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# DEPARTMENT OF MINERALS AND ENERGY

# BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

Record 1975/177

## EAST PAPUA CRUSTAL SURVEY, OCTOBER-DECEMBER 1973: OPERATIONAL REPORT

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by

D.M. FINLAYSON

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# EAST PAPUA CRUSTAL SURVEY, OCTOBER-DECEMBER 1973: OPERATIONAL REPORT

by

D.M. FINLAYSON

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## PARTICIPATING ORGANIZATIONS

Bureau of Mineral Resources, Geology and Geophysics, (BMR)

- Regional Structural Surveys Group, Canberra
- Regional Gravity Group, Canberra
- Geophysical Observatory Group, Port Moresby

Research School of Earth Sciences, Australian National University, Canberra

Geology Department, University of Queensland, St Lucia, Qld

Geological Survey of Papua New Guinea

- Headquarters, Port Moresby
- Vulcanological Observatory Group, Rabaul

Hawaii Institute of Geophysics, University of Hawaii, Honolulu, Hawaii, U.S.A.

Warrnambool Institute of Advanced Education, Warrnambool, Vic

Preston Institute of Technology, Preston Vic

Survey Branch, Department of Services and Property, Canberra.

## SUMMARY

During October to December 1973, the Bureau of Mineral Resources, in co-operation with a number of other geophysical institutions, conducted a major seismic and gravity investigation of the large-scale geological structure of the Papuan peninsula of Papua New Guinea. 111 marine seismic shots were fired along traverses both parallel and perpendicular to the northeast and southwest coasts of the peninsula and 43 recording sites were occupied during the survey. Observations of gravity were made at 150 new sites on the peninsula to supplement previous observations, thus completing the regional gravity coverage of the area.

This Record describes the geophysical operations conducted in PNG before and during the main survey period, October to December 1973. Shot and recording station information is listed together with the principal seismic travel-time data and the reduced gravity data. Interpretations based on the results obtained will be presented in later reports.

# 1. INTRODUCTION

The complex tectonic relations in the Melanesian region have long been recognized, but a full understanding of even current tectonic activity has yet to be achieved. The Bureau of Mineral Resources, Geology and Geophysics (BMR) has played a major role in conducting regional geological and geophysical investigations in Papua New Guinea (PNG). The East Papua Crustal Survey evolved from the need to have more definitive information on the gross structural geology of the Papuan peninsula. Within the framework of the modern concepts of lithospheric plate movements, the peridotite-gabbro-basalt complex of eastern Papua is regarded on the basis of geology as a classic example of an overthrust plate of oceanic mantle and crust caused by the subduction (Davies, 1971; Moores, 1973) of part of the northeast Australian continental margin during the Eocene. This is therefore a comparatively young example of tectonic processes which may account for the origin of ultramafic material in much older geological formations in Australia and elsewhere. The study of the deep structures in eastern Papua should thus add further basic information to our understanding of the tectonic framework of geological provinces and their associated mineral potential.

Planning for the survey started in September 1970 and continued until field survey operations began in October 1973. This Record describes the operations in PNG and documents the equipment used and the seismic and gravity data observed during the survey. The main purpose of the Record is to provide a convenient data source document for reference in interpretative reports which will be published separately.

The organizations that participated directly in the survey are listed on the foreleaf to this Record.

## 1.1. Background geology and geophysics

Davies & Smith (1971) described the geology of the Papuan peninsula of PNG and gave their interpretation of the tectonic evolution of the area. The following summary is taken from their paper.

'Eastern Papua is a southeasterly-trending mountainous peninsula with islands to the east and southeast, between 7° to 12°S and 146° to 155°E (Pl. 1). The peninsula and islands consist of a linear core of Mesozoic sialic metamorphic rocks flanked by Mesozoic and younger mafic rocks and partly concealed by still younger sedimentary and volcanic rocks. The Mesozoic sialic rocks are exposed in a belt 900 km long and up to 60 km wide. They consist of Cretaceous (and possibly older) sediments which were metamorphosed during the Palaeocene or Eocene. Metamorphic grade is generally greenschist facies, but is higher in the D'Entrecasteaux Islands and on part of Misima Island;

lawsonite occurs mainly within a few kilometres of the Owen Stanley Fault which bounds the mainland metamorphics on the north and northeast. Mesozoic mafic rocks include periodotite, gabbro and basalt of the Papuan Ultramafic Belt, metabasalt exposed in the Suckling Dayman mountain block and on Normanby and the Deboyne Islands, and unmetamorphosed basalt elsewhere on the mainland. These rocks are, at least in part, Cretaceous. Younger mafic rocks include Eocene basalt on the southeastern mainland and upper Oligocene and lower and middle Miocene tuff and lava at scattered localities. Eocene sediments consist of chert and deepwater limestone along the south coast of the mainland at Port Moresby and Magarida, and Eocene clastic sediments inland from Port Moresby and near Tapini. No lower or middle Oligocene rocks are known. Upper Oligocene, Miocene and Pliocene sediments in the Aure Trough (145° to 146°E) have a maximum thickness of about 12 000 m; the sediments are mainly alternating mudstone and greywacke, and are probably turbidites. Middle Miocene reef limestone on the eastern hinge line of the trough at 146°E is 1000 m thick. Middle Miocene and younger clastic sediments in the Cape Vogel Basin (150°E) are at least 4000 m thick. Pliocene and Quarternary volcanic rocks range in composition from basalt to rhyolite and include some potash-rich rocks. Intrusive rocks include Eocene tonalite in the ultramafic belt, Oligocene? gabbro near Port Moresby, middle Miocene granodiorite west of Salamaua, middle Miocene potash-rich intrusives on the southeastern mainland, Pliocene andesitic porphyries near Wau, and Pliocene granodiorite in the D'Entrecasteaux Islands.

'The Cretaceous (and possibly older) sialic sediments are thought to have been metamorphosed during the early Eocene at the time of emplacement of the Papuan Ultramafic Belt. The ultramafic belt is thought to be part of a thrust slice of oceanic mantle and crust which rode over or was underridden by the Cretaceous sediments on a low-angle fault (the Owen Stanley Fault). The metamorphic rocks were partly exposed during the middle or late Eocene but there was no major landmass in the area until the upper Oligocene. During the upper Oligocene, Miocene and Pliocene the sialic metamorphic rocks emerged, perhaps isostatically. Erosion of the resulting mountain block and contemporary volcanism and limestone development contributed great volumes of sediment to the Aure Trough and lesser volumes to the Cape Vogel basin. The history of the area can be interpreted in terms of interaction between Australian and Pacific lithospheric plates and opening of the Coral Sea by rifting.'

Moores (1973) reviewed the geotectonic significance of ultramafic rocks, and grouped the ophiolite complex of eastern Papua with similar structures in Cyprus, the Mediterranean, California, and New Caledonia which are also considered to be suboceanic crust and mantle slabs. The thickness of the mafic material is important in determining whether a simple overthrust model operates during tectonic emplacement of such complexes.

The determination of seismic velocities and structures in eastern Papua and comparison with oceanic layers 2, 3, and 4 are therefore important in deriving realistic tectonic models. The ophiolite body emplacement in eastern Papua is widely regarded as a classic case of collision between a continental mass (Australia) and an oceanic lithospheric plate (Pacific) with resultant overthrusting of oceanic crust and mantle. Davies (1971) described the detailed geology of the Papuan Ultramafic Belt, and indicated that geological evidence for the thickness of the basalt and gabbro components of 8 to 10 km matches the thickness of solid crust in the Solomon Sea and that the surface ultramafic zone may be 4 to 8 km thick.

The geophysical survey work conducted in the east Papuan area is summarized by Finlayson (1971). St John (1970) and Milsom (1973) have interpreted the regional gravity observations in the area, and both have examined the various aspects of the tectonic emplacement of the ophiolitic body. In both interpretations the data can be shown to be compatible with the oceanic crust overthrust hypothesis, but Milsom indicated that some of the geophysical and geological limitations in the area suggest that other types of origin cannot be excluded. The gravity data can be modelled only if there is a Moho about 20 km deep seaward of the ophiolite rock with a thick sedimentary column, rather than a thinner layer of sialic igneous or metamorphic rocks. There are mechanical limitations on the size and shape of the obducted material proposed for the Musa area although tectonic systems can be devised to explain the structure.

Milsom (1973) also considered the possibility of a gravity sliding formation hypothesis but rejected it on a number of grounds, not the least of which is the unlikelihood of the pluto-volcanic extrusion of such a large quantity of ophiolitic material. The proposed possibility of underthrusting of an island-arc by a continental margin is also considered. After the effects of bathymetry are taken into consideration near a Benioff zone, the gravity effect of a downgoing slab is unlikely to be in excess of 20 mGal, whereas the observed net gravity difference across the ophiolite belt in the Ajura Kujara Mountain region is of the order of 50 mGal. The gravity free-air anomaly minimum is commonly displaced seaward relative to a trench owing to sedimentation and fragmentation of the downgoing slab but the regional geology indicates no evidence of such material in east Papua if continental underthrusting had taken place. There also seems to be no evidence of thick sialic crust seaward of the ultramafic belt; in fact the gravity gradient would suggest thinning of the crust towards the Solomon Sea. Milsom presented other geological and geophysical arguments against the island-arc/continental margin collision hypothesis, such as the lack of frontal-arc melange rocks in east Papua and the necessary subsidence of the rear of the arc to account for the observed gravity observations.

Other hypotheses considered by Milsom, such as orogenic thickening suggested by Rabinowitz & Ryan (1970) for the Mediterranean Ridge, are admitted by him to be tenuous, but the possibility that the east Papua ophiolite suite is part of an underthrust marginal basin (Karig, 1972) was not discounted. If this was the case then the crustal layering to be expected in east Papua need not be typically oceanic.

Aeromagnetic surveys have been conducted over the whole of the Papuan peninsula (CGG, 1969, 1971, 1973) and magnetic interpretations have been made in relation to the near-surface geology. This information provides some indication of the near-surface seismic corrections to be expected for some of the shots and recording stations. The data provide information on the structure of magnetic basement throughout the survey areas where topography and vegatation cover preclude the examination of surface rocks.

For the marine areas surrounding the Papuan peninsula, several surveys provide structural information. In the Coral Sea, interpretations have been made by Gardner (1970), J. Ewing et al. (1970), M. Ewing et al. (1970), Finlayson (1968), Krause (1967), Brooks (1969), Tilbury (1975), Mutter (1972), as well as company exploration data listed by Tilbury (op. cit.). In the Solomon Sea structural information is provided by Furumoto et al. (1970), Rose et al. (1968), Von der Borch (1972) and Tilbury (1975).

The east Papuan area has been included in seismotectonic syntheses (Denham, 1969, 1973; Milsom, 1970; Johnson & Molnar, 1972; Krause, 1973; and Carey, 1970) based largely on modern earthquake distribution (Pl. 2) and focal mechanism data. The more recent of these syntheses require a compressional regime between the major Australian and Pacific lithospheric plates, with the smaller Bismarck and Solomon sub-plates lying in the interaction zone. The precise nature of the plate motions is, as yet, not defined. Milsom's (1970) hypothesis of a spreading centre in the Woodlark Basin seems to be confirmed by Luyendyk et al. (1973). The present-day seismic activity in the survey area of the Papuan peninsula is minor. The majority of the earthquakes are on the northeast side of the peninsula and shallow, although some intermediate depth events (70 to 299 km depth) have occurred in the Mt Lamington-Ioma area. Activity increases northwestward towards the major earthquake zones in the Huon Gulf and Huon Peninsula areas, and activity also tends to increase southwestward towards the Woodlark Basin. In the Solomon Sea away from the major active zones, scattered activity occurs with no definite pattern. There is no detected activity in the Coral Sea/western Papua region, and the northeastern boundary of the Australian plate, as defined by seismicity, is now well determined.

A number of volcanological investigations in the Papuan peninsula have been conducted (Taylor, 1958; Jakes & Smith, 1970; Smith, 1973; Johnson et al., 1973). Cainozoic volcanic rocks are widespread on the islands to the north and east of the Papuan mainland, and the Pleistocene to Recent volcanoes of Mt Lamington, Mt Trafalgar, and Mt Victory dominate part of the seismic survey area. The ages of the volcanic rocks tend to become younger from east to west across the region. These rocks may be associated with a current episode of rifting and spreading in the Woodlark Basin and faulting and slipping in eastern Papua as proposed to account for current earthquake activity (Luyendyk et al., 1973).

Smith (1970) has demonstrated from the geomorphology that, in the eastern Papuan peninsula, strong vertical movements have occurred in geologically recent times and that post-Miocene uplift is of the order of 3000-4000 m.

Volcanic rocks of Pliocene age crop out on the Lusancay Islands on the northern edge of the Trobriand Platform and may be representative of the aeromagnetic near-surface basement (CGG, 1971) that extends east to at least the Marshall Bennett Islands. Two exploration drill holes between Goodenough Island and the Trobriand Islands penetrated thick Pliocene and mid-Miocene sequences and bottomed in volcanics, volcaniclastics, and tuffs (Amoco, 1973, a, b). Nubian No. 1 well bottomed at 2.37 km; average velocities varied from 2.02 to 2.38 km/s and interval velocities varied from 2.07 km/s in shales to 3.66 km/s in the lower part of the drill hole (limestones, marls). Goodenough No. 1 well bottomed at 2.84 km; average velocities ranged from 2.28 to 2.45 km/s and interval velocities varied from 2.13 km/s in shaley conglomerates to 3.92 km/s in volcanics and volcaniclastics.

## 1.2 Aims of investigation

The aims of the geophysical investigations in the east Papuan peninsula during 1973 were as follows:

1. To determine by seismic methods the crustal and upper mantle velocities and structures associated with the Papuan Ultramafic Belt and the neighbouring tectonic provinces to the southwest into the Coral Sea and to the northeast into the Solomon Sea.

2. To complete regional gravity observation coverage in the east Papuan peninsula.

3. To determine the structural boundaries between tectonic provinces by using a unified approach to the interpretation of geological, magnetic, gravity, and seismic data.

4. To further knowledge of the tectonic history of the Melanesian region.

## 2. SURVEY PLANNING AND DESIGN

### 2.1 General

The planning of the East Papua Crustal Survey commenced during September 1970 when a meeting of interested geoscientists from inside and outside BMR indicated their support for a crustal investigation in the region. Subsequently a preview report for the survey was produced (Finlayson, 1971) and circulated to possible participants in the project. This report contained a number of proposals for seismic shooting at sea and recording on land, marine seismic profiling, and marine magnetic profiling. After critical review the proposals for seismic shooting and recording were approximately doubled (Pl. 3) and completion of regional gravity coverage for the area was added to the survey objectives.

A number of factors dominated the working-up period before the survey. The major ones were (a) development of seismic tape recording equipment by BMR in time for the survey, (b) shortage of suitable shooting ships willing to undertake such a short survey, (c) station positioning and ship navigation complexities, and (d) assessment of explosives and detonation techniques. These factors are discussed briefly in the following paragraphs. They twice delayed the programmed schedule for the survey and, together with the associated budgeting and contracting problems, placed major constraints on the field operations.

(a) Seismic recording equipment required for a crustal investigation should be compatible with the latest interpretation techniques, which include both analogue and digital signal processing and computer data processing, presentation, and modelling. BMR and the other participating organizations had in recent years been developing seismic tape recording equipment for attended and unattended operation because of the high cost of commercially available equipment suitable for very slow-speed, low-power, long-endurance operation. BMR's development of a four-channel FM tape recording system (Pl. 4) was considerably delayed by other operational requirements within BMR and by attempts to improve its performance. These delays were the major cause for postponing the survey.

(b) A shooting ship for the survey was chartered through the Contracts Board of the Department of Supply. There were very few suitable vessels in Australian or PNG ports whose owners were willing to undertake a contract of only 8-10 weeks. The postponement of the survey meant calling for tenders more than once.

None of the final tenders was entirely suitable, but after a considerable amount of negotiation between BMR and Contracts Board, Department of Shipping and Transport, PNG Department of Transport, Port Moresby Harbour Master and the tenderers, the L/V Sir Alan was eventually engaged.

(c) The positioning of the seismic recording stations and navigation of the shooting vessel necessitated major review exercises by the Survey Branch, Department of Services and Property, to assess the problems of achieving the desired accuracy of 0.1 km over the whole survey area. Various systems offered by commercial surveying companies were assessed in conjunction with the topographic surveying being conducted in the survey area by the Army, Department of Civil Aviation, and by the Survey Branch. After various reconnaissance visits to sites, the Survey Branch supervised contractors who determined the geographic locations of the seismic recording stations during March to May 1973 (see ch. 4.1), and different contractors who determined locations of the shots during shooting operations (see ch. 3.4).

(d) Various types of explosives were available for the kind of shooting required for the survey. However during 1971 West Australian Petroleum Pty Ltd had donated to BMR over 300 tonnes of Du Pont WW explosive which were surplus to their needs. This explosive was packaged in 30-kg metal containers designed for detonation at shallow depths. If water penetrated the containers, the nitramon explosive was rendered useless; thus a series of trials had to be conducted in order to perfect a method for deep shooting. Two series of trials were conducted off Fremantle (where the explosive was stored) in cooperation with the Navy, and a final series was conducted off Bermagui, NSW during May 1972 by the BMR personnel who were to be responsible for shipborne operations during the survey in PNG. The trials were successful, and 66 tonnes of this explosive was freighted to Port Moresby and stored in an extension built on to the PNG Department of Works magazine.

A number of other factors had to be taken into account at the planning stage. The weather in the PNG region restricted the survey to the doldrum periods between the northwest monsoon and the southeast trade wind seasons. These periods (April-May and October-November) were the only ones when there was a reasonable probability that moderate to good flying conditions in the mountains onshore would coincide with smooth to slight swell conditions for marine operations in both the Coral and Solomon Seas (Willcox, 1973).

The necessity for the seismic recording stations to be placed near villages and airstrips and that the sites be surveyed highlighted the problem of public relations. Land in PNG is owned predominantly by villages and families and not by the government. Land disputes constitute a major source of trouble for government and police authorities, and surveyors are generally

regarded with suspicion by villagers. Thus every effort was made to ensure that all authorities at the District and Sub-district level were kept informed about the nature of the nature of the survey and their assistance was always sought when visits to villages were required. This time and effort was well spent and the resulting co-operation with the local populations could not have been better.

The liaison between BMR and the other participating organizations constituted a major part of the work of survey administration. The commitments of the participant staff to lecturing and other geophysical work necessitated continuous assessment of forward programming to best meet their needs and requirements.

## 2.2 Seismic observation objectives

Suggestions from interested geoscientists regarding the scope of the investigation were sought early in the planning stages. Working within budget limitations, the number of sets of recording equipment available, and the time available for field operations, it soon became apparent that not all suggestions could be undertaken. Thus it was decided to investigate only the structures of the Papuan Ultramafic Belt and not those connected with the rifting at the eastern end of the Papuan peninsula and in the Woodlark Basin. The Papuan peninsula between Salamaua and Tufi was chosen as the survey area, with emphasis on the line through Port Moresby and Popondetta.

Experience gained by BMR staff during the interpretation of the 1967/1969 surveys in the New Britain-New Ireland region was extremely valuable in determining the survey design. In particular these surveys indicated that the most useful data came from recording stations which remained in the same position for the whole survey period. Fixed stations enable the interpreter to ensure that at least the recording station delay times are approximately constant over the seismic wave cone of emergence round the station, and that one has to consider only the variability of the shot-point delay times in the analysis. Probable interpretation methods must also be considered at the design stage of the survey. The modern trend is to construct a series of seismic record sections along profiles of shots and stations and interpret these by computer modelling and least squares optimization techniques. However, a rigid adherence to profiles would not survey all the essential geological features. The time-term interpretation method enables a larger area to be surveyed less intensively by admitting seismic arrivals from all azimuths. However, only the average structure over the cone of emergence of seismic waves is achieved, and the time-term interpretation method may not be appropriate for the expected high structural relief in the east Papuan area.

The adopted recording station pattern covered the whole survey area and ensured adequate coverage along two profiles parallel to the northeast and southwest coasts (and geological strike), and along two profiles across the strike of geological structures from Port Moresby to Popondetta and from Yule Island to Salamaua (Pl. 3). A shot pattern was chosen that ensured that the stations parallel to the coast recorded at 10-15 km shot intervals out to distances of a minimum of 150 km, and shot intervals of 40-50 km out to distances of 300 km. The shot patterns in the Coral and Solomon Seas were designed to ensure that coastal stations recorded data out to distances of at least 300 km wholely within the Coral Sea and Solomon Sea Basins.

Particular attention was given to the placing of stations in areas of geological importance. Salamaua, Lake Trist, Garaina, Karakaru, Gorari, Tetebedi, Namudei, and Musa Dam stations were designed to be either on or close to outcropping ultramafic rock. The stations at Guari, Tapini, Woitape, and Efogi were closely associated with the Owen Stanley metamorphics. Lamington, Popondetta, Afore, Oro Bay, and Tufi were associated with Pleistocene to Recent volcanics. Stations such as Lae, Kerema, Cape Rodney, Esa Ala, Lindenhafen, and Iron Range (Qld) were used to ensure that the extremities of the survey profiles were adequately covered for interpretation purposes.

Very few sets of equipment were repositioned during the shooting period. When shooting changed from the Coral Sea to the Solomon Sea, the equipment sets at Kerema, Kwikila, and Bereina were moved to Finschhafen, Lindenhafen, and Kwikila respectively.

In an attempt to standardize the transmitted energy from each shot point, only two shot sizes were used, 1020 kg and 180 kg (convenient packages of 34 and 6 cans of explosive, each containing 30 kg). It was estimated that the 1020-kg shots would be recorded out to distances of at least 400 km, and the 180-kg shots out to at least 150 km, based on experience in other areas of PNG.

Some of the marine areas in which shooting was conducted had not been covered adequately by marine seismic profiling, which was considered desirable to calculate corrections. Consequently a set of marine seismic profiling equipment was installed on board the shooting vessel.

## 2.3 Gravity observation objective

The objective of the gravity survey was to complete regional gravity coverage of the seismic survey area and thus enable concurrent gravity and seismic interpretation. St John (1970) and Milsom (1974, 1973) had conducted gravity surveys over large areas of eastern Papua, but there were significant gaps in the coverage in the area southwest of the Owen Stanley Ranges. BMR marine gravity observations had been made in the Gulf of Papua

and northern Coral Sea and along the northeast coast of Papua and Huon Gulf (Mutter, 1972; Tilbury, 1975). Rose et al. (1968) reported the gravity observations made by various institutions in the Solomon Sea, but there are still significant gaps in the marine coverage off the northeast Papuan coast.

The regional helicopter gravity survey work was undertaken concurrently with the seismic work in order to use the helicopter logistic facilities engaged for the seismic work more productively.

The desirable gravity observation grid of stations at 11-km spacing was not possible in the mountainous and swampy terrain of Papua, and observation sites were chosen on an opportunity basis in clearings approximately 11 km apart where the helicopter could land.

## 2.4 Detailed survey planning and operational objectives

The large number of scientific institutions, government departments in Canberra, Melbourne and Port Moresby, contractors, sub-contractors, and individuals involved in a project like the East Papua Crustal survey necessitated first-class liaison and communications to ensure that when they came together in the survey area, operations proceeded smoothly with the minimum wastage of time and effort.

The logistic support required for the establishment and maintenance of the recording station network was extensively researched with contingency plans forming an integral part of the exercise. Two major reconnaissance surveys for potential recording station sites were conducted by staff from Port Moresby Geophysical Observatory, and from BMR and the Survey Branch, Canberra. Logistic support available at each site was assessed by these surveys and by the PNG Chief Government Geologist, Port Moresby in co-operation with the PNG Department of District Administration. The positioning of the potential seismic station sites by the Survey Branch and the contractors before the main seismic survey (ch. 4.1) enabled further data on each site to be gathered. All these data and information, together with both ground and air photographs, were issued to the geophysicists responsible for setting up and operating the various seismic stations.

The survey area was topographically divided in two by the Owen Stanley Ranges, and it was therefore decided to provide survey logistic support from two offices, the main headquarters in Port Moresby and another sub-headquarters in Popondetta. Houses were rented in these two towns for both offices and sleeping quarters for a number of survey staff. Port Moresby and Popondetta were linked by a scheduled airline service and both offices were linked by telephone.

In order to conduct the survey effectively it was regarded as essential to establish a first-class radio network, so that all groups and individuals operating throughout the large survey area would be kept informed several times per day about survey progress. Only by this means could the survey react quickly to the many logistic contingencies which arose every day. 100W SSB Codan transceivers were chosen to operate at the two offices and on board the shooting ship 25W SSB Codan transceivers were selected for use by the field personnel and contractors (see ch. 6).

Port Moresby was chosen for the survey headquarters because of the logistic facilities available. It was essential that survey personnel have easy access to scheduled airline services both from Australia and within PNG, a good selection of air charter companies for both fixed wing and helicopter hire (using the Department of Civil Aviation period contract), car, truck, and crane hire companies, PNG government departments, consumable stores suppliers, good harbour facilities, shipwrights, and storage facilities.

In order to keep the survey planning according to a schedule, critical path assessments were made throughout 1973 on all items of administration, staffing, equipment procurement, shipping, and testing up to the point of firing shot number 1.

The shipping of stores from Australia was arranged through the Department of Supply. The 66 tonnes of explosives was shipped to Port Moresby 10 months before the survey and stored in the PNG Works Department magazine at Burundi near the Table Top Geophysical Observatory. All other survey equipment was shipped to Port Moresby on MV Tenos, which arrived in Port Moresby on 11 October after many delays owing to dock strikes. The equipment was packed in three containers, one 6.1 x 2.4 x 2.4 m (20 x 8 x 8 ft), the second 3.7 x 2.4 x 2.4 m (12 x 8 x 8 ft), and the third 2.4 x 2.4 x 2.4 m (8 x 8 x 8 ft). These containers were offloaded from Tenos straight onto L/V Sir Alan which was used as the shooting ship (see ch. 3). Tenos also carried the SHORAN navigation equipment required for positioning the shooting ship.

