, and the standard deviation of these estimates. The standard deviations are generally less than 0.1 mGal. Larger standard deviations are thought to be due to the different meter reactions to environmental effects.

Determination of meter scale factors. Estimates of the 'true' scale factor for a meter can be found directly by using accepted gravity intervals or by first calculating the relative scale factors of the meters and then deriving a correction to true scale.

(a) Relative Scale Factors

Errors in initially assumed scale factors can be determined by comparing the sum of the moduli of the gravity intervals along a traverse as determined for each meter. This sum is referred to as the absolute sum.

If, for example, a gravity difference, I' , is observed with three meters, then assuming meter scale factors, there will be three estimates of the interval, I_1 , I_2 and I_3 . The relative scale factors of the meters are the assumed scale factors (in this case those listed in the previous table) multiplied by the factors $I_m/I_1 = r_1$, $I_m/I_2 = r_2$, and $I_m/I_3 = r_3$, where I_m is the arithmetic mean of the three estimates. Using the absolute sums as defined above, estimates of these factors have been calculated for each traverse (Tables 1, 2). The east-west traverses were divided into two parts in most cases, and the north-south traverses NS2 and NS3 considered as complete entities. Results of calibrations on the Melbourne, Sydney and

Canberra calibration ranges during the surveys were used to derive independent relative scale factors (Tables 3, 4). These are consistent with the factors calculated from survey traverses, but are less precise. For the 1967 survey, the mean relative scale factors determined from the north-south traverses had smaller standard errors than those determined from the east-west traverses, and therefore were considered more correct. Meters used for only a small part of a survey, WW35 in 1964-65 and S145 in 1967 have less well determined relative scale factors.

(b) Estimates of 'True' Scale Factors

The relative scale factors must be multiplied by $I'/I_m = a$ to give 'true' scale. Estimates of 'a' can be determined by comparing observed intervals with the same intervals on 'true' scale. Calibration range intervals on the 1973 scale are given by Wellman and McCracken (1975), and these intervals are used to calculate 'a' (Tables 1, 2). In addition, the IGSN71 values (Morelli and others, 1971) of Perth J (979 386.56 mGal) and Darwin K (987 300.93) are used to obtain an independent estimate of 'a' for the 1967 survey. (The meters used during the 1964-65 and 1967 surveys were not observed along the ACL, and true scale factors cannot, therefore, be determined from intervals on the ACL).

The following meter scale factors (assumed scale factor $\times r \times a$) were then adopted:

	G20	MW548	S145	WW35	W140
1964-65	0.99975 x maker's cal	0.10962	0.10640	0.11540	-
1967	1.00063 x maker's cal	0.10955	0.10628	-	0.10196

Gravity values at node stations on NS2. Estimates of the gravity intervals along the east-west traverses between the ACL and NS2 were determined using the above scale factors (Table 5). These intervals were added to the Isogal-74 values at ACL stations given by Wellman and others (1974) to obtain values of observed gravity (east-west estimates) at node stations on NS2. (A node station is defined as a station observed on both north-south and east-west traverses).

The observations along the north-south traverse NS2 can be used to obtain independent estimates of the gravity values. However, since large gravity intervals due to the large changes in latitude are encountered along the north-south traverses, the meter scale factors are treated as unknowns. In Table 6, the NS2 observations (using arbitrary datum and scale) are fitted by linear regression to the east-west estimates of the gravity values of NS2 node stations. The intercept (A) and slope (B) of the line of best fit were found, and then the north-south observation (Y) adjusted according to the equation $Y' = (Y - A) / B$. The meter scale factors were estimated to be:

	G20	MW548	W140
1967	1.00041 x maker's cal	0.10952	0.10194
(NS2 estimate)			

The north-south estimates of the gravity values of the node stations on NS2 are the mean of the derived gravity values for the three meters (Table 6). The mean standard error of the north-south estimates was 0.047 compared with 0.085 for the east-west estimates. This suggests that the north-south observations are internally more consistent than the east-west observations and the north-south estimates should be given three times the weight of the east-west estimates. However, the north-south estimates are not completely independent of the east-west estimates. A compromise was made between giving the north-south and east-west estimates equal weight, and weighting them according to their variances, and Isogal- 74 values for the node stations on NS2 were calculated by taking the mean of the north-south and east-west estimates, giving double weight to the former. The standard errors of the north-south and east-west estimates were determined.

Gravity values at node stations on NS3. Gravity intervals along the east-west traverses between NS2 and NS3 were determined using the computed scale factors. For the 1967 survey, the scale factors from the least squares fit were used. The estimates of the intervals for each meter, the mean interval and the standard error of the estimates are given for each traverse in Table 7. The station Caiguna J was observed on two east-west traverses and a mean gravity value was taken. These intervals were used to determine east-west estimates of the gravity values for NS3 node stations.

Gravity values determined from observations along NS3 were converted to 1973 scale and datum by linear regression against the values determined from the east-west traverses. Table 8 gives the equations of the regression lines, the root-mean-square deviations from the regression lines (ERMS), the mean of the north-south estimates of gravity at node stations on NS3, and the standard error of the mean. The mean standard error was 0.031 compared with 0.061 for the east-west estimates. The mean of the north-south and east-west estimates was taken giving double weight to the former. The meter scale factors resulting from the linear regression were:

	G20	MW548	M140
1967	1.00037 x maker's cal	0.10955	0.10194
(NS3 estimate)			

The standard errors of the north-south and east-west estimates of the gravity values at node stations on NS3 are included in Table 8. The standard error of the values at Hamelin Pool is particularly large. In 1973, observations were made between Perth, Geraldton and Mt Magnet using two LaCoste & Romberg gravity meters, G20A and G101, (Appendix 3) in order to check the large loop misclosure in that area. Gravity intervals (corrected for earth tides) were determined on 1973 scale by using the meter scale factors given by Wellman and others (1974). The interval between Perth J and Geraldton J was found to be 130.23 mGal, agreeing with the 1964-65 and 1967 results within experimental error. The observed interval between Geraldton J and Mt Magnet J was 198.57 mGal, implying an interval of 221.91 mGal between Geraldton J and Hamelin Pool J. These results indicated an error of 0.3 mGal in the determination of the gravity value at Hamelin Pool from observations along the east-west traverses. The required corrections were made to the intervals along the traverse between Oodnadatta and Mt Magnet based on the 1973 observations.

Isogal-74 gravity values (Appendix 4) for all base stations have been determined by adjusting the intervals between node stations to distribute closure errors.

Ground Ties

(Base station to excentre, or excentre to excentre)

Excentres have been established at most places to protect the base stations. Most of the excentres were tied into the network between 1964 and 1967; others have been established and tied in during later surveys. Calibration range intervals given by Wellman and McCracken (1975) and ground tie intervals for stations on the ACL given by Wellman and others (1974) were accepted without change. Most of the remaining ground tie intervals are less than 10 mGal, and the meter scale factors determined from measurements on calibration ranges are sufficiently accurate to calculate intervals. The appropriate scale factors, as determined in the previous section, were used for the meters used in the 1964-65 and 1967 surveys.

Ties between excentres A and B were usually made in the sequence A-B-A-B (2:2 tie), or in the sequence A-B-A (2:1 tie). In some cases, observations were made in the sequence C-A-B-C (1:1 tie between A and B) where drift control was provided by repeat readings at a third excentre C.

Observations made on all known surveys were used to determine the mean interval for each ground tie and the standard deviation of the set of estimates of the interval. The following procedure was carried out in order to determine which estimates should be rejected on the basis of standard deviations. A mean standard deviation ($\bar{s}$) and mean variance ($\bar{v}$) were determined for each of the above three tie types from observations made during the 1964-65 and 1967 surveys with three meters. These are listed below with the number (n) of ties of each type.

The standard deviation of a set of estimates of an interval is expected to vary inversely with the square root of the number (k) of independent estimates of the interval (half the number of gravity observations). Thus, the product of $\bar{v}$ and k should be independent of k. By taking a weighted mean of this product for the three tie types, the expected variance for a 1:1 tie was found ($0.1207/170 = 7.10 \times 10^{-4}$). For a tie of another type, the expected variance (v) is $7.10 \times 10^{-4}/k$, and the expected standard deviation is $0.027/\sqrt{k}$. The expected variances for the above three tie types are compared below with the variances observed.

Tie Type	Observed s.d. $\bar{S}$	Obs. variance $\bar{v} \times 10^4$	k	n	$\bar{v} \times k \times n$	Expected Variance $v \times 10^4$	Expected s.d.
2:2	0.020	4.00	2	52	0.0416	3.55	0.019
2:1	0.021	4.49	1.5	98	0.0661	4.73	0.022
1:1	0.026	6.50	1	20	0.0130	7.10	0.027
			Sum	170	0.1207		

There is reasonable agreement between the mean observed and expected variances. The relation between the variance and the number of estimates of the interval can be used to estimate the expected variance for any tie type. The 0.027 mGal standard deviation for a single 1:1 tie calculated from these results compares very favourably with the 0.03 mGal standard deviation calculated for the 1973 survey for quartz-type gravity meters (Wellman, 1974).

Ground tie intervals were determined by rejecting an estimate of the interval if it differed from the mean by more than twice the expected standard deviation (if it was outside the 95% confidence limit). However, in cases where only two meters were observed, both estimates of the interval were retained. Ties were weighted according to the number of meters used, the drift control, and the standard deviation of the estimates, and adjustments were made to remove loop closure errors.

The adopted ground tie interval, the standard error of the mean (s.e.) in μ Gal after any rejections, the number (N) of meters used, and the number (K) of estimates of the interval per meter are included in Appendix 4. Isogal-74 gravity values were determined for all excentres.

Pressure effect on quartz-type gravity meters. Laboratory experiments suggest that the gravity reading of a quartz-type gravity meter is affected by a change in pressure. This effect would result in an error of approximately 0.3 mGal per 1000 m, i.e. about 0.07 mGal over a calibration range of 50 mGal (1 part in 700). The 1964 and 1967 Isogal surveys, however, do not show any gravity differences between quartz-type and LaCoste gravity meters. The hillside calibrations of the meters for both these surveys differ from the calibration factors calculated from survey traverses by less than 1 part in 2000 (Tables 1, 2).

The gravity intervals observed between Hobart and Port Moresby in 1970 with W260 and W140, calculated using hillside calibrations, are compared below with the interval determined using LaCoste and GAG-2 gravity meter results.

Observed Interval (mGal) (hillside scale factors)		Accepted Interval (mGal)
W260	W140	LaCoste/GAG-2
2236.68 $\pm$ 0.05	2236.99 $\pm$ 0.05	2237.70 $\pm$ 0.02

Since Hobart and Port Moresby are at approximately the same elevation, the use of hillside calibrations would be expected to lead to a difference between the Worden and LaCoste meter results of the order of that observed in the laboratory (i.e. 1 part in 700) but the difference is less than 1 part in 2000.

Since the 1964-65 and 1967 Isogal observations do not indicate statistically significant differences in LaCoste and quartz-type meter results, no corrections for changes in elevation have been made within the Isogal network.

Precision of the Isogal Network

The Isogal gravity values are based on the network of base stations, which, being read on air ties have the most accurately known values. Gravity values of excentres are only slightly less accurate, because of the high accuracy of intra-town ties.

Air tie errors could be due to gravity meter drift, incorrect gravity meter calibrations, reading error (estimated as 0.019 mGal for a tie of the type A-B-A-B according to ground tie results) or environmental effects on the meters. Table 9 lists for each traverse the mean maximum drift per tie (D_m), the mean deviation from the calculated drift curve (d), and the mean standard deviation (s) of the gravity interval estimates given by the three meters. The mean error per tie calculated from s is 0.067 mGal. Thus the 0.019 mGal reading errors are minor, and calibration effects should also be minor. The similar magnitudes of the mean error per tie (0.067 mGal) and the

mean drift during the tie (0.103 mGal), and the rough positive correlation of these terms for each traverse suggest that the effects of drift and tares have not been allowed for correctly.

The way meters drift with transportation and changing environment is not well known. It is believed that the apparent drift of both LaCoste & Romberg and quartz-type gravity meters consists of slow 'true drift' due to slow changes in the physical properties of the mechanism, small and large tares due to sudden changes in the properties of the mechanism, and, in quartz-type meters, fast drift due to changing temperature and pressure. Drift and small tares cannot be easily separated in field operations, and the uncertainty in an interval increases with the apparent drift. The computer program GRVHTS, used to determine air tie intervals, assumes that gravity meter drift is a continuous function with linear segments. Any high standard deviation of gravity interval estimates can be explained if the meters had major tares or irregular drifts during air ties.

According to the above calculation, the standard error of a single air tie observed with three meters is $0.039 (0.067/\sqrt{3})$. Therefore, the error in the gravity difference between two stations is $0.039 \times \sqrt{n}$ (where n is the number of intervals between the two stations). The means of the errors of the gravity values at node stations calculated by this formula (taking into account the fact that node stations were observed on two traverses) are 0.063 mGal for NS2 and 0.074 mGal for NS3. The differences between the north-south and east-west estimates of the gravity values (Tables 6, 8) suggest errors of the order of 0.057 mGal for NS2 and 0.062 mGal for NS3. The similarity of the values given by different calculations suggest that network errors are approximately correct and are homogeneous within the network.

Uncertainties in the gravity values at base stations have been determined according to the formula $0.039 \times \sqrt{n}$, and the ground tie errors have been added so that approximate uncertainties at all Isogal stations are known. These gravity value uncertainties are given in Appendix 4.

RESULTS

Principal facts for Isogal stations are given in Appendix 4. These include BMR station number, IGC (International Gravimetric Commission) station number and letter, latitude and longitude, height on Australian Height Datum (AHD; measured by the Department of Administrative Services), Isogal-74 gravity value with an estimated uncertainty, and informal station name.

The scale defined by IGSN71 values for the ACL is 1.5 parts in 104 smaller than the 1973 scale (Wellman and others, 1974). IGSN71 values determined for other stations in the network (Morelli and others, 1971) differ slightly from the Isogal-74 values.

	Isogal-74	IGSN71
Perth J	979 386.66 $\pm$ 0.07	979 386.56 $\pm$ 0.02
Darwin K	978 300.95 $\pm$ 0.06	978 300.93 $\pm$ 0.03
Alice Springs K	978 639.47 $\pm$ 0.08	978 639.66 $\pm$ 0.05
Mt Isa J	978 604.30 $\pm$ 0.10	978 604.41 $\pm$ 0.03

May 1965 Isogal values can be adjusted to 1973 datum and scale using the provisional formula (Wellman, 1974):

$$g_{1973} = 979\ 671.86 + 1.0005118 (g_{1965} - 979\ 685.74).$$

The difference between this computed value and the Isogal-74 value at each base station is shown in Fig. 3. There are comparatively large differences in these values in northern Australia, Tasmania and in the vicinity of Perth. These differences indicate that the 1975 adjustment was not a linear adjustment of the May 1965 Isogal values for the change in datum and scale.

The Isogal network, adjusted to 1973 datum and scale, provides datum values with an accuracy of about 0.1 mGal. The May 1965 Isogal values had estimated uncertainties of the order of 0.2 mGal (Barlow, 1970) while the 1962 adjustment of the National Gravity Network (Dooley, 1965) provided datum values with uncertainties ranging from 0.1 to 0.7 mGal.

The strengthening of NS2 and NS3, using many LaCoste & Romberg gravity meters, planned to take place in 1978 will greatly increase the internal precision of the Isogal network.

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TABLE 1. GRAVITY METER CALIBRATIONS, 1964-65 SURVEYS

	G20 ¹		MW548 ²		S145 ³		WW35 ⁴				
	Interval I (mGal)	r (I=Im/I)	Interval I (mGal)	r (=Im/I)	Interval I (mGal)	r (=Im/I)	Interval I (mGal)	r (=Im/I)	Im (mGal)	I'*	a (=I'/Im)

EW Traverses
(Absolute Sums)

EW1	206.788	0.99987	206.547	1.00104	206.948	0.99910			206.761		
EW2A	175.325	0.99958	174.988	1.00150	175.439	0.99893			175.251		
EW2B	163.194	0.99997	163.218	0.99982	163.156	1.00020			163.189		
EW3A	132.185	1.00030	132.211	1.00011	132.278	0.99960			132.225		
EW3B	233.229	0.99936	232.752	1.00141	233.258	0.99924			233.080		
EW4A	226.366	1.00046	226.603	0.99941	226.439	1.00013			226.469		
EW5A	258.706	0.99927	258.336	1.00070	258.505	1.00004			258.516		
EW6A	315.299	(0.99963)	314.819	(1.00115)			315.425	0.99923	(315.181)		
EW6B	345.049	0.99931	344.489	1.00093	344.891	0.99977			344.810		
EW7A	287.336	(1.00023)	287.041	(1.00125)			287.827	0.99852	(287.401)		
EW8A	258.453	0.99932	257.901	1.00146	258.478	0.99922			258.277		
EW8B	408.944	1.00020	409.163	0.99967	408.975	1.00013			409.027		
EW9A	187.597	0.99920	187.194	1.00135	187.548	0.99946			187.446		
EW9B	328.180	1.00026	328.218	1.00014	328.397	0.99960			328.265		
EW10A	278.069	0.99994	277.973	1.00029	278.116	0.99977			278.053		
EW10B	431.194	0.99934	430.620	1.00067	430.911	0.99999			430.908		
EW12	242.215	(1.00039)	242.135	(1.00072)	242.416	0.99956	242.475	0.99932	(242.310)		
Total EW	3633.279	0.99972	3630.213	1.00057	3633.339	0.99971			3632.277		
		<u>+0.00012</u>		<u>+0.00019</u>		<u>+0.00011</u>					

Cal. Ranges

Melbourne CR	53.051	0.99932	52.968	1.00089	53.026	0.99979	53.038	0.99957	53.015	53.03	1.00028
		<u>+0.00008</u>		<u>+0.00045</u>		<u>+0.00027</u>		<u>+0.00004</u>			
Sydney CR	59.047	0.99959	58.982	1.00070	59.040	0.99971				59.01	0.99978
		<u>+ .00003</u>		<u>+0.00040</u>		<u>+0.04650</u>					

	G20 ¹	MW548 ²	S145 ³	WW35 ⁴	
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computed scale
factor

(= a x r x

assumed scale
factor)

0.99975 x maker's
scale factor

0.10962

0.10640

0.11540

mean a
=1.00003

- 1 Assumed scale factor - maker's)
 2 " " " - 0.10955)
 3 " " " - 0.10643)
 4 " " " - 0.11851)

* accepted interval 1973 gravity
scale

TABLE 2. GRAVITY METER CALIBRATIONS , 1967 SURVEY

	G20 ¹		W140 ²		MW548 ³		S145 ⁴				
	Interval I (mGal)	r (=Im/I)	Interval I (mGal)	r (=Im/I)	Interval I (mGal)	r (=Im/I)	Interval I (mGal)	r (=Im/I)	Im (mGal)	I'*	a (=I'/Im)
N-S Traverses (Arithmetic Sums)											
Perth J - Darwin	1085.286	0.99949	1084.391	1.00031	1084.507	1.00020			1084.728	1085.631	1.00083
Adelaide - Darwin	1403.790	0.99947	1402.450	1.00043	1402.919	1.00010			1403.053		
Remaining NS(1,5,6,7)	1061.283	0.99985	1060.963	1.00015	1061.130	1.00000			1061.125		
Total NS	3550.359	0.99959 <u>±.00009</u>	3547.804	1.00031 <u>±.00008</u>	3548.556	1.00010 <u>±.00006</u>			3548.906		
E-W Traverses (Absolute Sums)											
EW11	208.215	1.00138	208.606	0.99951	208.688	0.99913	209.200	0.9966	208.5037		
EW7B	383.669	1.00008	383.667	1.00008	383.762	0.99984			383.699		
EW5B	224.858	0.99986	224.952	0.99944	224.670	1.00070			224.627		
EW4B	182.154	0.99875	181.880	1.00025	181.743	1.00101			181.926		
Total EW	998.896	1.00006 <u>±.00054</u>	999.105	0.99985 <u>±.00020</u>	998.863	1.00009 <u>±.00043</u>			998.955		
Canberra CR	54.688	1.00024 <u>±.00003</u>	54.695	1.00011 <u>±.00042</u>	54.721	0.99963 <u>±.00014</u>	54.718	0.99969	54.701	54.77	1.00126