BMR had the use of a Department of Civil Aviation warehouse off Lawes Road in Port Moresby for the storage and testing of all equipment for the duration of the survey. This warehouse was conveniently situated near the offices of the Port Moresby Geophysical Observatory and the PNG Geological Survey. Strict security precautions were kept regarding the use of the warehouse because of the prevalence of theft in that area. At the end of the survey all equipment was packed into the containers at the warehouse and shipped back through Sydney to Canberra.

A detailed program of all survey operations in the form of a BMR Record was distributed to all participants before their arrival in PNG (Finlayson, 1973). This program was stipulated as essential reading for all participants. It detailed the organizational, logistic, and communications structure for the entire survey from the time the first personnel arrived in PNG until the last person left. It listed details of all vehicle, shipping, and aircraft movements for the mobilization and demobilization of the survey and the modus-operandi for the duration of seismic shooting and recording period. The production of and adherence to this document contributed largely to the overall success of the survey with very little wastage of time.

The philosophy behind the detailed field operation programming was to break the survey into a number of semi-independent units which would be able to proceed with their own program even if weather, transport, or communications difficulties arose temporarily in certain local areas. Thus senior BMR officers were in charge of the survey headquarters in Port Moresby, the sub-headquarters in Popondetta, and on board the shooting ship L/V Sir Alan. The mobilization, servicing, and demobilization of seismic stations were divided into three sectors with their own, largely independent, transport arrangements. The operations in 'blue sector' northwest of Port Moresby and the 'green sector' southeast of Port Moresby were controlled from the survey headquarters. The operations in 'red sector' on the northeast side of the Owen Stanley Ranges were controlled from the sub-headquarters in Popondetta. The logistics for the positioning and repositioning of SHORAN land-based stations were controlled from survey headquarters. Inevitably most aircraft and helicopter operations were controlled from Port Moresby where the air charter companies were based, but in some instances aircraft were hired for operations out of Lae. A summary of survey operations is given in Appendix 1.

## 3. SHOOTING SHIP OPERATIONS

The speed and efficiency of the shooting ship in a survey of this type largely determines the overall length of the survey period. When tenders were called for the charter of a shooting vessel there were very few replies. The charter was not particularly attractive to ship owners as it was for a comparatively short duration involving non-routine operations in a remote locality. A contract was finally placed only after lengthy negotations between BMR and a number of government departments, both in Australia and PNG, and various private companies.

### 3.1 Shooting vessel

The shooting ship chartered for the survey was the landing craft L/V Sir Alan owned by Seafreight Pty Ltd, Lae. The

vessel was 39.6 m long and consisted of a main cargo deck which occupied the entire forward section of the ship, a bridge which occupied the entire width of the after section of the ship, and a very small after-deck about 2 m wide (Pl. 5).

The cargo deck was 30.5 m long by 9.2 m wide, and the gunwales were 1.5 m above the after part of the deck and 2.4 m above the forward part. A folding door across the front of the vessel allowed motor vehicles access to the deck, and a 3-tonne derrick was mounted at the rear of the deck.

The hold, which extended under most of the cargo deck, was entered through a 2 x 3 m hatch at the rear of the deck. The bridge contained cabins for the crew and messing facilities, and the after-deck merely allowed access to the rear of the ship for mooring and similar functions. Considerable modifications were required to the ship to make it usable as a shooting ship. The hold, which was used to store the explosives, was completely lined with timber as required by PNG Department of Transport explosive regulations. A shooting platform was erected in the port side of the ship adjacent to the entrance to the hold (Pl. 6). The platform was about 3 m square and surfaced with wood. On the platform itself a set of steel rollers was mounted horizontally about 0.5 m above the floor of the platform, projecting about 0.5 m over the side of the ship.

Three containers and a caravan were mounted on the forward deck. One container was used as sleeping accomodation for the BMR personnel, another was used to house the shot timing and radio communications equipment and the third housed the marine sparker power supplies and capacitor banks. The caravan was used as a recreation area, and contained shower/washing facilities and some storage cupboards. At the stern of the ship a cable drum for storing the hydrophone streamer was mounted over the stern, and a wire mesh cage was added to the stern to provide sufficient space for maintaining and handling both the hydrophone streamer and a hydrophone string used by the shot timing system. SHORAN navigation equipment was installed on the bridge; receiving and transmitting aerials for this equipment were mounted on top of the bridge (Pl. 7).

### 3.2 Shot firing

The explosive used during the survey was Du Pont Nitramon WW packed in 30-kg cans approximately 25 cm in diameter and 60 cm long. The explosive was donated to BMR by West Australian Petroleum Pty Ltd. Three series of test firings with this explosive were conducted by BMR, two off Fremantle, WA, and the other off Bermagui (NSW) to determine the most efficient shot firing proceedures. One limitation on the use of the explosive was that if water penetrated the can, the explosive material was rendered useless; thus the shot package could not be kept at depth in water for any great length of time. The shooting procedure was largely designed to cater for this limitation.

The shots were built up 'in situ' on the shooting platform while the ship was under way (Pl. 6). A sheet of 19-mm plywood was placed on the rollers and anchored in place by a steel pin. The shot was constructed on the plywood. Shot and plywood were then launched over the side of the ship with a recovery rope attached to the plywood. Two shot sizes were adopted, 1020 kg and 180 kg, based on the expected distances over which they were to be recorded. To construct a 1020-kg shot, a sheet of wire mesh was laid on the plywood and a simple wooden frame laid on top of this. 34 cans of explosives were laid across the frame in five rows of decreasing length to form a truncated pyramid. Another frame was then placed on the top and the wire mesh bent up around and secured with rope. Two steel bands were passed round the wooden frames binding them together. The 180-kg shots required only six cans, and were placed in pyramid fashion on a single wooden frame and bound with steel banding and rope. All shot information and data are listed in Table 1.

The shots were fired with safety fuse and primer charge, the fuse was lit on board the ship and the shot then pushed over the side from the roller platform. They were supported at a depth of 100 metres by a large buoy, and attached to this was a small buoy supporting a hydrophone and radio transmitter, which was used to transmit the shot instant to the ship.

The details of fuse firing mechanism were as follows: Du Pont 'Sword' brand fuse was crimped to a No. 6 detonator and the detonator inserted into a 1 lb Du Pont HDP-1 primer, which was securely tied with plastic banding tape to one of the 30 kg cans of explosive. Some ICI fuse recommended by the manufacturers for underwater use was also tried for a few shots, but its reliability was soon shown to be much inferior to the 'Sword' fuse. It was therefore not used further.

Initially two completely separate fuse/primer systems were attached to both large and small shots, but later in the survey three to four systems were used to ensure complete instant detonation. Six misfires (shots 21, 35, 58, 2 x 64, 79) were attributed to a) failure of a booster to detonate the charge (some hydrophone records clearly show a booster firing several tenths of a second before the main charge) and b) fuse failure due to water penetration. Water penetration of the fuse was definitely shown to occur with some I.C.I. fuse which was tried. This fuse, when lowered to depths of 100 metres, was always extinguished by the penetration of water to the cordite element. Du Pont 'Sword' fuse on the other hand did not suffer from this defect and was used throughout most of the survey after an emergency airlift of a further supply from Brisbane to Lae halfway through the survey.

The procedure adopted for firing and launching the shot was as follows. The shots were timed to detonate in the period 5 to 10 minutes past the hour. Seven-minute fuses were used on the large shots to allow sufficient time for the ship to pull away from the shot. The firing procedure was started at 1 minute before the hour for large shots, and on the hour for small shots which had a shorter fuse. The time of starting the firing procedure was controlled by the person operating the shot timing equipment. He started a stop-watch either on the hour or a minute later depending on the size of the shot. The shot was launched exactly one minute after the stop watch was started; the fuses were lit by the shooter about 5 s before this on instruction from the person controlling timing operations. Once the shot was launched the rope connecting it to the flotation buoy had to be paid out rapidly taking great care that it did not snag on the ship. After the flotation buoy with the shot instant transmitter buoy attached was launched, the time at which the shot reached a depth of 100 metres (as indicated by a pull on the buoy) was recorded. The length of fuse and the total time for it to burn were also recorded, and from these figures the rates of burning at depth were computed. These values are graphed in Plate 8. The average time taken for a large shot to reach 100 m depth was 85 s and for a small shot 101 s.

### 3.3 Shot instant recording and timing

Two completely separate shot instant recording systems were used to safeguard against the failure of one of them. The first system, consisting of a hydrophone and modified walkie-talkie radio transmitter, was attached to the small buoy floating directly above the shot and transmitted to a walkie-talkie receiver on the ship, where the signal was recorded on a Sanei Visigraph multichannel recorder at paper speeds of either 2, 10, or 20 cm/s. The second system consisted of a string of 12 Geospace MP-8B hydrophones, with the output recorded on a 12-channel SIE RS/4 recorder with a paper speed of 30 cm/s. The hydrophone string was streamed out behind the ship in a direct line between it and the shot, after the shot had been launched. In addition to recording the shot instant, the latter system was also used to determine the water depth at the shot location by measuring the time delay between the direct water wave and the reflected wave from the sea bottom. The distance between the shot and the ship was measured by the ship's radar using a radar reflector tied to the top of the walkie-talkie transmitter buoy.

A dual system of timing was also used. It consisted of a Labtronics time signal receiver tuned to the Australian Post Office time signal transmitter VNG, and a BMR digital clock (NCE-1). Both clock and radio were recorded on the Visigraph recorder, but the RS/4 had only one time channel, and the digital clock time code was recorded on this after several attempts to get a good radio signal onto it had failed.

The procedure for recording the shot instant was controlled by the person who scheduled the shot launching. After recording the time taken for the shot to sink he and an assistant returned to the equipment cabin. During this period the SHORAN transmitter was turned off because it interfered with the Labtronics time signal receiver, the walkie-talkie receiver, and the clock. The clock was reset to the correct time and all systems were checked to see that they were operational. The Visigraph was turned on about 2 minutes before the shot was due.

The SIE 12-channel RS/4 recorder and its associated hydrophones, the clock, and the Labtronics time signal receiver were very reliable; however, the system of walkie-talkie transceivers between the buoy and the ship was less reliable. This last system suffered from the lack of a suitable hydrophone, problems with waterproofing the transceiver on the buoy, and difficulties in tuning the receiver on ship so that noise did not swamp the signal from the hydrophone. The hydrophones used for this system throughout most of the survey were of a disposable type used in sonobuoys (Aquatronics Model 1210), and the entire stock of ten was used up before the survey was complete. These hydrophones proved very difficult to test on deck because they would still respond to a direct tap even when their responce in water was much below specification. They were eventually replaced by a Geospace MP-8B hydrophone and no further trouble was experienced. The use of the MP-8B also overcame most of the trouble with tuning the walkie-talkie receiver on the ship; this trouble appears to have been caused by the Aquatronics hydrophone gradually losing sensitivity. The problems with waterproofing the transmitter on the buoy were overcome by placing the whole unit in part of the tubular plastic container in which sonobuoys are packed, and sealing the lid with large quantities of 'Scotch' tape.

### 3.4 Shot positioning

The positions of the majority of the shots were determined using a SHORAN navigation system which was supplied under contract by Navigation Australian Pty Ltd of Perth W.A. The system is a radio distance measuring system which operates in the V.H.F./U.H.F. frequency band. Distance is determined by measuring the phase difference between a transmitted wave from a mobile station and the wave retransmitted back to the originating station by a land-based station. The position of the originating station is then computed by triangulation using several land-based stations. The accuracy of any single distance measurement was quoted by Navigation Australia as $\pm$ 15 m, and in most cases this gave a position accurate to within 100 m, which was the accuracy aimed at. However, the azimuth difference between the ship and the shore-based stations is important in determining the positional uncertainty, which may be considerably distorted when azimuth differences are between $0^{\circ}$ and $30^{\circ}$ and between $150^{\circ}$ and

180° (Appendix 2). During the survey the system was used successfully at distances up to 340 km.

For this survey, the mobile station was installed on the ship and three land-based retransmitting stations were deployed on the highest convenient trig stations. As the survey covered a very wide area, the land-based stations had to be moved for the various stages of the survey; this was accomplished mainly by helicopter and fixed-wing aircraft. The positions of the land stations which were not on existing survey markers were determined before the survey by Decca Surveys Australia Pty Ltd under contract to the Commonwealth Department of Services and Property. These stations were tied to existing survey marks by triangulation using a Decca Trisponder Survey System 202A (see chapter 4.1).

Three position fixes were taken during the shot firing sequence, one as the shot was launched, one when the shot fired, and one when the support buoys were being picked up. The position taken when the shot was launched was given the most weight in calculating a final position for the shot because it was regarded as the most reliable bearing in mind all wind and tide effects. The other two were used as confirmation and to provide evidence of drifting due to sea currents and wind. The fix taken as the shot was fired was related to the shot position by the distance and direction of the marker buoy from the ship. The distance from the ship to a metal reflector on the marker buoy was measured using the ship's radar.

For shots 46-55 no two land SHORAN stations were within range, and these shots were positioned mainly by triangulation using prominent topographic features and trig stations whose distances were found by radar. For shots 46, 47, and 48 the station at Hood Point was used to give one SHORAN distance, and this was used in conjunction with radar distances. The positions of these shots are not as accurate as those determined by SHORAN; some of those more distant from land may be as much as 400 m in error.

The checks made in determining the position of shots 30 and 106 were not entirely satisfactory. A three-way fix was obtained on shot 30 from Kerema, Gubbins Pt, and Hood Pt and the three distances could not be tied in to a single location. The position given in Table 1 for this shot is considered to be the most likely. For shot 106 the position given by radar, which in some cases was used to navigate the ship to the correct shot location, disagreed with that given by the SHORAN fixes. This conflict could not be resolved and the position given in Table 1 for shot 106 is the SHORAN position.

Navigation Australia Pty Ltd produced a report on their operations during the BMR contract period. This is reproduced in Appendix 2.

### 3.5 Sparker traversing

Sparker traversing was undertaken during the survey as breaks in the shooting program allowed; the locations of these traverses are shown in Plate 3. The power source consisted of a bank of Egerton, Germeshausen and Greer (EGG) power supplies and capacitor banks which were capable of delivering 7,000 joules, but which were used at 5,000 joules for most of the survey. The power was fed to an EGG three-electrode sparker, and reflections were detected on a Geotech model 24257 hydrostreamer containing one set of twelve hydrophones and another set of eight. An EGG recorder model 254 was used.

The complete system could be thoroughly tested only on board the ship on which it was installed, but considerable effort was made to overhaul all the equipment before the survey. All the power supplies and capacitor banks were installed in a 2.4 x 2.4 x 2.4 m (8 ft x 8 ft x 8 ft) container in Canberra and shipped to Port Moresby. However the Geotech hydrostreamer was incorrectly assembled during commercial overhaul, and this resulted in very poor seismic reflection profile records.

The time and manpower required to repair the equipment and get it operational were not available until after the crustal seismic shooting operations had been perfected. Unfortunately A. Spence, the geophysicist in charge of maintaining and operating the equipment, was required to return to Canberra on 15 November.

No good profiling records were obtained from areas not already covered by the BMR 1970 marine cruise in the Gulf of Papua and Bismarck Sea (Tilbury, 1975).

## 4. SEISMIC RECORDING OPERATIONS

### 4.1 Seismic station positioning

Two reconnaissance surveys of possible seismic station sites were conducted, one in November 1971 by I.B. Everingham of the Port Moresby Geophysical Observatory, and the other during February 1973 by D.M. Finlayson and D.A. Coutts of BMR Canberra and V. Ingham of the Survey Branch, Department of Services and Property, Canberra. The site information gathered during these two surveys and information collected by A. Renwick, PNG Chief Government Geologist, together with local maps and aerial photography, enabled the sites for survey pegs to be chosen which would be reasonably close to the expected seismometer sites.

During March to May 1973 V. Ingham of Survey Branch supervised the determination of the latitude and longitude of the selected sites by the contractors Decca Survey Australia Ltd

(Decca Survey Australia, 1973). The accuracy requirement for the positions was ± 0.07 minute of arc in latitude and longitude with respect to the Australian Map Grid (AMG).

The topography of the area largely influenced the survey method used. Positions were determined by trilateration using a Decca Trisponder 202A Survey System with the Distance Measuring Unit (DMU) mounted in a Bell 206A Jet Ranger Helicopter. Most sites were fixed by measuring distances to three known survey control points previously co-ordinated with respect to the AMG. Where three direct ties were not possible, measurement checks were made between adjacent recording sites or intermediate points on a local origin with connections to the AMG system.

Two distance-measuring methods were used. The first method set the trisponder remote beacon over a known co-ordinated point, and the slant range was measured to the DMU in the helicopter hovering closely over the secondary station. If hills or vegetation intervened, an observer at the secondary station controlled a helicopter pass high over the station using a Wild T2 theodolite fitted with an optical plummet attachment. With good VHF communications, the pass could be as high as 1000 m above the secondary station. If the line to be measured was too long because of terrain difficulties a baseline crossing method was used in which trisponder remotes were set up at each end of the line, and the two slant ranges were measured from the helicopter during several passes across the line. The two distances were measured simultaneously from two DMU's recording on a tape recorder. In all cases the height of the helicopter was based on altimeter measurements checked against known heights at survey control stations.

Each survey point was marked with a 2-m long stainless steel rod driven into the ground, and its location was identified by photographing with respect to nearby buildings and features and by magnetic bearing and taped distance sketch maps of the immediate vicinity of the peg.

Seismometer sites were chosen by the geophysicist setting up the recording station equipment. The distances and magnetic bearings of these from the survey peg were measured by the geophysicist using a measuring tape and prismatic compass. The final seismometer positions were computed by the Survey Branch, and these data are listed in Table 2. They were added to the survey files maintained on each recording site.

### 4.2 Recording equipment

In addition to the 4 permanent observatories normally operated in the survey area by BMR and the Rabaul Vulcanological Observatory, 37 sets of field recording equipment were provided by BMR, the Australian National University, Queensland University,

Melbourne University, the Hawaii Institute of Geophysics, and the Rabaul Vulcanological Observatory. A total of 43 recording station sites, including observatories, was used to record the explosions. Not all sites were occupied for the entire survey. Details of the equipment and servicing at the various recording sites are given in Table 3. All seismic recording stations used the VNG radio time signals transmitted by the Australian Post Office as the time reference standard.

BMR equipment BMR operated 22 sets of recording equipment. Of these, 2 were the observatories at Port Moresby (PMG) and Lae (LAT), 19 were automatic field seismographs, and one, at Konedobu, was a manually operated set using a pen recorder. The Port Moresby Observatory is one of the World Wide Standard Seismograph Network stations.

The 19 automatic seismographs used slow-speed tape recorders (Pl. 4). Of these, 6 used Precision Instrument (PI) tape recorders, on which the high and low gain seismic channel and the VNG time signals from a Labtronics radio receiver were frequency modulated before recording on tape. A 50-Hz coded time signal from a digital clock was recorded also in the direct record mode. The remaining 13 stations used Akai four-channel tape recorders modified for slow-speed recording. In these systems only the two seismic channels were frequency modulated. The radio and clock signals were both recorded in the direct record mode. All remote seismographs used Willmore Mk II seisometers with calibrators, BMR TAM5 amplifiers giving high and low gain amplification, BMR NCE-1 digital clocks, and, in the case of the Akai recorders, BMR TMF1 modulators. Labtronics radio receivers tuned to VNG on 12.5 kHz were used as a time reference for the digital clocks. The clocks in all remote seismographs were programmed to switch on the tape recorder and labtronics receiver for the first 15 minutes of each hour between 0700 and 1800 EST.

Australian National University equipment The nine sets of field equipment operated by ANU used magnetic tape recorders. All recording was done in the direct record mode. ANU used Willmore Mk II seismometers, and amplifiers (giving high and low gain amplification) and clocks designed and manufactured by ANU. Their recorders were Sony four-channel recorders modified for continuous slow-speed recording (Muirhead & Simpson, 1972).

University of Queensland equipment The University of Queensland installed an observatory at Iron Range in Queensland for the duration of the survey in an attempt to reverse the profiles across the Coral Sea. The equipment, however, malfunctioned, and only a small number of shots were recorded. In addition to the Iron Range station, the University also provided three sets of field equipment for use in PNG. One set, using a Sprengnether recorder, was run continuously at Tufi. Another set, using a TEAC FM/DR four-channel cassette recorder, was also run at Tufi

and manually operated at the time of each shot. The third field set was identical to the cassette recorder at Tufi and was used initially at Kwikila and later moved to Lindenhafen to reverse the lines in the Coral Sea. All of the Queensland University seismographs used Willmore Mk II seismometers, and the three sets used in New Guinea used BMR-designed TAM5 amplifiers. The two sets using cassette recorders recorded high and low gain seismic signals and time signals from Labtronics radios in frequency modulated form.

University of Melbourne equipment Three sets of equipment were provided by the University of Melbourne and used at Morobe, Garaina, and the third set initially at Kerema and later at Finschhafen. Willmore Mk II seismometers were used. Amplifiers and frequency modulators designed at the University of Melbourne were used, and the seismic signal was stacked with time signals from a transistor radio and recorded on single-channel cassette tape recorders. The time signals were separated from the seismic signals by band-pass filters during playback. The equipment was operated manually for each shot.

Hawaii Institute of Geophysics equipment The Hawaii Institute of Geophysics (HIG) established an array of three geophones at Killerton. Timing was provided by a Sanyo radio tuned to VNG and two chronometers. Recording was through a Mandrel Industries SPA-1-6 six-channel amplifier onto tape in a TEAC 4-channel FM/DR cassette tape recorder. The equipment was operated manually at the time of the shots.

The HIG also chartered a yacht, the Kathleen Gillette from Rabaul, which was stationed at the northeastern end of the Solomon Sea lines in an attempt to record the explosions on their neutral buoyancy 'Yellow Bird' hydrophone streamer. The attempt was unsuccessful and no refracted arrivals were recorded; the only energy recorded was direct water wave energy from the shots.

PNG Geological Survey equipment The Rabaul Vulcanological Observatory of the PNG Geological Survey operated two permanent observatories in the survey area. The seismic signal at the Mt Lamington (LMG) observatory was telemetred into Popondetta where it was recorded on a Sprengnether drum recorder using smoked paper (Pl. 9). The station at Esa Ala (ESA) records the signal photographically on 35-mm film. A temporary field station was operated at Kupiano for the duration of the survey. A Willmore Mk I seismometer was used, and recordings were made on a Sprengnether smoked-paper drum recorder manually operated during the time of the shots.

## 4.3 Recording station operation and servicing

The permanent seismic observatory stations within the survey area operated by BMR and the PNG Geological Survey were serviced daily by arrangment with local inhabitants. These

stations were Pt Moresby, Lamington, Lae, and Esa Ala. No special arrangements were made for survey shot recording except that the recording speed of the Lamington drum recorder was doubled to improve timing resolution.

The temporary field stations of the University of Melbourne, the University of Queensland, HIG and the PNG Geological Survey all required an operator to be on hand for each shot, and they were therefore located at sites where accommodation was available. The nearest accommodation to the Killerton station operated by HIG was at Popondetta, so the equipment was installed in the back of a hired truck and the operator commuted to Killerton each day.

The stations operated manually were Killerton, Konedobu, Kupiano, Kerema, Tufi, Garaina, Morobe, Finschhafen, and Lindenhafen. The operators at these stations had to be in constant radio communication with survey HQ in order to ensure that recordings were made at the correct time (see ch. 6). Local arrangements were made to accommodate the operators with PNG Administration staff, at commercial guest houses, or with plantation owners. These operators were made self-sufficient in terms of equipment and supplies for the duration of the station operation. Only Tufi required an emergency clock to be flown in at short notice.

Near the end of the shooting period, staff from Melbourne had to return to Australia because of teaching commitments and the operation of the Garaina and Morobe stations was continued with the active help of Joan Russell and Lynn Cultack, who resided at these places, and added a feminine touch to an otherwise male-dominated survey.

The ANU seismic tape equipment had a very low power requirement (Muirhead & Simpson, 1972) and could operate continuously on dry cells for about 4 weeks. This endurance was used to advantage by putting the 9 sets of ANU equipment at the most remote sites; these were all either in the Owen Stanley Ranges or on the northeast coast (Salamaua, Lake Trist, Karukaru, Cape Ward Hunt, Kui, Tetebedi, Nanudei, Musa Dam, and Afore). The only practicable access to many of these sites was by helicopter, thus the light weight of the equipment and its small size made it attractive for helicopter installation and servicing. The equipment required only one service during the whole survey.

The installation and maintenance of the 19 BMR automatic seismic tape recording systems required a major logistic operation throughout the shooting period. 9 of the recording systems had been field-tested early in 1973 in the Bowen Basin of Queensland and many of their deficiencies were known, but the added climatic changes and duration of the survey in PNG high-lighted yet more deficiencies. Only 3 of the 19 sets operated without breakdown during the survey.

The BMR field stations used lead-acid accumulators as a power source because of the large current drains required during operation. A fully charged set of two 75 Ah 12V batteries lasted seven to eight days, after which time it was changed. An additional 75 Ah battery was required at stations using PI tape recorders because of the current drain and polarity reversal of these recorders. Where possible, servicing was done using road access to the site. However, as roads in Papua New Guinea are generally poor, only sites around Port Moresby and Popondetta could be serviced in this manner. Where road access was impractical aircraft were used. Many stations were established near airstrips so that they could be serviced by either fixed-wing aircraft or helicopter.

At the beginning of the survey, arrangements were made to have batteries charged, where possible, at each recording site. For example, the proprietor of the trading store at Woitape was able to charge batteries for use at the Woitape station, and the batteries for the Yule Island station were charged at the mission nearby. However, often such arrangements could not be made or were not fully reliable. A base station was therefore set up at Tapini in order to recharge and service all of the stations in the northwest of the survey area. This arrangement also proved unsuitable because the airstrip at Tapini was usually closed by inclement weather from about ten a.m. It soon became clear that the simplest way to ensure reliable servicing of stations was to work from Port Moresby and Popondetta. The only BMR station not serviced in this manner was the station at Cape Rodney, which was in the care of a PNG Geological Survey officer stationed at Kupiano, about an hour's drive from Cape Rodney.