	G20 ¹	W140 ²	MW548 ³	S145 ⁴	
computed scale factor (= a x r x assumed scale factor)	1.00063 x maker's cal	0.10196	0.10955	0.10628	mean a =1.00003

¹ Assumed scale factor - maker's
² " " " - 0.10182
³ " " " - 0.10943
⁴ " " " - 0.10652

* accepted interval 1973 gravity scale or IGSN 71 value

TABLE 3. OBSERVATIONS ON CALIBRATION RANGES, FEBRUARY 1964 TO JANUARY 1965

Date	Calibration range	Interval on 1973 scale (mGal)	Observed interval (mGal)			
			G20 ¹	MW548 ²	S145 ³	WW35 ⁴
18-2-64	Melbourne	53.03	53.040	53.155*		53.036
18-2-64	"	"	53.040	53.208*		
18-2-64	"	"	53.056			
18-2-64	"	"	53.035			
23-3-64	"	"	53.048			
23-3-64	"	"	53.054			
30-4-64	"	"			53.039	
18-5-64	"	"	53.054	52.992	53.038	53.040
15-6-64	Brisbane	58.25	58.207	58.257		58.365
15-7-64	"	"			58.313	
5-8-64	Alice		52.244	52.006	52.273	
16-8-64	Townsville	60.55	60.579	60.504	60.413	
6-10-64	Alice		52.219	52.048	52.149	
11-11-64	Sydney	59.01	59.049	59.006	59.086	
10-12-64	Perth		53.975	53.899	53.982	
18-12-64	Adelaide		62.605	62.587	62.694	
22-12-64	Sydney	59.01	59.045	58.959	58.993	
8-1-65	Hobart	54.65	54.567	54.573	54.646	
26-1-65	Melbourne	53.03	53.072	52.944	52.989	
Mean Interval Sydney (weighted according to drift control)			59.047 <u>±.002</u>	58.982 <u>±.024</u>	59.040 <u>±.047</u>	
Mean Interval Melbourne (weighted according to drift control)			53.051 <u>±.004</u>	52.968 <u>±.024</u>	53.026 <u>±.014</u>	53.038 <u>±.002</u>

¹ Assumed scale factor - maker's factor

² " " " - 0.10955

³ " " " - 0.10643

⁴ " " " - 0.11551

* rejected

TABLE 4 OBSERVATIONS ON CALIBRATION RANGES, 1967

Date	Calibration range	Interval on 1973 scale (mGal)	Observed interval (mGal)			
			G20 ¹	MW548 ²	W140 ³	S145 ⁴
13.2.67	Canberra	54.77		54.658		
30.3.67	"	"			54.667	54.719
21.5.67	"	"	54.624*	54.720		
21.5.67	"	"	54.655*	54.713		
21.5.67	"	"	54.678			
25.5.67	"	"	54.688	54.748		
25.5.67	"	"	54.686	54.745		
25.5.67	"	"	54.693	54.720		
25.5.67	"	"	54.693	54.715		
25.5.67	"	"	54.713*			
7.6.67	Townsville	60.55		60.504		
9.6.67	Alice				52.084	
20.6.67	Canberra	54.77	54.686			
3.7.67	"	"	54.686	54.775		54.724
17.7.67	"	"	54.687	54.725	54.728	54.711
31.7.67	Adelaide		62.598	62.631	62.613	
17.8.67	Perth		53.937	53.978	53.930	
29.8.67	Alice		52.174	52.099	52.078	
24.9.67	"		52.163	52.106	52.070	
26.9.67	Melbourne	53.03	53.093	53.033	53.007	
29.9.67	Canberra	54.77	54.683	54.753	54.754	
17.10.67	"	"	54.689	54.728	54.661	
12.12.67	"	"		54.731		
14.12.67	"	"		54.704		
Mean Interval Canberra (weighted according to to drift control)			54.688 ±.001	54.721 ±.008	54.695 ±.023	54.718 ±.004

* rejected

¹ Assumed scale factor - maker's factor

2 " " " - 0.10943

3 " " " - 0.10182

4 " " " - 0.10652

[illegible]

TABLE 5. GRAVITY VALUES FOR NS2 NODE STATIONS (EAST-WEST ESTIMATES) (CONT'D)

Station	Observed interval (mGal)					Mean Interval (mGal)	Standard error of mean	Gravity value (mGal)
	G20 ¹	MW584 ²	W140 ³	S145 ⁴	WW35 ⁵			
Kempsey J	-53.718	-53.738		-53.357		-53.604	.123	979 412.358
Woomera J								979 358.754
Sydney J	20.386	20.098		20.332		20.272	.088	979 684.802
Adelaide L								979 705.074
Albury K	25.918*	26.004*	25.936*	25.943*		25.950*	.021	979 751.711
Meningie J								979 777.661
Melbourne M	16.180	16.029		16.108		16.106	.044	979 947.375
Mt Gambier J								979 963.481
							mean .085	

¹ Assumed scale factor: 1964-65, 0.99975 x maker's; 1967, 1.00063 x maker's

² " " " : 1964-65, 0.10962; 1967, 0.10955

³ " " " : 1967, 0.10196

⁴ " " " : 1964-65, 0.10640; 1967, 0.10628

⁵ " " " : 1964-65, 0.11540

* Observed in 1967

TABLE 6. GRAVITY VALUES FOR NS2 NODE STATIONS (NORTH-SOUTH AND EAST-WEST ESTIMATES)

Station	Gravity value prefix	East- west gravity value (mGal) X	North-South gravity values (mGal)						Mean N-S gravity value (mGal)	Standard error of N-S mean	Weighted mean N-S x 2, E-W x 1 (mGal)	Standard error of mean of N-S & E-W
			G20 ¹		MW548 ²		W140 ³					
			Y	Y' =(Y-A)/B	Y	Y' =(Y-A)/B	Y	Y' =(Y-A)/B				
Darwin K	978	300.848	300.933	300.819	300.933	301.144	300.933	301.023	300.995	.095	300.946	.074
Daly Waters J	978	374.694	374.702	374.618	374.492	374.762	374.518	374.697	374.692	.042	374.693	.001
Tennant Ck J	978	514.284	514.481	514.454	514.062	514.444	514.076	514.422	514.440	.009	514.388	.078
Alice Springs K	978	639.613	639.488	639.512	638.810	639.292	638.910	639.406	639.403	.063	639.473	.105
Henbury J	978	769.033	768.991	769.068	768.387	768.972	768.369	769.021	769.020	.028	769.024	.006
Abminga K	978	949.154	949.002	949.153	948.200	948.929	948.127	948.995	949.026	.066	949.069	.064
Oodnadatta J	979	085.820	085.642	085.849	084.863	085.701	084.749	085.781	085.777	.043	085.791	.021
Woomera J	979	358.777	358.380	358.698	357.615	358.672	357.322	358.682	358.684	.008	358.715	.047
Adelaide L	979	705.074	704.723	705.183	703.852	705.186	703.383	705.159	705.176	.009	705.142	.051
Meningie J	979	777.661	777.230	777.720	776.457	777.849	775.903	777.766	777.778	.038	777.739	.059
Mt Gambier J	979	963.481	962.802	963.368	961.951	963.491	961.395	963.481	963.447	.039	963.458	.017
										mean		mean
										.047		.057

¹ Assumed scale factor for Y - maker's, for Y' - 1.00041 x maker's; A = 0.237 ± 0.061; B = 0.999591 ± 0.000051; ERMS = 0.096

² Assumed scale factor for Y - 0.10943, for Y' - 0.10952; A = 0.029 ± 0.125; B = 0.999201 ± 0.000106; ERMS = 0.197

³ " " " for Y - 0.10182, for Y' - 0.10194; A = 0.272 ± 0.081; B = 0.998799 ± 0.000069; ERMS = 0.128

TABLE 7. GRAVITY VALUES FOR NS3 NODE STATIONS (EAST-WEST ESTIMATES)

Station	Observed interval (mGal)					Mean interval (mGal)	Standard error of mean	Gravity value (mGal)
	G20 ¹	MW548 ²	WW35 ³	S145 ⁴	W140 ⁵			
Adelaide L								979 705.142
Caiguna J	-221.770	-221.719		-221.553		-221.681	.065	979 483.461
Woomera J								979 358.715
Caiguna J	124.552	124.689		124.573		124.605	.043	979 483.320
Caiguna J								979 483.390
Albany J	209.317	209.177		209.237		209.244	.040	979 692.634
Caiguna J								979 483.390
Perth J	-96.683	-96.591		-96.598		-96.624	.029	979 386.766
Woomera J								979 358.715
Geraldton A	-102.982	-102.731		-102.866		-102.860	.073	979 255.855
Mt Willoughby J								979 077.893
*Hamelin Pool J	-43.521	-43.760			-43.853	-43.711	.038	979 034.182
Abminga J								978 949.069
Carnarvon A	-19.688	-19.409		-19.506		-19.534	.082	978 929.535

TABLE 7. GRAVITY VALUES FOR NS3 NODE STATIONS (EAST-WEST ESTIMATES) (CONT'D)

Station	Observed interval (mGal)					Mean interval (mGal)	Standard error of mean	Gravity value (mGal)
	G20 ¹	MW548 ²	WW35 ³	S145 ⁴	W140 ⁵			
Henbury J								978 769.024
* Onslow K	-9.598	-9.392			-9.497	-9.496	.059	978 759.528
Alice Springs K								978 639.473
* Anna Plains K	-29.624	-29.391			-29.611	-29.542	.078	978 609.931
Tennant Ck J								978 514.388
Derby J	-8.209	-7.848		-8.138		-8.065	.110	978 506.323
Daly Waters J								978 374.693
Wyndham J	25.482	25.418		25.543		25.481	.036	978 400.174
Oodnadatta J								979 085.791
Mt Willoughby J	-7.892	-7.921	-7.882			-7.898	.012 mean .016	979 077.893

¹ Assumed scale factor: 1964-65, 0.99975 x māker's; 1967, 1.00041 x makers

² " " " : 1964-65, 0.10962; 1967, 0.10952

³ " " " : 1964-65, 0.11540

⁴ " " " : 1964-65, 0.10640

⁵ " " " : 1967, 0.10194

* Observed in 1967

TABLE 8. GRAVITY VALUES FOR NS3 NODE STATIONS (NORTH-SOUTH AND EAST-WEST ESTIMATES)

Station	Gravity value prefix	East- west gravity value (mGal) X	North-South gravity values (mGal)						Mean N-S gravity value (mGal)	Standard error of N-S mean	Weighted mean N-S x 2, E-W x 1 (mGal)	Standard error of mean of N-S & E-W
			G20 ¹		W140 ²		MW548 ³					
			Y	Y'	Y	Y'	Y	Y'				
			=(Y-A)/B		=(Y-A)/B		=(Y-A)/B					
Darwin K	978	300.946	301.278	300.896	302.173	301.001	302.057	300.940	300.946	.031	300.946	.000
Wyndham J	978	400.174	400.491	400.145	401.281	400.222	401.250	400.241	400.203	.029	400.193	.015
Derby M	978	506.013	506.203	505.896	506.822	505.884	506.815	505.920	505.900	.010	505.938	.057
Anna Plains K	978	609.931	610.380	610.112	610.861	610.042	610.914	610.132	610.095	.027	610.040	.082
Onslow K	978	759.528	759.733	759.520	760.105	759.457	760.018	759.397	759.458	.035	759.481	.035
Carnarvon J	978	929.605	929.733	929.583	930.072	929.618	929.994	929.557	929.586	.018	929.592	.009
Hamelin Pool J	979	034.182	034.563	034.452	034.660	034.326	034.629	034.305	034.361	.046	034.301	.090
Geraldton J	979	256.555	256.473	256.444	256.399	256.319	256.497	256.413	256.392	.038	256.446	.081
Perth J	979	386.766	386.564	386.583	386.564	386.633	386.564	386.621	386.612	.015	386.663	.063
Albany J	979	692.634	692.569	692.701	692.413	692.832	692.422	692.810	692.781	.040	692.732	.074
										mean		mean
										.031		.062

¹ Assumed scale factor for Y - maker's, for Y' - 1.00037 x maker's; A = 0.494 ± 0.106; B = 0.999630 ± 0.000107; ERMS = 0.147

² " " " for Y - 0.10182, for Y' - 0.10194; A = 1.517 ± 0.106; B = 0.998856 ± 0.000107; ERMS = 0.147

³ " " " for Y - 0.10943, for Y' - 0.10955; A = 1.442 ± 0.102; B = 0.998919 ± 0.000103; ERMS = 0.141

TABLE 9. ESTIMATES OF GRAVITY INTERVAL ERRORS

Traverse	No of Ties n	Total Drift D	Mean Drift D _m	Mean Deviation from calculated drift d	Mean s.d. per tie s	$\sqrt{d^2 + D_m^2}$	nD_m^2	ns^2
EW1	6x3 =18	2.063	.115	.023	.117	.062	.238	.069
EW2A	7x3 =21	1.379	.066	.015	.068	.058	.091	.071
EW2B	5x3 =15	1.168	.078	.030	.084	.037	.091	.021
EW3A	8x3 =24	2.574	.107	.033	.112	.070	.275	.118
EW3B	8x3 =24	2.951	.123	.026	.126	.076	.363	.139
EW4A	12x3 =36	2.468	.069	.019	.072	.062	.171	.138
EW4B	6x3 =18	2.482	.138	.023	.140	.060	.343	.065
EW5A	10x3 =30	1.779	.059	.018	.062	.054	.104	.087
EW5B	7x3 =21	3.945	.188	.024	.190	.042	.724	.037
EW6A	11x3 =33	4.205	.127	.028	.130	.071	.532	.166
EW6B	12x3 =36	2.477	.069	.030	.075	.059	.171	.125
EW7A	13x3 =39	2.516	.116	.028	.119	.078	.525	.237
EW7B	9x3 =27	4.337	.161	.029	.164	.066	.700	.118
EW8A	10x3 =30	1.971	.066	.018	.068	.075	.131	.169
EW8B	12x3 =36	3.857	.107	.027	.110	.063	.412	.143
EW9A	9x3 =27	2.432	.090	.024	.093	.074	.219	.148
EW9B	10x3 =30	1.905	.064	.018	.066	.059	.123	.104
EW10A	8x3 =24	1.835	.076	.013	.077	.064	.139	.098
EW10B	6x3 =18	1.512	.084	.027	.088	.078	.127	.110
EW11	6x4 =24	1.554	.065	.016	.067	.103	.101	.255
EW12	3x4 =12	1.418	.118	.027	.121	.058	.167	.040
NS2	13x3 =39	3.647	.094	.023	.097	.072	.345	.202
NS3	6x3 =18	5.128	.085	.014	.086	.061	.434	.223
Sum*	543						5.747	2.448
Sum / n							.01058	.004508
Sum/ n							.1029	.06714

* excluding north-south traverses

APPENDIX 1A - TRAVERSE EW1

Meter (scale factor) Station	G20 (makers' cal)			MW548 (0.10955)			S145 (0.10643)				
	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Mean Interval mGal	S_i
Iron Range J	-42.066	19	26	-42.087	35	122	-42.278	11	58	-42.144	0.117
Weipa K	-21.824	12	26	-21.708	49	468	-21.785	27	108	-21.772	0.059
Yirrkala/Gove J	49.478	8	34	49.439	27	100	49.510	9	92	49.476	0.036
Elcho Island J	-50.491	16	10	-50.418	41	33	-50.474	7	7	-50.461	0.038
Maningrida J	38.989	8	16	38.892	38	37	38.936	7	63	38.939	0.049
Oenpelli J	- 3.940	6	64	- 4.003	16	571	- 3.965	4	228	- 3.969	0.032
Darwin L		d=12	D=176		d=36	D=1331		d=13	D=556		S=0.062
Arithmetic Sum	-29.854			-29.885			-30.056			-29.932	0.109
Absolute Sum	206.788			206.547			206.948			206.761	0.202

D_i maximum drift over the period of a tie

d_i mean drift of the observations from the calculated drift model

S_i standard deviation of the estimates of the interval

$S = S_i^2/n$ mean standard deviation per tie

$d = d_i^2/n$ mean deviation from the calculated drift

D total maximum drift

n number of intervals along the traverse

APPENDIX 1B - TRAVERSE EW2A

[illegible]

APPENDIX 1C - TRAVERSE EW2B

Meter (scale factor) Station	G20 (makers' cal)			MW548 (0.10955)			S145 (0.10643)				
	Interval mGal	d _i μGal	D _i μGal	Interval mGal	d _i μGal	D _i μGal	Interval mGal	d _i μGal	D _i μGal	Mean Interval mGal	S _i
Kalumburu J	56.156	0	32	56.096	28	84	56.040	2	45	56.097	.058
Wyndham J	-31.101	8	14	-31.119	58	141	-31.115	3	26	-31.112	.009
Newry J	40.775	8	13	40.860	76	171	40.783	10	79	40.806	.047
Victoria River Downs A	-9.070	3	16	-9.029	43	93	-9.081	4	56	-9.060	.027
Top Springs J	-26.092	6	16	-26.114	33	278	-26.137	9	104	-26.114	.023
Daly Waters J		d=6	D=91		d=51	D=767		d=6	D=310		S=0.037
Arithmetic Sum	30.668			30.694			30.490			30.617	0.111
Absolute Sum	163.194			163.218			163.156			163.189	0.031

APPENDIX 1D - TRAVERSE EW3A

Meter (scale factor) Station	G20 (makers' cal)			MW548 (0.10955)			S145 (0.10643)				
	Interval mGal	d_i μ Gal	D_i μ Gal	Interval mGal	d_i μ Gal	D_i μ Gal	Interval mGal	d_i μ Gal	D_i μ Gal	Mean Interval mGal	S_i
Cairns A	-7.241	20	34	-7.520	83	853	-7.260	25	87	-7.340	0.156
Georgetown J	26.827	4	17	26.699	6	290	26.779	8	119	26.768	0.065
Croydon J	-2.408	10	24	-2.405	14	44	-2.387	4	79	-2.400	0.011
Normanton K	26.505	16	37	26.514	6	10	26.598	8	25	26.539	0.051
Burketown J	-17.754	7	68	-17.760	21	108	-17.847	4	74	-17.787	0.052
Lawn Hill J	-23.586	3	21	-23.563	7	52	-23.568	1	100	-23.586	0.025
Alexandria Downs J	* -23.638	12	51	-23.603	81	72	-23.557	11	100		
Rockhampton Downs J	26.933	6	88	26.804	89	79	26.894	6	170	26.877	0.066
Tennant Creek J	-0.905	5	16	-0.926	37	70	-0.950	11	84	-0.927	0.023
		d=11	D=320		d=48	D=1516		d=11	D=738		S=0.070
Arithmetic Sum	28.345			27.823			28.264			28.144	0.281
Absolute Sum	132.185			132.211			132.278			132.225	0.048

* interval observed on two days

APPENDIX 1E - TRAVERSE EW3B

[illegible]

APPENDIX 1F - TRAVERSE EW4A

Meter (scale factor) Station	G20 (makers' cal)			MW548 (0.10955)			S145 (0.10643)				
	Interval mGal	d _i μGal	D _i μGal	Interval mGal	d _i μGal	D _i μGal	Interval mGal	d _i μGal	D _i μGal	Mean Interval mGal	S _i
Alice Springs K	0.229	6	17	0.199	33	86	0.214	21	44	0.214	0.015
Woodgreen J	-7.541	12	30	-7.444	26	85	-7.571	11	42	-7.519	0.066
Ammaroo J	-19.547	7	32	-19.614	38	26	-19.518	11	69	-19.560	0.049
Annitowa J	9.721	10	67	9.727	20	32	9.732	7	166	9.727	0.006
Lake Nash J	-18.035	16	31	-18.140	34	297	-18.099	13	64	-18.091	0.053
Mount Isa J	32.805	2	65	32.849	8	225	32.961	10	38	32.872	0.080
Cloncurry J	2.670	4	48	2.607	48	276	2.645	2	14	2.641	0.032
Julia Creek	-39.069	2	8	-39.185	23	96	-39.251	4	13	-39.168	0.092
Richmond J	-4.288	27	48	-4.392	11	15	-4.262	26	40	-4.314	0.069
Hughendon J	-39.670	5	8	-39.545	24	184	-39.517	16	48	-39.577	0.081
Torrens Creek J	24.221	8	14	24.237	16	30	24.102	30	62	24.187	0.074
Charters Towers J	28.570	3	8	28.664	1	137	28.567	3	3	28.600	0.055
Townsville A	d=11	D=376			d=27	D=1489		d=15	D=603		S=0.062
Arithmetic Sum	-29.934			-30.037			-29.997			-29.989	0.052
Absolute Sum	226.366			226.603			226.439			226.469	0.121

APPENDIX 1G - TRAVERSE EW5A

Meter (scale factor)	G20 (makers' cal)			MW548 (0.10955)			S145 (0.10643)				
	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Mean Interval mGal	S_i
Mackay J	42.530	9	19	42.290	21	71	42.356	34	14	42.392	0.124
Clermont J	20.754	5	40	20.694	13	258	20.799	6	9	20.749	0.053
Barcaldine J	-6.929	5	6	-6.855	29	127	-6.933	18	33	-6.906	0.044
Longreach A	-49.154	8	31	-49.192	16	218	-49.144	26	122	-49.163	0.025
Winton J	26.354	3	0	26.235	17	26	26.301	17	17	26.297	0.060
Middleton J	27.024	10	7	27.129	33	108	27.081	17	57	27.078	0.053
Boulia J	-4.587	1	10	-4.572	11	26	-4.574	7	20	-4.578	0.008
Glenormiston J	-25.012	4	33	-25.055	36	163	-25.056	20	44	-25.041	0.025
Marqua J	-18.958	3	85	-18.949	7	162	-18.903	30	26	-18.937	0.030
Ringwood J	37.404	8	7	37.365	20	34	37.358	3	5	37.376	0.025
Henbury J		d=6	D=238		d=22	D=1193		d=20	D=348		S=0.054
Arithmetic Sum	49.426			49.090			49.285			49.267	0.169
Absolute Sum	258.706			258.336			258.505			258.516	0.185

APPENDIX 1H - TRAVERSE EW6A

[illegible]

APPENDIX 1I - TRAVERSE EW6B

Meter (scale factor) Station	G20 (maker's cal)			MW548 (0.10955)			S145 (0.10643)				
	Interval mGal	d _i μGal	D _i μGal	Interval mGal	d _i μGal	D _i μGal	Interval mGal	d _i μGal	D _i μGal	Mean Interval mGal	S _i
Abminga J	12.144	4	17	11.958	50	47	12.150	9	38	12.084	0.109
De Rose Hill J	-83.115	16	22	-82.994	65	69	-83.053	20	39	-83.054	0.061
Kenmore Park J	65.288	3	8	65.248	46	186	65.225	6	33	65.254	0.032
Mount Davies J	-28.286	5	7	-28.144	58	249	-28.270	7	161	-28.233	0.078
Blackstone Mining Camp J	- 3.237	9	37	- 3.185	26	74	- 3.240	6	46	- 3.221	0.031
Warburton Range J	- 5.590	15	27	- 5.621	42	23	- 5.614	25	55	- 5.608	0.016
Alexander Springs J	7.402	7	21	7.552	29	282	7.460	11	2	7.475	0.071
	7.424	9	14				7.460	6	44		
Windidda J	24.420	11	30	24.395	15	16	24.417	6	24	24.411	0.014
Wiluna J	-34.222	8	24	-34.239	16	120	-34.154	41	96	-34.205	0.045
Meekathara J	34.566	8	40	34.609	17	288	34.546	5	85	34.574	0.032
Nookawarra J	-27.921	7	16	-27.760	39	98	-27.870	9	21	-27.850	0.082
Gascoyne Junction J	18.847	14	39	18.784	56	88	18.892	7	31	18.841	0.054
Carnarvon A		d=9	D=285		d=42	D=1540		d=16	D=651		S=0.059
Arithmetic Sum	-19.693			-19.397			-19.511			-19.534	0.149
Absolute Sum	345.049			344.489			344.891			344.810	0.289

[illegible]

APPENDIX 1K - TRAVERSE EW8A

Meter (scale factor)	G20 (maker's cal)			MW548 (0.10955)			S145 (0.10643)				
	Interval mGal	d _i μGal	D _i μGal	Interval mGal	d _i μGal	D _i μGal	Interval mGal	d _i μGal	D _i μGal	Mean Interval mGal	S _i
Woomera J	-52.980	16	10	-52.830	21	295	-53.035	7	25	-52.948	0.106
Leigh Creek A	30.549	21	56	30.391	20	27	30.533	10	28	30.491	0.087
Wooltana J	-16.362	12	89	-16.198	31	59	-16.336	4	39	-16.299	0.088
Quinyambie/Moorabie J	-72.303	9	43	-72.274	18	129	-72.385	13	14	-72.321	0.058
Tibooburra J	33.010	16	65	32.876	57	217	32.967	4	80	32.951	0.068
Wanaaring J	25.371	3	22	25.420	9	99	25.381	9	58	25.391	0.026
Bourke J	0.671	5	24	0.595	37	36	0.634	2	51	0.633	0.038
Walgett J	- 9.272	7	15	- 9.384	31	33	- 9.298	7	48	- 9.318	0.059
Narrabri J	13.713	2	78	13.544	10	51	13.665	5	111	13.641	0.087
Tamworth J	4.222	3	8	4.389	17	122	4.244	11	39	4.285	0.091
Grafton K		d=11	D=410		d=29	D=1068		d=8	D=493		S=0.075
Arithmetic Sum	-43.381			-43.471			-43.630			-43.494	0.126
Absolute Sum	258.453			257.901			258.478			258.277	0.326
Wanaaring J	-34.110			-34.103			-34.033				
Budgerygah J	-34.089			-33.862			-34.000			-34.033	0.060

APPENDIX 1L - TRAVERSE EW8B

Meter (scale factor)	G20 (maker's cal)			MW548 (0.10955)			S145 (0.10643)				
	Interval mGal	d _i μGal	D _i μGal	Interval mGal	d _i μGal	D _i μGal	Interval mGal	d _i μGal	D _i μGal	Mean Interval mGal	S _i
Geraldton A	90.002	10	12	89.906	16	20	89.914	8	78	89.941	0.053
Green Head J	-16.841	18	46	-17.014	12	114	-16.996	12	83	-16.950	0.095
Merredin J	-26.029	6	6	-25.909	20	258	-25.967	4	40	-25.968	0.060
Southern Cross J	-26.616	10	97	-26.687	50	193	-26.636	12	114	-26.646	0.037
Kalgoorlie J	8.409	18	71	8.426	54	598	8.399	7	90	8.411	0.014
Zanthus J	43.516	10	63	43.586	37	321	43.463	13	74	43.522	0.062
Rawlinna J	10.544	6	64	10.384	39	64	10.524	31	46	10.484	0.087
Loongana J	-46.528	1	65	-46.538	64	134	-46.482	59	195	-46.516	0.030
Forrest J	14.620	16	16	14.616	55	103	14.630	14	100	14.622	0.007
Cook J	-36.954	7	55	-37.101	25	28	-36.959	14	95	-37.005	0.083
Maralinga J	50.017	0	84	50.174	78	376	50.015	8	153		
	50.051	21	64	50.116	13	271	50.016	4	65	50.065	0.070
Tarcoola J	38.851	12	96	38.851	9	10	38.989	6	46	38.897	0.080
Woomera J		d=11	D=665		d=40	D=2166		d=21	D=1026		S=0.063
Arithmetic Sum	103.008			102.665			102.895			102.856	0.175
Absolute Sum	408.944			409.163			408.975			409.027	0.119

APPENDIX 1M - TRAVERSE EW9A

Meter (scale factor)	G20 (maker's cal)			MW548 (0.10955)			S145 (0.10643)				
	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Mean Interval mGal	S_i
Kempsey J	-9.220	13	25	-9.294	40	40	-9.236	1	50	-9.250	0.039
Scone J	14.812	14	18	14.760	31	30	14.819	24	34	14.797	0.032
Dubbo J	-0.194	8	13	-0.156	18	498	-0.041	75	172	-0.130	0.080
Nyngan J	-28.610	8	24	-28.544	16	17	-28.503	10	20	-28.552	0.054
Cobar J	3.636	6	98	3.676	26	151	3.646	1	76	3.653	0.021
Wilcannia J	48.485	13	43	48.309	45	595	48.623	2	3	48.472	0.157
Broken Hill J	-9.515	4	49	-9.489	10	152	-9.570	5	78	-9.525	0.041
Mannahill J	-51.500	7	4	-51.341	8	61	-51.519	8	27	-51.453	0.098
Hawker J	-21.625	23	62	-21.625	36	26	-21.591	2	66	-21.614	0.020
Woomera J		d=12	D=336		d=28	D=1570		d=27	D=526		S=0.074
Arithmetic Sum	-53.731			-53.704			-53.372			-53.602	0.200
Absolute Sum	187.597			187.194			187.548			137.446	0.220

APPENDIX 1N - TRAVERSE EW9B

Meter (scale factor)	G20 (maker's cal)			MW548 (0.10955)			S145 (0.10643)				
	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Mean Interval mGal	S_i
Woomera J	74.473	6	32	74.444	30	112	74.484	4	65	74.467	0.021
Lake Everard J	5.029	5	5	5.155	25	14	5.000	3	32	5.061	0.082
Ceduna A	4.936	10	12	5.000	7	257	5.035	3	57	4.990	0.050
Pintumba/Coorabie J	-51.404	9	53	-51.393	12	52	-51.532	4	71	-51.443	0.077
Nullarbor J	33.674	22	14	33.641	35	58	33.634	12	10	33.650	0.021
Eucla J	24.802	6	48	24.795	10	122	24.850	7	58	24.816	0.030
Madura J	33.073	11	8	32.967	15	29	33.137	8	90	33.059	0.086
Caiguna J	-80.535	7	16	-80.522	6	376	-80.608	6	38	-80.555	0.046
Norseman J	2.041	17	92	2.147	19	36	2.050	13	46	2.079	0.059
Quairading J	-18.213	6	31	-18.154	02	41	-18.067	6	30	-18.145	0.073
Perth J		d=11	D=311		d=27	D=1097		d=7	D=497		S=0.059
Arithmetic Sum	27.876			28.080			27.983			27.980	0.102
Absolute Sum	328.180			328.218			328.397			328.265	0.116

APPENDIX 10 - TRAVERSE EW10A

Meter (scale factor)	G20 (maker's cal)			MW548 (0.10955)			S145 (0.10643)				
	Interval mGal	d_i μ Gal	D_i μ Gal	Interval mGal	d_i μ Gal	D_i μ Gal	Interval mGal	d_i μ Gal	D_i μ Gal	Mean Interval mGal	S_i
Adelaide L	-64.651	3	8	-64.521	28	83	-64.713	2	45	-64.628	0.098
Waikerie J	1.510	5	33	1.481	22	145	1.504	3	82	1.498	0.015
Mildura J	39.699	5	89	39.723	5	131	39.769	8	80	39.730	0.036
Balranald J	-23.920	14	86	-23.925	21	18	-23.921	3	63	-23.922	0.003
Hay J	9.252	3	40	9.208	14	182	9.268	1	8	9.243	0.031
Narrandera J	- 9.617	11	47	- 9.498	23	495	- 9.643	6	37	- 9.586	0.077
Wagga J	-51.042	13	31	-51.085	17	69	-50.950	1	4	-51.026	0.069
Canberra J	78.378	16	26	78.532	22	28	78.348	2	5	78.419	0.099
Sydney J		d=10	D=360		d=20	D=1151		d=4	D=324		S=0.064
Arithmetic Sum	-20.391			-20.085			-20.338			-20.271	0.164
Absolute Sum	278.069			277.973			278.116			278.053	0.073

APPENDIX 1P - TRAVERSE EW10B

Meter (scale factor) Station	G20 (maker's cal)			MW548 (0.10955)			S145 (0.10643)				
	Interval mGal	d _i μGal	D _i μGal	Interval mGal	d _i μGal	D _i μGal	Interval mGal	d _i μGal	D _i μGal	Mean Interval mGal	S _i
Albany J	-29.406	3	8	-29.333	6	94	-29.364	2	14	-29.368	0.037
Bremer Bay J	-96.784	8	18	-96.772	61	138	-96.898	4	89	-96.818	0.070
Esperance J	-83.179	6	16	-82.938	21	431	-83.034	4	26	-83.050	0.121
Caiguna J	49.813	38	80	49.770	44	143	49.753	54	139	49.779	0.031
Streaky Bay J	97.213	16	80	97.095	43	33	97.014	17	27	97.107	0.100
Cowell J	74.799	16	74	74.712	15	38	74.848	5	64	74.786	0.069
Adelaide L		d=19	D=276		d=37	D=877		d=23	D=359		S=0.078
Arithmetic Sum	12.456			12.534			12.319			12.436	0.109
Absolute Sum	431.194			430.620			430.911			430.908	0.287

APPENDIX 1Q - TRAVERSE EW12

Meter (scale factor) Station	G20 (maker's cal)			MW548 (0.10955)			S145 (0.10643) /WW35* (0.11551)				
	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Mean Interval mGal	S_i
Mt Gambier J	-38.815	4	18	-38.842	30	506	-38.814 -38.868*	3 12	9 59	-38.835	0.026
Hamilton J	54.899	18	60	55.018	28	133	55.002 55.106*	10 73	22 267	55.006	0.085
Colac J	-32.268	12	24	-32.195	28	64	-32.301 -32.218*	2 12	33 223	-32.246	0.048
Melbourne M	60.773	8	23	60.708	66	284	60.868 60.831*	12 38	23 41	60.795	0.070
Yarram J	-39.368	31	25	-39.261	27	260	-39.372 -39.384*	9 25	15 76	-39.346	0.057
Bairnsdale K	16.092	0	20	16.111	2	119	16.059 16.068*	5 0	17 78	16.083	0.024
Mallacoota J		d=16	D=170		d=35	D=1366		d=8 d=36*	D=119 D=744*		S=0.056
Arithmetic Sum	21.313			21.539			21.442 21.535*			21.457	0.106
Absolute Sum	242.215			242.135			242.416 242.475*			242.310	0.161
Yarram J	4.275	14	55	4.124	51	260	4.135	17	139	4.178	0.084
Launceston S											

* interval observed with meter indicated above

APPENDIX 1R - TRAVERSE EW13

Meter (scale factor)	G20 (maker's cal)			548 (0.10955)			S145 (0.10643)				
	Interval mGal	d_i μ Gal	D_i μ Gal	Interval mGal	d_i μ Gal	D_i μ Gal	Interval mGal	d_i μ Gal	D_i μ Gal	Mean Interval mGal	S_i
Flinders Island L	97.802	0	16	97.709	20	129	97.861	10	29	97.791	0.077
St Helens J	-26.620	14	19	-26.646	0	36	-26.768	3	77	-26.678	0.079
Launceston J				8.480	25	408	8.536	5	6		
Devonport J				-7.998	39	71	- 8.103	10	28		
Smithton J				-79.360	12	63	-79.356	6	54		
King Island J					d=23	D=707		d=7	D=194		
Arithmetic Sum				- 7.815			- 7.830				
Absolute Sum				220.193			220.624				
Launceston J	-45.321	22	53	-45.484	0	112	-45.433	1	54	-45.413	0.083
Hobart R											
Launceston K	8.184*										
Devonport L											

* observed later in 1965

APPENDIX 1S - TRAVERSE EW14

Meter (scale factor)	G20 (maker's cal)	MW548 (0.10955)	S145 (0.10643)	
Station	Interval d _i D _i mGal μGal μGal	Interval d _i D _i mGal μGal μGal	Interval d _i D _i mGal μGal μGal	Mean Interval S _i mGal
Strahan J	77.282 6 15	77.266 25 118	77.256 11 55	77.268 0.013
Hobart T				

APPENDIX 2A - TRAVERSE EW4B

Meter (scale factor) Station	G20 (maker's cal)			W140 (0.10189)			MW548 (0.10943)				
	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Mean Interval mGal	S_i
Alice Springs K	-5.553	7	14	-5.531	5	115	-5.512	16	137	-5.532	0.021
Hermannsburg K	11.121	10	32	11.090	12	105	11.087	36	76	11.099	0.019
Papunya J	-95.659	8	64	-95.623	14	166	-95.425	17	134	-95.569	0.126
Vaughan Springs J	- 4.616	8	14	- 4.531	8	150	- 4.527	22	54	- 4.558	0.050
Balgo Hill J	65.150	2	25	65.052	56	156	65.101	23	118	65.101	0.049
Swindell L	- 0.055	10	40	- 0.053	24	356	- 0.091	44	726	- 0.066	0.021
Anna Plains K		d=8	D=189		d=26	D=1048		d=28	D=1245		S=0.060
Arithmetic Sum	-29.612			-29.596			-29.367			-29.525	0.137
Absolute Sum	182.154			181.880			181.743			181.926	0.209

APPENDIX 2B - TRAVERSE EW5B

Meter (scale factor) Station	G20 (maker's cal)			W140 (0.10189)			MW548 (0.10943)				
	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Mean Interval mGal	S_i
Onslow K	14.914	16	28	14.878	14	208	14.791	10	228	14.861	0.063
Edmund J	2.456	13	44	2.400	6	54	2.402	6	88	2.419	0.032
Mt Vernon J	-61.512	6	8	-61.587	4	337	-61.520	34	441	-61.540	0.041
Mundiwindi J	67.109	0	16	67.141	30	291	67.113	64	313	67.121	0.017
Warri J	-24.144	3	15	-24.208	20	331	-24.229	45	342	-24.194	0.044
Giles L	32.747	6	16	32.803	21	242	32.721	23	352	32.757	0.042
Ayers Rock J	-21.976	10	6	-21.935	40	235	-21.894	6	350	-21.935	0.041
Henbury J		d=9	D=133		d=23	D=1698		d=34	D=2114		S=0.042
Arithmetic Sum	9.594			9.492			9.384			9.490	0.105
Absolute Sum	224.858			224.952			224.670			224.827	0.144

APPENDIX 2C - TRAVERSE EW7B

Meter (scale factor) Station	G20 (maker's cal)			W140 (0.10182)			MW548 (0.10943)				
	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Mean Interval mGal	S_i
Mt Willoughby J	75.323	32	73	75.187	30	151	75.249	10	65	75.253	0.068
Emu J	-79.277	18	24	-79.227	24	37	-79.311	38	44	-79.272	0.042
Serpentine Lakes J	26.650	7	58	26.464	80	400	26.411	41	330	26.508	0.126
Decca J	-61.886	5	76	-61.923	41	184	-61.859	35	434	-61.889	0.032
Lake Yeo J	44.936	8	23	44.974	6	199	44.925	8	173	44.945	0.026
Laverton J	-48.469	1	16	-48.556	31	327	-48.602	37	358	-48.542	0.068
Sandstone J	22.594	4	17	22.650	13	99	22.710	17	110	22.651	0.058
Mt Magnet J	-23.954	8	40	-24.043	31	291	-23.971	14	331	-23.989	0.047
Barloweerie J	0.580	4	30	0.643	44	94	0.724	31	353	0.649	0.072
Hamelin Pool J		d=13	D=357		d=39	D=1782		d=29	D=2198		S=0.066
Arithmetic Sum	-43.503			-43.831			-43.724			-43.686	0.167
Absolute Sum	383.669			383.667			383.762			383.699	0.054

APPENDIX 2D - TRAVERSE EW11

Meter (scale factor)	G20 (maker's cal)			MW548 (0.10943)			W140 (0.10182)/ S145* (0.10652)				
	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Interval mGal	d_i μGal	D_i μGal	Mean Interval mGal	S_i
Bombala J	33.973	19	24	34.297	14	131	34.053 34.043*	29 2	256 14	34.092	0.142
Albury K	48.488	12	15	48.436	20	111	48.468 48.590*	28 4	40 11	48.496	0.067
Benalla J	-26.707	10	10	-26.756	19	35	-26.712 -26.809*	3 3	107 63	-26.746	0.047
Kerang J	33.086	23	101	33.182	14	115	33.178 33.332*	11 8	98 23	33.195	0.102
Nhill J	-28.965	4	8	-28.883	27	43	-29.034 -29.111	26 16	80 101	-28.998	0.097
Meningie J	36.996	4	39	37.134	9	58	37.161 37.315*	11 12	23 48	37.152	0.131
Kingscote J		d=14	D=197		d=18	D=493		d=20 d=9*	D=604 D=260		S=0.103
Arithmetic Sum	96.871			97.410			97.114 97.360*			97.189	0.248
Absolute Sum	208.215			208.688			208.606 209.200*			208.677	0.405