The tapes on the Akai tape recorders last approximately one month, so that the need arose to replace them during one of the service visits approximately half-way through the survey. The PI tapes were long enough to last the whole survey period.

Many of the faults which occured in the BMR equipment were obscure and cropped up after the equipment had apparently been left operating perfectly. Only one or two component failures were detected during the survey. Many faults were attributed to connections and cables which corroded badly in the PNG climate. The coatings on the electronic boards did not stand up to fair wear and tear. Some faults were due to badly charged batteries where outside assistance was used, but with the necessity of using lead-acid accumulators and the stringent regulations governing transport of corrosive materials in light aircraft, this was difficult to avoid. Many of the crystal clock failures were attributed to the air temperature in the equipment bins being above the crystal oven temperature. Clock failures produced a multitude of symptoms ranging from irregular tape speeds to failures in the ON/OFF programming. It is possible that the ON/OFF programming of the tape recording system introduced tran-

sients into components and systems which would not have occurred had the system been operating continuously. However the system power drain and tape-speed limitations precluded continuous operation. Two stations (Malalaua and Mt Lawes) were damaged by floodwater during the survey.

Many BMR stations were visited twice per week during the survey instead of once per week as originally intended. The field experience in PNG demonstrated that the BMR systems will required at least the following improvements to be viable for further field operation:

1) Reduction in power consumption
2) Reduction in bulk and weight
3) Reduction in cables and pin connections
4) Use of improved playback system to allow for variation in tape speed.

Many of these improvements are now being implemented.

4.4 Seismic data processing and plotting

At the conclusion of the survey all participants prepared a full set of analogue seismic records from their tape recordings using the playback facilities at their various institutions (Pl. 9).

Some playback difficulties were experienced by BMR and other organizations. Not all recording quality was good, and the initial failure of the BMR final Akai ¼-inch tape playback system meant that a temporary playback system had to be set up which was not entirely suitable. This was later replaced with a system capable of handling less than perfect tapes. Other participants experienced similar setbacks in the quality of data. The ANU system at Namudei had no clock time code and hence no useful recordings were obtained. The time code at Karukaru required filtering before it could be identified. Melbourne recording equipment had both seismic and time signals on the single-track cassette tape, and some difficulty was experienced in separating them on playback.

111 shots were fired, of which 5 were small shots (64-68) fired in the Solomon Sea in an endeavor to locate the HIG charter vessel Kathleen Gillette. These 5 were not recorded by the land recording stations. Of the remaining 104 shots, the recording success rate varied considerably depending on conditions at the recording sites. The 'success rate' of the various stations as determined by the data accessed to the computer file is listed in Table 4.

Some participants picked the seismic arrival times from their own records, but many forwarded records to BMR for this to be done. The picking of arrivals was checked by a second and sometimes a third geophysicist.

Each arrival was assigned an accuracy -

| | |
|---|---|
| | 1 < 0.1 s |
| 0.1 s ≤ | 2 < 0.5 s |
| 0.5 s ≤ | 3 |

The accuracy indicated the estimated error in determining the time of the onset of the arrival, and included components from (a) the error in the clock time used to pick the onset, (b) parallax errors due to non-alignment of tape recorder heads during the record and playback modes, and (c) the difficulty in determining exactly where the arrival begins. Each arrival was also assigned a quality, which is subjective. The quality was defined as GOOD, FAIR, or POOR depending on such factors as amplitude of the signal, signal to noise ratio and frequency, and was agreed upon by at least two geophysicists. Such a classification is useful in applying weights to each point in, say, least squares analyses.

Travel-times, qualities, and accuracies were punched into cards, together with distance and azimuth data for computer processing similar to that described by Cull (1973). Shot-to-station distances were computed on the Australian National Spheroid using program ROBINS 2. Listings of the data were obtained using program REFDAT 2. A full set of time/distance plots were produced by PLØTIT 2 and examined for any obviously spurious results. Where these were found, checks were made on the original records to remove any errors or badly picked arrivals.

Participants were sent updated listings and copies of the plots as they came to hand. A disc and tape file of the updated data was kept in the computer at CSIRO to allow ready access.

A listing of the travel time data qualities and accuracies is given in Table 5. All travel times have had a correction to mean sea level applied for both the shot depths and station elevations. In these corrections, the P wave travel-time in sea water (velocity 1.5 km/s) was replaced with the travel-time in a medium with velocity of 4.0 km/s and thickness equal to the depth of water. The station correction reduced the travel-time by the elevation/4.0 km/s.

In Tables 2-5, permanent observatories have internationally recognized three-letter mnemonics, and temporary field stations have two-letter mnemonics.

# 5. GRAVITY OBSERVATIONS

## 5.1 Logistics

Regional helicopter gravity survey work was conducted during the East Papua Crustal Survey when the helicopter was not being used to establish or service seismic recording stations or SHORAN base stations.

Two 1:250 000 Sheet areas within the crustal survey boundaries had no previous gravity coverage (AROA and YULE), and two had only partial coverage (PORT MORESBY and BUNA). These four adjoining Sheet areas formed a composite block near the centre of the crustal survey area. This block was readily accessible from Port Moresby and Popondetta.

The initial part of the gravity project was carried out using Port Moresby as a main base, moving daily observation bases progressively farther out as coverage was completed. A Bell 206A Jetranger (VH-CSU) from Helicopter Utilities was deployed for this work. Flight patterns were based on the method of cell-flying outlined by Vale (1962) and Hastie and Walker (1962). In some areas the planned station spacing of 11 km could not be achieved owing to expanses of swamp, total coverage by jungle, or precipitous terrain. It was often necessary to distort severly the standard pattern to ensure that cell centres used were readily identifiable for future occupation.

The gravity operational base was later moved to Popondetta and then to Tapini to fit in with crustal survey requirements. A Bell 206B helicopter (VH-FJR) from Helitrans was in use at this stage, and its superior performance at high altitude compared with the 206A was of advantage when working in the Owen Stanley Ranges.

In all, 132 stations were occupied - some of them more than once. Only 3 of these stations had been occupied in previous surveys.

## 5.2 Instruments

The gravity meter used on the survey was LaCoste & Romberg G252. This instrument recorded very good drift characteristics despite the harsh operating conditions in Papua New Guinea. The meter remained on heat throughout the survey and no accidental rough treatment was recorded.

Other than at isogal stations no ties were made to previous surveys, owing to the lack of tie point information. The main gravity base used at Port Moresby was the 1973 Soviet site on the tarmac at the airstrip (7390.0176), which was

adjusted to the 1967 isogal value. This station was conveniently close to the helicopter hangar. Isogal stations were also occupied at Woitape and Kokoda.

Elevations were determined by Mechanism microbarometers and a Wallace and Tiernan altimeter. The altimeter was used in the Owen Stanley Ranges where elevations rose to more than 2000 metres above mean sea level (MSL), the upper limit of operation for the microbarometers. The highest point observed was on Mount Scratchley (3810 m).

Microbarometer drift was low when operating on the coastal plains, but rose to as much as 16 m in 2 hours when working in the mountains. For logistic reasons it was often necessary to site the base instruments in a valley (with comparatively stable air mass), and to observe the field instruments high on the main range where local storms sometimes produced erratic pressure variations. PNG Department of Lands, Surveys and Mines surveyors have stated that errors of up to 30 m are known at some trig points. Four trig points were occupied during the survey, and several observations were taken at MSL along the southern coast.

### 5.3 Gravity data reduction and plotting

Raw data from the field sheets were transferred to punched cards and processed on the Cyber 76 using the Regional Gravity Group program GRVHTS. The data were then transferred to magnetic tape, and a principal facts listing was produced by use of program AMENDS. The program CONTOUR was then used to plot a Bouguer anomaly map. The principle facts for the gravity observations made during 1973 are contained in Table 6 and contour plots of the simple Bouguer gravity values using density 2.67 t $m^{-3}$ are shown in Pl. 10 for the Aroa-Port Moresby area and Pl. 11 for the Yule-Buna area. No terrain corrections have been applied to the data contoured in Pls 10 and 11.

## 6. COMMUNICATIONS

Radio communications were maintained throughout the survey area between all participating parties, with base stations established at Port Moresby and Popondetta.

Codan Type 6801 100 watt single side band transceivers were used at Port Moresby, Popondetta and on board the shooting ship Sir Alan. Sixteen 25 watt Codan Type 6924 single side band transceivers were used by the field parties and SHORAN operators, including the shipborne SHORAN operator on board Sir Alan. Power for each 100 watt transceiver was supplied from a Codan Type 7113 power supply run off 240 volt mains. 12 volt lead-acid batteries were normally used to power the 25 watt transceivers.

Single-wire aerials were used and adjusted to give maximum transmission and reception strength. Codan Type 7208 antenna tuners were used to obtain maximum signal strength from the 100 watt transceivers.

The frequency normally used was 7435 kHz, but this proved unsatisfactory for communication before about 9.30 am owing to poor radio conditions and interference. A frequency of 4525 kHz was therefore used for early morning schedules. SHORAN communications were normally conducted on 6815 kHz.

Reception was generally good, even across the Owen Stanley Ranges, up to distances of more than 400 km. However at times it was difficult or impossible to receive some stations and, where necessary, messages were relayed via more favourably placed stations. It was also possible to contact headquarters at Port Moresby and Popondetta by telephone from some Post Offices, but generally speaking the Post Office communications were not as reliable as our own.

Regular communications sessions were held three times daily (07.30, 11.30, and 16.30 EST) to deal with general traffic as well as to announce the known shooting program. Shots were fired as near as possible to five minutes past the hour. Confirmation of expected shot time and charge size was given 30 minutes preceding the shot hour, and repeated 15 minutes preceding the shot hour. Communications were then left entirely to the SHORAN operators until the shot was fired. Confirmation or otherwise that the shot had been successfully fired was given two to three minutes later. Fifteen minutes after the shot hour, the approximate shot-time was given, as well as expected time and charge size of the next shot. Exact times and positions of shots were relayed during the daily communications sessions.

It was essential to have prior knowledge of the shot time for the operation of the manually operated field stations so that the recording equipment could be switched on shortly before the shot and switched off as soon as possible after successful firing had been confirmed.

Inter-party communication could be carried out freely at all times other than during regular schedules and shot-firing procedures. All these communication procedures were regarded as being well suited to the survey requirements, and the care taken before the survey in the choice of equipment and frequencies proved worthwhile as judged by those who had experience of similar previous survey work.

# 7. COMMENTS

A workshop of scientific personnel who took part in the East Papua Crustal Survey was held in BMR during the period 9-17 January 1975. It was suggested there that paragraphs be included in the Operations Report commenting on the availability of data and the success rate of the various recording stations. The workshop also discussed the various aspects of interpretation of the data and what efforts the various participants were making towards publication of interpretative papers.

## 7.1 Data availability, distribution, and acknowledgement

The data presented in this Record have been derived from the analogue seismic records and the BMR gravity data bank. The picking of the seismic arrivals is by its nature a subjective process even though the geophysicists involved have tried to allocate a quality and accuracy to each arrival. No attempt has been made to pick every possible arrival on the seismic wave train, and the significance of many of the arrivals listed may be difficult to determine. The data listings however do represent a starting point for interpretation, and listings and plots of the data in various configurations are available to any geoscientist, on request, from BMR.

Copies of analogue records from all the stations are held in BMR and any requests for these will be referred to the institution which recorded the data for approval before being distributed. Requesting geoscientists should expect to bear the cost of data listing and record reproduction.

The recordings from most stations were made on magnetic tapes using various recording systems, and these are held by the various participants for replay on their specialist playback systems. Requests for tape copies will be referred to the participants involved.

Geoscientists requesting data and records are asked to outline the purpose for which the data and records are to be used. Geoscientists publishing interpretations based on the data from the East Papua Crustal Survey are asked to acknowledge the participation of the following organizations: Bureau of Mineral Resources, Geology and Geophysics; Australian National University; the Universities of Queensland and Hawaii; the Geological Survey of Papua New Guinea; the Warrnambool Institute of Advanced Education, and the Preston Institute of Technology.

## 7.2 Seismic recording station success rate

Some idea of the reasons behind the relative success of the various recording stations is desirable but very difficult to

gauge reliably. Table 4 gives the success rate of the various stations in recording a wave train which could be identified with the various shots. It gives no idea of the quality of the recording. The following comments on the success at the various stations are solely the personal opinion of the editor, who was also the Party Leader for the survey. The reason for including comments on station operation is to, perhaps, enable future surveys of this type to benefit from the experience of this survey. Where organizations and personnel are alluded to, any adverse comment should be taken as objective criticism and hopefully should enable future survey planners to make the necessary allowances.

Details of the equipment at each station are contained in Table 3 and some comments on the sites are contained in Table 2.

Station 1, Port Moresby - High success rate resulting from careful site selection for observatory in quiet area with piers on bedrock. The relatively slow recording speed (60 mm/min) and photographic recording limits the detail seen in a seismic wave train.

Station 2, Daugo I - Site on concrete block in sand on top of coral reef; wind and surf noise caused by proximity to sea (100 m).

Station 3, Konedobu - Site at BMR Observatory office in Lawes Road; not good because of traffic noise and poor rock foundation. Some loss of record owing to avoidable instrumental faults.

Station 4, Aroa - Site in soil on airfield on edge of coconut plantation, approximately 2 km from sea and 0.5 km from road; thus traffic, wind and surf noise prevelant. Seismometer cable cut by grass cutter, clock faults.

Station 5, Yule I - Reasonably good coastal site on concrete foundations and apparently operated well, but subsequent playback revealed instrument faults not detected in the field. Instrument design should be improved. Tapes may give further records when improved BMR playback is available. One battery failure reported.

Station 6, Kubuna - Quiet site despite seismometer being only in topsoil; high success rate.

Station 7, Bereina - Catastrophic instrument failure despite repeated attempts to rectify in field. Brought back to Port Moresby for complete overhaul after shot 51.

Station 8, Iron Range (Cape York Peninsula) - Station operated by an unskilled DCA employee at the airfield. Heavy earth-moving equipment on the airfield generated excessive microseismic background, but this was not known until after the survey. More attention should have been made to ensure a rigorous equipment and site check before the important few days shooting across the Coral Sea.

Station 9, Malalaua - Poor site on unconsolidated topsoil on airfield. Heavy rain and flooding made equipment and airfield inoperable; routine checks by inexperienced operator from Kerema failed to reveal equipment faults.

Station 10, Kerema - Inexperienced operator, experiemental recording equipment, and poor site conditions resulted in poor success rate. Station operating only for shots 1 to 50.

Station 11, Guari - Repeated instrument failure; incorrect recording speed could not be compensated for on initial playback. This may be catered for in improved BMR playback and subsequently result in some record return.

Station 12, Tapini - Site on previously established observatory seismic site. Good record return may be improved with further playback.

Station 13, Woitape - Variable recording speed resulted in poor success rate; this may be improved with better BMR playback system.

Station 14, Lamington - Established observatory site on side of Mt Lamington volcano; very high success rate despite relatively low instrument magnification.

Station 15, Efogi - Noisy site on airstrip in rugged country; recording speed variations only partly compensated for on playback; further recovery expected when new BMR playback available.

Station 16, Kupiano - Site in town with considerable traffic and ocean noise. Smoked paper records difficult to read and virtually impossible to reproduce. Recording speed too slow to identify detail in seismic wave train.

Station 17, Cape Rodney - Poor site in unconsolidated soil on airfield alongside beach. Some instrument faults.

Station 18, Gorari - Traffic noise owing to proximity of road and village.

Station 19, Karukaru - Catastrophic instrument failure; clock and radio time code noise problems; some recovery may be achieved on further playback.

Station 20, Tufi - High success rate; careful instrument operation by skilled operator.

Station 21, Namudei - Catastrophic instrument failure (no timing).

Station 22, Afore - Good success rate despite poor site conditions.

Station 23, Tetebedi - Good success rate on relatively poor site.

Station 24, Kokoda - Not very good success rate owing to site in the middle of town with consequent noise. Site should have been moved out of town.

Station 25, Popondetta - Fair success rate on poor site near road. Instrument faults required repeated attention.

Station 26, Oro Bay - High-gain channel not registered on tape despite positive monitoring signal; clock faults. Some recovery may be achieved with improved BMR playback.

Station 27, Killerton - Fair success rate despite late setting up and poor site conditions.

Station 28, Owers Corner - Very good success rate despite poor site in jungle, a tape jam, and a clock programming fault.

Station 29, Ioma - Good success rate despite apparently poor site conditions.

Station 30, Mt Lawes - Excellent success rate on good hard rock site. One battery failure caused by local flood.

Station 31, Morobe - Good success rate with experimental equipment and experienced operator. Possibly higher success rate could have been achieved with improved playback system.

Station 32, Garaina - Good success rate with experimental equipment and experienced operator. Possibly higher success rate could have been achieved with improved playback.

Station 33, Kui - Fair success rate on poor site.

Station 34, Sirinumu Dam - Good success rate on relatively poor site near dam spillway. One tape twisting fault.

Station 35, Salamaua - Very good success rate on hard rock site.

Station 36, Finschhafen - Poor site, experimental equipment, and inexperienced operator. Station operating only for shots 56 to 111.

Station 37, Lindenhafen - Poor site on beach, inexperienced operator, instrument troubles. Station operating only for shots 56 to 111.

Station 38, Lae - Observatory outstation, poor site.

Station 39, Esa'Ala - Observatory outstation, instrument failure.

Station 40, Lake Trist - Good return, poor site conditions.

Station 41, Musa Dam - Very good return, good hard rock site.

Station 42, Cape Ward Hunt - Very good return, despite poor site near sea.

Station 43, Kwikila - Good success rate, inexperienced operator, but experienced supervision for shots 1 to 51; instrument change for shots 53 to 111.

Kathleen Gillette marine recording - Considerable effort was made by HIG to position a recording station in the Solomon Sea. The complete failure of the recording system was very disappointing and indicated that it would have been prudent to test the system thoroughly near Port Moresby before going to the Solomon Sea. The navigation of the Kathleen Gillette was inadequate for an exercise of this type.

Some lessons can be learnt from the overall performance:

1. Site testing and preparation pays great dividends. Hard rock sites are desirable in areas where traffic noise is a problem, but many sites with unconsolidated sediment performed well provided they were sufficiently removed from roads, towns, villages, trees, and sea. Local testing for selection of the site can improve the S/N ratio, e.g. Mt Lawes where care was taken to get a site away from weathered rock onto hard rock in a small road cutting.

2. Automatic tape recording equipment is an advantage in rugged country where it is difficult to position and maintain a skilled operator. Equipment can be located remote from traffic noise. However, such equipment must be thoroughly reliable because the penalties of instrument failure are high when service visits are only at weekly or monthly intervals. Thus highly skilled operators must be in charge of all aspects of setting up such

equipment, and final equipment operating tests must be rigorous and more prolonged than for a manually operated station where faults are readily apparent.

3. Equipment systems must be thoroughly designed and tested from the recording stage through to the final playback stage before embarking on expensive surveys. Recording systems should incorporate both a high-gain and a low-gain channel to guard against swamping of the high-gain channel with strong seismic signals.

4. Unskilled operators should be used only where there is close supervision by an experienced seismic operator.

5. Shot size should always be greater than the minimum estimated to record over the distance to obtain good first arrivals. A large number of small shots are desirable as well as the larger shots.

### 7.3 Interpretation proposals

The main interpretation effort for this survey will probably be within BMR and HIG. At the end of 1975 two interpretative publications were in press (Finlayson et al., in press a, b) and a short statement had been made to the American Geophysical Union 1974 Fall Meeting (Boyles & Furumoto, 1974).

## 8. ACKNOWLEDGEMENTS

During the East Papua Crustal Survey there were innumerable people whose willing help and encouragement greatly assisted the survey personnel conducting work in unfamiliar surroundings. In particular, participants would like to thank the following for their part in contributing towards the success of the survey:

A. Renwick, PNG Chief Government Geologist, and his successor H.L. Davies and their staff; R. Blaikie, Principal Officer Lands, Department of the Chief Minister and Developmental Administration, his assistant C. Waite and their staff; E. Eade, Executive Officer, DCA, G. Stevens, Superintendent of Supply and Transport, DCA, D. Fisher, Shipping Officer, DCA, and staff; P. Michael, Senior Engineer, PNG Works Department; G. Perkins, Radio Branch, Department of Posts and Telegraphs; Capt. Janulus, Harbour Master, Port Moresby; P. Dirkis, Director, PNG Dept of Water Resources; R.J.S. Cooke O.I.C., Vulcanological Observatory, Rabaul, and staff; N. Munro, Manager, Coastal Tug and Barge, Port Moresby, J. Kennish, Manager, Seafreight Pty Ltd, Port Moresby; B. Edwards, COMPAC shipping agent manager; D. Read and R.B. Halstead, Marine Survey Branch, PNG Dept of Transport;

R. Behan, shipwright; F. Keays, Navigation Australia Pty Ltd, Perth; H. Grieve, Helicopter Utilities Pty Ltd, Port Moresby; A. Kamadira, Du Pont Aust. Ltd, Brisbane.

Numerous people at the recording stations sites gave assistance to the survey. Lynn Cutlack at Morobe and Joan Russell at Garaina are thanked for taking over seismic recording duties when university staff had to return to Australia. Others who greatly assisted were A. Karukaru, DC Northern District, D. Butler, DDC, R. Webster, ADC Popondetta; J. Sabire, Engineer in charge Rouna No. 2 Power Station for Sirinimu Dam; M. Anderson, DC Kwikila; A. Hutton and P. Russell, Garaina; P. Cook, Dept of Post and Telegraphs, for Mt Lawes; A. Siuoa ADC and G. Pople, post master, Tufi; K. Wallace, ADC, Kerema; Father Riehl, Catholic Mission Yule I.; P. Briggs, ADC Waitape; H. Sabben, ADC, Kokoda; J. Lawton, manager South Pacific Timbers, Kui; A. Pingo, PO Afore; J. Land PO Ioma; J. McGaven, ADC Kupiano; C. Konea, Anglican Mission, Gorari; R. Baira and P. Millar, Seventh Day Adventist Mission, Tetebedi; M. Lot, schoolteacher, Salamaua; Dr M. Dowell, Anglican Mission Hospital, Oro Bay; F. Jove, Anglican Mission, Namudie; D. Longhurst, Plantation Manager, Aroa; Father Bohn, Catholic Mission, Kubuna; S. Cutlack, ADC, Morobe; R. Hoad, ADC, Tapini. At other sites the cooperation of the PNG Administration is gratefully acknowledged.

Lamington and Esa'Ala seismic station were maintained respectively by F. Dira and P. Dianbari of the Rabaul Vulcanological Observatory staff for the duration of the survey.

BMR wishes to thank West Australian Petroleum Pty Ltd (WAPET) for donating the explosives to BMR for crustal investigations in the Australian region.