* interval observed with meter indicated above

APPENDIX 2E - TRAVERSE NS1

Meter (scale factor)	G20 (maker's cal)			W140 (0.10182)			MW548 (0.10943)/ W169 (0.10109*)				
	Interval mGal	d _i Gal	D _i Gal	Interval mGal	d _i Gal	D _i Gal	Interval mGal	d _i Gal	D _i Gal	Mean Interval mGal	S _i
Melbourne M	-195.526	11	58	-195.464	22	255	-195.484 -195.579	4 19	242 125	-195.513	0.051
Albury K	-145.224	5	0	-145.248	35	262	-145.406 -145.425	37 35	372 214	-145.326	0.104
Canberra J		d=9	D=58		d=29	D=517		d=26 d=28*	D=614 D=339*		S=0.082
Arithmetic Sum	-340.750			-340.712			-340.890 -341.004*			-340.839	0.134

* interval observed with meter indicated above

APPENDIX 2F - TRAVERSE NS2

Meter (scale factor) Station	G20 (maker's cal)			W140 (0.10182)			MW548 (0.10943)				
	Interval mGal	d_i Gal	D_i Gal	Interval mGal	d_i Gal	D_i Gal	Interval mGal	d_i Gal	D_i Gal	Mean Interval mGal	S_i
Adelaide L	-145.199	14	11	-145.111	16	90	-145.175	45	13	-145.162	0.045
Whyalla J	-201.144	6	17	-200.950	16	38	-201.062	51	211	-201.052	0.097
Woomera J	-146.145	2	24	-146.040	6	230	-146.027	33	311	-146.071	0.065
William Creek J	-126.593	4	16	-126.533	19	144	-126.725	12	112	-126.617	0.098
Oodnadatta J	-136.640	0	0	-136.622	5	187	-136.663	18	178	-136.642	0.021
Abminga K	-180.011	20	17	-179.758	40	99	-179.813	6	48	-179.861	0.133
Henbury J	-129.503	18	23	-129.459	12	93	-129.577	8	130	-129.513	0.060
Alice Springs K	- 41.473	6	54	- 41.417	2	134	- 41.426	26	252	-441.439	0.030
Barrow Creek J	- 83.534	12	42	- 83.417	6	341	- 83.322	67	133	- 83.424	0.106
Tennant Creek K	- 88.413	9	39	- 88.225	10	49	- 88.235	23	62	- 88.291	0.106
Newcastle Waters J	- 51.366	15	42	- 51.333	12	90	- 51.335	25	77	- 51.345	0.019
Daly Waters J	- 44.263	7	16	- 44.092	27	72	- 44.083	52	90	- 44.146	0.101
Katherine L	- 29.506	3	17	- 29.493	5	51	- 29.476	14	94	- 29.492	0.015
Darwin K		d=10	D=318		d=17	D=1618		d=35	D=1711		S=0.072
Arithmetic Sum	-1403.790			-1402.450			-1402.919			-1403.053	0.680

[illegible]

APPENDIX 2G - TRAVERSE NS3

Meter (scale factor) Station	G20 (maker's cal)			W140 (0.10182)			MW548 (0.10943)				
	Interval mGal	d _i Gal	D _i Gal	Interval mGal	d _i Gal	D _i Gal	Interval mGal	d _i Gal	D _i Gal	Mean Interval mGal	S _i
Albany J	-117.584	17	15	-117.511	3	122	-117.471	4	191	-117.522	0.057
Busselton J	-188.421	6	60	-188.338	16	138	-188.387	9	51	-188.382	0.042
Perth J	-130.091	6	27	-130.165	2	11	-130.057	6	132	-130.108	0.051
Geraldton J	-127.083	0	68	-126.948	8	101	-127.016	11	22	-127.016	0.068
Mt Curious J	- 94.827	4	17	- 94.791	4	319	- 94.852	11	225	- 94.823	0.031
Hamelin Pool J	-104.830	2	0	-104.588	7	161	-104.635	9	222	-104.684	0.128
Carnarvon J	-103.524	4	8	-103.550	17	97	-103.571	14	53	-103.548	0.024
Winning J	- 66.476	7	13	- 66.417	17	201	- 66.405	14	147	- 66.433	0.038
Onslow K	-113.643	6	33	-113.521	23	28	-113.537	19	111	-113.567	0.066
Barrow Island J	17.441	23	41	17.313	25	45	17.421	22	92	17.392	0.069
Roebourne J	- 32.092	4	16	- 31.939	35	45	- 31.943	47	121	- 31.991	0.087
Port Hedland J	42.482	5	47	42.319	11	92	42.367	6	115	42.389	0.084
Wallal Downs J	- 63.541	7	11	- 63.416	14	156	- 63.412	19	20	- 63.456	0.073
Anna Plains K	- 86.028	0	32	- 85.938	19	92	- 85.953	13	55	- 85.973	0.048
Broome J	- 18.149	4	8	- 18.101	0	9	- 18.146	3	158	- 18.132	0.027
Derby M	-182.021	7	41	-181.891	27	304	-181.952	9	93	-181.955	0.065

APPENDIX 2G (CONT'd)

Meter (scale factor)	G20 (maker's cal)			MW548 (0.10943)			W140 (0.10182)				
	Interval mGal	d_i Gal	D_i Gal	Interval mGal	d_i Gal	D_i Gal	Interval mGal	d_i Gal	D_i Gal	Mean Interval mGal	S_i
Gibb River J	20.180	4	16	20.252	11	26	20.271	4	113	20.234	0.048
Kalumburu J	56.129	2	15	56.098	21	89	56.116	7	22	56.114	0.016
Wyndham J	- 90.995	4	24	- 90.901	8	246	- 90.928	6	208	- 90.941	0.048
Port Keats J	- 8.218	7	22	- 8.207	16	108	- 8.265	21	73	- 8.230	0.031
Darwin K		d=35	D=514		d=75	D=2390		d=71	D=2224		S=0.061
Arithmetic Sum	-1391.291			-1390.240			-1390.365			-1390.632	0.574
Absolute Sum	1663.755			1662.204			1662.715			1662.891	0.790

APPENDIX 2H - TRAVERSE NS5

Meter (scale factor) Station	G20 (maker's cal)			MW548 (0.10943)			W140 (0.10182)				
	Interval mGal	d _i Gal	D _i Gal	Interval mGal	d _i Gal	D _i Gal	Interval mGal	d _i Gal	D _i Gal	Mean Interval mGal	S _i
Balgo Hill J	109.416	7	8	109.240	36	281	109.115	10	274	109.257	0.151
Terry Hills J	128.015	3	38	127.844	96	128	127.973	87	261	127.944	0.089
Warri J		d=5	D=46		d=72	D=409		d=62	D=535		S=0.124
Arithmetic Sum	237.431			237.084			237.088			237.201	0.199

APPENDIX 21 - TRAVERSE NS6

Meter (scale factor)	G20 (maker's cal)			MW548 (0.10943)			W140 (0.10182)/ S145* (0.10652)				
	Interval mGal	d _i Gal	D _i Gal	Interval mGal	d _i Gal	D _i Gal	Interval mGal	d _i Gal	D _i Gal	Mean Interval mGal	S _i
Kingscote J	-104.777	2	8	-104.872	4	18	-104.846 -105.052*	6 3	50 8	-104.887	0.117
Port Lincoln J	-4.307	6	11	-4.742	30	46	-4.824 -4.762*	6 14	105 19	-4.784	0.038
Adelaide L		d=4	D=19		d=21	D=64		d=6 d=10*	D=155 D=27*		S=0.087
Arithmetic Sum	-109.584			-109.614			-109.670 -109.814*			-109.671	0.102

* interval observed with meter indicated above

APPENDIX 2J - TRAVERSE NS7

Meter (scale factor)	G20 (maker's cal)			MW548 (0.10943)			M140 (0.10182)				
	Interval mGal	d_i Gal	D_i Gal	Interval mGal	d_i Gal	D_i Gal	Interval mGal	d_i Gal	D_i Gal	Mean Interval mGal	S_i
Canberra J	111.280	13	20	111.020	9	53	111.174	15	71	111.158	0.131
Bombala J	207.444	17	69	207.661	3	77	207.486	66	177	207.530	0.115
Merrimbula J	59.601	13	1	59.603	36	53	59.657	3	2	59.620	0.032
Mallacoota J		d=14	D=90		d=21	D=183		d=39	D=250		S=0.102
Arithmetic Sum	378.325			378.284			378.317			378.309	0.022

APPENDIX 3. TIE: PERTH - GERALDTON - MT MAGNET 1973

Meter (scale factor) Station	G20 (1.000378 x makers' cal)	G101 (1.002690 x makers' cal)		
	Interval mGal	Interval mGal	Mean Interval mGal	S_i
Perth U	-130.282	-130.276	-130.279	0.004
Geraldton J	-198.640	-198.607	-198.624	0.023
Mount Magnet K				

APPENDIX 4 PRINCIPAL FACTS FOR ISOGAL STATIONS

IGC LETTER	BMR NO	LATITUDE DEG MIN	LONGITUDE DEG MIN	HEIGHT M	OBS.GRAV MGAL	S.E.	INFORMAL NAME	GRAV.INT. MGAL	S.E.	N	K

ABMINGA 41964											
J	6491.9019	26	8.1	134 51.0	216.77	978949.07	.07	RS SIGN AP29	J-K= 0.00	.01	1 2
K	6600.0002	26	8.0	134 51.0	216.87	978949.07	.07	FETTLERS QUART.			
ADELAIDE 45548											
A	5099.9908	34	55.3	138 36.3	*****	*****	****	UNI OBS	O-J=16.01	.01	3 2
J	6091.0108	34	55.4	138 40.0	111.62	979692.75	.06	KENS. GARD. CS1	L-J=12.39	.01	3 2
K	6091.0208	34	55.5	138 43.6	445.38	979630.12	.06	NORTON SUMM CS2	J-K=62.63	.01	** **
L	6491.0108	34	56.5	138 32.1	5.47	979705.14	.06	A/S TERM.	O-L= 3.62	.03	3 2
M	6491.0208	34	47.6	138 38.3	14.51	979690.51	.06	PARAFIELD A/S	L-M=14.63	.01	3 1
N	6491.0308	34	56.5	138 32.1	5.47	979705.14	.06	A/S WA3001	L-N= 0.00	.01	3 1
O	6491.0408	34	55.3	138 36.3	36.40	979708.76	.06	UNI OBS	O-M=18.25	.01	3 1
P	6491.0508	34	47.6	138 38.3	14.52	979690.41	.06	PAR.A/S MINES	O-P=18.35	.01	3 1
O	6491.0608	34	45.4	138 40.8	51.33	979682.58	.06	OLD SPOT HOTEL	P-O= 7.83	.01	3 1
R	6491.0708	35	.5	138 42.7	489.56	979631.22	.07	MT LOFTY RS MUC	J-R=61.53	.04	3 1
S	6491.0908	34	55.3	138 36.3	38.47	979708.44	.06	UNI PHYSICS SCH	O-S= .32	.01	3 1
T	6793.0208	34	58.5	138 42.7	711.46	979576.90	.06	MT LOFTY SUMM.	K-T=53.22	.02	4 2
									O-O=26.20	.01	3 1
ALBANY 45747											
A	5099.9918	34	56.3	117 47.7	66.85	979692.26	.07	A/S STORE	J-A= .47	.01	3 2
J	6491.0118	34	56.6	117 47.9	69.01	979692.73	.07	A/S TERM			
ALBURY 45466											
J	6591.1136	36	5.1	146 55.5	161.77	979757.65	.02	RS	K-J= 5.95	.01	5 2
K	6591.9136	36	4.3	146 57.3	162.09	979751.71	.02	A/S TERM			
L	6793.1136	36	4.3	146 57.3	162.09	979751.71	.01	A/S TERM	L-M= 0.00	.01	1 1
M	7591.1136	36	4.3	146 57.3	162.24	979751.71	.02	A/S TERM			
ALEXANDER SPRING 42064											
J	6491.9086	26	7.6	124 45.5	413.74	978906.28	.12	A/S			
ALEXANDRIA DOWNS 38396											
J	6491.9054	19	8.1	136 45.9	248.64	978488.41	.09	A/S NEAR SHED			
ALICE SPRINGS 41933											
A	5099.9935	23	48.2	133 52.7	*****	978639.53	.09	A/S WA3003 H26	A-J= .33	.02	3 2
J	6491.0335	23	48.4	133 53.9	542.57	978639.20	.09	A/S NEW TERM	A-K= .06	.04	3 2

ABBREVIATIONS

ANA	ANSETT
A/S	AIRSTRIIP OR AIRPORT
BM	BENCHMARK
BMR	BUREAU OF MINERAL RESOURCES
CS	CALIBRATION STATION
DCA	DEPARTMENT OF CIVIL AVIATION
DT	DEPARTMENT
GEOG	GEOLOGY
H	HELPER
HS	HOMESTEAD OR HOUSE
HWAY	HIGHWAY
INT	INTERNATIONAL
MP	MILEPOST
MUC	MUCKENFUSS
NR	NEAR
OBS	OBSERVATORY
PASS TERM	PASSENGER TERMINAL
PM	PERMANENT MARK
PO	POST OFFICE
PSM	PERMANENT SURVEY MARK
OBM	QUEENSLAND BENCH MARK
RAAF	ROYAL AUSTRALIAN AIR FORCE
RS	RAILWAY STATION
SCH	SCHOOL
SSM	STATE SURVEY MARK
ST	STATION
TAA	TRANS-AUSTRALIAN AIRLINES
TERM	TERMINAL
UNI	UNIVERSITY
WA	UNIVERSITY OF WISCONSIN

IGC LETTER	BMR NO	LATITUDE DEG MIN	LONGITUDE DEG MIN	HEIGHT M	OBS.GRAV MGAL	S.E.	INFORMAL NAME	GRAV.INT. MGAL	S.E.	N	K

ALICE SPRINGS 41933											
K	6491.0135	23 48.2	133 52.9	545.31	978639.47	.08	A/S OLD TERM	K-L=12.92	.07	3	1
L	6091.0135	23 33.7	133 52.2	708.58	978626.55	.10	CS1 BM68-53 H28	A-L=12.98	.01	1	3
M	6091.0235	23 21.3	133 48.2	713.66	978678.79	.10	CS2 BM68-50 H29	M-L=52.24	.01	**	**
AMMAROO 41915											
J	6491.9040	21 44.3	135 14.6	391.96	978632.19	.10	A/S WINDSOCK	J-K= .28	.01	1	3
K	6600.0006	21 45.1	135 14.2	*****	978631.91	.10	HS BM66-21				
ANNA PLAINS 38491											
A	5099.9927	19 15.3	121 29.0	6.27	978610.93	.07	HS GARAGE	A-K= .89	.01	1	3
J	6792.0127	*****	121 30.6	16.65	978610.59	.07	A/S WINDSOCK	J-K= .55	.01	1	3
K	6792.0227	*****	121 30.6	17.35	978610.04	.07	A/S NEAR APRON	A-J= .34	.01	1	3
ANNITOWA 41916											
J	6491.9041	21 12.6	136 27.1	272.28	978612.64	.10	A/S WINDSOCK	J-K= .55	.01	3	1
K	6491.1041	21 12.8	136 28.4	274.56	978612.09	.10	HS BM64-9				
ARMIDALE 45301											
A	5099.9946	30 29.3	151 38.6	*****	*****	****	UNI OLD SCIENCE				
J	6491.0146	30 32.1	151 36.9	1085.44	979087.59	.06	A/S TERM				
K	6491.0246	30 31.1	151 39.2	996.79	979105.93	.06	RS MUC A-23	K-J=18.34	.02	3	2
L	6525.0146	30 31.5	151 38.1	*****	979101.22	.06	MP2 PM5047	L-J=13.63	.01	1	3
AYERS ROCK 41951											
J	6792.9213	25 20.2	131 2.9	514.08	978790.95	.08	A/S WINDSOCK	J-L= 2.36	.01	2	2
K	6792.1213	25 21.2	131 3.8	523.46	978785.96	.08	CURATOR LODGE	J-K= 4.99	.01	2	2
L	6205.7612	25 20.6	131 4.3	*****	978788.59	.08	BM76-12	L-K= 2.63	.01	2	2
BAIRNSDALE 45477											
J	6491.1005	37 52.8	147 34.3	47.65	979968.82	.06	A/S HANGAR 103	K-J= .03	.01	4	1
K	6491.9005	37 52.8	147 34.3	47.63	979968.85	.06	A/S HANGAR 104				
BALGO HILL MISSION(OLD) 42007											
J	6792.9217	20 9.2	127 50.5	337.35	978544.97	.09	A/S WINDSOCK	L-J= 2.45	.01	1	2
K	6792.1217	20 8.8	127 50.1	335.50	978545.48	.09	A/S END STRIP	K-J= .51	.01	1	2
L	5605.0029	*****	*****	333.84	978547.42	.09	OLD MISSION #29	L-K= 1.94	.01	1	2
BALRANALD 45443											
J	6491.9134	34 37.4	143 34.4	63.63	979681.72	.08	A/S WINDSOCK	L-J= 2.11	.01	3	1
K	6491.1134	34 38.6	143 33.9	63.63	979683.17	.08	INTERSN PM5863	K-J= 1.45	.01	3	1

IGC LETTER	BMR NO	LATITUDE DEG MIN	LONGITUDE DEG MIN	HEIGHT M	OBS.GRAV MGAL	S.E.	INFORMAL NAME	GRAV.INT. MGAL	S.E.	N	K

BALRANALD 45443											
L	6491.2134	34 39.6	143 33.6	65.12	979683.83	.08	RS EAS76	L-K= .66	.01	3	1
BARCADDINE 41835											
J	6491.9031	23 33.9	145 18.0	266.71	978782.90	.06	A/S TERM	J-L= .57	.01	3	1
K	6491.1031	23 33.4	145 17.3	266.53	978782.01	.06	CRTHSE BM38-1	J-K= .89	.01	3	1
L	6491.2031	23 33.2	145 16.4	257.87	978782.33	.06	MAGELLAN BASE18	L-K= .32	.01	3	1
BARLOWEERIE 42176											
J	6792.9206	27 11.0	116 16.6	299.19	979033.87	.09	A/S WINDSOCK	J-L= .84	.01	2	2
K	6792.1206	27 11.1	116 16.7	300.16	979033.65	.09	A/S SHED	J-K= .22	.01	2	2
L	6792.2206	27 10.8	116 16.2	296.37	979033.03	.09	A/S NEAR SIGN	K-L= .62	.01	2	2
BARROW CREEK 41913											
J	6793.9317	21 29.8	133 54.7	496.79	978597.96	.07	A/S	J-K= 7.10	.02	3	1
K	6793.1317	21 32.1	133 53.2	510.60	978590.86	.07	PO HWAY BM				
BARROW ISLAND 42105											
J	6793.9312	20 47.6	115 25.6	*****	978645.87	.08	A/S APRON	J-K= .08	.01	3	1
K	6793.1312	20 47.6	115 25.6	*****	978645.79	.08	A/S WINDSOCK				
BENALLA 45465											
J	6793.9302	36 33.3	146 0.0	171.31	979800.23	.04	A/S TERM				
K	6793.1302	36 33.3	146 0.0	171.38	979800.17	.04	A/S HANGAR	K-J= .06	.01	4	1
L	5103.0035	36 32.7	145 59.1	171.67	979800.90	.04	RS	L-J= .67	.01	4	1
BETOOTA 41850											
J	6491.9022	25 41.8	140 44.7	70.20	978976.69	.10	HOTEL BM51-27				
BIRDSVILLE 41959											
A	5099.9957	25 53.8	139 21.1	46.03	978989.63	.09	NURSING HOME	J-A= .07	.02	4	1
J	6491.0157	25 53.9	139 20.9	46.41	978989.70	.09	A/S MONUMENT				
BLACKSTONE MINING CAMP 42068											
J	6491.9084	26 1.2	128 22.8	560.31	978915.12	.11	A/S BM81-18				
BOLLON 41887											
J	6491.9011	28 3.1	147 28.8	182.09	979119.69	.10	A/S MONUMENT				
K	6210.6016	28 2.2	147 28.8	182.33	*****	****	POLICE ST GT16				