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## APPENDIX I

## SUMMARY OF PNG OPERATIONS

| | | |
|---|---|---|
| 1971 | 22-30 Nov. | Seismic station reconnaissance by I.B. Everingham. |
| 1973 | 20 Jan. | Explosives leave Brisbane on board Coral Chief |
| | 13-23 Feb. | Seismic station reconnaissance by D.M. Finlayson, D.A. Coutts, V. Ingham. |
| | 19 Mar. | Decca seismic station positioning survey begins. |
| | 5 May | Decca survey ends. |
| | 23 Aug. | All seafreight equipment packed in 3 containers leaves BMR. |
| | 2 Sept. | SHORAN equipment leaves Perth. |
| | 4 Sept. | Accumulators shipped Sydney on board Coral Chief. |
| | 17 Sept. | D.M. Finlayson arrives Port Moresby. |
| | 18 Sept. | L/V Sir Alan at slipway. |
| | 19 Sept. | Seafreight containers on shipping company wharf, Sydney. J. Somerville, B. Carr arrive Port Moresby. Tenos sailing schedule put back 1 week, all survey operations delayed 1 week. |
| | 20 Sept. | Survey office opens. |
| | 21 Sept. | DCA warehouse ready for equipment. Field transmitters arrive. |
| | 22 Sept. | Seismic noise test at Owens Corner and Sirinumu Dam. |
| | 23 Sept. | Seismic noise tests at Table Top Observatory and Port Moresby area. |
| | 24 Sept. | Explosives inspected at Burundi magazine. |
| | 25 Sept. | Accumulators arrive off Coral Chief. Radio transmitter tests. |
| | 26 Sept. | Tenos delayed Melbourne. |
| | 27 Sept. | Seismic noise test Mt Lawes. |
| | 28 Sept. | Airfreight arrives. Air charters being organized. |
| | 29 Sept. | Seismic noise tests Kwikila. |
| | 30 Sept. | Seismic noise tests Port Moresby. |

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| 1 Oct. | D.M. Finlayson and I. Ripper visit Popondetta to make arrangements for survey sub-head-quarters. |
| | Radio transmitter tests from Popondetta to Port Moresby. |
| 2 Oct. | Arrangements with DCA and Water Resources. D.A. Coutts arrives. |
| 3 Oct. | Sir Alan at Steamships slipway for repairs. |
| 4 Oct. | D.A. Coutts begins helicopter gravity flying with Helicopter Utilities Bell 206A. |
| 5 Oct. | Helicopter fuel taken to Aroa by Toyota. Tenos delayed in Sydney by strike. |
| 6 Oct. | Tenos sails from Sydney. Explosive magazine on Sir Alan being con-structed. |
| 7 Oct. | Seismic noise tests at Aroa. |
| 8 Oct. | Inspected caravan for Sir Alan. Ordered stores. |
| 9 Oct. | J. Skates, Navigation Aust. Pty Ltd arrives (SHORAN) Discussions with PNG Admin. |
| 10 Oct. | Sir Alan contract begins, still at Steamships slipway; no loadline certificate. 3 SHORAN operators arrive. |
| 11 Oct. | Tenos arrives Port Moresby. |
| | Sir Alan loadline certificate finally cleared with PNG Marine Branch, Dept of Transport and Harbour Master. |
| | Mann, Spence, Connelly, Drummond, Cherry, Petkovic, Ryan, Parker, Rynn, Russell, Hutton, 1 SHORAN operator arrive Port Moresby. |
| | 3 containers offloaded from Tenos onto Sir Alan. |
| | Equipment offloading begins. |
| 12 Oct. | SHORAN equipment offloaded from Tenos. Gibson, Cleary, Muirhead arrive. Survey Briefing. |
| 13 Oct. | Equipment preparation. Sir Alan number 3 engine US, radar not installed, echo sounder US. |
| 14 Oct. | Sir Alan fitting out continues. Murphy (HIG) arrives and goes to Rabaul to look for recording ship Kathline Gillette |

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|---|---|
| 15 Oct. | Sir Alan fitting out.<br>SHORAN land base station installed Varol by helicopter.<br>Webb arrives. |
| 16 Oct. | Recording station equipment deployment begins by air in Blue, Green Sectors.<br>2 DC3 charters to Popondetta with Red Sector equipment. |
| 17 Oct. | Gubbins Pt SHORAN station established.<br>Red Sector recording station deployment begins from Popondetta.<br>Caravan arrives for Sir Alan; shooting platform complete. |
| 18 Oct. | Kerema SHORAN station established.<br>W.A. Wiebenga arrives for supervisory visit.<br>Recording station establishment in all sectors continues. |
| 19 Oct. | SHORAN stations at Varol, Gubbins Pt, Kerema reported operational.<br>John Hyslop, Survey Branch, navigator arrives.<br>Furumoto and Broyles arrive from Hawaii.<br>Timber delivered Sir Alan; still problems with 3rd engine gearbox. |
| 20 Oct. | Sir Alan gear box reported O.K.; all shipborne recording O.K.<br>Helitrans helicopter US with radio trouble Lae. |
| 21 Oct. | Sir Alan sails for shakedown cruise.<br>1 small shot misfired; problems with SHORAN.<br>Muirhead returns to Canberra. |
| 22 Oct. | Sir Alan compass swinging 6-9 am; Dept of Transport (Marine) inspection not fully satisfactory.<br>Servicing of recording stations continues in all Sectors.<br>HIG recording equipment still in Customs.<br>Refrigeration engineers on Sir Alan; echo sounder and radar still being repaired; engine oil leak fixed. |
| 23 Oct. | Sir Alan finishes compass swinging 9 am; passed inspection by Dept of Transport (Marine).<br>1250 cans explosives loaded on Sir Alan from Burundi magazine.<br>BMR Geotech streamer cable finally found on wharf. |

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| 24 Oct. | Geotech cable installed on Sir Alan.<br>Radar, echo sounder and outboard motor finally fixed.<br>HIG recording equipment out of Customs and sent to Popondetta.<br>Sir Alan sails 1700 for anchorage outside harbour. |
| 25 Oct. | Shot 1 fired 0805; weather not too good.<br>Recording station servicing continues.<br>Shot 2 fired 1204; shot 3 fired 1605.<br>Helicopter gravity work started by Coutts on NE side of Owen Stanley Mts. |
| 26 Oct. | Shot 4 fired 1205; shot 5 fired 1705.<br>Monitoring of shots encouraging. |
| 27 Oct. | Shot 6 fired 0803; shot 7 fired 1205; shot 8 fired 1606.<br>Sir Alan having problems with uphole transmitter; explosives rope breaking; larger stronger support buoys required. Weather a lot better.<br>Station servicing continues. |
| 28 Oct. | Shot 9 fired 0905; shot 10 fired 1205; shot 11 fired 1605.<br>Sir Alan not satisfied with ICI fuse. |
| 29 Oct. | Sir Alan calls at Yule I to pick up spares but rain prevented plane landing.<br>Shot 12 fired 1405; shot 13 fired 1805.<br>Varol SHORAN station dismantled and returned to Port Moresby for transfer to Hood Pt. |
| 30 Oct. | Shot 14 fired 0707; shot 15 fired 1004; shot 16 fired 1205; shot 17 fired 1406; shot 18 fired 1705.<br>Bob Mitaguay (HIG) arrives Port Moresby.<br>W.A. Wiebenga returns Canberra. |
| 31 Oct. | Shot 19 fired 1406; Sir Alan en route to Yule I.<br>HIG marine equipment arrives in Pt Moresby and consigned to Lae.<br>New fuse ordered from Du Pont, Brisbane. |
| 1 Nov. | Station servicing continues.<br>Tractor tube buoys and other spares flown to Yule I and picked up by Sir Alan.<br>Hood Pt SHORAN station established by road.<br>Shot 20 fired 1406; shot 21 fired 1705 (misfire at 1605). |

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| 2 Nov. | Shot 22 fired 0805; shot 23 fired 1006; shot 24 fired 1204; shot 25 fired 1707 (SHORAN troubles at 1505 and 1605). Bad flying weather; Ryan struck at Guari. Hood Pt SHORAN in trouble; spares driven down. |
| 3 Nov. | No aircraft charters available (serious problem of aircraft serviceability). Shot 26 fired 0810; shot 27 fired 1408; shot 28 fired 1805. |
| 4 Nov. | Airfast helicopter picks up Ryan from Guari and Connelly from Woitape. Shot 29 fired 0905; shot 30 fired 1205. |
| 5 Nov. | Shot 31 fired 0806; shot 32 fired 1206; shot 33 fired 1606. Kerema SHORAN station demobilised and equipment brought to Port Moresby using Airfast helicopter and 2 Islander flights. |
| 6 Nov. | Shot 34 fired 0804; shot 35 fired 1305 (misfire at 1005); shot 36 fired 1505; shot 37 fired 1705. Coutts begins helicopter gravity work flying out of Tapini. J.C. Dooley arrives Pt Moresby for supervisory visit. SHORAN station at Bae established by helicopter flying from Port Moresby. |
| 7 Nov. | Shot 38 fired 0806; shot 39 fired 1306; shot 40 fired 1505; shot 41 fired 1705. Sir Alan anchored outside Pt Moresby harbour for night. |
| 8 Nov. | Sir Alan docks 0620; explosives loading all day. Gubbins Pt SHORAN station demobilized to Pt Moresby using Airfast helicopter and 2 Islander flights. |
| 9. Nov. | Sir Alan sails 1800; 3 crew missing delays sailing. |
| 10 Nov. | Coutts begins helicopter gravity work Kwikila area. Shot 42 fired 0805; shot 43 fired 1005; shot 44 fired 1306; shot 45 fired 1505. Spence stays on Sir Alan to try to solve sparker streamer problems. |

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| 11 Nov. | Shot 46 fired 0805; shot 47 fired 1106; shot 48 fired 1705.<br>Bae SHORAN station dismantled and returned to Pt Moresby.<br>Recording station servicing continues. |
| 12 Nov. | Shot 49 fired 1005; shot 50 fired 1605.<br>Kerema recording station packed up and returned to Pt Moresby.<br>Dooley and Coutts fly Crowley helicopter to Markham valley laser geodimeter sites.<br>Hood Pt SHORAN dismantled and returned to Pt Moresby by road. |
| 13 Nov. | Shot 51 fired 0806; shot 52 fired 1606.<br>Bad weather for flying, lots of rain.<br>Kwikila manual station returned to Pt Moresby. |
| 14 Nov. | Automatic station set up at Kwikila.<br>Shot 53 fired 0806; shot 54 fired 1206; shot 55 fired 1605.<br>Air Nuigini DC3 charter to Popondetta with 2 sets SHORAN for Killerton and Spear I.<br>Finlayson flies Helitrans to Popondetta; inspects Popondetta, Tufi, Killerton.<br>Helicopter medical emergency delays operations. Sir Alan calls at Tufi. |
| 15 Nov. | Killerton and Spear I SHORAN station operational.<br>Sir Alan sails to Killerton.<br>Air Nuigini DC3 charter to Finschhafen cancelled (aircraft unserviceable)<br>Finlayson, Skates go Helitrans to Morobe and Lae; pilot seriously ill.<br>Spence leaves Sir Alan at Tufi. |
| 16 Nov. | Shot 56 fired 0806; shot 57 fired 1006; shot 58 fired 1205; shot 59 fired 1506; shot 60 fired 1705.<br>Air Nuigini DC3 charter to Finschhafen completed. Carr gets Macair charter to Gasmata for Lindenhafen recording station.<br>Dooley and Spence return Canberra.<br>Parker sets up Finschhafen recording station. |
| 17 Nov. | Station servicing continues.<br>Shot 61 fired 0804; shot 62 fired 1006; shot 63 fired 1306; (misfire at 1705).<br>Problems at Finschhafen; SHORAN site not cleared;<br>New Helitrans pilot arrives from Cairns. |

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| 18 Nov. | Shots 64 - 68 small shots fired to try to locate HIG ship Kathleen Gillette (didn't know where it was).<br>Sir Alan reports serious doubts about ICI fuse. Not worth continuing until replaced.<br>Sir Alan heads for Lae.<br>Bad weather at Finschhafen prevents helicopter installing SHORAN. |
| 19 Nov. | New DuPont fuse arrives Pt Moresby and Hutton takes it accompanied baggage to Lae.<br>Finschhafen SHORAN operational.<br>Sir Alan en route to Lae; sparker system still not operating. |
| 20 Nov. | Sir Alan docks Lae, refuels and picks up new fuse.<br>Shot 69 fired 1605.<br>Killerton SHORAN station moved to Cape Ward Hunt by helicopter. |
| 21 Nov. | Shot 70 fired 0804; shot 71 fired 1005; shot 72 fired 1109; shot 73 fired 1305; shot 74 fired 1504; shot 75 fired 1705.<br>Furumoto left PNG for Hawaii.<br>Routine recording station servicing continues. |
| 22 Nov. | Shot 76 fired 0708; shot 77 fired 0905; shot 78 fired 1008; shot 79 fired 1605 (misfires at 1205 and 1305); shot 80 fired 1805. |
| 23 Nov. | Shot 81 fired 0803; shot 82 fired 1005; shot 83 fired 1109; shot 84 fired 1208; shot 85 fired 1506; shot 86 fired 1612; shot 87 fired 1708.<br>Gibson and Russel leave PNG for Melbourne; Garaina and Morobe recording stations left with local operators. |
| 24 Nov. | Shot 88 fired 0805; shot 89 fired 1003; shot 90 fired 1108; shot 91 fired 1305; shot 92 fired 1503; shot 93 fired 1608; shot 94 fired 1805.<br>Webb leaves PNG for Brisbane.<br>Routine recording station servicing continues. |
| 25 Nov. | Shot 95 fired 1212; shot 96 fired 1505; shot 97 fired 1805. |

Mitaguay and Murphy return Pt Moresby after finishing recording on Kathleen Gillette in Solomon Sea. Not hopeful of results.
Appraisal made of BMR recording station performance; not too good; massive logistic support required compared with ANU equipment.

26 Nov. Shot 98 fired 0903; shot 99 fired 1206; shot 100 fired 1409; shot 101 fired 1604; shot 102 fired 1705.
Mitaguay and Murphy leave PNG for Hawaii.

27 Nov. Shot 103 fired 0804; shot 104 fired 1006; shot 105 fired 1204; shot 106 fired 1404; shot 107 fired 1607; shot 108 fired 1704.
Shooting expected to finish tomorrow; various preparations made for demobilization.

28 Nov. Shot 109 fired 0806; shot 110 fired 1105; shot 111 fired 1405. End of seismic shooting.
Demobilization of recording station begins.
Finschhafen SHORAN demobilized to airstrip.

29 Nov. Demobilization in all Sectors continues. Air Nuigini engineers strike delays charter of DC3.
Sir Alan trying to get sparker traverses in Solomon Sea, returning via Trobriand Is.

30 Nov. Sir Alan returning to Pt Moresby via Samarai.
Spear I SHORAN demobilized to Tufi.
Demobilization continues using all aircraft available.
Air Nuigini DC3 charter delayed again.

1 Dec. PNG Self Government Day (Public Holiday).
Cape Ward Hunt SHORAN demobilized to Popondetta.
All demobilization in Blue and Green Sectors complete.
All Red Sector demobilized to Popondetta and awaiting DC3 charter.

2 Dec. Air Nuigini DC3 charter to pick up SHORAN and recording equipment from Finschhafen completed.
Equipment packing continues in Pt Moresby.

3 Dec. Sir Alan docks at 6.30 a.m. Shipwrights on board cutting of equipment.
Bad weather cancelled flights to Tufi.

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| 4 Dec. | Air Nuigini DC3 charter to Popondetta completed. All personnel back in Pt Moresby but still one set SHORAN gear at Tufi.<br>Difficulties getting hold of large crane and trucks for containers on Sir Alan. Sir Alan moves to main wharf. |
| 5 Dec. | 3 containers and caravan lifted off Sir Alan. Containers moved to warehouse off Lawes Road. Packing of equipment into containers started.<br>Sir Alan stripped of nearly all BMR and SHORAN equipment.<br>Rynn, Dent, Broyles, Parker and 2 SHORAN crew left PNG.<br>One Islander flight to Tufi completed for SHORAN gear. |
| 6 Dec. | Another Islander flight to Tufi completed; all gear in Pt Moresby.<br>Sir Alan cleared of all remaining equipment; end of Seafreight charter.<br>Ryan, Connelly, Petkovic, Collins left PNG. |
| 7 Dec. | All equipment finally packed in 3 containers. Containers locked, sealed and consignment documents completed through DCA.<br>All hire vehicle documentation completed; all financial matters cleared up with Accountant.<br>Survey Office closed.<br>Skates (SHORAN) still packing some equipment. |
| 8 Dec. | Finlayson, Mann, Carr, Drummond, Cherry, Somerville, and one SHORAN operator left PNG 3.30 a.m. |

# APPENDIX 2

## REPORT BY NAVIGATION AUSTRALIA PTY LTD FOR BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS; EAST PAPUA CRUSTAL SURVEY OCTOBER 1973 - DECEMBER 1973

### 1. SHORAN SYSTEM

Includes the shipboard units of the basic Shoran system for navigation. These shipboard units are Range Indicators IP-186/APN84 and Radio Transmitters T-342/APN84. The function of this equipment is to provide direct reading of the slant range ship to shore station distances.

The transmitter sends out radar signals which are received and re-transmitted by the two Shoran base stations. The range indicator received these re-transmitted signals, and the operator superimposes the returned video pulse upon reference marker pulses on the indicating scope. This in turn reveals in miles and decimals, on associated dials, the distance to each base station.

Total distance covered = Elapsed time x velocity.

Knowing the geographical or grid position of the base stations, it is possible to pre-compute ranges for selected locations or lines.

The Shoran system operates in the VHF/UHF section of the radio spectrum. In normal operation, three separate frequencies are used. Two of the frequencies are transmitted alternatively by the shipboard station to each base station. The third frequency is used by the base stations to re-transmit the received pulses back to the shipboard station.

Both bases operate on the same frequency so as to be able to operate with a single receiver on the shipboard station.

The basic equipment used in originating and terminating the signal at the mobile station are shown in diagrammatic form in Plate 13. This equipment consists of a signal source (Pulse Generator) transmitter, receiver, and indicator unit which makes up the shipboard station, and a receiver, transmitter at each base station.

Owing to the propagation characteristics of VHF/UHF radio signals, the tendency is to travel in a straight line. Refraction will occur in the atmosphere to some extent but exact determination of this refraction is dependent upon varying factors such as atmospheric conditions, temperature inversion layer, signal strength, together with base and mobile station elevations.

Under certain conditions, abnormally long Shoran ranges may be obtained. These ranges occur due to the previously mentioned temperature inversion layer. This layer has a high refractive index occurring within the first few thousand feet of the atmosphere and has the effect of containing radio waves near the Earth's surface. The ranges possible under these conditions could exceed 250 nautical miles and it is possible to predict the occurrence of a temperature inversion layer during certain seasons in various areas of the world.

Shoran equipment, under normal marine conditions, properly calibrated, has an accuracy of ± 50 feet on a single range. Under geodetic conditions and applying meteorological index corrections, together with refractive index to the measured distance, accuracies of 1:50 000 can be obtained.

Positional accuracy is related to the intersection angle of the Shoran range circles (Pl. 14). In normal operations, the angle of intersection is kept between 30 and 150 degrees as in Plate 15.

Ambiguity can arise by being on the opposite side of the base line as in island stations or peninsulas, and by not noting multiples of 100 miles range.

The 1-mile and 10-mile scale should be frequently checked against the 100-mile scale to remove any possibility of being either 1 or 10 miles out of position.

## 2. SURVEY AREA

The survey was carried out along the northeast and southwest coasts of the Papuan peninsula.

The proposed shot pattern (refer Plate 1 - Record 1973/116 - "Program for East Papua Crustal Survey") was basically adhered to, and is indicated on the location map - (Pl. 12).

The following Shoran base stations were occupied during the survey. The co-ordinates are based on the Australian National Spheroid.

| Station | Latitude (S) | Longitude (E) |
|---|---|---|
| Varol T1014 | 09° 28' 03.761" | 147° 06' 17.835" |
| Bae T1052 | 09° 36' 50.944" | 147° 22' 51.853" |
| Gubbins Point Eccentric | 08° 59' 55.241" | 146° 35' 30.524" |
| Kerema AA 103 | 08° 00' 13.567" | 145° 48' 20.372" |
| Hood Point Eccentric | 10° 06' 12.672" | 147° 43' 27.157" |
| Spear Island | 09° 00' 00.817" | 149° 07' 57.801" |

| | | |
|---|---|---|
| Killerton | 08° 37' 12.27" | 148° 20' 31.27" |
| Cape Ward Hunt Eccentric | 08° 03' 46.186" | 148° 07' 36.652" |
| Finschhafen Eccentric | 06° 38' 59.963" | 147° 45' 34.373" |

## 3. SURVEY DETAIL

### 3.1 Personnel and Equipment Movements

The Commonwealth provided all forms of transport within Papua New Guinea to place Shoran personnel and equipment at the base station site.

Extensive use was made of both fixed wing and rotary wing aircraft during the survey, under a DCA Period Contract. Aircraft movements were arranged in liaison with the party leader, Mr D.M. Finlayson.

### 3.2 Radio Communication

The Commonwealth provided 25 watt Codan SSB transceivers. Shoran personnel were permitted to transmit on 6825 kHz and this facility enabled survey work to proceed without interference from general radio traffic, on 7435 kHz and 4525 kHz.

### 3.3 Shoran Frequencies

| | |
|---|---|
| Mobile transmitters | 230/250 MHz |
| Base transmitters | 300 MHz |

### 3.4 Calibration Shoran Chain 1A

Preliminary calibration tests were carried out on Friday and Saturday, 19th and 20th October.

The mobile equipment was set up on Varol, and the known line from Varol to Gubbins Point used as a test range.

Final calibration was made on Wednesday 24th October. A series of measurements were taken from Sir Alan berthed at the A.P.C. Wharf in Port Moresby, to Varol. Eccentric points were established on the wharf, and a survey connection made to local co-ordinated survey marks. The observations, and computation of the distance from the wharf to Varol, were carried out by Surveyor G. Thompson of DCA Surveys. The adopted slant distance from the Sir Alan to Varol was 3.056 miles.

Setting up Figures for Mobile

Range Indicator R123

| | Rate H.F. T24 | Drift L.F. T23 |
|---|---|---|
| Mech. Zero = | 00.000 ± 0 | 00.000 ± 0 |
| Test = | 99.773 | 99.773 |
| Tuning Counter = | 143 | 107 |
| Gain = | 6.3 | 5.5 |
| Zero set = | 99.868 | 99.873 |

Range Indicator R122

| | Range H.F. T24 | Drift L.F. T23 |
|---|---|---|
| Mech. Zero = | 00.000 ± 0 | 00.000 ± 0 |
| Test = | 99.773 | 99.773 |
| Tuning Counter = | 141 | 097 |
| Gain = | 4.3 | 5.5 |
| Zero set = | 99.868 | 99.873 |

Figures for T22 with either R123 or R122 are:

Mech. Zero = 00.000 ± 0
Test = 99.773
Zero set = 99.868 H.F. Mode

Base settings

| | Transmitter | Delay Box Position |
|---|---|---|
| Base 1 | T4 Working | 5 |
| | T7 Backup | 5 |
| Base 2 | T5 Working | 5 |
| | T8 Backup | 5 |
| Base 3 | T6 Working | 5 |
| | T9 Backup | 5 |

Note:

All gain controls adjusted to full pulse height plus half a gain division. Base gain controls set for Delay Box meter reading of 60 for steady mode, and a reading of 30 for switching mode.

Line Crossings

Additional tests of the Shoran equipment were accomplished with three base line crossings.

(i) Varol - Gubbins Point Eccentric

| Date | Time | Operator |
|---|---|---|
| 28.10.73 | 0750 | R. Mason |

Measured Distance

| Rate Varol | Drift Gubbins | Total Distance |
|---|---|---|
| 32.586 | 15.023 | 47.609 miles* |

Computed Distance 47.610 miles

(ii) Gubbins Point Eccentric - Kerema

| Date | Time | Operator |
|---|---|---|
| 29.10.73 | 1210 | R. Mason |

Measured Distance

| Rate Gubbins | Drift Kerema | Total Distance |
|---|---|---|
| 9.248 | 77.749 | 86.997 miles |

Computed Distance 86.992 miles

(iii) Finschhafen Eccentric - Cape Ward Hunt Eccentric

| Date | Time | Operator |
|---|---|---|
| 22.11.73 | 1830 | R. Mason |

Measured Distance

| Rate Finschhafen | Drift Cape Ward Hunt | Total Distance |
|---|---|---|
| 86.343 | 13.965 | 100.308 miles |

Computed Distance 100.306 miles

* Editor's note - all miles refered to are statute miles.

3.5 Performance

No major delays were incurred through failure of the Shoran equipment.

On Sunday 25 November a delay of four hours occurred owing to lack of signals, caused by adverse atmospheric conditions.

It was not possible to obtain regular three range fixes. Factors contributing to this were:

(a) Lack of signals owing to adverse atmospheric conditions.

(b) The necessity to fire shots within the first five minutes of the hour.

(c) The ship had to maintain headway during the bomb drop, and then move to a safe stand-off position while waiting for the bomb to explode.

To obtain an accurate three way fix the vessel would be required to stop, to allow ranges to be measured to all three base stations.

Time did not allow many three-way fixes to be taken. In some of those obtained the angle of cut of one intersection invalidated the accuracy required.

The maximum Shoran range was 210.419 miles, from Kerema to Shot No. 29.

4. SURVEY COMPUTATIONS

The bearings and distances from the Shoran base stations to each of the proposed shot points were computed before departure from Perth.

All computations were carried out on a Hewlett Packard 9810A Calculator, using precise geodetic formulae, on the Australian National Spheroid.

Initially the precomputed bearings and distances were used to help position the survey ship before shot-firing. However, as the times of shot firing were more critical than the ship's position, the precomputations were not strictly adhered to.

Navigation was effected with the aid of range arc charts prepared by the Commonwealth navigator on board Sir Alan J.W. Hyslop.

Provisional shot position computations were carried out by J. Hyslop on board ship, by hand, using a Hewlett Packard 35 Pocket Calculator.

In addition to this, the Navigation Australia supervisor computed the shot firing positions on a H.P. 9810A Calculator, made available by the Commonwealth Department of Works, Port Moresby.

Precise geodetic formulae were used, and the results obtained quickly, with a minimum of effort.

A copy of the computations undertaken have been forwarded to BMR.

## 5. WORK PROGRESS

| | |
|---|---|
| 8th Sept. '73 | Equipment ex Perth. |
| 9th Oct. | Personnel ex Perth. |
| 10th Oct. | Personnel arrive Port Moresby. |
| 12th Oct. | Equipment offloaded from M.V. Tenos. Survey briefing. |
| 14th-15th Oct. | Fitting Shoran masts and antennae Sir Alan. |
| 16th-18th Oct. | Shoran base stations established at Varol, Gubbins Point and Kerema. |
| 21st Oct. | Sir Alan on shakedown cruise. |
| 24th Oct. | Sir Alan departs Port Moresby at 1710 hours. |
| 25th Oct. | Shots 1, 2 and 3 fired. |
| 26th Oct. | Shots 4 and 5 fired. |
| 29th Oct. | Shoran station at Varol closed down - equipment returned to Port Moresby. |
| 1st-2nd Nov. | Shoran station established at Hood Point. |
| 5th Nov. | Shoran station at Kerema closed down - equipment returned to Port Moresby. |
| 6th Nov. | Shoran station established at Bae. |
| 8th Nov. | Sir Alan returns to Port Moresby - end of first part of project. 41 shots fired. Shoran station at Gubbins Point closed down - equipment returned to Port Moresby. |
| 9th Nov. | Sir Alan departs Port Moresby at 1800. |
| 11th Nov. | Shoran station at Bae closed down - equipment returned to Port Moresby. |

| | |
|---|---|
| 12th Nov. | Shoran station at Hood Point closed down - equipment returned to Port Moresby. |
| 14th-15th Nov. | Shoran stations established at Killerton and Spear Island. Establishment of Spear Island delayed by medical emergency on Kokoda trail. Helicopter diverted to bring sick man out to Popondetta. |
| 16th Nov. | Shoran equipment ex Port Moresby to Finschhafen. One day late due to aircraft unserviceability. Helicopter pilot ill; base station equipment cannot be established on hill. |
| 17th Nov. | Replacement helicopter pilot arrives Finschhafen ex Cairns. |
| 18th Nov. | Shoran station established at Finschhafen. Sir Alan sailing Lae - project delayed through faulty fuses. |
| 20th Nov. | Shoran station at Killerton closed down. Shifted to Cape Ward Hunt by helicopter. |
| 21st Nov. | Shoran station at Cape Ward Hunt operational at 0945. |
| 28th Nov. | Final shot fired - No. 111. Shoran station at Finschhafen closed down - equipment returned to Finschhafen airstrip. Air Niugini DC3 charter Pon-Finsch-Pom delayed (until 2nd Dec) aircraft unserviceable due to engineers strike. |
| 30th Nov. | Shoran station at Cape Ward Hunt closed down. Equipment returned to Popondetta by helicopter. |
| 1st Dec. | Shoran station at Spear Island closed down. Equipment returned to Tufi by helicopter. |
| 2nd Dec. | Shoran equipment returned to Port Moresby from Finschhafen. |
| 3rd Dec. | Sir Alan returns to Port Moresby - project completed. Scheduled return of Shoran equipment from Tufi to Port Moresby delayed (until 5th Dec) by aircraft unserviceability and bad weather. |

| | |
|---|---|
| 5th Dec. | Two members Shoran party depart Port Moresby Shoran equipment flown from Tufi to Port Moresby. |
| 6th-10th Dec. | Packing up Shoran equipment at DCA warehouse. |
| 7th-11th Dec.<br>7th Jan '74 | Shoran party departs Port Moresby.<br>Equipment ex Port Moresby - E.T.A. Perth 27th Jan. |

6. PERSONNEL

| | |
|---|---|
| J. SKATES L.S | Supervisor |
| R. MASON | Mobile Operator |
| W. GRAY | Base Operator |
| J. VERMEULEN | Base Operator |
| G. WALLIS | Base Operator |

7. RECOMMENDATIONS FOR FUTURE SIMILAR PROJECTS

(a) If possible, obtain the exclusive services of an aircraft that could take a complete base station in one load, with short take-off and landing capabilities.