IGC LETTER	BMR NO	LATITUDE DEG MIN	LONGITUDE DEG MIN	HEIGHT M	QES.GRAV MGAL	S.E.	INFORMAL NAME	GRAV.INT. MGAL	S.E.	N	K

BOMBALA 45469											
A	5099.9903	36 54.8	149 14.4	*****	979730.65	.05	BOMBALA MOTORS	A-J=13.04	.03	3	1
J	6491.0103	36 54.4	149 10.9	736.54	979717.61	.04	A/S GATE POST	J-K= .80	.01	3	1
K	6793.0103	36 54.4	149 10.9	739.06	979716.81	.04	A/S AERO CLUB				
BOUDIA 41929											
A	5099.9956	22 54.6	139 54.4	154.56	978779.55	.10	SCHOOL				
J	6491.0156	22 55.0	139 53.9	162.97	978780.21	.10	A/S	J-A= .65	.01	3	2
BOURKE 45405											
J	6491.9107	30 2.6	145 57.1	106.43	979306.03	.08	A/S HANGAR	K-J= 3.00	.03	3	1
K	6491.1107	30 5.6	145 56.3	*****	979309.03	.08	COURTHS PM5212				
BREMEE BAY 45749											
J	6491.9129	34 22.7	119 19.9	38.49	979663.33	.08	A/S WINDSOCK				
BRISBANE 41773											
A	5099.9947	27 30.1	153 1.1	20.19	979155.78	.02	UNI GW85A	A-J=10.34	.01	1	1
B	6491.0347	27 30.1	153 1.1	22.90	979155.89	.01	UNI GEOL GW85	B-C= .04	.01	3	1
C	6499.0147	27 30.1	153 1.1	20.19	979155.85	.01	UNI GEOL	C-D= .60	.01	9	2
D	6091.0147	27 30.1	153 1.1	22.76	979155.25	.01	UNI GEOL CS1	D-J= 9.81	.02	6	2
I	6525.0147	*****	*****	*****	979156.16	.01	EAGLE ST WHARF	I-J=10.72	.01	1	2
J	6491.0147	*****	*****	6.49	979145.44	.01	A/S WA3004	C-J=10.41	.01	5	2
K	6491.0247	27 34.2	153 .8	13.29	979153.96	.02	ARCH A/S WA3067	K-N=56.98	.02	5	1
N	6091.0247	27 29.6	152 57.2	226.33	979096.98	.01	MT COOT-THA CS2	A-N=58.80	.01	1	1
R	7213.0147	27 25.8	153 4.9	*****	979145.74	.01	A/S ANA TERM	S-R= .36	.01	4	9
S	7390.0147	27 25.8	153 4.7	*****	979146.10	.01	A/S NR ANA TERM	S-T= .68	.01	4	3
T	7390.0247	27 25.8	153 5.0	*****	979145.42	.01	A/S TAA TERM	D-S= 9.15	.01	4	3
								D-N=58.25	.02	**	**
BROKEN HILL 45421											
A	5099.9941	32 2.2	141 28.2	284.24	979441.13	.10	A/S DCA GARAGE	J-A= .19	.02	3	2
J	6491.0141	32 2.2	141 28.2	283.76	979441.32	.10	A/S HANGAR	A-K= .51	.02	3	1
K	6491.0241	32 0.0	141 28.3	285.44	979440.62	.10	A/S FLYING DOC				
BROOME 38472											
J	6491.9061	17 57.2	122 14.0	9.26	978524.07	.08	A/S PASS TERM	K-J= .04	.01	3	1
K	6491.1061	17 57.2	122 14.0	*****	978524.11	.08	A/S DCA PSM1	K-P= .03	.01	1	1
L	6410.0010	17 57.2	122 14.0	9.13	978524.10	.08	A/S DCA	L-J= .03	.01	1	1
M	6410.0011	17 57.2	122 14.0	*****	978524.15	.08	A/S DCA	M-L= .05	.01	1	1
N	6410.0012	17 57.2	122 14.0	8.97	978524.17	.08	A/S DCA	N-M= .02	.01	1	1

IGC LETTER	BMR NO	LATITUDE DEG MIN	LONGITUDE DEG MIN	HEIGHT M	OBS.GRAV MGAL	S.E.	INFORMAL NAME	GRAV.INT. MGAL	S.E.	N	K

BROOME 38472											
O	6410.0013	17 57.2	122 14.0	9.11	978524.14	.08	A/S DCA	N-O= .03	.01	1	1
P	6410.0014	17 57.2	122 14.0	9.15	978524.08	.08	A/S DCA	O-P= .06	.01	1	1
O	6892.1061	17 57.4	122 14.5	6.66	978525.30	.08	THOMAS PILLAR	O-J= 1.20	.02	3	1
R	6892.2061	17 57.9	122 14.2	9.53	978524.81	.08	DAMPIERS CHEST	R-J= .77	.01	3	1
								O-R= .43	.02	3	1
BUDGERYGAR 41893											
J	6410.0025	29 21.2	143 41.1	131.12	979246.58	.10	A/S GATE				
BURKETOWN 38379											
J	6491.9052	17 44.8	139 32.3	*****	978529.76	.08	A/S PASS TERM	K-J= 2.02	.02	3	1
K	6491.1052	17 44.7	139 32.8	*****	978531.78	.08	POLICE ST OHM71				
BUSSELTON 45735											
J	6793.9310	33 40.7	115 19.6	7.52	979575.13	.08	A/S HANGAR	J-K= 6.29	.03	3	1
K	6793.1310	33 39.1	115 20.6	2.51	979568.84	.08	PO				
CAIGUNA 45626											
J	6491.9122	*****	*****	106.46	979483.39	.11	A/S END STRIP	J-K= 1.55	.02	3	1
K	6491.1122	32 16.3	125 29.0	105.98	979481.84	.11	JOHN EYRE MOTEL	L-K= 1.66	.01	3	1
L	6491.2122	32 16.4	125 28.0	*****	979483.50	.11	MP231 Y46	L-J= .11	.02	3	1
CAIRNS 38265											
A	5099.9952	16 53.4	145 45.0	2.41	978486.14	.02	A/S ANA HANG. H	A-J= .06	.01	1	2
J	5810.0152	16 53.2	145 45.1	*****	978486.08	.02	A/S WA3006	A-L= 1.53	.01	7	2
K	6491.0152	16 55.8	145 46.7	3.33	978481.91	.02	WHARF H1	L-K= 2.70	.01	7	1
L	6591.0252	16 55.6	145 46.4	*****	978484.61	.02	RS H4	A-K= 4.23	.01	3	1
M	6600.0152	16 53.4	145 45.1	*****	978486.20	.02	A/S TAA TERM H3	M-A= .06	.01	1	2
CALVERT HILLS 38377											
J	6491.9068	17 12.2	137 20.9	*****	978431.53	.08	A/S DCA	J-K= .74	.01	3	1
K	6491.1068	17 13.7	137 19.6	168.32	978430.79	.08	RS				
CANNBERRA 45459											
A	6718.0000	35 17.5	149 8.2	562.95	979603.92	.01	BMR GRAVITY LAB	A-L= 1.89	.01	7	2
B	5099.9904	35 16.8	149 76.0	565.52	*****	****	CIVIC CENTRE	J-A= 2.45	.01	5	2
J	6491.0104	35 18.5	149 11.3	*****	979606.37	.01	A/S OLD TERM	J-K=59.11	.01	5	1
K	6491.0204	35 16.5	149 5.7	803.20	979547.26	.01	BLACK MT CS2	L-K=54.77	.01	**	**
L	6491.0304	35 16.9	149 6.8	560.78	979602.03	.01	UNT CS1	J-L= 4.34	.01	5	2
M	6893.0104	35 18.5	149 11.3	566.85	979606.64	.01	A/S NEW TERM	M-J= .27	.01	3	2

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IGC LETTER	BMR NO	LATITUDE DEG MIN	LONGITUDE DEG MIN	HEIGHT M	OBS.GRAV MGAL	S.E.	INFORMAL NAME	GRAV.INT. MGAL	S.E.	N	K

CANBERRA 45459											
N	6893.0204	35 18.4	149 11.2	565.89	979606.60	.01	A/S AERO CLUB	N-J= .23	.01	3	2
D	6893.0304	35 17.2	149 17.8	784.52	979569.95	.02	KOWEN FOREST	J-O=36.42	.02	3	2
P	7390.0104	35 18.3	149 11.1	*****	979607.24	.01	A/S APRON	P-M= .60	.01	4	10
								M-N= .04	.01	3	20
CARNARVON 42143											
A	5099.9924	24 53.0	113 39.7	2.55	978929.52	.09	A/S DCA GARAGE	J-A= .07	.01	1	1
J	6500.0124	24 53.0	113 39.7	2.62	978929.59	.09	A/S TERM WA3009				
CEDUNA 45523											
A	5099.9910	32 7.6	133 41.8	17.22	979438.27	.09	A/S HANGAR				
J	6491.0110	32 7.5	133 41.9	16.42	979438.48	.09	A/S WA3010	J-A= .21	.01	3	1
K	6600.0110	*****	*****	*****	979442.10	.09	CEMETRY WG51	K-A= 3.83	.01	1	3
CHARLEVILLE 41866											
J	6491.9024	26 24.9	146 15.4	301.92	978954.21	.09	A/S PASS TERM	J-K= .73	.02	3	2
K	6491.1024	26 24.3	146 13.9	295.27	978953.48	.09	COURTHS BZ-27				
CHARTERS TOWERS 41806											
J	6491.9047	20 2.8	146 16.3	290.30	978581.01	.04	A/S TERM H13				
K	6491.1047	20 4.8	146 16.2	308.16	978576.38	.04	RS C-46	J-K= 4.63	.01	3	1
L	6491.2047	20 5.1	146 15.1	356.52	978567.54	.06	SEISMOGRAPH ST	J-L=13.47	.05	3	1
CLERMONT 41827											
A	5099.9950	22 49.6	147 38.5	267.51	978761.72	.04	HOTEL	J-A= .44	.01	3	2
J	6491.0150	22 46.6	147 37.4	271.30	978762.16	.04	A/S TERM	A-K= .42	.01	3	1
K	6491.0250	22 49.6	147 38.5	267.79	978761.30	.04	RS R-70	J-K= .86	.02	3	1
CLONCURRY 41800											
A	5099.9955	20 40.2	140 30.5	187.44	978637.51	.10	A/S DCA H18	A-J= .33	.01	3	2
J	6491.0155	20 40.2	140 30.5	186.83	978637.18	.10	A/S WA3012 H17				
COBAR 45415											
A	5099.9943	31 30.0	145 50.1	241.06	979382.23	.08	POLICE ST	J-A= 6.98	.01	3	2
J	6491.0143	31 32.5	145 47.8	217.98	979389.21	.08	A/S ON SIGN	J-K= 5.94	.01	3	1
K	6491.0243	31 30.0	145 50.5	238.55	979383.27	.08	PM4917	K-A= 1.04	.01	3	1
COLAC 45483											
J	6491.9001	38 22.1	143 41.1	185.43	979979.62	.04	YEO A/S HANGAR	L-J= 5.36	.01	4	2
K	6491.1001	38 20.3	143 35.8	126.28	979986.27	.04	PO	K-L= 1.29	.02	4	1

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COLAC 45483											
L	6491.2001	38 20.6	143 35.3	133.13	979984.98	.04	RS	L-M= .73	.01	3	1
M	6491.3001	38 20.6	143 35.3	136.65	979984.25	.04	NR RS FROME K16	K-M= 2.02	.02	3	1
								K-J= 6.65	.02	4	2
COOK 45500											
J	6491.9099	30 36.9	130 24.5	120.69	979306.73	.10	A/S				
COOKTOWN 38255											
J	6491.9072	15 26.8	145 11.2	*****	978427.76	.02	A/S PASS TERM				
K	6491.1072	15 27.9	145 14.9	4.47	978421.09	.02	PO	J-K= 6.67	.01	3	1
L	7090.1072	15 26.8	145 11.2	5.37	978427.76	.01	A/S TERM&OUT<	L-K= 6.67	.02	3	1
M	7390.1072	15 26.7	145 11.2	*****	978427.95	.01	A/S APRON	M-L= .20	.01	4	9
COWELL 45536											
J	6491.9132	33 40.2	136 53.6	30.79	979630.33	.07	A/S PASS TERM				
K	6491.1132	33 40.2	136 53.6	30.85	979630.27	.07	A/S OCA PSM7	J-K= .06	.01	3	1
L	6600.1132	33 41.1	136 55.6	*****	979632.99	.07	HARBOURS BOARD	L-J= 2.66	.01	1	2
CRESWELL DOWNS 38375											
J	6491.9067	17 57.0	135 54.1	222.61	978450.52	.09	HS WINDMILL	J-K= 0.00	.01	1	1
K	6505.0833	17 57.0	135 54.1	*****	978450.52	.09	HS DAM				
CROYDON 38282											
J	6491.9050	18 13.0	142 15.2	116.50	978505.59	.06	A/S CATTLE GRID	K-J= .35	.01	1	2
K	6612.4165	18 12.3	142 14.7	115.17	978505.94	.06	POLICE ST DZ-22				
CUNNAMULLA 41885											
J	6491.9012	28 1.9	145 37.2	188.64	979117.54	.10	A/S APRON	K-J= .22	.02	3	2
K	6491.1012	28 4.3	145 40.8	190.97	979117.76	.10	COURTHS OBM36				
DALY WATERS 38363											
A	5099.9933	16 16.0	133 22.5	210.19	978374.59	.06	A/S H118	J-A= .10	.01	3	2
J	6491.0133	16 16.0	133 22.5	210.06	978374.69	.06	A/S RADIO MAST	J-K= .05	.01	3	2
K	6793.0133	16 16.0	133 22.5	*****	978374.64	.06	A/S PASS TERM				
L	6712.3456	16 16.0	133 22.5	*****	*****	****	A/S WA3013				
DARWIN 38320											
A	6491.0532	12 27.5	130 50.2	22.64	978299.57	.06	BMR GW88 H241	L-A= 1.06	.01	3	2
B	5099.9932	12 25.3	130 51.8	22.13	978301.94	.06	A/S WA3058	B-A= 2.37	.01	5	2
J	6491.0232	12 25.3	130 51.8	27.53	978300.95	.06	A/S TERM WA3014	B-J= .99	.01	8	2

IGC LETTER	BMR NO	LATITUDE DEG MIN	LONGITUDE DEG MIN	HEIGHT M	OBS.GRAV MGAL	S.E.	INFORMAL NAME	GRAV.INT. MGAL	S.E.	N	K
DARWIN 38320											
K	6491.0432	12 25.3	130 51.8	27.52	978300.95	.06	A/S INT TERM	J-K= 0.00	.01	3	1
L	6491.0132	12 25.3	130 51.8	29.78	978300.63	.06	A/S HANGAR	K-L= .32	.01	3	1
M	6491.0332	12 28.4	130 50.8	6.35	978302.44	.06	WHARF	M-L= 1.81	.01	3	1
								M-A= 2.87	.01	8	1
								B-L= 1.31	.01	3	2
DECCA AIRSTRIP 42086											
J	6792.9203	28 18.8	126 3.4	360.70	979100.51	.11	A/S MK-16	J-L= 2.42	.01	2	2
K	6792.1203	28 18.6	126 2.1	342.06	979104.96	.11	BM	K-J= 4.45	.02	2	2
L	6792.2203	28 18.2	126 4.7	363.80	979098.09	.11	BM	K-L= 6.87	.03	2	2
DERBY 38473											
A	5099.9928	17 22.3	123 39.7	*****	*****	****	A/S HANGAR	J-M= .31	.02	3	1
J	6491.0128	17 22.3	123 39.7	6.03	978506.25	.07	A/S KENT HANGAR	J-L= .07	.02	4	1
K	6491.0228	17 22.3	123 39.7	6.13	978506.21	.07	A/S WA3015	J-K= .04	.01	3	1
L	6491.0328	17 22.3	123 39.7	6.30	978506.18	.07	A/S	L-M= .24	.01	1	2
M	6500.0128	17 22.3	123 39.7	6.88	978505.94	.07	A/S PASS TERM	M-N= 1.49	.01	3	1
N	6500.0228	17 18.2	123 37.5	7.40	978504.45	.07	CLUB HOTEL	J-N= 1.80	.03	4	1
DE ROSE HILL 41963											
J	6491.9081	26 25.6	133 15.8	410.05	978961.15	.08	A/S WINDSOCK	K-J= .03	.01	3	1
K	6491.1081	26 26.0	133 15.6	409.97	978961.18	.08	HS GARAGE				
DEVONPORT 49016											
J	6491.9141	*****	*****	8.23	980270.70	.04	A/S NR TERM	J-K= 2.08	.01	2	1
K	6491.1141	41 9.6	146 21.2	24.00	980268.62	.04	MERSEY LIGHTS				
L	6500.1141	41 10.4	146 25.5	8.41	980270.64	.04	A/S PASS TERM				
DUBBO 45428											
J	6491.9113	32 13.0	148 34.2	280.33	979417.90	.06	A/S APRON	K-J= 8.62	.01	3	1
K	6491.1113	32 14.6	148 36.4	*****	979426.52	.06	TOWN PM2294	K-L= .42	.01	3	1
L	6491.2113	32 14.7	148 36.5	264.74	979426.10	.06	RS EA336	L-J= 8.20	.01	3	1
DUNBAR 38262											
J	6491.9070	16 2.8	142 23.0	*****	978414.11	.06	A/S	K-J= .31	.01	3	1
K	6491.1070	16 2.8	142 22.7	*****	978414.42	.06	HOSPITAL				
EDMUND 42136											
J	6792.9208	23 46.0	116 5.8	336.28	978774.35	.08	A/S WINDSOCK	J-K= .19	.02	2	2
K	6792.1208	23 46.0	116 5.6	336.28	978774.16	.08	A/S STRIP	K-L= .13	.01	2	2

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IGC LETTER	BMR NO	LATITUDE DEG MIN	LONGITUDE DEG MIN	HEIGHT M	OBS.GRAV MGAL	S.E.	INFORMAL NAME	GRAV.INT. MGAL	S.E.	N	K
EDMUND 42136											
L	6792.2208	23 45.6	116 5.8	337.70	978774.03	.08	A/S ZN-67	L-M= .43	.01	2	2
M	5105.3320	23 45.6	116 6.8	335.76	978773.60	.08	GATE	J-M= .75	.01	2	2
ELCHO ISLAND 38325											
J	6491.9076	12 1.2	135 34.2	*****	978316.07	.07	A/S				
EMU 41982											
J	6792.9201	28 37.6	132 11.9	257.29	979153.19	.10	A/S WINDSOCK	J-L= 2.43	.01	2	2
K	6792.1201	28 38.2	132 12.2	263.09	979153.77	.10	BM 2980	K-J= .58	.02	2	2
L	6792.2201	28 38.2	132 11.6	273.67	979150.76	.10	HUT	K-L= 3.01	.01	2	2
ESPERANCE 45631											
A	5099.9913	33 51.0	121 54.1	2.83	979607.12	.08	DRY CLEANERS	A-J=40.65	.01	3	2
J	6491.0113	33 41.0	121 50.1	142.84	979566.47	.08	A/S PASS TERM	K-J=41.51	.01	3	1
K	6491.0213	33 51.6	121 53.6	2.75	979607.98	.08	AGRIC. DEPT	K-A= .86	.02	3	1
EUCLA 45618											
A	5099.9911	*****	*****	*****	*****	***	OLD TELEG.	L-J= .21	.01	1	1
J	6491.0111	31 42.4	128 53.0	4.03	979425.50	.11	A/S TROUGH	K-J= .21	.03	2	1
K	6491.0211	31 42.8	128 53.1	3.76	979425.71	.11	ROAD JCN Y88A	K-L= 0.00	.01	1	1
L	6491.0311	31 42.8	128 53.1	3.76	979425.71	.11	ROAD JCN Y88B	M-K= 0.00	.01	1	1
M	6491.0411	31 42.8	128 53.1	3.76	979425.71	.11	ROAD JCN Y88C	M-J= .21	.01	1	1
FITZROY CROSSING 38485											
J	6491.9060	18 11.0	125 33.6	115.43	978503.99	.08	A/S PASS TERM	K-J= 2.62	.01	2	1
K	5308.9036	18 10.7	125 35.7	109.27	978506.61	.08	BM T-36				
FLINDERS ISLAND 49007											
J	6491.1140	40 5.7	148 .1	30.16*	980191.15	.01	DCA GARAGE	J-L= .12	.01	3	1
K	7390.1140	40 5.6	148 .3	*****	980190.79	.01	A/S APRON	L-K= .23	.01	4	10
L	6491.9140	40 5.7	148 .3	30.92*	980191.03	.01	A/S TERM				
FORREST 45608											
A	5099.9912	30 50.8	128 6.8	155.80	979292.07	.11	A/S HANGAR	J-A= .03	.01	3	2
J	6491.0112	30 50.8	128 6.8	155.80	979292.10	.11	A/S WA3016				
GASCOYNE JUNCTION 42155											
J	6491.9092	25 4.1	115 8.9	139.66	978910.68	.09	A/S WINDSOCK				

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GEORGETOWN 38283											
J	6491.9049	18 18.1	143 31.8	*****	978478.81	.04	A/S GATE	K-J= 1.39	.01	1	2
K	6612.4230	18 17.5	143 32.6	294.04	978480.20	.04	COURTHS EI-57				
GERALDTON 42184											
A	5099.9920	28 47.5	114 41.8	33.95	979255.73	.09	A/S DCA HANGAR	J-A= .70	.01	7	1
J	6500.0120	28 47.7	114 41.9	32.97	979256.43	.09	A/S PASS TERM	K-J= 4.89	.01	4	2
K	7391.0120	28 46.5	114 35.6	*****	979261.32	.09	WHARF HUT				
GIBB RIVER 38466											
J	6793.9313	16 25.2	126 26.3	506.94	978323.94	.08	A/S WINDSOCK	J-K= 3.41	.01	3	2
K	6708.1557	16 26.4	126 26.6	522.43	978320.53	.08	BM JK-57	L-K= 4.89	.01	3	1
L	6793.2313	16 25.7	126 25.9	498.21	978325.42	.08	HS BMR MAG ST	L-J= 1.48	.01	3	1
GILES 42058											
J	6792.9973	25 2.0	128 18.0	596.13	978754.87	.09	MET ST BUILD 22	K-J= .06	.01	2	2
K	6792.0173	25 2.0	128 18.0	596.08	978754.93	.09	MET ST	L-K= 3.26	.01	2	2
L	6792.0273	25 2.6	128 17.7	578.66	978758.19	.09	A/S WINDSOCK	M-L= .97	.01	2	2
M	6205.7655	25 2.8	128 18.3	581.06	978759.16	.09	ROAD JCN 76-55	M-J= 4.29	.01	2	2
GLENORMISTON 41928											
J	6491.9034	22 53.3	138 48.9	156.49	978775.63	.10	A/S ON SIGN	K-J= 6.60	.02	3	1
K	6491.1034	22 55.0	138 47.9	142.30	978782.23	.10	HS BM5-19				
GOONDIWINDI 41780											
J	6491.9009	28 31.3	150 19.5	216.50	979144.69	.08	A/S				
K	6491.1009	28 32.7	150 18.4	217.11	979144.83	.08	COURT/HS	L-K= .08	.02	3	1
L	6491.2009	28 32.7	150 18.4	*****	979144.91	.08	CRT/HS OBM26	L-J= .22	.02	3	2
M	6591.1009	28 33.1	150 18.5	*****	979145.39	.08	MOBIL PM5072	M-J= .70	.01	1	2
N	6525.2009	28 31.3	150 19.5	*****	979144.52	.08	A/S FLAG WA3061	J-N= .17	.01	1	2
GORDON DOWNS 38488											
J	6491.9058	18 40.9	128 35.5	335.55	978466.07	.09	A/S HUT	J-K= .02	.01	3	1
K	6491.1058	18 40.9	128 35.5	345.72	978466.05	.09	A/S BM				
GRAFTON 41792											
J	6491.1110	29 41.1	152 55.5	9.56	979306.30	.02	RS 1/46	K-J= 9.00	.01	8	1
K	6491.9110	29 45.6	153 1.8	28.91	979315.30	.01	A/S PASS TERM	K-L= 6.10	.02	3	1
L	6491.2110	29 42.1	152 56.1	*****	979309.20	.02	ROTARY PARK R52	L-J= 2.90	.02	3	1

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GREEN HEAD 45704											
J	6491.9093	30	3.0	114	58.5	2.14	979345.68	.10	A/S WINDSOCK		
HALLS CREEK 38487											
A	5099.9929	18	13.7	127	40.0	408.78	978449.30	.10	OLD HUT	A-J= 2.04	.01 3 1
J	6491.0129	18	14.2	127	40.1	409.61	978447.26	.10	A/S PASS TERM		
HAMELIN POOL 42164											
J	6792.9207	26	25.5	114	12.4	27.64	979034.52	.08	A/S WINDSOCK	K-J= .32	.07 2 2
K	6792.1207	26	25.5	114	12.2	26.60	979034.84	.08	A/S STRIP	L-K= 3.89	.01 2 2
L	5307.0305	26	24.1	114	9.8	3.21	979038.73	.08	PO	L-J= 4.21	.01 2 2
HAMILTON 45472											
J	6491.9002	37	39.0	142	3.6	238.76	979924.62	.06	A/S PASS TERM	K-J=28.62	.01 4 2
K	6491.1002	37	44.8	142	1.7	175.44	979953.24	.06	RS	K-L= 1.10	.03 4 1
L	6491.2002	37	45.0	142	.6	*****	979952.14	.07	FROME BASE B	L-J=27.52	.02 4 1
HAWKER 45518											
J	6491.9117	31	53.5	138	25.7	321.52	979380.33	.08	A/S CRICKET	K-J= .06	.01 3 1
K	6491.1117	31	53.5	138	25.6	322.06	979380.39	.08	SCH VERANDAH		
HAY 45444											
A	5099.9942	34	30.6	144	50.5	91.16	979633.85	.07	HARDWARE STORE	J-A=23.94	.02 3 2
J	6491.0142	34	32.0	144	49.8	90.81	979657.79	.07	A/S PASS TERM		
HENBURY 41943											
J	6491.9037	24	35.0	133	13.5	425.98	978769.02	.07	A/S BM	K-J= .76	.01 3 2
K	6792.1037	24	35.0	133	13.9	425.50	978769.78	.07	A/S WINDSOCK	K-L= 6.49	.01 2 2
L	6106.7219	24	33.9	133	14.6	*****	978763.29	.07	BM72-19	J-L= 5.73	.01 2 2
HERMANNSBURG 41932											
J	6792.9214	23	55.9	132	48.2	599.91	978633.00	.09	A/S WINDSOCK	K-J= .96	.01 2 2
K	6792.1214	23	56.2	132	48.0	597.23	978633.96	.09	MONUMENT	L-K= 1.20	.02 2 2
L	6131.0501	23	55.8	132	48.9	*****	978635.16	.09	A/S GATE	L-J= 2.16	.02 2 2
HOBART 49027											
A	6491.9960	42	54.5	147	19.2	132.24*	980417.74	.02	UNI VAULT	L-A=13.26	.02 3 2
K	7530.0160	42	54.5	147	19.2	*****	980435.61	.03	UNI VAULT		
L	6091.0160	42	54.1	147	19.6	20.22*	980431.00	.01	UNI CS1	L-M=54.65	.01 ** **
M	6091.0260	42	55.5	147	20.7	333.90*	980376.35	.02	MT NELSON CS2	T-L= 4.65	.01 11 2
N	6491.0260	42	53.1	147	19.9	2.41*	980437.25	.02	PIER H253	N-L= 6.25	.02 6 1

IGC LETTER	BMR NO	LATITUDE DEG MIN	LONGITUDE DEG MIN	HEIGHT M	OBS.GRAV MGAL	S.E.	INFORMAL NAME	GRAV.INT. MGAL	S.E.	N	K

HOBART 49027											
O	6491.0360	42 54.5	147 19.2	*****	980417.24	.02	UNI VAULT 4399	A-O= .50	.01	3	2
P	7390.0160	42 50.3	147 30.3	*****	980435.98	.01	A/S FUEL POINT	P-T= .33	.01	4	6
O	7390.0260	42 50.4	147 30.4	*****	980434.39	.01	A/S ANA	T-O= 1.26	.01	4	2
R	6491.9138	42 53.5	147 14.1	997.80*	980216.80	.09	MT WELLINGTON				
S	7090.1138	42 53.8	147 14.2	*****	980156.18	.03	MT WELLINGTON				
T	6491.0160	42 50.3	147 30.3	3.65	980435.65	.01	A/S TERM H255?				
HOOKER CREEK 38380											
J	6491.9057	18 20.1	130 38.0	313.41	978459.92	.08	A/S MILK BAR				
HUGHENDEN 41304											
A	5099.9953	20 50.7	144 11.7	325.84	978589.92	.07	ROYAL HOTEL	J-A= 6.46	.01	3	2
J	6491.0153	*****	144 13.4	314.69	978596.38	.07	A/S TERM H14				
INNAMINCKA 41870											
J	6491.9015	27 42.2	140 44.1	56.65	979100.99	.11	A/S SHED IM-37				
K	6211.3036	27 44.9	140 44.0	53.15	*****	****	MONUMENT IM-36				
INVERELL 41791											
J	6491.9008	29 53.1	151 8.5	799.60	979098.72	.07	A/S PASS TERM				
K	6004.0910	29 45.9	151 7.2	*****	*****	****	RS GI-10				
IRON RANGE 38223											
J	6491.9073	12 47.3	143 18.3	*****	978330.45	.01	A/S	K-J= 1.25	.01	1	3
K	6600.0025	12 47.2	143 18.3	*****	978331.70	.01	A/S PASS TERM	K-L= .31	.01	4	8
L	7390.1073	12 47.2	143 18.3	*****	978331.39	.01	A/S NR RUNWAY				
JULIA CREEK 41801											
J	6491.9044	20 40.0	141 43.4	122.39	978639.83	.09	A/S TERM H16				
KALGOORLIE 45601											
A	5099.9914	30 45.9	121 27.7	355.75	979276.50	.12	A/S DCA HANGAR	A-J= .35	.01	3	1
J	6491.0114	30 47.0	121 27.4	358.50	979276.15	.12	A/S TERM WA3022	K-J= .12	.01	3	1
K	6491.0214	30 46.9	121 27.7	355.46	979276.26	.12	A/S CONC FLOOR	A-K= .24	.01	3	1
KALLAKOUPAH AIRSTRIP 41977											
J	6491.9017	27 43.3	137 38.3	-4.68	979128.80	.09	SHOT POINT E95				
KALUMBURU 38446											
J	6491.9062	14 17.3	126 37.7	21.82	979344.04	.07	A/S HUT	K-J= .04	.01	3	1

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KALUMBURU 38446											
K	6793.1062	14 17.5	126 38.6	20.69	978344.08	.07	FK-5				
KATHERINE 38342											
J	6793.9318	14 27.0	132 16.4	107.88	978330.47	.07	A/S 6704.9469	J-K= .05	.01	3	2
K	6793.1318	14 27.0	132 16.4	107.89	978330.42	.07	A/S EQUIPMENT	L-K= .07	.01	3	2
L	6410.0020	14 27.0	132 16.4	107.88	978330.49	.07	A/S TERM WA3023	L-J= .02	.01	3	2
KEMPSEY 45312											
J	6491.9111	31 4.2	152 46.0	14.72	979412.36	.01	A/S PASS TERM	J-L= .08	.01	4	10
K	6491.1111	31 4.7	152 50.0	9.60	979422.13	.01	RS PLATFORM	K-J= 9.77	.01	8	1
L	7390.1111	31 4.2	152 46.0	*****	979412.28	.01	A/S APRON	N-K= .37	.01	1	2
M	6525.2111	31 4.9	152 49.9	*****	979422.31	.01	RS R29	N-M= .19	.01	1	2
N	6525.1111	31 4.6	152 50.0	*****	979422.50	.01	RAILWAY MP313				
KENMORE PARK 41962											
J	6491.9082	26 20.4	132 28.7	606.18	978878.10	.09	A/S	J-K= 5.66	.02	3	1
K	6491.1082	26 19.7	132 26.8	615.74	978872.44	.09	HS GARAGE				
KERANG 45453											
J	6793.9303	35 44.9	143 56.0	77.18	979773.50	.06	A/S GARAGE	K-J= .02	.01	4	2
K	6793.1303	35 44.9	143 56.0	77.57	979773.52	.06	A/S GATE	K-L= 1.11	.01	4	2
L	5608.0018	35 44.0	143 55.4	79.23	979772.41	.06	RS	J-L= 1.09	.01	4	2
KINGARDY 41761											
J	6491.9027	26 34.9	151 50.4	437.96	978968.58	.04	A/S PASS TERM	K-J= 3.44	.02	3	2
K	6491.1027	26 32.8	151 50.3	429.60	978972.02	.04	NR COURT OBM33	L-J= 2.97	.02	3	1
L	6491.2027	26 33.6	151 50.3	433.77	978971.55	.04	RAILWAY				
KING ISLAND 45493											
J	6491.9143	39 52.9	143 53.5	36.69	980183.25	.07	A/S PASS TERM	K-J= .14	.01	2	1
K	6491.1143	39 52.9	143 53.5	37.41	980183.39	.07	A/S POWER HS				
KINGSCOTE 45557											
J	6793.9306	35 42.6	137 31.5	*****	979814.90	.06	A/S PASS TERM	J-K= .12	.01	4	1
K	6793.1306	35 42.6	137 31.4	*****	979814.78	.06	A/S DCA STORE				
LAKE EVERARD 45515											
J	6491.9118	31 44.1	135 1.6	124.73	979433.20	.08	A/S NR WINDSOCK	J-K= .35	.02	3	1
K	6491.1118	31 43.9	135 1.9	123.48	979432.85	.08	A/S END STRIP				

IGC LETTER	BMR NO	LATITUDE DEG MIN	LONGITUDE DEG MIN	HEIGHT M	OBS.GRAV MGAL	S.E.	INFORMAL NAME	GRAV.INT. MGAL	S.E.	N	K
LAKE NASH 41907											
J	6491.9042	20 58.7	137 55.0	192.52	978622.38	.11	A/S ON SIGN	J-K= .13	.01	1	2
K	6600.0007	20 58.0	137 55.0	192.39	978622.25	.11	POLICE ST 62-15				
LAKE YEO 42084											
J	6792.9204	28 4.0	124 23.5	353.66	979038.67	.12	A/S END STRIP	J-K= 1.47	.02	2	2
K	6792.1204	28 4.0	124 23.5	359.83	979039.64	.12	A/S	K-L= 1.22	.03	2	2
L	6792.2204	28 4.1	124 23.7	355.26	979038.42	.12	A/S ROAD	J-L= .25	.01	2	2
LAUNCESTON 49017											
A	6491.9971	41 32.8	147 12.5	170.10	980262.01	.04	A/S FIRE ST	J-A= .19	.07	2	3
J	6491.0171	41 33.0	147 12.5	171.86	980262.20	.03	A/S OLD APRON	K-A= .45	.07	2	1
K	6491.0271	*****	*****	171.95	980262.46	.03	A/S OLD TAA	L-A= .32	.03	2	1
L	6491.0371	41 33.0	147 12.5	171.91	980262.33	.03	A/S OLD ANA	K-L= .13	.01	2	3
M	6850.0171	*****	*****	*****	980262.02	.03	A/S NEW TERM	L-J= .13	.01	4	2
N	6850.0271	41 32.7	147 12.2	*****	980261.93	.02	A/S NEW TERM	K-J= .26	.01	2	1
R	6491.1003	41 23.6	147 25.5	1317.80*	980014.09	.06	MT BARROW HUT	J-M= .18	.01	2	3
S	6491.9003	41 22.7	147 25.3	1308.90*	980012.37	.06	MT BARROW HUT	M-N= .07	.02	2	3
								K-N= .51	.01	2	3
								R-S= 1.72	.02	3	1
LAVERTON 42082											
A	5099.9915	28 37.5	122 24.2	456.19	979087.81	.11	SEWELL	A-J= 4.15	.01	2	2
J	6792.0115	28 36.8	122 25.5	461.06	979083.65	.11	A/S FUEL SHED	A-K= 5.28	.03	2	2
K	6792.0215	28 37.0	122 25.0	462.36	979082.53	.11	A/S WINDSOCK	J-K= 1.13	.03	2	2
LAWN HILL 38388											
J	6491.9053	18 34.7	138 34.8	105.67	978511.99	.09	A/S QUARTERS				
LEIGH CREEK 45508											
A	5099.9937	30 27.9	138 24.7	192.68	979305.78	.08	A/S TERM WA3025				
LONGREACH 41834											
A	5099.9954	23 26.5	144 16.0	191.01	978776.00	.07	A/S EQUIPMENT	A-J= 0.00	.01	3	2
J	6491.0154	23 26.5	144 16.0	191.02	978776.00	.07	A/S EQUIPMENT				
LOONGANA 45617											
J	6491.9098	30 56.6	127 1.8	180.70	979338.60	.11	A/S FUEL SHED				

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MACKAY 41819											
A	6499.9961	21 8.8	149 11.2	5.39	978720.65	.01	AMBULANCE BOARD	A-J= .88	.01	10	1
J	6491.0161	21 10.2	149 11.0	3.99	978719.77	.01	A/S TAA WA3026?	K-J= 1.29	.01	1	3
K	6305.1223	21 8.5	149 11.3	*****	978721.06	.01	COURT HS AN23	K-A= .41	.01	1	3
L	6410.0002	21 10.1	149 10.9	*****	978719.51	.01	A/S BMR MAG ST	A-L= 1.14	.01	1	2
M	7390.0161	21 10.3	149 11.0	*****	978719.66	.01	A/S APRON	J-L= .26	.01	1	2
N	6410.0003	21 9.0	149 10.9	*****	978720.10	.01	RS STEPS	K-N= .96	.01	1	1
O	6003.0639	21 9.0	149 10.9	*****	978720.13	.01	RS PLTERM TM-49	O-N= .03	.01	1	3
								O-J= .36	.01	1	1
								J-N= .11	.01	4	9
								A-N= .55	.01	1	3
MADURA 45617											
J	6491.9121	31 53.5	127 1.7	97.98	979450.33	.12	A/S END STRIP				
K	6491.1121	31 53.2	127 1.5	98.61	979450.63	.12	A/S WINDSOCK	K-J= .30	.01	3	1
MALLACOOTA 45479											
J	6491.9006	37 36.1	149 43.4	24.79	979984.95	.07	A/S GATE EV633A	J-K= .06	.01	4	1
K	6491.1006	37 36.1	149 43.4	24.81	979984.89	.07	A/S GARAGE				
MALLAPUNYAH SPRINGS 38365											
J	6491.9066	16 57.8	135 46.6	*****	978439.61	.08	A/S WINDSOCK				
MANINGRIDA 38324											
J	6491.9077	*****	134 14.2	*****	978265.63	.08	A/S GATE				
MANNAHILL 45420											
J	6491.9116	32 25.8	140 .5	364.09	979431.79	.09	A/S STRIP	J-K= .11	.01	3	1
K	6491.1116	32 25.8	140 .7	364.99	979431.68	.09	ROADSIDE				
MARALINGA 45501											
J	6491.9100	30 9.8	131 37.4	254.42	979269.73	.09	A/S PASS TERM				
MARGARET RIVER 38486											
J	6491.9059	18 37.2	126 52.3	276.71	978482.02	.09	A/S WINDSOCK	J-K= 1.11	.02	3	1
K	6491.1059	18 37.2	126 51.7	272.87	978480.91	.09	NEAR HS BM13-5				
MAROUA 41927											
J	6491.9035	22 48.9	137 21.1	233.93	978750.59	.09	A/S STORE	J-K= .02	.01	1	2
K	6600.0008	22 48.9	137 21.1	233.65	978750.57	.09	A/S GARAGE				