(b) That a Hewlett Packard 9810A or similar calculator be used to compute post plot positions, on site or nearby base, using geodetic formulae to obtain real time results.

J. SKATES
LICENCED SURVEYOR

```
                THIS LISTING WAS WRITTEN BY REFDAT3 ON  29/07/76
                VELOCITY USED FOR TERRAIN CORRECTIONS =  4.00
251073    EAST PAPUA CRUSTAL SURVEY 1973
                THE SURVEY COMMENCED ON 25 OCTOBER AND FINISHED ON 28 NOV.
                111 SHOTS WERE FIRED. RECORDINGS WERE MADE AT 43 SITES.
                PARTICIPATING ORGANISATIONS WERE ---
          1. BMR                                19 FIELD RECORDERS + 3 OBS
          2. AUSTRALIAN NATIONAL UNIVERSITY      9  FIELD RECORDERS
          3. UNIVERSITY OF QUEENSLAND            3  FIELD RECORDERS
          4. UNIVERSITY OF MELBOURNE             3  FIELD RECORDERS
          5. RABAUL VULCANOLOGICAL OBSERVATORY   1  FIELD RECORDER  + 2 OBS
          6. HAWAII INSTITUTE OF GEOPHYSICS      1  FIELD RECORDER  +
                                                 1  SHIPBORNE RECORDER
```

| | LOCATION | ABREVIATION | LATITUDE | LONGITUDE | ELEVATION | INSTITUTION | | |
|---|---|---|---|---|---|---|---|---|
| R 1 | PT.MORESBY | PMG | 09 24.4 | 147 09.5 | 67.0 | BMR | -0.0 | |
| R 2 | DAUGO I. | DI | 09 30.5 | 147 02.7 | 3.0 | BMR | -0.0 | |
| R 3 | KONEDOBU | KD | 09 28.3 | 147 09.6 | 70.0 | BMR | -0.0 | |
| R 4 | AROA | AA | 09 01.7 | 146 48.1 | 3.0 | BMR | -0.0 | |
| R 5 | YULE I. | YE | 08 50.4 | 146 32.3 | 10.0 | BMR | -0.0 | |
| R 6 | KUBUNA | KB | 08 41.5 | 146 45.3 | 60.0 | BMR | -0.0 | |
| R 7 | BEREINA | BA | 08 38.1 | 146 30.6 | 15.0 | BMR | -0.0 | |
| R 8 | IRON RANGE | IR | 12 47.1 | 143 18.3 | 20.0 | QLD | -0.0 | |
| R 9 | MALALAUA | MA | 08 04.6 | 146 09.7 | 5.0 | BMR | -0.0 | |
| R 10 | KEREMA | KM | 07 58.2 | 145 46.7 | 10.0 | MELB | -0.0 | |
| R 11 | GUARI | GU | 08 07.9 | 146 52.5 | 2300.0 | BMR | -0.0 | |
| R 12 | TAPINI | TI | 08 21.4 | 146 59.0 | 914.0 | BMR | -0.0 | |
| R 13 | WOITAPE | WP | 08 32.7 | 147 14.9 | 1474.0 | BMR | -0.0 | |
| R 14 | LAMINGTON | LMG | 08 55.2 | 148 09.1 | 1200.0 | RAB | -0.0 | |
| R 15 | EFOGI | EI | 09 09.3 | 147 39.6 | 1158.0 | BMR | -0.0 | |
| R 16 | KUPIANO | KP | 10 04.5 | 148 10.9 | 20.0 | RAB | -0.0 | |
| R 17 | CAPE RODNEY | CR | 10 11.0 | 148 23.3 | 5.0 | BMR | -0.0 | |
| R 18 | GORARI | GO | 08 55.1 | 147 52.5 | 450.0 | BMR | -0.0 | |
| R 19 | KARUKARU | KK | 08 38.9 | 147 39.4 | 200.0 | ANU | -0.0 | |
| R 20 | TUFI | TF | 09 04.8 | 149 18.8 | 18.0 | QLD | -0.0 | |
| R 21 | NAMUDEI | ND | 09 28.7 | 148 19.6 | 395.0 | ANU | -0.0 | |
| R 22 | AFORE | AF | 09 08.6 | 148 23.2 | 700.0 | ANU | -0.0 | |
| R 23 | TETEBEDI | TT | 09 09.7 | 148 04.0 | 995.0 | ANU | -0.0 | |
| R 24 | KOKODA | KA | 08 52.9 | 147 44.1 | 396.0 | BMR | -0.0 | |
| R 25 | POPONDETTA | PP | 08 46.4 | 148 13.2 | 120.0 | BMR | -0.0 | |
| R 26 | ORO BAY | OB | 08 53.6 | 148 28.9 | 20.0 | BMR | -0.0 | |
| R 27 | KILLERTON | KL | 08 37.5 | 148 20.8 | 2.0 | HIG | -0.0 | |
| R 28 | OWERS CNR. | OC | 09 21.8 | 147 29.2 | 550.0 | BMR | -0.0 | |
| R 29 | IOMA | IA | 08 21.8 | 147 49.5 | 45.0 | BMR | -0.0 | |
| R 30 | MT.LAWES | ML | 09 20.2 | 147 14.0 | 400.0 | BMR | -0.0 | |
| R 31 | MOROBE | ME | 07 47.7 | 147 35.6 | 2.0 | MELB | -0.0 | |
| R 32 | GARAINA | GA | 07 53.4 | 147 08.2 | 715.0 | MELB | -0.0 | |
| R 33 | KUI | KU | 07 29.2 | 147 16.3 | 10.0 | ANU | -0.0 | |
| R 34 | SIRINUMU DAM | SD | 09 28.9 | 147 26.6 | 460.0 | BMR | -0.0 | |
| R 35 | SALAMAUA | SL | 07 03.2 | 147 03.1 | 5.0 | ANU | -0.0 | |
| R 36 | FINSCHHAFEN | FF | 06 37.0 | 147 51.5 | 8.0 | MELB | -0.0 | |
| R 37 | LINDENHAFEN | LF | 06 14.8 | 150 27.3 | 5.0 | QLD | -0.0 | |
| R 38 | LAE | LAT | 06 39.2 | 147 00.0 | 72.0 | BMR | -0.0 | |
| R 39 | ESA ALA | ESA | 09 44.4 | 150 48.7 | 46.0 | RAB | -0.0 | |
| R 40 | LAKE TRIST | LT | 07 28.9 | 146 57.3 | 1450.0 | ANU | -0.0 | |
| R 41 | MUSA DAM | MD | 09 32.6 | 148 41.0 | 150.0 | ANU | -0.0 | |
| R 42 | CAPE WARD HUNT | CW | 08 03.9 | 148 07.3 | 5.0 | ANU | -0.0 | |
| R 43 | KWIKILA | KW | 09 48.6 | 147 40.2 | 71.0 | QDBM | -0.0 | |
| S 1 | SHOT 1 | | 09 40.9 | 146 52.6 | 2100.0 | 25OCT | 100.0 | 180 KG 08 03 07.40 |
| S 2 | SHOT 2 | | 09 37.6 | 146 58.9 | 1930.0 | | 100.0 | 180 KG 12 04 06.00 |
| S 3 | SHOT 3 | | 09 31.6 | 146 55.3 | 1500.0 | | 100.0 | 180 KG 16 04 17.57 |
| S 4 | SHOT 4 | | 09 34.7 | 147 02.4 | 1250.0 | 26OCT | 100.0 | 1020 KG 12 05 53.80 |
| S 5 | SHOT 5 | | 09 28.0 | 146 50.1 | 850.0 | | 100.0 | 1020 KG 17 05 27.70 |
| S 6 | SHOT 6 | | 09 25.3 | 146 46.2 | 806.0 | 27OCT | 100.0 | 180 KG 08 03 18.44 |
| S 7 | SHOT 7 | | 09 21.9 | 146 42.9 | 932.0 | | 100.0 | 180 KG 12 04 13.04 |
| S 8 | SHOT 8 | | 09 15.9 | 146 37.5 | 796.0 | | 100.0 | 1020 KG 16 06 29.43 |
| S 9 | SHOT 9 | | 09 12.0 | 146 34.9 | 505.0 | 28OCT | 100.0 | 180 KG 09 04 11.93 |
| S 10 | SHOT 10 | | 09 07.7 | 146 29.8 | 1101.0 | | 100.0 | 180 KG 12 04 05.42 |
| S 11 | SHOT 11 | | 09 01.4 | 146 26.8 | 838.0 | | 100.0 | 1020 KG 16 05 58.37 |
| S 12 | SHOT 12 | | 08 57.0 | 146 21.5 | 600.0 | 29OCT | 100.0 | 180 KG 14 04 09.08 |
| S 13 | SHOT 13 | | 08 52.0 | 146 17.4 | 712.0 | | 100.0 | 180 KG 18 04 08.93 |
| S 14 | SHOT 14 | | 08 47.1 | 146 13.3 | 451.0 | 30OCT | 100.0 | 1020 KG 07 07 36.86 |
| S 15 | SHOT 15 | | 08 41.9 | 146 08.6 | 545.0 | | 100.0 | 180 KG 10 04 03.02 |
| S 16 | SHOT 16 | | 08 37.0 | 146 04.1 | 738.0 | | 100.0 | 180 KG 12 05 34.57 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | 17 | SHOT | 17 | 08 | 32.2 | [illegible] | [illegible] | 100.0 | | 100.0 | 1020 | KG | 14 | 06 | 48.90 |
| S | 18 | SHOT | 18 | 08 | 18.9 | [illegible] | [illegible] | 64.0 | | 64.0 | 1020 | KG | 17 | 07 | 57.77 |
| S | 19 | SHOT | 19 | 08 | 18.3 | [illegible] | 20.8 | 100.0 | 31OCT | 100.0 | 1020 | KG | 14 | 06 | 15.23 |
| S | 20 | SHOT | 20 | 08 | 58.6 | 146 | 16.7 | 1309.0 | 1NOV | 100.0 | 1020 | KG | 14 | 06 | 33.55 |
| S | 21 | SHOT | 21 | 09 | 03.3 | 146 | 14.3 | 1582.0 | | 100.0 | 180 | KG | 17 | 04 | 13.34 |
| S | 22 | SHOT | 22 | 09 | 08.5 | 146 | 11.6 | 1799.0 | 2NOV | 100.0 | 180 | KG | 08 | 05 | 00.98 |
| S | 23 | SHOT | 23 | 09 | 14.1 | 146 | 05.9 | 1830.0 | | 100.0 | 1020 | KG | 10 | 06 | 41.93 |
| S | 24 | SHOT | 24 | 09 | 17.3 | 146 | 04.1 | 1865.0 | | 100.0 | 180 | KG | 12 | 04 | 57.19 |
| S | 25 | SHOT | 25 | 09 | 32.0 | 145 | 48.9 | 1747.0 | | 100.0 | 1020 | KG | 17 | 07 | 02.82 |
| S | 26 | SHOT | 26 | 09 | 53.1 | 145 | 37.8 | 1807.0 | 3NOV | 100.0 | 1020 | KG | 08 | 10 | 00.21 |
| S | 27 | SHOT | 27 | 10 | 15.2 | 145 | 25.3 | 1220.0 | | 100.0 | 1020 | KG | 14 | 08 | 32.51 |
| S | 28 | SHOT | 28 | 10 | 38.9 | 145 | 08.9 | 1268.0 | | 100.0 | 1020 | KG | 18 | 06 | 08.40 |
| S | 29 | SHOT | 29 | 10 | 56.4 | 144 | 56.0 | 1390.0 | 4NOV | 100.0 | 1020 | KG | 09 | 06 | 21.74 |
| S | 30 | SHOT | 30 | 10 | 48.7 | 145 | 11.4 | 1271.0 | | 100.0 | 1020 | KG | 12 | 09 | 54.46 |
| S | 31 | SHOT | 31 | 10 | 37.3 | 145 | 30.2 | 1155.0 | 5NOV | 100.0 | 1020 | KG | 08 | 06 | 16.45 |
| S | 32 | SHOT | 32 | 10 | 23.9 | 145 | 50.9 | 1485.0 | | 100.0 | 1020 | KG | 12 | 06 | 49.23 |
| S | 33 | SHOT | 33 | 10 | 10.3 | 146 | 13.4 | 2088.0 | | 100.0 | 1020 | KG | 16 | 06 | 25.66 |
| S | 34 | SHOT | 34 | 10 | 01.3 | 146 | 25.8 | 2238.0 | 6NOV | 100.0 | 180 | KG | 08 | 04 | 55.18 |
| S | 35 | SHOT | 35 | 09 | 58.0 | 146 | 31.1 | 2155.0 | | 100.0 | 1020 | KG | 13 | 05 | 52.94 |
| S | 36 | SHOT | 36 | 09 | 52.7 | 146 | 37.3 | 2198.0 | | 100.0 | 180 | KG | 15 | 05 | 02.73 |
| S | 37 | SHOT | 37 | 09 | 48.0 | 146 | 43.5 | 2197.0 | | 100.0 | 180 | KG | 17 | 05 | 14.16 |
| S | 38 | SHOT | 38 | 09 | 43.9 | 146 | 48.4 | 2178.0 | 7NOV | 100.0 | 1020 | KG | 08 | 06 | 12.68 |
| S | 39 | SHOT | 39 | 09 | 46.8 | 147 | 17.0 | 947.0 | | 100.0 | 1020 | KG | 13 | 06 | 10.64 |
| S | 40 | SHOT | 40 | 09 | 43.3 | 147 | 11.8 | 989.0 | | 100.0 | 180 | KG | 15 | 05 | 01.50 |
| S | 41 | SHOT | 41 | 09 | 38.4 | 147 | 06.7 | 1056.0 | | 100.0 | 180 | KG | 17 | 05 | 02.28 |
| S | 42 | SHOT | 42 | 09 | 52.6 | 147 | 20.7 | 905.0 | 10NOV | 100.0 | 180 | KG | 08 | 05 | 00.62 |
| S | 43 | SHOT | 43 | 09 | 58.9 | 147 | 23.9 | 1141.0 | | 100.0 | 180 | KG | 10 | 05 | 05.20 |
| S | 44 | SHOT | 44 | 10 | 04.4 | 147 | 30.5 | 691.0 | | 100.0 | 1020 | KG | 13 | 06 | 10.98 |
| S | 45 | SHOT | 45 | 10 | 08.6 | 147 | 37.7 | 1141.0 | | 100.0 | 180 | KG | 15 | 04 | 58.01 |
| S | 46 | SHOT | 46 | 10 | 09.9 | 147 | 45.2 | 1077.0 | 11NOV | 100.0 | 180 | KG | 08 | 05 | 04.58 |
| S | 47 | SHOT | 47 | 10 | 10.6 | 147 | 52.0 | 380.0 | | 100.0 | 1020 | KG | 11 | 06 | 07.40 |
| S | 48 | SHOT | 48 | 10 | 20.4 | 148 | 24.2 | 1050.0 | | 100.0 | 1020 | KG | 17 | 06 | 22.80 |
| S | 49 | SHOT | 49 | 10 | 25.6 | 148 | 56.5 | 1537.0 | 12NOV | 100.0 | 1020 | KG | 10 | 05 | 58.44 |
| S | 50 | SHOT | 50 | 10 | 32.7 | 149 | 34.0 | 527.0 | | 100.0 | 1020 | KG | 16 | 06 | 04.18 |
| S | 51 | SHOT | 51 | 10 | 25.0 | 150 | 39.4 | 613.0 | 13NOV | 100.0 | 1020 | KG | 08 | 06 | 21.21 |
| S | 52 | SHOT | 52 | 09 | 41.0 | 150 | 37.4 | 654.0 | | 100.0 | 1020 | KG | 16 | 06 | 07.15 |
| S | 53 | SHOT | 53 | 09 | 39.2 | 150 | 06.6 | 304.0 | 14NOV | 100.0 | 1020 | KG | 08 | 06 | 05.16 |
| S | 54 | SHOT | 54 | 09 | 29.7 | 149 | 39.6 | 425.0 | | 100.0 | 1020 | KG | 12 | 06 | 03.13 |
| S | 55 | SHOT | 55 | 09 | 12.1 | 149 | 28.4 | 348.0 | | 100.0 | 1020 | KG | 16 | 05 | 56.95 |
| S | 56 | SHOT | 56 | 08 | 24.1 | 148 | 34.4 | 66.0 | 16NOV | 66.0 | 1020 | KG | 08 | 06 | 12.32 |
| S | 57 | SHOT | 57 | 08 | 19.4 | 148 | 38.5 | 110.0 | | 100.0 | 180 | KG | 10 | 06 | 22.85 |
| S | 58 | SHOT | 58 | 08 | 18.6 | 148 | 40.7 | 73.0 | | 73.0 | 180 | KG | 12 | 05 | 29.94 |
| S | 59 | SHOT | 59 | 08 | 14.9 | 148 | 45.0 | 805.0 | | 100.0 | 1020 | KG | 15 | 06 | 26.13 |
| S | 60 | SHOT | 60 | 08 | 09.7 | 148 | 50.1 | 2100.0 | | 100.0 | 180 | KG | 17 | 04 | 00.47 |
| S | 61 | SHOT | 61 | 08 | 03.5 | 148 | 53.6 | 3300.0 | 17NOV | 100.0 | 180 | KG | 08 | 04 | 03.95 |
| S | 62 | SHOT | 62 | 08 | 00.1 | 149 | 00.2 | 4411.0 | | 100.0 | 1020 | KG | 10 | 06 | 13.15 |
| S | 63 | SHOT | 63 | 07 | 46.5 | 149 | 14.1 | 5138.0 | | 100.0 | 1020 | KG | 13 | 06 | 40.81 |
| S | 64 | SHOT | 64 | 07 | 37.6 | 149 | 27.2 | 0.0 | 18NOV | 100.0 | 90 | KG | 12 | 27 | 04 |
| S | 65 | SHOT | 65 | 07 | 23.7 | 149 | 40.9 | -0.0 | | 100.0 | 90 | KG | 15 | 34 | 53 |
| S | 66 | SHOT | 66 | 07 | 16.9 | 149 | 43.9 | -0.0 | | 100.0 | 30 | KG | 16 | 51 | |
| S | 67 | SHOT | 67 | 07 | 13.7 | 149 | 39.8 | -0.0 | | 100.0 | 30 | KG | 17 | 59 | |
| S | 68 | SHOT | 68 | 07 | 13.7 | 149 | 39.0 | -0.0 | | 100.0 | 30 | KG | 18 | 15 | |
| S | 69 | SHOT | 69 | 06 | 49.1 | 147 | 02.4 | 330.0 | 20NOV | 100.0 | 1020 | KG | 16 | 05 | 37.33 |
| S | 70 | SHOT | 70 | 06 | 56.4 | 147 | 01.9 | 282.0 | 21NOV | 100.0 | 180 | KG | 08 | 04 | 23.35 |
| S | 71 | SHOT | 71 | 07 | 03.4 | 147 | 08.0 | 446.0 | | 100.0 | 1020 | KG | 10 | 05 | 36.23 |
| S | 72 | SHOT | 72 | 07 | 08.0 | 147 | 10.0 | 641.0 | | 100.0 | 180 | KG | 11 | 09 | 02.82 |
| S | 73 | SHOT | 73 | 07 | 14.8 | 147 | 12.3 | 324.0 | | 100.0 | 1020 | KG | 13 | 05 | 43.05 |
| S | 74 | SHOT | 74 | 07 | 18.1 | 147 | 16.8 | 765.0 | | 100.0 | 180 | KG | 15 | 04 | 02.17 |
| S | 75 | SHOT | 75 | 07 | 22.3 | 147 | 21.1 | 280.0 | | 100.0 | 1020 | KG | 17 | 05 | 21.02 |
| S | 76 | SHOT | 76 | 07 | 19.0 | 147 | 24.3 | 824.0 | 22NOV | 100.0 | 180 | KG | 07 | 08 | 55.61 |
| S | 77 | SHOT | 77 | 07 | 13.9 | 147 | 27.8 | 1392.0 | | 100.0 | 1020 | KG | 09 | 05 | 33.76 |
| S | 78 | SHOT | 78 | 07 | 09.3 | 147 | 30.9 | 1877.0 | | 100.0 | 180 | KG | 10 | 08 | 46.65 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| S 79 | SHOT 79 | 07 03.8 | 147 33.8 | 2500.0 | | 100.0 | 1020 KG 16 05 36.64 |
| S 80 | SHOT 80 | 06 54.1 | 147 42.8 | 1595.0 | | 100.0 | 1020 KG 18 09 34.10 |
| S 81 | SHOT 81 | 07 27.3 | 147 28.0 | 293.0 | 23NOV | 100.0 | 180 KG 08 03 56.99 |
| S 82 | SHOT 82 | 07 33.6 | 147 34.1 | 248.0 | | 100.0 | 1020 KG 10 05 26.25 |
| S 83 | SHOT 83 | 07 35.8 | 147 39.2 | 261.0 | | 100.0 | 180 KG 11 09 05.00 |
| S 84 | SHOT 84 | 07 38.4 | 147 42.3 | 578.0 | | 100.0 | 180 KG 12 08 58.08 |
| S 85 | SHOT 85 | 07 42.6 | 147 46.2 | 813.0 | | 100.0 | 1020 KG 15 06 48.42 |
| S 86 | SHOT 86 | 07 45.9 | 147 50.0 | 110.0 | | 100.0 | 180 KG 16 12 00.34 |
| S 87 | SHOT 87 | 07 48.1 | 147 53.4 | 1052.0 | | 100.0 | 180 KG 17 08 53.63 |
| S 88 | SHOT 88 | 07 54.1 | 148 11.7 | 840.0 | 24NOV | 100.0 | 1020 KG 08 05 29.72 |
| S 89 | SHOT 89 | 07 48.0 | 148 17.5 | 1328.0 | | 100.0 | 180 KG 10 03 59.63 |
| S 90 | SHOT 90 | 07 43.6 | 148 21.9 | 2443.0 | | 100.0 | 180 KG 11 08 55.05 |
| S 91 | SHOT 91 | 07 38.9 | 148 26.1 | 2182.0 | | 100.0 | 1020 KG 13 05 30.16 |
| S 92 | SHOT 92 | 07 32.5 | 148 33.2 | 3864.0 | | 100.0 | 180 KG 15 03 45.75 |
| S 93 | SHOT 93 | 07 27.8 | 148 36.1 | 4858.0 | | 100.0 | 180 KG 16 08 51.62 |
| S 94 | SHOT 94 | 07 23.6 | 148 41.6 | 5912.0 | | 100.0 | 1020 KG 18 05 37.12 |
| S 95 | SHOT 95 | 07 04.0 | 149 59.4 | 6352.0 | 25NOV | 100.0 | 1020 KG 12 12 35.81 |
| S 96 | SHOT 96 | 07 15.2 | 149 48.2 | 4491.0 | | 100.0 | 1020 KG 15 05 23.00 |
| S 97 | SHOT 97 | 07 27.7 | 149 36.1 | 5535.0 | | 100.0 | 1020 KG 18 05 35.70 |
| S 98 | SHOT 98 | 08 00.4 | 148 10.9 | 573.0 | 26NOV | 100.0 | 180 KG 09 03 48.40 |
| S 99 | SHOT 99 | 08 13.5 | 148 17.8 | 73.0 | | 73.0 | 810 KG 12 06 08.25 |
| S100 | SHOT 100 | 08 20.2 | 148 21.4 | 37.0 | | 37.0 | 180 KG 14 09 47.94 |
| S101 | SHOT 101 | 08 28.4 | 148 27.3 | 49.0 | | 49.0 | 180 KG 16 04 23.50 |
| S102 | SHOT 102 | 08 33.3 | 148 29.3 | 53.0 | | 53.0 | 180 KG 17 09 18.55 |
| S103 | SHOT 103 | 08 39.8 | 148 31.2 | 53.0 | 27NOV | 53.0 | 180 KG 08 04 02.28 |
| S104 | SHOT 104 | 08 43.7 | 148 41.5 | 66.0 | | 66.0 | 810 KG 10 06 11.92 |
| S105 | SHOT 105 | 08 49.2 | 148 47.7 | 68.0 | | 68.0 | 180 KG 12 04 11.81 |
| S106 | SHOT 106 | 08 51.0 | 148 52.7 | 62.0 | | 62.0 | 180 KG 14 04 16.44 |
| S107 | SHOT 107 | 08 57.4 | 148 55.7 | 53.0 | | 53.0 | 810 KG 16 07 45.04 |
| S108 | SHOT 108 | 08 58.4 | 148 59.9 | 53.0 | | 53.0 | 180 KG 17 04 34.94 |
| S109 | SHOT 109 | 08 58.3 | 149 12.4 | 62.0 | 28NOV | 62.0 | 690 KG 08 06 18.87 |
| S110 | SHOT 110 | 08 53.6 | 149 27.5 | 406.0 | | 100.0 | 810 KG 11 05 29.67 |
| S111 | SHOT 111 | 08 32.4 | 149 26.9 | 100.0 | | 100.0 | 810 KG 14 05 30.93 |