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MARYBOROUGH 41752											
A	5099.9948	25 31.1	152 42.7	10.77	979007.21	.01	A/S HANG WA3027	J-A= 1.76	.01	5	2
J	6591.0148	25 32.5	152 42.0	11.34	979008.97	.01	RS BM BM-13				
MEEKATHARRA 42168											
J	6491.9090	26 36.6	118 32.7	517.07	978903.96	.11	A/S NEW TERM	K-J= 1.16	.02	3	1
K	6491.1090	26 36.7	118 32.9	517.56	978905.12	.11	A/S AERADIO				
MELBOURNE 45474											
A	5099.9901	37 47.2	144 53.5	34.72	979965.21	.03	FOOTSCRAY GW83	D-A= .01	.01	5	1
B	6591.0401	37 47.2	144 53.5	*****	979965.24	.03	FTSCRAY M56157	B-D= .02	.01	5	1
C	6491.0501	37 47.2	144 53.5	34.69	979965.22	.03	FOOTSCRAY B	C-A= .01	.01	5	1
D	6491.0201	37 47.2	144 53.5	*****	979965.22	.03	FOOTSCRAY D	E-B= .15	.01	5	1
E	6591.0101	37 47.2	144 53.5	34.27	979965.39	.03	FOOTSCRAY	F-A= 7.21	.02	2	6
F	6491.0401	37 49.9	144 58.5	*****	979972.42	.02	OLD OBS	F-L=24.17	.02	5	2
H	5099.9939	37 53.2	145 22.5	377.30	*****	****	KALLISTA EV37	F-P=38.58	.01	5	2
J	6591.0201	37 43.8	144 53.6	74.41	979948.24	.01	ESSENDON A/S	A-P=31.37	.05	3	2
L	6591.0301	37 43.8	144 53.6	*****	979948.25	.01	ESS A/S WA3028	L-M= .87	.01	3	2
M	6491.0101	37 43.7	144 53.9	76.65	979947.38	.01	ESS A/S TERM	L-J= .01	.01	5	2
N	6491.0301	*****	*****	76.87	979947.36	.01	ESS A/S TAA	A-M=17.83	.01	3	2
O	7591.0101	37 53.4	145 19.1	*****	979935.25	.02	FERNTREE GULLY	M-N= .02	.01	5	2
P	6091.0101	37 53.4	145 19.1	185.37	979933.84	.02	FERNTREE CS1	J-N= .88	.01	5	2
Q	6091.0201	37 53.2	145 20.4	446.52	979986.87	.02	FERNY CK CS2	C-M=17.84	.01	5	2
R	5491.0101	37 53.4	145 17.3	*****	*****	****	BRENOCK PARK				
S	5491.0201	37 53.2	145 22.5	377.26	*****	****	KALLISTA GARAGE	S-R=55.71	.01	**	**
T	6592.0201	37 34.2	145 29.3	601.79	979803.27	.10	TOOLANGI OBS	O-P=53.03	.01	**	**
U	7090.9401	37 58.5	145 5.6	16.40	979988.03	.02	MOORABBIN A/S	O-P= 1.41	.01	5	6
V	7213.0101	*****	*****	*****	979931.70	.01	A/S TAA TERM	M-Y= .03	.01	1	2
W	7390.0101	37 43.8	144 53.9	*****	979947.42	.01	ESS A/S TERM	U-Y=40.69	.02	8	2
Y	7090.0101	37 43.7	144 53.9	*****	979947.34	.01	ESS A/S TERM	W-M= .05	.01	4	10
								M-V=15.68	.01	4	1
MENINGIE 45559											
J	6793.9305	35 41.5	139 21.8	2.15	979777.74	.04	A/S GATE	J-K= 1.35	.01	4	1
K	6793.1305	35 41.4	139 21.4	5.14	979776.39	.04	HS WOOLSHED				
MERIMBULA 45469											
J	6793.9301	36 54.7	149 54.1	2.10	979925.30	.06	A/S TERM	J-K= .20	.01	3	1
K	6793.1301	36 53.8	149 54.6	2.24	979925.10	.06	A/S				

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MERREDIN 45718											
A	5099.9916	31 28.5	118 16.3	316.56	979330.21	.10	OLD CONC FLOOR	A-J= 1.47	.01	3	2
J	6491.0116	31 30.1	118 17.4	339.54	979328.74	.10	MP334				
MIDDLETON 41821											
J	6491.9033	22 22.6	141 31.3	182.65	978753.13	.09	A/S BM MR2	J-K= 3.86	.01	3	1
K	6491.1033	22 21.2	141 32.8	185.89	978749.27	.09	HOTEL BM20-46				
MILDURA 45442											
A	5099.9940	34 13.9	142 5.0	53.14	979641.92	.09	A/S ENCLOSURE	J-A= .08	.01	3	2
J	6491.0140	34 13.8	142 5.0	52.57	979642.00	.09	A/S PASS TERM	K-A= .10	.01	3	2
K	6491.0240	34 13.9	142 5.0	52.73	979642.02	.09	A/S HANGAR	K-J= .02	.01	3	2
MILES-CONDAMINE 41760											
J	6491.9026	26 48.6	150 9.7	302.14	978982.01	.06	A/S BASI	J-K= .25	.01	1	2
K	6525.0001	26 48.7	150 9.8	303.27	978981.76	.06	A/S PASS TERM				
MITCHELL 41867											
J	6491.9025	26 29.4	147 56.4	341.89	978953.17	.08	A/S PASS TERM	L-J= 1.82	.01	3	2
K	6491.1025	26 29.4	147 58.2	*****	978955.45	.08	NR MEMORIAL	K-L= .46	.02	3	2
L	6491.2025	26 29.3	147 57.9	337.77	978954.99	.08	RS BM BC05				
MITCHELL RIVER MISSION 38251											
J	6491.9069	15 29.0	141 44.8	*****	978378.52	.07	A/S FUEL DUMP	J-K= .27	.01	3	1
K	6491.1069	15 28.4	141 44.7	21.62	978378.25	.07	MISSION STORE				
MOUNT CURIOUS AIRSTRIP 42174											
J	6793.9309	27 26.1	114 18.1	122.14	979129.36	.09	A/S WINDSOCK	K-J= .61	.01	3	1
K	6793.1309	27 26.2	114 18.0	120.00	979129.97	.09	A/S TELEGRAPH				
MOUNT DAVIES 42069											
J	6491.9083	26 10.4	129 8.5	629.90	978943.35	.10	MINING CAMP				
MOUNT GAMBIER 45470											
A	5099.9907	37 50.1	140 46.7	43.54	979979.89	.04	POLICE ST STORE	A-J=16.43	.01	4	2
J	6491.0107	37 44.7	140 47.1	63.29	979963.46	.04	A/S PASS TERM				
MOUNT ISA 41909											
J	6491.0162	20 40.1	139 29.3	*****	978604.30	.10	A/S TERM WA3031				
K	6491.9962	20 40.1	139 29.3	336.60	978604.59	.10	A/S NEW FIRE ST	K-J= .29	.01	3	2

IGC BNR NO LETTER	LATITUDE DEG MIN	LONGITUDE DEG MIN	HEIGHT M	OBS.GRAV MGAL	S.E.	INFORMAL NAME	GRAV.INT. MGAL	S.E.	N	K
MOUNT ISA 41909										
L 6491.0262	20 44.4	139 28.7	*****	978603.32	.10	RS BM8-7	J-L= .98	.01	3	1
M 6610.7385	20 40.0	139 29.1	336.21	978604.27	.10	A/S TAA HANGAR	J-M= .03	.01	1	3
MOUNT MAGNET 42187										
A 5099.9921	28 3.7	117 50.8	424.74	979060.63	.10	ROAD BOARD STR	A-J= 2.77	.03	2	2
J 6792.0121	28 6.9	117 50.4	406.51	979057.86	.10	A/S PASS TERM	J-K= .05	.01	2	2
K 6792.0221	28 7.0	117 50.4	405.52	979057.81	.10	A/S SHED	A-K= 2.82	.03	2	2
MOUNT VERNON 42148										
J 6792.9210	24 13.4	118 15.1	398.83	978776.78	.09	A/S WINDSOCK	J-K= .31	.01	2	2
K 6792.1210	24 13.5	118 15.0	399.53	978776.47	.09	A/S STRIP	J-L= .26	.01	2	2
L 6792.2210	24 13.7	118 14.3	403.16	978776.52	.09	RS BNR MAG ST	L-K= .05	.01	2	2
MOUNT WILLOUGHBY 41974										
J 6491.9018	27 58.7	134 8.7	278.53	979077.89	.09	A/S WINDSOCK	K-J= 1.08	.01	3	2
K 6792.1018	27 57.4	134 8.7	266.37	979078.97	.09	HS BM2615				
MUNDIWINDI 42030										
A 5099.9923	23 52.0	120 9.5	569.38	978731.71	.10	HS	A-L= 6.62	.02	2	2
J 6792.0123	23 45.7	120 15.3	580.94	978715.24	.10	A/S WINDSOCK	L-J= 9.85	.02	2	2
K 6792.0223	23 45.8	120 1.3	580.69	978715.59	.10	A/S ROAD TO PO	K-J= .35	.02	2	2
L 6792.0323	23 47.9	120 14.4	571.03	978725.09	.10	POWER HS ZO-1	L-K= 9.50	.01	2	2
MUNGERANIE 41988										
J 6491.9016	28 2.2	138 39.0	53.40	979133.55	.10	A/S	J-K= 5.21	.01	1	2
K 6600.0009	28 1.1	138 39.7	57.96	979128.34	.10	HS GARAGE				
NARRABRI 45409										
J 6491.9108	30 19.1	149 49.5	222.99	979297.36	.06	A/S PASS TERM	K-J= 1.68	.01	3	1
K 6491.1108	30 19.5	149 46.9	212.82	979299.04	.06	HOTEL PM 3913	L-K= .42	.02	3	1
L 6491.2108	30 19.8	149 47.5	213.65	979299.46	.06	POWER POLE 5-37	L-J= 2.10	.02	3	1
NARRANDERA 45446										
J 6491.9135	34 42.4	146 30.5	*****	979667.02	.06	A/S PASS TERM	J-K= .38	.01	3	1
K 6491.1135	34 44.5	146 33.2	175.31	979666.64	.06	RS EAS 27	L-K= 1.07	.01	3	1
L 6491.2135	34 45.8	146 32.3	144.88	979667.71	.06	HWAY JCN SM4170	L-J= .69	.02	3	1
NEWCASTLE WATERS 38373										
J 6793.9316	17 22.7	133 24.5	210.04	978426.11	.07	A/S HANGAR	J-K= 1.06	.01	3	2
K 6793.1316	17 22.3	133 24.6	209.67	978425.05	.07	PO RESIDENCE				

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NEWRY 38469											
J	6491.9063	16 3.6	129 12.2	100.00	978369.08	.07	A/S SHELTER				
NHILL 45461											
J	6793.9304	36 18.7	141 38.8	127.01	979806.72	.06	A/S AERO CLUB	K-J= .02	.01	4	1
K	6793.1304	36 18.7	141 38.8	127.86	979806.74	.06	A/S HANGAR	L-K= 3.39	.01	4	1
L	4905.2000	*****	*****	*****	979810.13	.06	SILOS	L-J= 3.41	.01	4	1
NOCCUNDRA 41872											
J	6491.9014	27 49.0	142 35.1	92.28	979120.49	.11	POLICE ST	K-J= .58	.01	2	2
K	6525.0002	27 48.5	142 35.8	96.85	979121.07	.11	A/S BM NI-1				
NOOKAWARRA 42166											
J	6491.9091	26 14.5	116 50.7	343.95	978938.53	.10	A/S SIGNAL SORE				
NORMANTON 38271											
J	6491.9963	17 41.2	141 4.3	16.92	978504.28	.07	A/S PASS TERM	L-J= .02	.01	3	2
K	6491.0163	17 41.2	141 4.3	*****	978503.21	.07	A/S TERM C20	L-K= 1.09	.01	3	1
L	6491.0263	17 40.2	141 4.6	*****	978504.30	.07	POLICE ST OBM70				
NORSEMAN 45621											
J	6491.9123	32 12.4	121 45.4	263.34	979402.80	.09	A/S CONCR FLOOR				
NULLARBOR 45510											
J	6491.9120	31 26.5	130 53.7	61.40	979391.84	.11	HS PETROL PUMP	K-J= .92	.02	3	1
K	6491.1120	31 27.0	130 53.6	60.43	979392.76	.11	ROAD TO HS				
NYNGAN 45417											
J	6491.9114	31 33.0	147 11.9	172.47	979417.76	.07	A/S PASS TERM	K-J= 2.42	.02	3	1
K	6491.1114	31 32.2	147 12.0	170.54	979420.18	.07	MP SSM4700	K-L= 2.60	.01	1	2
L	6525.1114	31 33.4	147 11.1	*****	979417.58	.07	BRIDGE SSM3173				
OENPELLI 38323											
J	6491.9078	12 19.6	133 3.1	8.40	978304.59	.07	A/S DCA PSM1				
ONSLOW 42115											
A	5099.9925	21 39.8	115 6.6	2.95	978759.36	.09	A/S WORKSHOP	J-A= .09	.01	2	2
J	6500.0125	21 39.9	115 6.6	3.26	978759.45	.09	A/S PASS TERM	K-J= .03	.01	2	2
K	6792.0225	21 39.9	115 6.6	3.25	978759.48	.09	A/S PASS TERM	K-A= .12	.01	2	2

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DODNATTA 41975											
A	5099.9936	27 33.2	135 26.3	*****	979085.71	.08	A/S STORE	J-A= .08	.01	3	2
J	6491.0136	27 33.4	135 26.1	112.51	979085.79	.08	A/S WA3033				
D.T. DOWNS 38365											
J	6491.9065	16 37.1	135 2.3	188.90	978390.57	.07	A/S				
PAPUAYA 41931											
J	6792.9215	23 14.4	131 53.9	617.63	978645.07	.10	A/S WINDSOCK	J-K= .04	.01	2	2
K	6792.1215	23 15.9	131 53.9	617.62	978645.03	.10	A/S	L-K=23.39	.02	2	2
L	6111.7547	*****	*****	590.56	978668.42	.10	MT WEDGE RD BM	L-J=23.35	.02	2	2
PERIH 45715											
A	5099.9917	31 58.6	115 48.8	4.83	979380.95	.07	UNI GEOL H251	A-B= 2.13	.02	3	1
B	6491.0617	31 58.6	115 48.8	12.78	979378.82	.07	UNI GEOL PLAQUE	B-S= 6.94	.02	3	1
J	6491.0117	31 56.1	115 57.5	14.50	979386.66	.07	A/S TERM H246	J-A= 5.71	.02	3	2
K	6491.0317	31 56.2	115 57.3	15.08	979386.43	.07	A/S WA3035 H249	J-K= .23	.01	4	1
L	6091.0117	31 54.1	115 59.2	12.10	979394.61	.07	HAZELMERE CS	L-J= 7.95	.01	3	2
M	91.0217	*****	*****	27.56	979448.59	.07	HELENA VALL CS	L-K= 8.18	.01	3	1
N	6491.0417	32 2.8	115 44.2	3.25	979402.63	.09	FREMANTLE HARB	M-L=53.98	.01	3	3
P	7391.0117	31 57.2	116 9.5	*****	979344.77	.07	WEIR NEW CS1	O-U=12.27	.02	2	2
O	7391.0217	31 59.3	115 7.6	*****	979398.98	.07	MT GUNGIN CS2	O-P=54.21	.01	5	5
R	6091.0317	31 55.0	116 2.6	26.26	979448.91	.07	HELENA CS2A	R-M= .32	.01	3	2
S	6491.0217	31 57.2	115 51.2	13.20	979371.88	.07	HOTEL H250 MUCK	N-T= 1.99	.03	3	1
T	6491.0517	32 2.9	115 44.5	3.20	979400.64	.08	FREMANTLE H245	T-S=28.76	.03	3	1
U	6500.0117	31 56.0	115 57.4	14.44	979386.71	.07	A/S TERM	U-J= .05	.01	4	1
V	7391.0317	31 56.0	115 57.4	*****	979387.04	.07	A/S INTERN TERM	V-U= .33	.01	4	5
W	7391.0417	31 58.6	115 48.8	*****	979381.70	.07	UNI GEOL	U-A= 5.76	.05	2	3
X	7391.0517	*****	*****	*****	979381.92	.07	UNI PLAQUE	P-L=49.84	.01	2	2
								W-A= .75	.03	4	3
								X-W= .22	.01	4	2
								X-A= .97	.02	4	1
								N-S=30.75	.06	3	1
								A-S= 9.07	.02	3	2
PINTUMBA-COORABIE 45512											
J	6491.9119	31 51.4	132 14.7	86.34	979443.27	.10	A/S GATE	K-J= .48	.01	3	1
K	6491.1119	31 50.9	132 14.5	87.43	979443.75	.10	A/S FENCE				

IGC LETTER	BMR NO	LATITUDE DEG MIN	LONGITUDE DEG MIN	HEIGHT M	OBS.GRAV MGAL	S.E.	INFORMAL NAME	GRAV.INT. MGAL	S.E.	N	K

POEPPELS CORNER 41967											
J	6491.9021	26 .6	137 57.2	*****	979001.40	.15	A/S				
POULOWANNA-DALHOUSIE 41966											
J	6491.9020	*****	136 42.5	*****	979002.81	.08	A/S				
PORT HEDLAND 42108											
A	5099.9926	20 22.6	118 37.8	*****	978631.14	.09	A/S TERM	J-A= .05	.01	1	2
J	6500.0126	20 22.6	118 37.8	7.19	978631.19	.09	A/S TERM WA3036	K-J= 9.96	.01	1	2
K	6500.0226	20 18.9	118 34.4	*****	978641.15	.09	WHARF	L-J= .20	.01	1	2
L	6792.0326	20 22.6	118 37.7	8.02	978631.39	.09	A/S DCA CARPORT	M-L= .20	.01	1	2
M	6792.0426	20 22.6	118 37.7	7.61	978631.59	.09	A/S FLAGPOLE	M-J= .40	.01	1	2
PORT KEATS MISSION 38449											
J	6793.9314	*****	129 31.8	*****	978309.21	.10	A/S WINDSOCK	K-J= 2.46	.01	3	1
K	6793.1314	*****	129 31.2	*****	978311.67	.10	MISSION				
PORT LINCOLN 45545											
J	6793.9307	34 36.3	135 52.6	9.06	979709.96	.07	A/S TERM	J-K= .20	.02	4	1
K	6793.1307	*****	*****	10.52	979709.76	.07	A/S GATE				
QUAIRADING 45727											
J	6491.9124	*****	117 24.8	237.70	979404.84	.08	A/S WINDSOCK	J-K= 1.55	.02	3	1
K	6491.1124	32 .5	117 23.9	247.35	979403.29	.08	PO				
QUILPIE 41864											
A	5099.9956	26 37.0	144 15.5	196.37	978993.60	.10	SPORTS OVAL	J-A= .47	.01	3	2
J	6491.0158	26 36.8	144 15.3	197.00	978994.07	.10	A/S PASS TERM				
QUINYAMBIE-MOORABIE 45401											
J	6491.9104	30 13.2	141 .3	90.06	979319.98	.10	A/S FENCE	K-J= .66	.01	3	1
K	6491.1104	30 13.0	140 59.5	86.10	979320.64	.10	HS FROME 1-192				
RAWLINNA 45615											
J	6491.9097	31 .7	125 19.8	179.93	979328.11	.12	A/S SHED				
RICHMOND 41803											
J	6491.9045	20 42.0	143 6.8	206.37	978600.68	.08	A/S TERM H15	J-K= .84	.02	3	2
K	6491.1045	20 43.7	143 8.3	212.72	978599.84	.08	POI ST BM57-33				

IGC BMR NO LETTER	LATITUDE DEG MIN	LONGITUDE DEG MIN	HEIGHT M	OBS.GRAV MGAL	S.E.	INFORMAL NAME	GRAV.INT. MGAL	S.E.	N	K
RINGWOOD 41934										
J 6491.9036	23 50.0	134 57.6	406.11	978731.65	.08	A/S DCA BM1	J-K= .29	.01	1	2
K 6600.0004	23 50.0	134 57.1	*****	978731.36	.08	HS BM178 MP				
ROCKHAMPTON 41730										
A 5099.9949	23 22.7	150 30.6	*****	978855.90	.01	POLICE ST CELL	J-A= 3.31	.01	5	1
J 6591.0149	23 22.6	150 28.5	9.99	978859.21	.01	A/S OLD TAA	L-K= .20	.01	2	1
K 6499.0149	23 22.4	150 28.5	9.82	978859.90	.01	A/S FIRE ST	K-J= .69	.01	7	2
L 7090.0149	23 22.7	150 28.5	*****	978860.10	.01	A/S TERM	M-K= .45	.01	4	10
M 7390.0149	23 22.7	150 28.6	*****	978860.35	.01	A/S APRON				
ROCKHAMPTON DOWNS 38385										
J 6491.9055	18 57.1	135 11.7	225.05	978515.30	.08	A/S WINDSOCK	J-K= .04	.01	3	1
K 6491.1055	18 57.1	135 11.3	223.95	978515.26	.08	HS FENCE BM90-5				
ROEBOURNE 42107										
J 6792.9220	20 45.6	117 9.3	7.78	978663.22	.09	A/S PASS TERM	K-J= 1.40	.01	1	2
K 6792.1220	20 46.2	117 9.2	9.75	978664.62	.09	A/S WA3039	L-J= 2.93	.01	1	2
L 6792.2220	20 46.3	117 8.6	9.63	978666.15	.09	MONUMENT	L-K= 1.53	.01	1	2
ROMA 41868										
A 5099.9959	26 34.2	148 46.4	321.61	978965.15	.07	NURSES HOME	J-A= .15	.02	3	2
J 6491.0159	26 32.7	148 46.7	304.03	978965.30	.07	A/S PASS TERM				
ROPER RIVER MISSION 38344										
J 6793.9315	14 44.1	134 44.0	21.52	978368.60	.08	A/S DCA PSM3	J-K= .64	.01	3	2
K 6708.0314	14 43.7	134 44.0	21.54	978367.96	.08	A/S GATE EU14				
SANDSTONE 42179										
J 6792.9205	27 58.8	119 17.7	526.72	979035.16	.11	A/S WINDSOCK	K-J= .67	.01	2	2
K 6792.1205	27 58.9	119 17.6	527.07	979035.83	.11	A/S STRIP	L-K= 1.37	.01	2	2
L 6792.2205	27 59.3	119 17.5	531.93	979037.20	.11	PO	L-J= 2.04	.01	2	2
SCONE 45310										
J 6491.9112	32 2.2	150 49.9	222.50	979403.10	.04	A/S PASS TERM	K-J= 6.48	.01	3	1
K 6491.1112	32 3.0	150 51.9	*****	979409.58	.04	RS EA408 MUCK	L-K= 1.58	.01	3	1
L 6491.2112	32 3.5	150 52.2	*****	979411.16	.04	SIGN PM230	L-J= 8.06	.02	3	1
SERPENTINE LAKES 42089										
J 6792.9202	28 30.4	129 .8	285.56	979073.96	.10	A/S STRIP	J-K= 2.80	.02	2	2
K 6792.1202	28 30.0	129 2.1	294.52	979071.16	.10	A/S BM4867	L-K= .33	.01	2	2

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SERPENTINE LAKES 42089											
	L 6792.2202	28 30.2	129 1.3	294.50	979071.49	.10	A/S NR ROAD	J-L= 2.47	.03	2	2
SMITHTON 49005											
	J 6491.9142	40 49.8	145 4.9	5.70*	980262.64	.06	A/S PASS TERM	K-J= 1.07	.01	2	1
	K 6491.1142	40 50.7	145 7.2	9.36	980263.71	.06	RAILWAY LINE				
SOUTHERN CROSS 45719											
	J 6491.9094	31 14.0	119 21.2	347.90	979302.79	.11	A/S BLOCK				
ST GEORGE 41888											
	J 6491.9010	28 3.0	148 35.6	198.69	979113.52	.09	A/S TERM WA3063	K-J= .28	.02	3	2
	K 6491.1010	28 2.4	148 34.8	200.37	979113.80	.09	SHIRE HALL M-15				
ST HELENS 49018											
	J 6491.9139	41 20.5	148 16.7	45.65*	980288.85	.04	A/S TERM				
STRAHAN 49025											
	J 6491.9136	42 9.0	145 17.2	22.48*	980358.38	.04	A/S POASS TERM				
STREAKY BAY 45524											
	J 6491.9131	32 47.2	134 14.4	29.08	979533.20	.08	A/S GATE	K-J= 6.16	.02	3	1
	K 6491.1131	32 48.0	134 12.6	11.24	979539.36	.08	COUNCIL BUILD.				
SWINDELL AIRSTRIP 42013											
	J 6792.9219	21 6.1	123 26.9	281.98	978611.32	.08	A/S SHED	J-K= 1.52	.01	1	2
	K 6792.1219	21 6.0	123 27.0	288.58	978610.30	.08	A/S END STRIP	K-L= .21	.01	1	2
	L 6792.2219	21 6.1	123 27.1	290.21	978610.09	.08	A/S	J-L= 1.73	.01	1	2
	M 6792.0021	21 12.0	123 27.5	*****	978608.22	.08	WAPET GS620	J-M= 3.60	.01	1	2
SYDNEY 45331											
	A 5099.9905	33 53.4	151 11.4	*****	979671.86	.01	UNI NGBS	A-B= .34	.01	4	2
	B 7199.9999	33 53.5	151 11.4	*****	979671.52	.01	NAT STAND LAB	J-A=12.94	.01	5	2
	J 6491.0105	*****	*****	*****	979684.80	.01	A/S WA3040	J-L= 2.82	.02	3	1
	L 6491.0305	33 52.3	151 15.8	*****	979681.98	.02	ROSE BAY WA3041	A-M=16.59	.02	3	2
	M 6491.0205	33 55.1	150 59.4	*****	979655.27	.02	BANKSTOWN A/S	A-N=18.82	.01	11	2
	N 6091.0105	33 47.6	151 9.5	2.11	979653.04	.01	LANE COVE CS1	P-A=13.00	.01	4	1
	O 6091.0205	33 42.9	151 7.1	192.57	979594.03	.01	WAHROONGA CS2	J-O= .10	.01	5	1
	P 6091.0305	33 43.2	151 6.9	207.45	979684.86	.01	WAHR RES CS2A	V-O= .13	.01	5	2
	Q 6692.0105	*****	*****	*****	979684.70	.01	A/S OLD TERM	S-O= .14	.01	5	2
	S 6891.0205	33 56.0	151 10.7	1.50	979684.84	.01	A/S APRON	T-S= 1.07	.01	3	2

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SYDNEY 45331											
T	6891.0305	33 56.1	151 11.2	6.37	979685.66	.01	A/S FLIGHT FAC	T-V= .80	.01	2	2
U	7090.0105	33 56.2	151 10.0	*****	979682.82	.01	A/S INT TERM	U-V= 2.04	.01	8	1
V	6891.0105	*****	*****	1.54	979684.86	.01	A/S OLD TERM	X-T= .52	.01	4	13
W	7590.0105	33 56.1	151 10.9	*****	979684.58	.01	A/S TAA TERM	X-A=14.31	.01	4	3
X	7390.0105	33 56.2	151 11.2	*****	979686.17	.01	A/S TAXIWAY	X-V= 1.31	.01	4	3
Y	7391.0105	33 56.1	151 10.9	*****	979685.11	.01	A/S ANA TERM	X-U= 3.35	.01	4	3
								T-U= 2.84	.10	4	3
								T-Y= .55	.01	6	2
								T-W= 1.08	.01	4	3
								Y-W= .53	.01	4	3
								R-O=59.01	.01	**	**
TAMWORTH 45310											
J	6491.9109	31 5.2	150 50.9	405.24	979311.01	.04	A/S PASS TERM	K-J= 4.06	.01	1	2
K	6525.1109	31 5.8	150 54.7	*****	979315.07	.04	ROAD JCN PM2533	K-M= 2.24	.01	1	3
L	6525.2109	31 5.3	150 55.8	*****	979312.76	.04	RS MUCK A-17	M-L= .07	.01	1	2
M	5905.0389	31 5.3	150 55.8	390.69	979312.83	.04	RS FA389				
TANAMI 38499											
J	6491.9964	19 58.1	129 42.6	436.88	978550.28	.08	A/S BM 80-01				
TARCOOLA 45504											
J	6491.9101	30 42.3	134 34.6	120.40	979319.81	.08	A/S WINDSOCK				
TENNANT CREEK 38394											
A	5099.9934	19 38.5	134 10.9	375.02	978514.45	.06	A/S POWER ST	A-J= .06	.01	6	2
J	6491.0134	19 38.5	134 10.9	374.87	978514.39	.06	A/S WA3042 H38	K-J= .08	.01	3	2
K	6793.0134	19 38.5	134 10.9	*****	978514.47	.06	A/S PASS TERM	K-A= .02	.01	3	2
TERRY HILLS AIRSTRIP 42026											
J	6793.9311	22 44.0	126 26.6	*****	978654.33	.10	A/S WINDSOCK				
THARGOMINDAH 41873											
J	6491.9013	27 59.3	143 48.7	*****	979128.46	.11	A/S FUEL SHED	J-K= .98	.01	3	1
K	6491.1013	27 59.8	143 49.3	128.61	979127.48	.11	SHIRE HALL OBM				
THURSDAY ISLAND (HORN IS) 38202											
J	6691.9001	10 35.5	142 17.8	*****	978229.72	.06	A/S TERM HORN	K-J= .04	.01	11	1
K	6691.1001	10 35.5	142 17.8	*****	978229.76	.03	A/S TERM HORN	K-M= 3.14	.02	3	1
L	6691.2001	10 35.1	142 13.4	*****	978226.22	.04	CUSTOMS THURS	J-M= 3.10	.05	3	2

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THURSDAY ISLAND (HORN IS) 38202											
N	6691.3001	10 35.1	142 13.4	*****	978226.62	.04	JETTY THURS IS	M-L= .40	.01	3	1
TIBBOOBURRA 41892											
J	6491.9970	29 27.1	142 3.6	171.31	979247.67	.10	A/S PASS TERM	J-K= 1.89	.01	3	1
K	6491.0170	29 26.3	142 .6	179.90	979245.78	.10	SSM 3895				
TOP SPRINGS 38361											
J	6491.9064	16 36.6	131 49.2	173.98	978400.81	.07	A/S SIGN				
TORRENS CREEK 41805											
J	6491.9046	20 47.3	145 .3	473.67	978556.81	.06	A/S END STRIP				
TOWNSVILLE 38296											
A	5099.9951	19 15.6	146 46.3	*****	978609.63	.02	A/S RAAF HR	B-A= .68	.01	5	1
B	6491.0251	19 15.8	146 45.9	5.11	978610.31	.02	A/S RAAF GW86	A-C= .04	.01	3	2
C	6499.0151	19 15.7	146 48.8	20.49	978609.59	.02	TECH SCH	K-A= .01	.01	3	2
K	6491.0151	19 15.4	146 46.2	*****	978609.64	.02	A/S PASS TERM	B-K= .67	.01	3	1
L	6091.0151	19 15.1	146 48.7	9.21	978612.67	.05	SCH CS1 H9	L-A= 3.04	.01	1	1
M	591.0251	19 15.5	146 48.2	266.17	978552.12	.02	MONUMENT CS2	L-M=60.55	.01	**	**
N	6591.0151	*****	*****	4.90	978609.57	.02	A/S PASS TERM	L-N= 3.10	.05	2	1
O	7090.0151	19 15.4	146 46.2	4.43	978609.61	.01	A/S TERM	A-O= .02	.01	6	2
P	7090.0251	19 15.4	146 46.2	*****	978609.71	.02	A/S TERM	O-O= .23	.01	4	10
Q	7390.0151	19 15.3	146 46.2	*****	978609.84	.01	A/S TERM	R-O= .01	.01	4	3
R	7590.0151	*****	*****	*****	978609.62	.01	A/S TERM	A-N= .06	.01	7	2
								P-O= 1.00	.01	1	1
VAUGHAN AIRSTRIP 38390											
J	6491.9056	19 10.6	130 49.6	295.98	978505.71	.07	A/S RM DE-50				
VAUGHAN SPRINGS 41920											
J	6792.9215	22 20.6	130 51.7	612.72	978549.52	.10	A/S WINDSOCK	J-K= 2.69	.01	2	2
K	6792.1216	22 20.1	130 51.4	615.68	978546.83	.10	A/S STRIP	K-L= 8.94	.01	2	2
L	6792.2216	22 18.2	130 50.9	636.37	978538.09	.10	HS GARAGE	J-L=11.43	.01	2	2
VICTORIA RIVER DOWNS 38360											
A	5099.9931	16 25.1	130 58.6	90.43	978409.88	.08	A/S STORE	A-J= .12	.01	3	1
J	6491.0131	16 25.1	130 58.5	90.93	978409.76	.08	A/S TANK				
WAGGA WAGGA 45457											
A	5099.9906	35 7.5	147 21.8	209.61	979658.66	.04	HIGH SCH	A-J= 1.23	.01	3	2

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WAGGA WAGGA 45457											
J	6491.0106	35	9.6	147	27.8	212.14	979657.43	.04	A/S PASS TERM		
WAIKERIE 45440											
J	6491.9133	34	11.1	140	1.6	42.82	979640.51	.08	A/S GLIDER CLUB	K-J= 8.87	.01 3 1
K	6491.1133	*****	*****	*****			979649.38	.08	SHED		
WALGETT 45408											
A	5099.9945	30	1.3	148	6.9	132.80	979307.63	.07	POLICE ST	A-J= .96	.01 3 1
J	6491.0145	30	1.9	148	7.2	132.37	979306.67	.07	A/S TERM	K-J= 2.09	.01 3 1
K	6491.0245	30	1.3	148	6.8	132.72	979308.76	.07	PO PM5085	K-A= 1.13	.01 3 1
WALLAL DOWNS 38490											
J	6792.9218	19	46.4	120	38.5	5.47	978673.54	.08	A/S WINDSOCK	K-J= .10	.01 1 2
K	6792.1218	19	46.4	120	38.5	5.24	978673.64	.08	A/S STRIP	K-L= .13	.01 1 2
L	5605.1887	19	46.8	120	38.0	*****	978673.51	.08	HS GATE 18-87	J-L= .03	.01 1 2
WANAARING 41894											
J	6491.9106	29	42.5	144	10.1	109.18	979280.63	.09	A/S ROAD	J-K= 1.21	.02 3 1
K	6491.1106	29	42.1	144	8.9	107.92	979279.42	.09	NR TOWN SSM3430		
WARBURTON RANGE MISSION 42066											
J	6491.0169	26	8.0	126	34.8	457.25	978911.89	.11	A/S GATE 81-45		
K	6491.9969	26	8.0	126	34.7	458.75	978911.45	.11	MISSION STORE	J-K= .44	.01 3 1
WARRI AIRSTRIP 42045											
J	6792.9212	24	5.3	125	14.2	*****	978782.37	.10	A/S	K-J= 2.86	.01 2 2
K	6206.8334	*****	*****	*****			978785.23	.10	BM83-34		
WARWICK 41781											
J	6491.9007	28	9.0	151	56.6	458.26	979080.46	.04	A/S PASS TERM	K-J= 6.33	.01 3 2
K	6491.1007	28	13.0	152	1.9	458.96	979086.79	.04	PO	L-K= .05	.01 3 1
L	6491.2007	28	12.8	152	1.8	*****	979086.84	.04	COURTHS OBM75	M-J= .02	.01 3 1
M	6491.3007	28	9.0	151	56.6	458.22	979080.48	.04	A/S TERM WA3065		
WEIPA 28221											
J	6491.9967	12	41.4	141	53.5	11.22	978288.49	.04	A/S STORE	J-K= .16	.02 3 1
K	6491.0167	12	41.3	141	53.4	11.30	978288.33	.04	A/S FUEL STORE		
WHYALLA 45537											
A	5099.9909	33	2.1	137	35.1	14.02	979556.69	.07	POLICE ST	J-A= 3.18	.01 3 2

IGC	BMR NO	LATITUDE	LONGITUDE	HEIGHT	OBS.GRAV	S.E.	INFORMAL NAME	GRAV.INT.	S.E.	N	K
LETTER		DEG MIN	DEG MIN	M	MGAL			MGAL			
WHYALLA 45537											
J	6793.0109	33	3.2	137	31.2	9.76	979559.87	.07	A/S TERM	K-J=	.11 .01 3 2
K	6793.0209	33	3.2	137	31.2	9.48	979559.98	.07	A/S HANGAR	K-A=	3.29 .01 3 2
WILCANNIA 45413											
J	6491.9115	31	31.3	143	23.0	94.42	979392.85	.09	A/S FIRE SHED	K-J=	7.60 .03 3 1
K	6491.1115	31	33.3	143	22.0	77.73	979400.45	.09	OLD ROAD PM4873		
WILLIAM CREEK 41986											
J	6793.9308	28	54.4	136	20.2	73.83	979212.53	.08	HOTEL	J-K=	.23 .01 3 1
K	6793.1308	28	54.5	136	20.2	74.40	979212.30	.08	PMG ENCLOSURE		
WILLIAMTOWN NEWCASTLE 45321											
J	7090.9402	32	48.2	151	50.4	5.09	979568.27	.01	A/S TERM		
WILUNA 42060											
A	5099.9922	26	35.7	120	13.3	513.73	978940.85	.12	OLD ROAD BOARD	A-J=	2.68 .01 3 2
J	6491.0122	26	38.1	120	13.3	496.90	978938.17	.12	A/S		
WINDIDDA 42062											
J	6491.9087	26	22.7	122	10.5	466.07	978913.76	.12	A/S		
WINDORAH 41852											
J	6491.9023	25	24.8	142	39.8	131.71	978928.60	.10	A/S PASS TERM		
K	5805.5170	*****	*****	*****	*****	*****	*****	****	POLICE ST		
L	5805.5249	*****	*****	*****	*****	*****	*****	****	BM52-1A MR-53		
WINNING 42134											
J	6792.9209	23	9.2	114	32.8	76.07	978825.98	.08	A/S FENCE	K-J=	1.51 .02 2 2
K	5005.0701	23	9.4	114	32.2	72.73	978827.49	.08	HS VERANDAH		
WINTON 41823											
J	6491.9032	22	22.0	143	4.9	191.42	978726.83	.08	A/S FENCE	K-J=	3.97 .01 3 2
K	6491.1032	22	23.4	143	2.2	184.74	978730.80	.08	COURTHS BM53-1	L-K=	.47 .01 3 1
L	6491.2032	22	23.5	143	2.1	182.82	978731.27	.08	HOTEL	L-J=	4.44 .01 3 1
WOODGREEN 41924											
J	6491.9039	22	23.9	134	16.4	563.32	978639.70	.09	A/S WINDSOCK	K-J=	.58 .02 3 1
K	6491.1039	22	24.0	134	16.3	562.95	978640.28	.09	A/S STRIP		

IGC LETTER	BMR NO	LATITUDE DEG MIN	LONGITUDE DEG MIN	HEIGHT M	OBS.GRAV MGAL	S.E.	INFORMAL NAME	GRAV.INT. MGAL	S.E.	N	K

WOOLITANA 45509											
J	6491.9103	30 25.3	139 26.7	78.95	979336.27	.09	A/S	J-K= 4.81	.01	3	1
K	6491.1103	30 25.0	139 25.3	115.86	979331.46	.09	TRACK JCN				
WOOMERA 45516											
A	5099.9938	31 8.8	136 48.2	165.60	979356.81	.07	A/S GRAV BUILD	J-A= 1.91	.01	3	2
J	6491.0138	31 9.5	136 48.3	166.78	979358.72	.07	A/S NEW TERM				
WROTHAM PARK-WALSH 38263											
J	6491.9071	16 39.7	143 59.6	*****	978419.06	.04	HS	K-J= 1.37	.01	3	1
K	6491.1071	16 40.5	143 54.2	*****	978420.43	.04	PO FROME GW70				
WYNDHAM 38458											
A	5099.9930	15 30.3	128 9.0	5.38	978400.13	.06	A/S STORE	J-A= .06	.01	3	2
J	6491.0130	15 30.3	128 9.1	5.06	978400.19	.06	A/S PASS TERM				
YARRAM 45486											
A	5099.9902	38 34.1	146 40.6	20.14	980008.65	.06	BLACKSMITH SHOP	A-J= .46	.04	4	2
J	6491.0102	38 34.1	146 45.2	18.83	980008.19	.04	A/S MEMORIAL	K-J= .69	.01	4	2
K	6491.0202	38 34.1	146 40.6	20.19	980008.88	.04	SWIMMING POOL	K-A= .23	.01	4	2
YIRRKALA MISSION-GOVE A/S 38326											
J	6491.9968	12 16.6	136 49.4	*****	978266.57	.06	A/S SHED	K-J= .21	.02	3	1
K	6491.0168	12 16.5	136 49.4	*****	978266.78	.06	A/S ASTROFIX				
ZANTHUS 45613											
J	6491.9096	31 2.3	123 34.1	266.75	979284.57	.12	A/S				

* HEIGHTS ACCURATE TO 0.1M ONLY