TABLE 3

SEISMIC RECORDING STATION INSTRUMENTATION

In the following table, the following abbreviations have been used for the recording equipment indicated:

AKAI Tape Recording System - WILLMORE MK II Seismometer, .75 sec free period
TAM5 Amplifier and Bandpass Filter
TMF1 or TMF2 Modulator
LABTRONICS Radio tuned to VNG
NCE-1 Low Power Digital Clock
AKAI 4-channel Tape Deck modified for slow speed recording, automatically switched for the first ¼ hour every hour between 0700 and 1600

PI Tape Recording System - WILLMORE MK II Seismometer, .75 sec free period
TAM5 Amplifier and Bandpass Filter
LABTRONICS Radio tuned to VNG
NCE-1 Low Power Digital Clock
PRECISION INSTRUMENT (PI) 5100D FM/DR 7 channel Tape Recorder automatically switched for the first ¼ hour every hour between 0700 and 1600

ANU Tape Recording System - WILLMORE MK II Seismometer
ANU Designed Amplifier
ANU Designed Crystal Clock
National Radio tuned to VNG
Sony Direct Record 4 channel Tape Recorder modified for continuous slow speed recording

| STATION NAME | STATION ABBREVIATION AND SURVEY NUMBER | INSTITUTION PROVIDING EQUIPMENT | PERSONNEL SERVICING EQUIPMENT | FREQUENCY OF SERVICE | EQUIPMENT |
|---|---|---|---|---|---|
| Port Moresby Observatory | PMG (1) | BMR | BMR | Daily | -WORLD WIDE STANDARD SEISMOGRAPH SET (3 component (Z,N,E) seismometers, $T_s$=1.0, Tg=0.75, Nominal Magnification 25,000, Recorder UED DR 273, 60 mm/min). |
| Daugo Island | DI (2) | BMR | BMR | Every 6-8 days | AKAI tape recording system |
| Konedobu | KD (3) | BMR | BMR | Manual operation | -WILLMORE MK 1 Seismometer<br>-TAM5 amplifier and bandpass filter<br>-LABTRONICS radio tuned to VNG<br>-HELLAGE HELCOSCRIPTOR HE 16 pen recorder |
| Aroa | AA (4) | BMR | BMR | Every 6-8 days | PI tape recording system |
| Yule Island | YE (5) | BMR | BMR | " | AKAI tape recording system |
| Kubuna | KB (6) | BMR | BMR | " | AKAI tape recording system |
| Bereina | BA (7) | BMR | BMR | " | AKAI tape recording system |
| Iron Range | IR (8) | QLD | Dept. Civil Aviation | Daily | WILLMORE MK II Seismometer, UED preamplifier<br>HELIGORDER amplifier and recorder<br>LABTRONICS clock<br>LABTRONICS radio tuned to VNG |
| Nalalawa | MA (9) | BMR | BMR | Every 6-8 days | AKAI tape recording system |
| Kerema | KM (10) | MELB | BMR | Manual operation | -WILLMORE MK II Seismometer, free period 1 second<br>-MELB designed amplifier and filter<br>-MELB designed modulator<br>-Transistor radio tuned to VNG, time signals superimposed on seismic signal<br>-SANYO M-2000 single channel cassette tape recorder |
| Guari | GU (11) | BMR | BMR | Every 6-8 days | AKAI tape recording system |
| Tapini | TI (12) | BMR | BMR | Every 6-8 days | AKAI tape recording system |
| Waitape | WP (13) | BMR | BMR | Every 6-8 days | AKAI tape recording system |
| Lamington Observatory | LMG (14) | RAB | RAB | Daily | -WILLMORE MK II Seismometer, free period 1 second<br>-24 db pad between seismometer and subcarrier modulator<br>-Type TM-B2 modulator (local design)<br>-PHILLIPS type FM1680 radio transmitter<br>-PHILLIPS type FM1680 radio receiver<br>-local design Type DM demodulator<br>-LABTRONICS Type 705 chronometer<br>-SPRENGNETHER type R6038 recorder, smoked paper record. |
| Efogi | EI (15) | BMR | BMR | Every 6-8 days | AKAI tape recording system |

| STATION NAME | STATION ABBREVIATION AND SURVEY NUMBER | INSTITUTION PROVIDING EQUIPMENT | PERSONNEL SERVICING EQUIPMENT | FREQUENCY OF SERVICE | EQUIPMENT |
|---|---|---|---|---|---|
| Kupiano | KP (16) | RAB | RAB | Manually operated | WILLMORE MK I Seismometer, free period .60 sec<br>PREAMPLIFIER (Local Design)<br>PEN AMPLIFIER MPS Type A-655<br>SPARKMASTER recorder type R603/4<br>Smoked paper record |
| Cape Rodney | CR (17) | BMR | RAB | Every 6-8 days | AKAI tape recording system |
| Gorari | GO (18) | BMR | BMR | Every 6-8 days | PI tape recording system |
| Karukaru | KK (19) | ANU | ANU | Once during survey | ANU tape recording system |
| Tufi | TF (20) | QLD | QLD | Manually operated | 2 sets were operated<br>(a) WILLMORE MK II Seismometer<br>TAM 5 amplifier and bandpass filter<br>TEAC 4 channel DR/FM cassette recorder<br>LABTRONICS radio tuned to VNG<br>LABTRONICS clock<br>(b) WILLMORE MK II Seismometer<br>TAM 5 amplifier and bandpass filter<br>SPRENGNETHER Recorder-continuous operation |
| Namudi | ND (21) | ANU | ANU | Once during survey | ANU tape recording system |
| Afora | AF (22) | ANU | ANU | Once during survey | ANU tape recording system |
| Tetemadi | TT (23) | ANU | ANU | Once during survey | ANU tape recording system |
| Kokoda | KA (24) | BMR | BMR | Every 6-8 days | AKAI tape recording system |
| Popondetta | PP (25) | BMR | BMR | Every 6-8 days | PI tape recording system |
| Ora Bay | OB (26) | BMR | BMR | Every 6-8 days | AKAI tape recording system |
| Killerton | KL (27) | NIG | NIG | Manually operated | -2 x MARK II 1 Hz geophones<br>-1 x 4 Hz multi-spread type geophone<br>-SANYO transistor radio tuned to VNG<br>-2 chronometers<br>-MANDREL INDUSTRIES SFA-1-6<br>6 channel amplifier<br>-TEAC 4-channel R-70 DR/FM cassette recorder |
| Owers Corner | OC (28) | BMR | BMR | Every 6-8 days | PI tape recording system |
| Toma | TA (29) | BMR | BMR | Every 6-8 days | AKAI tape recording system |
| Mount Lawson | ML (30) | BMR | BMR | Every 6-8 days | PI tape recording system |
| Morobe | ME (31) | MELB | MELB | Manually operated | -WILLMORE MK II Seismometer, free period 1 sec<br>-MELB designed amplifier and filter<br>-MELB designed modulator<br>-Transistor radio tuned to VNG, time signals superimposed on seismic signal<br>-SANYO M-2000 single channel cassette tape recorder |
| Garaina | GA (32) | MELB | MELB | Manually operated | -WILLMORE MK II Seismometer, free period 1 sec<br>-MELB designed amplifier and filter<br>-MELB designed modulator<br>-Transistor radio tuned to VNG-time signals superimposed on seismic signal<br>-SHARP RD-465X single channel cassette tape recorder |
| Kui | KU (33) | ANU | ANU | Once during survey | ANU tape recording system |
| Sirinumu Dam | SD (34) | BMR | BMR | Every 6-8 days | PI tape recording system |
| Salamaua | SL (35) | ANU | ANU | Once during survey | ANU tape recording system |
| Finschhafen | FF (36) | MELB | BMR | Manually operated | Same equipment that was operated at Kerema |
| Lindenhafen | LF (37) | QLD | BMR | Manually operated | WILLMORE MK II Seismometer<br>TAM 5 amplifier and bandpass filter<br>LABTRONICS CLOCK<br>LABTRONICS radio tuned to VNG<br>TEAC 4 channel DR/FM cassette tape recorder |
| Lae Observatory | LAT (38) | BMR | BMR | Daily | (a) WILLMORE Seismometer (z), Ts = 0.7 sec<br>Tg = 0.7 sec<br>UED DR 271 drum recorder<br>(b) WOOD ANDERSON Seismometer (E), Ts = 0.7 sec<br>UED DR 271 drum recorder |
| Esa Ala | ESA (39) | RAB | RAB | Daily | -BENIOFF VR 107.5 kg seismometer, Ts = 1.0 sec, Tg = 0.2 sec<br>-Magnification (z) 38 000<br>-Record speed (photographic) 45 mm/min |
| Lake Trist | LT (40) | ANU | ANU | Once during survey | ANU tape recording system |
| Musa Dam | MD (41) | ANU | ANU | Once during survey | ANU tape recording system |
| Cape Ward Hunt | CW (42) | ANU | ANU | Once during survey | ANU tape recording system |
| Kwikila | KW (43) | (a) QLD<br>(b) BMR | BMR | (a) manually operated<br>(b) every 6-8 days | (a) Until 7th Nov 1973 -<br>WILLMORE MK II Seismometer<br>TAM 5 amplifier and bandpass filter<br>LABTRONICS clock<br>LABTRONICS radio tuned to VNG 4 channel<br>TEAC FM/DR 4 channel cassette tape recorder<br>(b) From 14/11/73 to 28/11/73 -<br>AKAI tape recording system |

TABLE 4

Seismic Recording Station Success Rate

| Station Number | Station | Number of shots recorded | Number possibly recorded | Percentage Success |
|---|---|---|---|---|
| 1 | Port Moresby | 100 | 106 | 94 |
| 2 | Daugo I | 53 | 106 | 50 |
| 3 | Konedobu | 54 | 106 | 51 |
| 4 | Aroa | 63 | 106 | 59 |
| 5 | Yule I | 33 | 106 | 31 |
| 6 | Kubuna | 93 | 106 | 88 |
| 7 | Bereina | 8 | 50 | 16 |
| 8 | Iron Range | 0 | 106 | 0 |
| 9 | Malalaua | 30 | 79 | 38 |
| 10 | Kerena | 13 | 48 | 27 |
| 11 | Guari | 27 | 106 | 25 |
| 12 | Tapini | 80 | 106 | 75 |
| 13 | Woitape | 18 | 106 | 17 |
| 14 | Lamington | 101 | 106 | 95 |
| 15 | Efogi | 43 | 106 | 41 |
| 16 | Kupiano | 52 | 106 | 49 |
| 17 | Cape Rodney | 45 | 106 | 42 |
| 18 | Gorari | 66 | 106 | 62 |
| 19 | Karukaru | 0 | 106 | 0 |
| 20 | Tufi | 87 | 106 | 82 |
| 21 | Namudei | 0 | 106 | 0 |
| 22 | Afore | 64 | 106 | 60 |
| 23 | Tetebedi | 80 | 106 | 75 |
| 24 | Kokoda | 39 | 106 | 37 |
| 25 | Popondetta | 45 | 106 | 42 |
| 26 | Oro Bay | 4 | 106 | 4 |
| 27 | Killerton | 50 | 99 | 50 |

TABLE 4 (Cont.)

| | | | | |
|---|---|---|---|---|
| 28 | Owers Corner | 100 | 106 | 94 |
| 29 | Ioma | 75 | 106 | 71 |
| 30 | Mt Lawes | 104 | 106 | 98 |
| 31 | Morobe | 53 | 106 | 50 |
| 32 | Garaina | 69 | 106 | 65 |
| 33 | Kui | 57 | 106 | 54 |
| 34 | Sirinunu Dam | 79 | 106 | 75 |
| 35 | Salamaua | 88 | 106 | 83 |
| 36 | Finschhafen | 23 | 47 | 49 |
| 37 | Lindenhafen | 6 | 49 | 12 |
| 38 | Lae | 30 | 106 | 28 |
| 39 | Esa Ala | 18 | 106 | 17 |
| 40 | Lake Trist | 65 | 106 | 61 |
| 41 | Musa | 94 | 106 | 89 |
| 42 | Cape Ward Hunt | 95 | 106 | 90 |
| 43 | Kwikila | 82 | 104 | 77 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | PT.MORESBY | PMG | 43.4 | 45.5 | 10.72 | GOOD | 0.50 | 9.91 | BMR | 4.49 |
| | | | | | | 20.42 | GOOD | 1.00 | 19.61 | | 14.19 |
| 2 | 1 | PT.MORESBY | PMG | 31.1 | 38.6 | 8.62 | GOOD | 0.50 | 7.88 | BMR | 3.99 |
| | | | | | | 11.32 | FAIR | 1.00 | 10.58 | | 6.69 |
| 3 | 1 | PT.MORESBY | PMG | 29.2 | 63.0 | 7.66 | GOOD | 0.50 | 7.10 | BMR | 3.45 |
| 4 | 1 | PT.MORESBY | PMG | 23.0 | 34.4 | 5.67 | GOOD | 0.50 | 5.21 | BMR | 2.33 |
| | | | | | | 8.37 | FAIR | 1.00 | 7.91 | | 5.03 |
| 5 | 1 | PT.MORESBY | PMG | 36.1 | 79.4 | 8.17 | GOOD | 0.50 | 7.87 | BMR | 3.36 |
| 6 | 1 | PT.MORESBY | PMG | 42.7 | 87.8 | 10.20 | GOOD | 0.50 | 9.92 | BMR | 4.58 |
| | | | | | | 12.40 | FAIR | 1.00 | 12.12 | | 6.78 |
| | | | | | | 21.40 | FAIR | 1.00 | 21.12 | | 15.78 |
| 7 | 1 | PT.MORESBY | PMG | 48.9 | 95.4 | 11.60 | GOOD | 0.50 | 11.27 | BMR | 5.16 |
| | | | | | | 22.10 | GOOD | 1.00 | 21.77 | | 15.66 |
| | | | | | | 25.60 | GOOD | 1.00 | 25.27 | | 19.16 |
| 8 | 1 | PT.MORESBY | PMG | 60.6 | 105.0 | 13.21 | GOOD | 0.50 | 12.93 | BMR | 5.36 |
| 9 | 1 | PT.MORESBY | PMG | 67.4 | 109.9 | 14.71 | GOOD | 0.50 | 14.55 | BMR | 6.13 |
| 10 | 1 | PT.MORESBY | PMG | 79.0 | 113.0 | 16.92 | GOOD | 0.50 | 16.52 | BMR | 6.64 |
| 11 | 1 | PT.MORESBY | PMG | 89.0 | 118.5 | 18.47 | GOOD | 0.50 | 18.18 | BMR | 7.05 |
| 12 | 1 | PT.MORESBY | PMG | 101.4 | 119.9 | 19.95 | GOOD | 0.50 | 19.75 | BMR | 7.08 |
| | | | | | | 22.05 | GOOD | 1.00 | 21.85 | | 9.18 |
| | | | | | | 24.55 | GOOD | 1.00 | 24.35 | | 11.68 |
| | | | | | | 36.35 | FAIR | 1.00 | 36.15 | | 23.48 |
| 13 | 1 | PT.MORESBY | PMG | 112.6 | 122.1 | 21.70 | GOOD | 0.50 | 21.46 | BMR | 7.38 |
| | | | | | | 29.30 | GOOD | 1.00 | 29.06 | | 14.98 |
| 14 | 1 | PT.MORESBY | PMG | 123.8 | 123.8 | 23.55 | GOOD | 0.50 | 23.42 | BMR | 7.94 |
| | | | | | | 43.75 | FAIR | 1.00 | 43.62 | | 28.14 |
| | | | | | | 51.15 | FAIR | 1.00 | 51.02 | | 35.54 |
| 15 | 1 | PT.MORESBY | PMG | 136.4 | 125.1 | 24.39 | FAIR | 0.50 | 24.22 | BMR | 7.17 |
| | | | | | | 25.99 | GOOD | 0.50 | 25.82 | | 8.77 |
| | | | | | | 28.29 | GOOD | 1.00 | 28.12 | | 11.07 |
| 16 | 1 | PT.MORESBY | PMG | 148.3 | 126.2 | 25.74 | GOOD | 0.50 | 25.49 | BMR | 6.95 |
| | | | | | | 27.84 | FAIR | 1.00 | 27.59 | | 9.05 |
| | | | | | | 32.24 | FAIR | 0.50 | 31.99 | | 13.45 |
| | | | | | | 34.04 | FAIR | 1.00 | 33.79 | | 15.25 |
| 17 | 1 | PT.MORESBY | PMG | 160.4 | 127.0 | 27.12 | GOOD | 0.50 | 27.13 | BMR | 7.08 |
| | | | | | | 29.62 | GOOD | 0.50 | 29.63 | | 9.58 |
| | | | | | | 31.72 | FAIR | 1.00 | 31.73 | | 11.68 |
| | | | | | | 51.92 | FAIR | 1.00 | 51.93 | | 31.88 |
| 18 | 1 | PT.MORESBY | PMG | 190.2 | 129.5 | 35.55 | GOOD | 0.50 | 35.55 | BMR | 11.77 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 39.41 | FAIR | 1.00 | 39.41 | | 15.63 |
| | | | | | | 43.45 | GOOD | 1.00 | 43.45 | | 19.67 |
| | | | | | | 47.25 | FAIR | 1.00 | 47.25 | | 23.47 |
| 19 | 1 | PT.MORESBY | PMG | 233.6 | 121.6 | 37.01 | GOOD | 0.50 | 37.02 | BMR | 7.82 |
| 20 | 1 | PT.MORESBY | PMG | 107.8 | 116.3 | 21.09 | GOOD | 0.50 | 20.61 | BMR | 7.13 |
| 21 | 1 | PT.MORESBY | PMG | 108.3 | 111.1 | 21.50 | GOOD | 0.50 | 20.90 | BMR | 7.37 |
| 22 | 1 | PT.MORESBY | PMG | 110.0 | 105.5 | 22.06 | GOOD | 0.50 | 21.38 | BMR | 7.63 |
| | | | | | | 25.26 | FAIR | 1.00 | 24.58 | | 10.83 |
| | | | | | | 28.56 | GOOD | 1.00 | 27.88 | | 14.13 |
| | | | | | | 32.06 | FAIR | 1.00 | 31.38 | | 17.63 |
| 23 | 1 | PT.MORESBY | PMG | 118.0 | 99.3 | 22.81 | GOOD | 0.50 | 22.11 | BMR | 7.36 |
| | | | | | | 29.11 | FAIR | 1.00 | 28.41 | | 13.66 |
| | | | | | | 31.71 | FAIR | 1.00 | 31.01 | | 16.26 |
| 24 | 1 | PT.MORESBY | PMG | 120.4 | 96.3 | 23.35 | GOOD | 0.50 | 22.64 | BMR | 7.59 |
| 25 | 1 | PT.MORESBY | PMG | 148.2 | 84.7 | 26.32 | GOOD | 0.50 | 25.66 | BMR | 7.13 |
| | | | | | | 31.32 | GOOD | 1.00 | 30.66 | | 12.13 |
| | | | | | | 54.82 | GOOD | 1.00 | 54.16 | | 35.63 |
| 26 | 1 | PT.MORESBY | PMG | 175.9 | 72.6 | 28.63 | GOOD | 0.50 | 27.94 | BMR | 5.95 |
| | | | | | | 36.83 | GOOD | 0.50 | 36.14 | | 14.15 |
| 27 | 1 | PT.MORESBY | PMG | 212.4 | 64.0 | 33.33 | GOOD | 0.50 | 32.88 | BMR | 6.33 |
| | | | | | | 45.73 | FAIR | 1.00 | 45.28 | | 18.73 |
| 28 | 1 | PT.MORESBY | PMG | 259.6 | 58.2 | 39.24 | GOOD | 0.50 | 38.77 | BMR | 6.32 |
| | | | | | | 44.34 | FAIR | 1.00 | 43.87 | | 11.42 |
| | | | | | | 49.44 | GOOD | 1.00 | 48.97 | | 16.52 |
| 29 | 1 | PT.MORESBY | PMG | 297.0 | 55.4 | 43.20 | GOOD | 0.50 | 42.68 | BMR | 5.56 |
| | | | | | | 46.10 | FAIR | 0.50 | 45.58 | | 8.46 |
| | | | | | | 62.10 | GOOD | 0.50 | 61.58 | | 24.46 |
| | | | | | | 75.90 | GOOD | 1.00 | 75.38 | | 38.26 |
| 30 | 1 | PT.MORESBY | PMG | 265.9 | 54.4 | 39.38 | GOOD | 0.50 | 38.91 | BMR | 5.67 |
| | | | | | | 46.18 | FAIR | 1.00 | 45.71 | | 12.47 |
| | | | | | | 49.48 | FAIR | 1.00 | 49.01 | | 15.77 |
| | | | | | | 69.88 | FAIR | 1.00 | 69.41 | | 36.17 |
| 31 | 1 | PT.MORESBY | PMG | 225.8 | 53.6 | 35.39 | GOOD | 0.50 | 34.97 | BMR | 6.[illegible] |
| | | | | | | 44.79 | FAIR | 1.00 | 44.37 | | 16.[illegible] |
| 32 | 1 | PT.MORESBY | PMG | 180.8 | 52.8 | 29.71 | GOOD | 0.50 | 29.15 | BMR | 6.55 |
| | | | | | | 37.31 | GOOD | 1.00 | 36.75 | | 14.15 |
| | | | | | | 40.61 | FAIR | 1.00 | 40.05 | | 17.45 |
| 33 | 1 | PT.MORESBY | PMG | 133.0 | 50.6 | 23.98 | GOOD | 0.50 | 23.18 | BMR | 6.55 |
| | | | | | | 28.38 | FAIR | 1.00 | 27.58 | | 10.95 |
| | | | | | | 45.18 | FAIR | 1.00 | 44.38 | | 27.75 |
| 34 | 1 | PT.MORESBY | PMG | 105.0 | 49.7 | 20.48 | GOOD | 0.50 | 19.62 | BMR | 6.49 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 34.88 | GOOD | 1.00 | 34.02 | | 20.89 |
| 35 | 1 | PT.MORESBY | PMG | 93.6 | 48.6 | 18.93 | GOOD | 0.50 | 18.10 | BMR | 6.40 |
| | | | | | | 29.93 | FAIR | 1.00 | 29.10 | | 17.40 |
| | | | | | | 57.63 | FAIR | 1.00 | 56.80 | | 45.10 |
| 36 | 1 | PT.MORESBY | PMG | 78.7 | 48.5 | 15.93 | GOOD | 0.50 | 15.08 | BMR | 5.24 |
| | | | | | | 44.63 | GOOD | 1.00 | 43.78 | | 33.94 |
| 37 | 1 | PT.MORESBY | PMG | 64.5 | 47.6 | 13.50 | GOOD | 0.50 | 12.65 | BMR | 4.59 |
| | | | | | | 18.70 | FAIR | 1.00 | 17.85 | | 9.79 |
| | | | | | | 34.50 | GOOD | 1.00 | 33.65 | | 25.59 |
| 38 | 1 | PT.MORESBY | PMG | 52.8 | 47.1 | 12.76 | GOOD | 0.50 | 11.92 | BMR | 5.32 |
| 39 | 1 | PT.MORESBY | PMG | 43.5 | 341.6 | 10.10 | GOOD | 0.50 | 9.76 | BMR | 4.33 |
| 40 | 1 | PT.MORESBY | PMG | 34.1 | 353.1 | 8.64 | GOOD | 0.50 | 8.29 | BMR | 4.02 |
| 41 | 1 | PT.MORESBY | PMG | 26.3 | 11.2 | 6.96 | GOOD | 0.50 | 6.58 | BMR | 3.29 |
| 42 | 1 | PT.MORESBY | PMG | 55.9 | 338.5 | 12.24 | GOOD | 0.50 | 11.92 | BMR | 4.93 |
| | | | | | | 13.44 | FAIR | 0.50 | 13.12 | | 6.13 |
| | | | | | | 14.84 | FAIR | 0.50 | 14.52 | | 7.53 |
| | | | | | | 16.54 | FAIR | 0.50 | 16.22 | | 9.23 |
| | | | | | | 30.94 | FAIR | 0.50 | 30.62 | | 23.63 |
| 43 | 1 | PT.MORESBY | PMG | 68.8 | 337.5 | 14.46 | GOOD | 0.50 | 14.04 | BMR | 5.44 |
| | | | | | | 15.46 | FAIR | 0.50 | 15.04 | | 6.44 |
| | | | | | | 18.36 | FAIR | 0.50 | 17.94 | | 9.34 |
| | | | | | | 20.36 | FAIR | 0.50 | 19.94 | | 11.34 |
| | | | | | | 27.76 | FAIR | 0.50 | 27.34 | | 18.74 |
| | | | | | | 31.50 | FAIR | 0.50 | 31.14 | | 22.54 |
| 44 | 1 | PT.MORESBY | PMG | 83.1 | 332.4 | 16.18 | GOOD | 0.50 | 15.95 | BMR | 5.56 |
| | | | | | | 29.68 | FAIR | 1.00 | 29.45 | | 19.06 |
| 45 | 1 | PT.MORESBY | PMG | 96.4 | 327.6 | 18.65 | GOOD | 0.50 | 18.23 | BMR | 6.18 |
| | | | | | | 21.35 | FAIR | 1.00 | 20.93 | | 8.88 |
| | | | | | | 32.15 | FAIR | 0.50 | 31.73 | | 19.68 |
| | | | | | | 33.65 | FAIR | 0.50 | 33.23 | | 21.18 |
| 46 | 1 | PT.MORESBY | PMG | 106.3 | 322.0 | 21.08 | GOOD | 0.50 | 20.69 | BMR | 7.40 |
| | | | | | | 22.28 | FAIR | 1.00 | 21.89 | | 8.60 |
| 47 | 1 | PT.MORESBY | PMG | 115.3 | 317.6 | 21.76 | GOOD | 0.50 | 21.65 | BMR | 7.24 |
| | | | | | | 27.96 | FAIR | 1.00 | 27.85 | | 13.44 |
| 48 | 1 | PT.MORESBY | PMG | 171.2 | 307.0 | 28.76 | GOOD | 0.50 | 28.38 | BMR | 6.98 |
| | | | | | | 34.26 | FAIR | 1.00 | 33.88 | | 12.48 |
| | | | | | | 37.76 | FAIR | 1.00 | 37.38 | | 15.98 |
| 49 | 1 | PT.MORESBY | PMG | 225.8 | 229.8 | 35.83 | GOOD | 0.50 | 35.25 | BMR | 7.03 |
| 50 | 1 | PT.MORESBY | PMG | 292.5 | 295.3 | 41.87 | GOOD | 0.50 | 41.70 | BMR | 5.14 |
| | | | | | | 51.87 | FAIR | 1.00 | 51.70 | | 15.14 |
| 51 | 1 | PT.MORESBY | PMG | 399.6 | 285.9 | 57.74 | GOOD | 0.50 | 57.54 | BMR | 7.59 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 66.54 | FAIR | 1.00 | 66.34 | | 16.39 |
| | | | | | | 71.64 | FAIR | 1.00 | 71.44 | | 21.49 |
| 52 | 1 | PT.MORESBY | PMG | 381.6 | 274.3 | 65.00 | GOOD | 0.50 | 64.78 | BMR | 17.08 |
| | | | | | | 68.60 | FAIR | 0.50 | 68.38 | | 20.68 |
| | | | | | | 71.60 | FAIR | 0.50 | 71.38 | | 23.68 |
| 53 | 1 | PT.MORESBY | PMG | 325.2 | 274.6 | 56.32 | FAIR | 0.50 | 56.25 | BMR | 15.60 |
| | | | | | | 57.52 | GOOD | 0.50 | 57.45 | | 16.80 |
| | | | | | | 61.12 | FAIR | 1.00 | 61.05 | | 20.40 |
| 54 | 1 | PT.MORESBY | PMG | 274.9 | 271.8 | 42.25 | GOOD | 1.00 | 42.13 | BMR | 7.76 |
| | | | | | | 45.67 | GOOD | 1.00 | 45.55 | | 11.18 |
| | | | | | | 48.75 | GOOD | 1.00 | 48.63 | | 14.26 |
| | | | | | | 50.05 | FAIR | 1.00 | 49.93 | | 15.56 |
| | | | | | | 52.85 | GOOD | 1.00 | 52.73 | | 18.36 |
| | | | | | | 62.55 | FAIR | 1.00 | 62.43 | | 28.06 |
| | | | | | | 76.05 | FAIR | 1.00 | 75.93 | | 41.56 |
| 55 | 1 | PT.MORESBY | PMG | 255.4 | 264.7 | 40.33 | GOOD | 1.00 | 40.24 | BMR | 8.31 |
| | | | | | | 43.23 | GOOD | 1.00 | 43.14 | | 11.21 |
| | | | | | | 44.23 | FAIR | 1.00 | 44.14 | | 12.21 |
| | | | | | | 46.13 | FAIR | 1.00 | 46.04 | | 14.11 |
| | | | | | | 50.03 | GOOD | 1.00 | 49.94 | | 18.01 |
| 56 | 1 | PT.MORESBY | PMG | 191.2 | 234.4 | 32.65 | GOOD | 1.00 | 32.65 | BMR | 8.75 |
| | | | | | | 33.25 | GOOD | 1.00 | 33.25 | | 9.35 |
| | | | | | | 34.55 | FAIR | 1.00 | 34.55 | | 10.65 |
| | | | | | | 37.65 | FAIR | 1.00 | 37.65 | | 13.75 |
| | | | | | | 56.25 | FAIR | 1.00 | 56.25 | | 32.35 |
| | | | | | | 58.95 | GOOD | 1.00 | 58.95 | | 35.05 |
| 57 | 1 | PT.MORESBY | PMG | 202.4 | 233.6 | 33.22 | FAIR | 0.50 | 33.22 | BMR | 7.92 |
| | | | | | | 34.12 | GOOD | 0.50 | 34.12 | | 8.82 |
| 58 | 1 | PT.MORESBY | PMG | 206.6 | 233.9 | 33.90 | FAIR | 0.50 | 33.90 | BMR | 8.08 |
| 59 | 1 | PT.MORESBY | PMG | 217.0 | 233.7 | 35.61 | GOOD | 0.50 | 35.33 | BMR | 8.21 |
| | | | | | | 37.41 | FAIR | 1.00 | 37.13 | | 10.01 |
| | | | | | | 38.91 | FAIR | 1.00 | 38.63 | | 11.51 |
| 60 | 1 | PT.MORESBY | PMG | 230.2 | 233.1 | 37.57 | FAIR | 0.50 | 36.76 | BMR | 7.99 |
| 61 | 1 | PT.MORESBY | PMG | 242.2 | 231.9 | 40.38 | GOOD | 0.50 | 39.58 | BMR | 9.31 |
| 62 | 1 | PT.MORESBY | PMG | 255.7 | 232.4 | 42.58 | FAIR | 0.50 | 40.83 | BMR | 8.87 |
| | | | | | | 42.88 | GOOD | 0.50 | 41.13 | | 9.17 |
| | | | | | | 47.48 | FAIR | 1.00 | 45.73 | | 13.77 |
| | | | | | | 54.38 | FAIR | 1.00 | 52.63 | | 20.67 |
| | | | | | | 59.78 | FAIR | 1.00 | 58.03 | | 26.07 |
| 63 | 1 | PT.MORESBY | PMG | 291.2 | 231.5 | 48.92 | GOOD | 0.50 | 46.87 | BMR | 10.47 |
| | | | | | | 49.72 | FAIR | 0.50 | 47.67 | | 11.27 |
| | | | | | | 56.92 | FAIR | 1.00 | 54.87 | | 18.47 |
| 69 | 1 | PT.MORESBY | PMG | 286.6 | 177.4 | 44.30 | GOOD | 1.00 | 44.21 | BMR | 8.39 |
| | | | | | | 45.50 | FAIR | 1.00 | 45.41 | | 9.59 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 49.30 | FAIR | 1.00 | 49.21 | | 13.39 |
| 70 | 1 | PT.MORESBY | PMG | 273.2 | 177.1 | 45.98 | POOR | 0.50 | 45.91 | BMR | 11.76 |
| 73 | 1 | PT.MORESBY | PMG | 239.0 | 181.2 | 37.76 | GOOD | 0.50 | 37.68 | BMR | 7.80 |
| | | | | | | 43.96 | FAIR | 1.00 | 43.88 | | 14.00 |
| 74 | 1 | PT.MORESBY | PMG | 233.2 | 183.3 | 37.84 | FAIR | 1.00 | 37.58 | BMR | 8.43 |
| 75 | 1 | PT.MORESBY | PMG | 226.1 | 185.4 | 35.89 | GOOD | 0.50 | 35.82 | BMR | 7.56 |
| | | | | | | 44.99 | FAIR | 1.00 | 44.92 | | 16.66 |
| 76 | 1 | PT.MORESBY | PMG | 232.7 | 186.7 | 38.00 | POOR | 0.50 | 37.71 | BMR | 8.63 |
| | | | | | | 38.60 | GOOD | 0.50 | 38.31 | | 9.23 |
| 79 | 1 | PT.MORESBY | PMG | 263.0 | 189.7 | 43.17 | GOOD | 0.50 | 42.20 | BMR | 9.32 |
| | | | | | | 45.27 | GOOD | 0.50 | 44.30 | | 11.42 |
| | | | | | | 50.17 | GOOD | 0.50 | 49.20 | | 16.32 |
| | | | | | | 50.07 | FAIR | 1.00 | 49.10 | | 16.22 |
| | | | | | | 71.37 | FAIR | 1.00 | 70.40 | | 37.52 |
| 80 | 1 | PT.MORESBY | PMG | 283.7 | 192.4 | 45.51 | GOOD | 0.50 | 44.91 | BMR | 9.45 |
| | | | | | | 47.61 | GOOD | 0.50 | 47.01 | | 11.55 |
| | | | | | | 55.81 | GOOD | 1.00 | 55.21 | | 19.75 |
| 81 | 1 | PT.MORESBY | PMG | 218.5 | 188.9 | 35.62 | GOOD | 0.50 | 35.55 | BMR | 8.24 |
| | | | | | | 37.42 | GOOD | 0.50 | 37.35 | | 10.04 |
| | | | | | | 41.12 | GOOD | 1.00 | 41.05 | | 13.74 |
| 82 | 1 | PT.MORESBY | PMG | 209.2 | 192.4 | 34.36 | GOOD | 0.50 | 34.31 | BMR | 8.16 |
| | | | | | | 36.36 | GOOD | 0.50 | 36.31 | | 10.16 |
| | | | | | | 38.66 | FAIR | 1.00 | 38.61 | | 12.46 |
| 83 | 1 | PT.MORESBY | PMG | 207.5 | 195.2 | 34.01 | GOOD | 0.50 | 33.95 | BMR | 8.02 |
| | | | | | | 36.11 | FAIR | 0.50 | 36.05 | | 10.12 |
| 84 | 1 | PT.MORESBY | PMG | 204.4 | 197.1 | 34.73 | GOOD | 0.50 | 34.54 | BMR | 8.99 |
| 85 | 1 | PT.MORESBY | PMG | 199.4 | 199.7 | 33.20 | GOOD | 0.50 | 32.92 | BMR | 7.99 |
| | | | | | | 37.90 | GOOD | 0.50 | 37.62 | | 12.69 |
| 86 | 1 | PT.MORESBY | PMG | 196.2 | 202.2 | 33.68 | GOOD | 0.50 | 33.68 | BMR | 9.16 |
| | | | | | | 36.08 | FAIR | 0.50 | 36.08 | | 11.56 |
| 87 | 1 | PT.MORESBY | PMG | 194.9 | 204.3 | 33.99 | GOOD | 0.50 | 33.61 | BMR | 9.25 |
| | | | | | | 35.19 | FAIR | 0.50 | 34.81 | | 10.45 |
| | | | | | | 38.19 | FAIR | 1.00 | 37.81 | | 13.45 |
| 88 | 1 | PT.MORESBY | PMG | 201.8 | 214.3 | 34.82 | GOOD | 0.50 | 34.53 | BMR | 9.30 |
| | | | | | | 37.72 | FAIR | 1.00 | 37.43 | | 12.20 |
| | | | | | | 39.12 | FAIR | 1.00 | 38.83 | | 13.60 |
| 89 | 1 | PT.MORESBY | PMG | 217.1 | 215.0 | 37.01 | GOOD | 0.50 | 36.52 | BMR | 9.38 |
| | | | | | | 41.21 | FAIR | 0.50 | 40.72 | | 13.58 |
| | | | | | | 42.21 | FAIR | 0.50 | 41.72 | | 14.58 |
| 90 | 1 | PT.MORESBY | PMG | 228.4 | 215.5 | 38.79 | FAIR | 0.50 | 37.84 | BMR | 9.29 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 39.49 | GOOD | 0.50 | 38.54 | | 9.99 |
| 91 | 1 | PT.MORESBY | PMG | 239.9 | 215.7 | 40.48 | FAIR | 0.50 | 39.64 | BMR | 9.65 |
| | | | | | | 42.28 | GOOD | 0.50 | 41.44 | | 11.45 |
| 92 | 1 | PT.MORESBY | PMG | 257.2 | 216.6 | 44.29 | POOR | 1.00 | 42.76 | BMR | 10.61 |
| 93 | 1 | PT.MORESBY | PMG | 267.3 | 216.4 | 45.72 | FAIR | 0.50 | 43.79 | BMR | 10.37 |
| 94 | 1 | PT.MORESBY | PMG | 279.6 | 217.1 | 47.52 | GOOD | 0.50 | 45.16 | BMR | 10.21 |
| | | | | | | 49.92 | FAIR | 0.50 | 47.56 | | 12.61 |
| | | | | | | 57.92 | FAIR | 1.00 | 55.56 | | 20.61 |
| 95 | 1 | PT.MORESBY | PMG | 405.3 | 230.1 | 62.52 | GOOD | 0.50 | 59.98 | BMR | 9.32 |
| | | | | | | 64.02 | FAIR | 0.50 | 61.48 | | 10.82 |
| 96 | 1 | PT.MORESBY | PMG | 376.3 | 230.5 | 57.43 | GOOD | 0.50 | 55.65 | BMR | 8.61 |
| | | | | | | 60.83 | FAIR | 1.00 | 59.05 | | 12.01 |
| | | | | | | 68.73 | FAIR | 1.00 | 66.95 | | 19.91 |
| 99 | 1 | PT.MORESBY | PMG | 181.0 | 223.7 | 30.27 | GOOD | 0.50 | 30.27 | BMR | 7.65 |
| | | | | | | 31.57 | GOOD | 0.50 | 31.57 | | 8.95 |
| | | | | | | 43.67 | FAIR | 1.00 | 43.67 | | 21.05 |
| | | | | | | 46.77 | FAIR | 1.00 | 46.77 | | 24.15 |
| 100 | 1 | PT.MORESBY | PMG | 177.1 | 228.0 | 32.38 | POOR | 1.00 | 32.37 | BMR | 10.24 |
| 101 | 1 | PT.MORESBY | PMG | 176.0 | 234.0 | 30.23 | GOOD | 0.50 | 30.23 | BMR | 8.23 |
| | | | | | | 33.43 | GOOD | 0.50 | 33.43 | | 11.43 |
| 102 | 1 | PT.MORESBY | PMG | 174.0 | 237.1 | 30.38 | GOOD | 0.50 | 30.38 | BMR | 8.63 |
| | | | | | | 36.48 | GOOD | 1.00 | 36.48 | | 14.73 |
| 103 | 1 | PT.MORESBY | PMG | 170.8 | 241.1 | 30.40 | GOOD | 0.50 | 30.40 | BMR | 9.05 |
| 104 | 1 | PT.MORESBY | PMG | 184.5 | 245.9 | 31.96 | GOOD | 0.50 | 31.96 | BMR | 8.90 |
| 105 | 1 | PT.MORESBY | PMG | 191.2 | 250.0 | 33.37 | GOOD | 0.50 | 33.37 | BMR | 9.47 |
| | | | | | | 35.07 | FAIR | 1.00 | 35.07 | | 11.17 |
| | | | | | | 36.27 | FAIR | 1.00 | 36.27 | | 12.37 |
| | | | | | | 39.07 | FAIR | 1.00 | 39.07 | | 15.17 |
| 106 | 1 | PT.MORESBY | PMG | 198.8 | 251.8 | 34.34 | GOOD | 0.50 | 34.34 | BMR | 9.49 |
| | | | | | | 40.74 | FAIR | 1.00 | 40.74 | | 15.89 |
| 107 | 1 | PT.MORESBY | PMG | 200.8 | 255.5 | 34.32 | GOOD | 0.50 | 34.32 | BMR | 9.22 |
| | | | | | | 39.62 | FAIR | 1.00 | 39.62 | | 14.52 |
| | | | | | | 41.82 | FAIR | 1.00 | 41.82 | | 16.72 |
| 108 | 1 | PT.MORESBY | PMG | 207.8 | 256.5 | 36.82 | FAIR | 0.50 | 36.82 | BMR | 10.84 |
| 109 | 1 | PT.MORESBY | PMG | 230.2 | 257.8 | 38.76 | GOOD | 0.50 | 38.76 | BMR | 9.98 |
| 110 | 1 | PT.MORESBY | PMG | 259.1 | 257.1 | 41.15 | FAIR | 0.50 | 41.03 | BMR | 8.65 |
| | | | | | | 43.15 | GOOD | 0.50 | 43.03 | | 10.65 |
| | | | | | | 47.95 | FAIR | 0.50 | 47.83 | | 15.45 |
| 111 | 1 | PT.MORESBY | PMG | 269.4 | 249.0 | 44.59 | FAIR | 0.50 | 44.60 | BMR | 10.92 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 48.89 | FAIR | 1.00 | 48.90 | | 15.22 |
| 1 | 2 | DAUGO I. | DI | 26.6 | 44.0 | 8.75 | GOOD | 0.10 | 7.96 | BMR | 4.63 |
| | | | | | | 13.60 | GOOD | 0.50 | 12.81 | | 9.48 |
| 2 | 2 | DAUGO I. | DI | 14.8 | 28.0 | 6.04 | FAIR | 0.50 | 5.32 | BMR | 3.47 |
| | | | | | | 8.01 | FAIR | 0.50 | 7.29 | | 5.44 |
| 3 | 2 | DAUGO I. | DI | 13.7 | 81.5 | 5.05 | GOOD | 0.10 | 4.50 | BMR | 2.79 |
| 4 | 2 | DAUGO I. | DI | 7.3 | 4.1 | 1.86 | GOOD | 0.10 | 1.42 | BMR | .44 |
| 5 | 2 | DAUGO I. | DI | 23.5 | 101.3 | 6.48 | GOOD | 0.10 | 6.20 | BMR | 3.26 |
| | | | | | | 13.48 | GOOD | 0.50 | 13.20 | | 10.26 |
| 6 | 2 | DAUGO I. | DI | 31.7 | 107.6 | 8.61 | GOOD | 0.10 | 8.35 | BMR | 4.38 |
| | | | | | | 10.64 | POOR | 0.50 | 10.38 | | 6.41 |
| | | | | | | 18.79 | FAIR | 0.50 | 18.53 | | 14.56 |
| 7 | 2 | DAUGO I. | DI | 39.6 | 113.6 | 10.12 | GOOD | 0.10 | 9.80 | BMR | 4.85 |
| | | | | | | 12.77 | FAIR | 0.50 | 12.45 | | 7.50 |
| | | | | | | 15.66 | FAIR | 0.50 | 15.34 | | 10.39 |
| 8 | 2 | DAUGO I. | DI | 53.4 | 120.3 | 12.64 | GOOD | 0.10 | 12.38 | BMR | 5.71 |
| | | | | | | 13.70 | FAIR | 0.50 | 13.44 | | 6.77 |
| | | | | | | 16.09 | FAIR | 0.50 | 15.83 | | 9.16 |
| | | | | | | 18.03 | FAIR | 0.50 | 17.77 | | 11.10 |
| 9 | 2 | DAUGO I. | DI | 61.3 | 123.8 | 14.08 | FAIR | 0.50 | 13.94 | BMR | 6.28 |
| | | | | | | 15.34 | GOOD | 0.50 | 15.20 | | 7.54 |
| 10 | 2 | DAUGO I. | DI | 73.5 | 124.9 | 16.08 | GOOD | 0.50 | 15.70 | BMR | 6.51 |
| | | | | | | 16.87 | FAIR | 0.50 | 16.49 | | 7.30 |
| | | | | | | 17.43 | FAIR | 0.50 | 17.05 | | 7.86 |
| | | | | | | 19.09 | FAIR | 0.50 | 18.71 | | 9.52 |
| | | | | | | 20.64 | FAIR | 0.50 | 20.26 | | 11.07 |
| 11 | 2 | DAUGO I. | DI | 84.9 | 129.2 | 17.95 | FAIR | 0.50 | 17.67 | BMR | 7.06 |
| | | | | | | 18.30 | GOOD | 0.10 | 18.02 | | 7.41 |
| 12 | 2 | DAUGO I. | DI | 97.5 | 129.3 | 19.93 | GOOD | 0.50 | 19.75 | BMR | 7.56 |
| | | | | | | 22.05 | FAIR | 0.50 | 21.87 | | 9.68 |
| | | | | | | 23.42 | FAIR | 0.50 | 23.24 | | 11.05 |
| | | | | | | 23.73 | FAIR | 0.50 | 23.55 | | 11.36 |
| 13 | 2 | DAUGO I. | DI | 109.2 | 130.6 | 21.49 | GOOD | 0.50 | 21.26 | BMR | 7.61 |
| | | | | | | 22.07 | FAIR | 0.50 | 21.84 | | 8.19 |
| | | | | | | 22.94 | FAIR | 0.50 | 22.71 | | 9.06 |
| | | | | | | 24.82 | FAIR | 0.50 | 24.59 | | 10.94 |
| | | | | | | 25.52 | FAIR | 0.50 | 25.29 | | 11.64 |
| | | | | | | 25.88 | FAIR | 0.50 | 25.65 | | 12.00 |
| 14 | 2 | DAUGO I. | DI | 120.8 | 131.5 | 22.83 | FAIR | 0.50 | 22.71 | BMR | 7.61 |
| | | | | | | 23.63 | GOOD | 0.50 | 23.51 | | 8.41 |
| | | | | | | 24.22 | FAIR | 0.50 | 24.10 | | 9.00 |
| 15 | 2 | DAUGO I. | DI | 133.6 | 132.2 | 24.34 | POOR | 1.00 | 24.18 | BMR | 7.48 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 25.28 | POOR | 1.00 | 25.12 | | 8.42 |
| | | | | | | 26.24 | FAIR | 0.50 | 26.08 | | 9.38 |
| | | | | | | 27.00 | FAIR | 0.50 | 26.84 | | 10.14 |
| 16 | 2 | DAUGO I. | DI | 145.8 | 132.6 | 25.74 | POOR | 1.00 | 25.50 | BMR | 7.28 |
| | | | | | | 28.42 | FAIR | 0.50 | 28.18 | | 9.96 |
| | | | | | | 29.83 | FAIR | 0.50 | 29.59 | | 11.37 |
| | | | | | | 33.63 | FAIR | 0.50 | 33.39 | | 15.17 |
| 17 | 2 | DAUGO I. | DI | 158.0 | 132.9 | 27.97 | POOR | 1.00 | 27.99 | BMR | 8.24 |
| | | | | | | 29.14 | POOR | 0.50 | 29.16 | | 9.41 |
| | | | | | | 30.21 | POOR | 0.50 | 30.23 | | 10.48 |
| | | | | | | 31.65 | POOR | 0.50 | 31.67 | | 11.92 |
| | | | | | | 32.97 | POOR | 0.50 | 32.99 | | 13.24 |
| 18 | 2 | DAUGO I. | DI | 188.5 | 134.5 | 35.40 | FAIR | 0.[illegible] | 35.42 | BMR | 11.85 |
| | | | | | | 36.32 | FAIR | 0.50 | 36.34 | | 12.77 |
| | | | | | | 41.37 | GOOD | 0.50 | 41.39 | | 17.82 |
| 20 | 2 | DAUGO I. | DI | 102.7 | 125.0 | 21.00 | GOOD | 0.10 | 20.53 | BMR | 7.69 |
| | | | | | | 23.85 | FAIR | 0.50 | 23.38 | | 10.54 |
| | | | | | | 35.86 | GOOD | 0.50 | 35.39 | | 22.55 |
| 21 | 2 | DAUGO I. | DI | 101.8 | 119.5 | 21.01 | GOOD | 0.10 | 20.43 | BMR | 7.70 |
| | | | | | | 21.54 | FAIR | 0.50 | 20.96 | | 8.23 |
| 22 | 2 | DAUGO I. | DI | 102.0 | 113.5 | 20.98 | GOOD | 0.50 | 20.31 | BMR | 7.56 |
| | | | | | | 23.68 | FAIR | 0.50 | 23.01 | | 10.26 |
| 23 | 2 | DAUGO I. | DI | 108.3 | 106.3 | 21.50 | GOOD | 0.10 | 20.82 | BMR | 7.28 |
| | | | | | | 28.78 | FAIR | 0.10 | 28.10 | | 14.56 |
| | | | | | | 30.23 | POOR | 0.50 | 29.55 | | 16.01 |
| 24 | 2 | DAUGO I. | DI | 110.0 | 102.8 | 22.31 | GOOD | 0.50 | 21.61 | BMR | 7.86 |
| | | | | | | 24.47 | FAIR | 0.50 | 23.77 | | 10.02 |
| 25 | 2 | DAUGO I. | DI | 135.1 | 88.9 | 24.55 | GOOD | 0.10 | 23.90 | BMR | 7.01 |
| | | | | | | 25.36 | GOOD | 0.50 | 24.71 | | 7.82 |
| | | | | | | 26.68 | FAIR | 0.50 | 26.03 | | 9.14 |
| | | | | | | 30.54 | FAIR | 0.50 | 29.89 | | 13.00 |
| 27 | 2 | DAUGO I. | DI | 196.2 | 65.3 | 32.21 | GOOD | 0.10 | 31.78 | BMR | 7.25 |
| | | | | | | 33.46 | FAIR | 0.50 | 33.03 | | 8.50 |
| 28 | 2 | DAUGO I. | DI | 243.2 | 58.9 | 37.28 | GOOD | 0.10 | 36.83 | BMR | 6.43 |
| 29 | 2 | DAUGO I. | DI | 280.4 | 55.8 | 41.53 | FAIR | 0.50 | 41.03 | BMR | 5.98 |
| 30 | 2 | DAUGO I. | DI | 249.2 | 54.8 | 37.87 | GOOD | 0.50 | 37.42 | BMR | 6.27 |
| | | | | | | 38.89 | FAIR | 0.50 | 38.44 | | 7.29 |
| 31 | 2 | DAUGO I. | DI | 209.1 | 54.0 | 33.00 | GOOD | 0.10 | 32.59 | BMR | 6.46 |
| | | | | | | 42.12 | GOOD | 0.10 | 41.71 | | 15.58 |
| 32 | 2 | DAUGO I. | DI | 164.0 | 53.2 | 27.49 | GOOD | 0.50 | 26.95 | BMR | 6.45 |
| | | | | | | 34.55 | FAIR | 0.50 | 34.01 | | 13.51 |
| | | | | | | 49.52 | FAIR | 0.50 | 48.98 | | 28.48 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 33 | 2 | DAUGO I. | DI | 116.2 | 50.9 | 21.90 | GOOD | 0.50 | 21.11 | BMR | 6.59 |
| | | | | | | 22.81 | GOOD | 0.10 | 22.02 | | 7.50 |
| | | | | | | 30.89 | GOOD | 0.50 | 30.10 | | 15.58 |
| 34 | 2 | DAUGO I. | DI | 88.2 | 50.0 | 18.13 | GOOD | 0.10 | 17.28 | BMR | 6.26 |
| | | | | | | 19.07 | GOOD | 0.10 | 18.22 | | 7.20 |
| | | | | | | 21.71 | FAIR | 1.00 | 20.86 | | 9.84 |
| | | | | | | 56.79 | FAIR | 0.50 | 55.94 | | 44.92 |
| | | | | | | 58.75 | GOOD | 0.50 | 57.90 | | 46.88 |
| 35 | 2 | DAUGO I. | DI | 76.9 | 48.8 | 16.53 | GOOD | 0.10 | 15.72 | BMR | 6.10 |
| | | | | | | 17.96 | FAIR | 0.50 | 17.15 | | 7.53 |
| | | | | | | 49.07 | GOOD | 1.00 | 48.26 | | 38.64 |
| 36 | 2 | DAUGO I. | DI | 61.9 | 48.6 | 13.92 | GOOD | 0.10 | 13.09 | BMR | 5.35 |
| | | | | | | 16.01 | FAIR | 0.50 | 15.18 | | 7.44 |
| | | | | | | 16.62 | FAIR | 0.50 | 15.79 | | 8.05 |
| | | | | | | 18.86 | FAIR | 0.50 | 18.03 | | 10.29 |
| 37 | 2 | DAUGO I. | DI | 47.7 | 47.5 | 11.95 | GOOD | 0.50 | 11.12 | BMR | 5.16 |
| | | | | | | 12.79 | FAIR | 0.50 | 11.96 | | 6.00 |
| | | | | | | 28.29 | GOOD | 0.50 | 27.46 | | 21.50 |
| 38 | 2 | DAUGO I. | DI | 36.0 | 46.7 | 9.82 | GOOD | 0.10 | 9.00 | BMR | 4.50 |
| | | | | | | 15.57 | GOOD | 0.50 | 14.75 | | 10.25 |
| | | | | | | 23.17 | GOOD | 0.50 | 22.35 | | 17.85 |
| 39 | 2 | DAUGO I. | DI | 39.8 | 318.9 | 9.72 | GOOD | 0.50 | 9.40 | BMR | 4.42 |
| | | | | | | 13.37 | FAIR | 0.50 | 13.05 | | 8.07 |
| | | | | | | 24.54 | GOOD | 0.50 | 24.22 | | 19.24 |
| 40 | 2 | DAUGO I. | DI | 28.9 | 324.8 | 7.98 | GOOD | 0.50 | 7.64 | BMR | 4.03 |
| | | | | | | 8.83 | FAIR | 0.50 | 8.49 | | 4.88 |
| | | | | | | 12.54 | FAIR | 0.50 | 12.20 | | 8.59 |
| | | | | | | 15.80 | GOOD | 0.50 | 15.46 | | 11.85 |
| | | | | | | 17.10 | GOOD | 0.50 | 16.76 | | 13.15 |
| 41 | 2 | DAUGO I. | DI | 16.3 | 333.3 | 5.29 | FAIR | 0.50 | 4.92 | BMR | 2.89 |
| | | | | | | 5.91 | GOOD | 0.50 | 5.54 | | 3.51 |
| | | | | | | 8.83 | FAIR | 0.50 | 8.46 | | 6.43 |
| 42 | 2 | DAUGO I. | DI | 52.4 | 321.0 | 12.15 | GOOD | 0.50 | 11.85 | BMR | 5.30 |
| | | | | | | 14.22 | FAIR | 0.50 | 13.92 | | 7.37 |
| 43 | 2 | DAUGO I. | DI | 65.2 | 323.4 | 14.38 | FAIR | 0.50 | 13.98 | BMR | 5.83 |
| | | | | | | 15.89 | FAIR | 0.50 | 15.49 | | 7.34 |
| | | | | | | 40.87 | GOOD | 0.50 | 40.47 | | 32.32 |
| | | | | | | 41.79 | FAIR | 0.50 | 41.39 | | 33.24 |
| 44 | 2 | DAUGO I. | DI | 80.6 | 320.8 | 16.36 | FAIR | 0.50 | 16.14 | BMR | 6.07 |
| | | | | | | 17.32 | GOOD | 0.50 | 17.10 | | 7.03 |
| 45 | 2 | DAUGO I. | DI | 95.0 | 317.6 | 18.87 | FAIR | 0.50 | 18.47 | BMR | 6.59 |
| | | | | | | 19.23 | FAIR | 0.50 | 18.83 | | 6.95 |
| | | | | | | 19.80 | FAIR | 0.50 | 19.40 | | 7.52 |
| | | | | | | 21.01 | FAIR | 0.50 | 20.61 | | 8.73 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 23.67 | FAIR | 0.50 | 23.27 | | 11.39 |
| 47 | 2 | DAUGO I. | DI | 116.6 | 309.3 | 22.02 | GOOD | 0.10 | 21.93 | BMR | 7.36 |
| | | | | | | 22.81 | FAIR | 0.50 | 22.72 | | 8.15 |
| 48 | 2 | DAUGO I. | DI | 175.1 | 301.6 | 29.13 | POOR | 1.00 | 28.77 | BMR | 6.88 |
| | | | | | | 33.33 | POOR | 1.00 | 32.97 | | 11.08 |
| | | | | | | 40.25 | GOOD | 0.50 | 39.89 | | 18.00 |
| 49 | 2 | DAUGO I. | DI | 231.5 | 295.9 | 36.44 | FAIR | 0.50 | 35.88 | BMR | 6.94 |
| | | | | | | 40.69 | FAIR | 0.50 | 40.13 | | 11.19 |
| | | | | | | 44.71 | FAIR | 0.50 | 44.15 | | 15.21 |
| 56 | 2 | DAUGO I. | DI | 207.9 | 233.8 | 34.94 | GOOD | 0.10 | 34.96 | BMR | 8.97 |
| | | | | | | 35.47 | FAIR | 0.50 | 35.49 | | 9.50 |
| | | | | | | 36.12 | FAIR | 0.50 | 36.14 | | 10.15 |
| | | | | | | 38.77 | FAIR | 0.50 | 38.79 | | 12.80 |
| | | | | | | 47.84 | FAIR | 0.50 | 47.86 | | 21.87 |
| 57 | 2 | DAUGO I. | DI | 219.1 | 233.1 | 38.19 | POOR | 1.00 | 38.21 | BMR | 10.82 |
| 59 | 2 | DAUGO I. | DI | 233.6 | 233.3 | 38.81 | GOOD | 0.50 | 38.55 | BMR | 9.35 |
| 62 | 2 | DAUGO I. | DI | 272.4 | 232.1 | 55.64 | GOOD | 0.10 | 53.91 | BMR | 19.86 |
| 85 | 2 | DAUGO I. | DI | 214.3 | 201.8 | 37.16 | GOOD | 0.50 | 36.89 | BMR | 10.11 |
| | | | | | | 41.76 | FAIR | 0.50 | 41.49 | | 14.71 |
| 100 | 2 | DAUGO I. | DI | 193.9 | 228.0 | 33.46 | GOOD | 0.50 | 33.47 | BMR | 9.23 |
| | | | | | | 37.26 | FAIR | 0.50 | 37.27 | | 13.03 |
| 104 | 2 | DAUGO I. | DI | 200.5 | 244.4 | 34.89 | GOOD | 0.50 | 34.91 | BMR | 9.84 |
| 2 | 3 | KONEDOBU | KD | 26.0 | 48.8 | 6.80 | GOOD | 0.10 | 6.06 | BMR | 2.81 |
| | | | | | | 10.80 | GOOD | 0.10 | 10.06 | | 6.81 |
| 3 | 3 | KONEDOBU | KD | 26.9 | 76.9 | 7.65 | GOOD | 0.10 | 7.09 | BMR | 3.72 |
| | | | | | | 11.63 | FAIR | 0.50 | 11.07 | | 7.70 |
| 4 | 3 | KONEDOBU | KD | 17.7 | 48.2 | 4.84 | GOOD | 0.10 | 4.38 | BMR | 2.17 |
| 5 | 3 | KONEDOBU | KD | 35.7 | 90.9 | 8.47 | GOOD | 0.10 | 8.17 | BMR | 3.71 |
| 6 | 3 | KONEDOBU | KD | 43.2 | 97.4 | 10.51 | GOOD | 0.10 | 10.23 | BMR | 4.83 |
| 7 | 3 | KONEDOBU | KD | 50.3 | 103.6 | 11.96 | GOOD | 0.10 | 11.63 | BMR | 5.34 |
| 8 | 3 | KONEDOBU | KD | 63.1 | 111.3 | 14.07 | GOOD | 0.10 | 13.79 | BMR | 5.91 |
| 9 | 3 | KONEDOBU | KD | 70.3 | 115.4 | 15.02 | GOOD | 0.10 | 14.86 | BMR | 6.07 |
| 10 | 3 | KONEDOBU | KD | 82.2 | 117.6 | 17.40 | FAIR | 0.10 | 17.00 | BMR | 6.72 |
| | | | | | | 17.78 | GOOD | 0.10 | 17.38 | | 7.10 |
| 11 | 3 | KONEDOBU | KD | 92.8 | 122.4 | 19.10 | GOOD | 0.10 | 18.81 | BMR | 7.21 |
| | | | | | | 22.33 | FAIR | 0.50 | 22.04 | | 10.44 |
| 12 | 3 | KONEDOBU | KD | 105.3 | 123.3 | 21.17 | GOOD | 0.50 | 20.97 | BMR | 7.81 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 3 | KONEDOBU | KD | 116.7 | 125.1 | 22.85 | GOOD | 0.10 | 22.61 | BMR | 8.02 |
| 14 | 3 | KONEDOBU | KD | 128.1 | 126.4 | 23.99 | GOOD | 0.50 | 23.85 | BMR | 7.84 |
| | | | | | | 28.11 | FAIR | 0.50 | 27.97 | | 11.96 |
| 17 | 3 | KONEDOBU | KD | 164.9 | 128.9 | 29.90 | FAIR | 1.00 | 29.91 | BMR | 9.29 |
| | | | | | | 28.50 | FAIR | 1.00 | 28.51 | | 7.89 |
| 18 | 3 | KONEDOBU | KD | 195.0 | 131.1 | 40.53 | FAIR | 1.00 | 40.53 | BMR | 16.15 |
| 20 | 3 | KONEDOBU | KD | 111.3 | 119.5 | 22.05 | GOOD | 0.10 | 21.56 | BMR | 7.65 |
| | | | | | | 23.55 | FAIR | 0.50 | 23.06 | | 9.15 |
| | | | | | | 35.45 | FAIR | 1.00 | 34.96 | | 21.05 |
| 21 | 3 | KONEDOBU | KD | 111.3 | 114.5 | 22.36 | GOOD | 0.10 | 21.76 | BMR | 7.85 |
| 23 | 3 | KONEDOBU | KD | 119.5 | 102.8 | 22.97 | GOOD | 0.10 | 22.27 | BMR | 7.33 |
| 33 | 3 | KONEDOBU | KD | 128.7 | 53.1 | 23.40 | GOOD | 0.10 | 22.60 | BMR | 6.51 |
| | | | | | | 28.94 | FAIR | 1.00 | 28.14 | | 12.05 |
| 35 | 3 | KONEDOBU | KD | 89.2 | 52.2 | 18.26 | GOOD | 0.10 | 17.43 | BMR | 6.28 |
| | | | | | | 24.06 | FAIR | 1.00 | 23.23 | | 12.08 |
| | | | | | | 31.26 | FAIR | 1.00 | 30.43 | | 19.28 |
| | | | | | | 36.26 | FAIR | 1.00 | 35.43 | | 24.28 |
| 36 | 3 | KONEDOBU | KD | 74.2 | 52.7 | 15.77 | GOOD | 0.10 | 14.92 | BMR | 5.65 |
| | | | | | | 16.95 | FAIR | 0.50 | 16.10 | | 6.83 |
| | | | | | | 21.27 | FAIR | 0.50 | 20.42 | | 11.15 |
| 38 | 3 | KONEDOBU | KD | 48.3 | 53.5 | 11.92 | GOOD | 0.10 | 11.08 | BMR | 5.04 |
| | | | | | | 14.98 | GOOD | 0.50 | 14.14 | | 8.10 |
| | | | | | | 19.62 | FAIR | 1.00 | 18.78 | | 12.74 |
| 39 | 3 | KONEDOBU | KD | 36.7 | 338.3 | 9.06 | GOOD | 0.10 | 8.72 | BMR | 4.13 |
| 40 | 3 | KONEDOBU | KD | 27.9 | 351.7 | 7.50 | GOOD | 0.10 | 7.14 | BMR | 3.66 |
| | | | | | | 12.70 | FAIR | 1.00 | 12.34 | | 8.86 |
| 41 | 3 | KONEDOBU | KD | 19.4 | 15.9 | 5.72 | GOOD | 0.10 | 5.34 | BMR | 2.91 |
| | | | | | | 7.64 | GOOD | 0.10 | 7.26 | | 4.83 |
| 42 | 3 | KONEDOBU | KD | 49.2 | 335.6 | 12.10 | FAIR | 0.50 | 11.78 | BMR | 5.63 |
| 43 | 3 | KONEDOBU | KD | 62.2 | 335.1 | 13.56 | GOOD | 0.50 | 13.14 | BMR | 5.37 |
| 44 | 3 | KONEDOBU | KD | 76.7 | 330.1 | 15.67 | GOOD | 0.10 | 15.44 | BMR | 5.85 |
| | | | | | | 19.42 | FAIR | 0.50 | 19.19 | | 9.60 |
| | | | | | | 25.52 | FAIR | 1.00 | 25.29 | | 15.70 |
| 47 | 3 | KONEDOBU | KD | 110.0 | 315.1 | 21.10 | GOOD | 0.10 | 20.99 | BMR | 7.24 |
| | | | | | | 21.54 | FAIR | 0.10 | 21.43 | | 7.68 |
| | | | | | | 23.90 | FAIR | 0.50 | 23.79 | | 10.04 |
| | | | | | | 29.60 | FAIR | 0.50 | 29.49 | | 15.74 |
| 48 | 3 | KONEDOBU | KD | 166.8 | 305.0 | 35.80 | POOR | 1.00 | 35.42 | BMR | 14.57 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 49 | 3 | KONEDOBU | KD | 222.1 | 298.2 | 35.26 | GOOD | 0.10 | 34.68 | BMR | 6.92 |
| | | | | | | 39.06 | FAIR | 1.00 | 38.48 | | 10.72 |
| 50 | 3 | KONEDOBU | KD | 289.3 | 294.0 | 42.62 | FAIR | 0.50 | 42.45 | BMR | 6.29 |
| 56 | 3 | KONEDOBU | KD | 195.4 | 232.6 | 33.18 | FAIR | 0.50 | 33.18 | BMR | 8.75 |
| 59 | 3 | KONEDOBU | KD | 221.1 | 232.2 | 35.87 | FAIR | 0.50 | 35.59 | BMR | 7.95 |
| 62 | 3 | KONEDOBU | KD | 260.0 | 231.1 | 44.05 | FAIR | 0.50 | 42.30 | BMR | 9.80 |
| 69 | 3 | KONEDOBU | KD | 293.8 | 177.4 | 46.47 | FAIR | 0.50 | 46.38 | BMR | 9.66 |
| 73 | 3 | KONEDOBU | KD | 246.1 | 181.2 | 39.75 | FAIR | 0.50 | 39.67 | BMR | 8.90 |
| 75 | 3 | KONEDOBU | KD | 233.2 | 185.2 | 37.48 | FAIR | 0.50 | 37.41 | BMR | 8.26 |
| 77 | 3 | KONEDOBU | KD | 250.0 | 187.7 | 40.74 | GOOD | 0.10 | 40.22 | BMR | 8.97 |
| | | | | | | 46.14 | POOR | 1.00 | 45.62 | | 14.37 |
| 79 | 3 | KONEDOBU | KD | 270.0 | 189.4 | 44.36 | FAIR | 0.50 | 43.39 | BMR | 9.64 |
| 82 | 3 | KONEDOBU | KD | 216.2 | 192.0 | 35.50 | GOOD | 0.50 | 35.45 | BMR | 8.42 |
| | | | | | | 37.85 | FAIR | 1.00 | 37.80 | | 10.77 |
| 83 | 3 | KONEDOBU | KD | 214.4 | 194.6 | 36.50 | FAIR | 0.50 | 36.44 | BMR | 9.64 |
| 84 | 3 | KONEDOBU | KD | 211.3 | 196.5 | 35.72 | FAIR | 0.50 | 35.53 | BMR | 9.12 |
| 85 | 3 | KONEDOBU | KD | 206.1 | 199.0 | 34.83 | GOOD | 0.50 | 34.55 | BMR | 8.78 |
| | | | | | | 41.08 | FAIR | 1.00 | 40.80 | | 15.03 |
| | | | | | | 42.58 | FAIR | 1.00 | 42.30 | | 16.53 |
| 86 | 3 | KONEDOBU | KD | 202.8 | 201.4 | 35.36 | FAIR | 1.00 | 35.36 | BMR | 10.01 |
| 87 | 3 | KONEDOBU | KD | 201.4 | 203.5 | 35.47 | GOOD | 0.50 | 35.09 | BMR | 9.91 |
| 88 | 3 | KONEDOBU | KD | 207.7 | 213.2 | 35.90 | GOOD | 0.10 | 35.61 | BMR | 9.64 |
| 89 | 3 | KONEDOBU | KD | 222.9 | 213.9 | 41.77 | FAIR | 1.00 | 41.28 | BMR | 13.41 |
| 91 | 3 | KONEDOBU | KD | 245.7 | 214.7 | 42.34 | GOOD | 0.50 | 41.50 | BMR | 10.79 |
| 94 | 3 | KONEDOBU | KD | 285.2 | 216.2 | 48.58 | GOOD | 0.50 | 46.22 | BMR | 10.57 |
| | | | | | | 51.38 | FAIR | 1.00 | 49.02 | | 13.37 |
| | | | | | | 56.28 | FAIR | 1.00 | 53.92 | | 18.27 |
| 98 | 3 | KONEDOBU | KD | 197.2 | 214.7 | 35.50 | FAIR | 0.50 | 35.31 | BMR | 10.66 |
| | | | | | | 32.40 | POOR | 1.00 | 32.21 | | 7.56 |
| 99 | 3 | KONEDOBU | KD | 186.1 | 222.1 | 32.65 | FAIR | 0.50 | 32.65 | BMR | 9.39 |
| 109 | 3 | KONEDOBU | KD | 231.6 | 256.0 | 40.33 | POOR | 1.00 | 40.33 | BMR | 11.38 |
| 110 | 3 | KONEDOBU | KD | 260.6 | 255.6 | 45.33 | POOR | 1.00 | 45.21 | BMR | 12.64 |
| 1 | 4 | AROA | AA | 72.7 | 353.5 | 17.12 | GOOD | 0.50 | 16.33 | BMR | 7.24 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 18.42 | FAIR | 0.50 | 17.63 | | 8.54 |
| | | | | | | 21.72 | POOR | 0.50 | 20.93 | | 11.84 |
| | | | | | | 23.89 | FAIR | 0.50 | 23.10 | | 14.01 |
| | | | | | | 26.82 | FAIR | 0.50 | 26.03 | | 16.94 |
| | | | | | | 30.72 | FAIR | 0.50 | 29.93 | | 20.84 |
| 2 | 4 | AROA | AA | 69.1 | 343.3 | 15.60 | GOOD | 0.10 | 14.88 | BMR | 6.24 |
| | | | | | | 22.25 | FAIR | 0.50 | 21.53 | | 12.89 |
| | | | | | | 29.94 | FAIR | 0.50 | 29.22 | | 20.58 |
| | | | | | | 34.12 | FAIR | 0.50 | 33.40 | | 24.76 |
| 3 | 4 | AROA | AA | 56.7 | 346.5 | 13.57 | GOOD | 0.10 | 13.02 | BMR | 5.94 |
| | | | | | | 21.35 | POOR | 0.50 | 20.80 | | 13.72 |
| | | | | | | 23.75 | POOR | 0.50 | 23.20 | | 16.12 |
| | | | | | | 38.55 | FAIR | 0.50 | 38.00 | | 30.92 |
| 4 | 4 | AROA | AA | 66.2 | 336.7 | 13.59 | GOOD | 0.10 | 13.15 | BMR | 4.87 |
| | | | | | | 16.88 | FAIR | 0.50 | 16.44 | | 8.16 |
| | | | | | | 21.88 | POOR | 1.00 | 21.44 | | 13.16 |
| | | | | | | 29.76 | POOR | 0.50 | 29.32 | | 21.04 |
| | | | | | | 33.68 | POOR | 0.50 | 33.24 | | 24.96 |
| 5 | 4 | AROA | AA | 48.6 | 355.7 | 11.25 | GOOD | 0.10 | 10.97 | BMR | 4.89 |
| | | | | | | 14.12 | GOOD | 0.10 | 13.84 | | 7.76 |
| | | | | | | 40.02 | FAIR | 0.50 | 39.74 | | 33.66 |
| | | | | | | 46.02 | FAIR | 0.50 | 45.74 | | 39.66 |
| 6 | 4 | AROA | AA | 43.6 | 4.6 | 11.16 | GOOD | 0.10 | 10.90 | BMR | 5.45 |
| | | | | | | 13.03 | FAIR | 0.50 | 12.77 | | 7.32 |
| | | | | | | 15.16 | FAIR | 0.50 | 14.90 | | 9.45 |
| | | | | | | 16.11 | GOOD | 0.50 | 15.85 | | 10.40 |
| | | | | | | 18.58 | FAIR | 0.50 | 18.32 | | 12.87 |
| 7 | 4 | AROA | AA | 38.4 | 14.4 | 10.47 | GOOD | 0.10 | 10.15 | BMR | 5.35 |
| | | | | | | 12.80 | FAIR | 0.50 | 12.48 | | 7.68 |
| | | | | | | 14.67 | FAIR | 0.50 | 14.35 | | 9.55 |
| | | | | | | 19.41 | POOR | 0.50 | 19.09 | | 14.29 |
| | | | | | | 27.97 | POOR | 0.50 | 27.65 | | 22.85 |
| | | | | | | 32.97 | POOR | 0.50 | 32.65 | | 27.85 |
| 8 | 4 | AROA | AA | 32.6 | 36.6 | 9.30 | GOOD | 0.10 | 9.04 | BMR | 4.97 |
| | | | | | | 11.98 | FAIR | 0.50 | 11.72 | | 7.65 |
| | | | | | | 15.58 | FAIR | 0.50 | 15.32 | | 11.25 |
| | | | | | | 16.98 | POOR | 0.50 | 16.72 | | 12.65 |
| | | | | | | 20.48 | POOR | 0.50 | 20.22 | | 16.15 |
| 9 | 4 | AROA | AA | 30.8 | 51.9 | 8.87 | GOOD | 0.10 | 8.73 | BMR | 4.88 |
| | | | | | | 11.68 | FAIR | 0.50 | 11.54 | | 7.69 |
| | | | | | | 21.88 | FAIR | 0.50 | 21.74 | | 17.89 |
| | | | | | | 25.48 | POOR | 0.50 | 25.34 | | 21.49 |
| | | | | | | 32.48 | POOR | 0.50 | 32.34 | | 28.49 |
| 10 | 4 | AROA | AA | 35.3 | 71.8 | 10.11 | GOOD | 0.10 | 9.73 | BMR | 5.31 |
| | | | | | | 12.75 | FAIR | 0.50 | 12.37 | | 7.95 |
| | | | | | | 20.53 | POOR | 0.50 | 20.15 | | 15.73 |
| | | | | | | 23.89 | POOR | 0.50 | 23.51 | | 19.09 |
| | | | | | | 26.79 | POOR | 1.00 | 26.41 | | 21.99 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 28.89 | POOR | 0.50 | 28.51 | | 24.09 |
| 11 | 4 | AROA | AA | 39.0 | 90.8 | 10.54 | GOOD | 0.10 | 10.26 | BMR | 5.39 |
| | | | | | | 13.34 | FAIR | 0.50 | 13.06 | | 8.19 |
| | | | | | | 14.84 | POOR | 0.50 | 14.56 | | 9.69 |
| | | | | | | 19.64 | POOR | 0.50 | 19.36 | | 14.49 |
| | | | | | | 47.04 | POOR | 0.50 | 46.76 | | 41.89 |
| 12 | 4 | AROA | AA | 49.5 | 100.1 | 18.63 | POOR | 0.50 | 18.45 | BMR | 12.26 |
| | | | | | | 25.73 | POOR | 0.50 | 25.55 | | 19.36 |
| 13 | 4 | AROA | AA | 59.0 | 107.7 | 13.67 | FAIR | 0.10 | 13.44 | BMR | 6.07 |
| | | | | | | 15.73 | FAIR | 0.50 | 15.50 | | 8.13 |
| | | | | | | 19.04 | FAIR | 0.50 | 18.81 | | 11.44 |
| | | | | | | 24.89 | FAIR | 0.50 | 24.66 | | 17.29 |
| 14 | 4 | AROA | AA | 69.2 | 112.9 | 15.57 | GOOD | 0.10 | 15.45 | BMR | 6.80 |
| | | | | | | 17.15 | GOOD | 0.10 | 17.03 | | 8.38 |
| | | | | | | 21.05 | POOR | 0.50 | 20.93 | | 12.28 |
| | | | | | | 26.01 | FAIR | 0.50 | 25.89 | | 17.24 |
| | | | | | | 30.91 | POOR | 0.50 | 30.79 | | 22.14 |
| | | | | | | 51.35 | POOR | 0.50 | 51.23 | | 42.58 |
| 15 | 4 | AROA | AA | 81.1 | 116.8 | 17.80 | GOOD | 0.10 | 17.64 | BMR | 7.51 |
| | | | | | | 18.73 | FAIR | 0.10 | 18.57 | | 8.44 |
| | | | | | | 20.74 | POOR | 0.50 | 20.58 | | 10.45 |
| | | | | | | 22.69 | FAIR | 0.50 | 22.53 | | 12.40 |
| | | | | | | 25.99 | POOR | 0.50 | 25.83 | | 15.70 |
| 16 | 4 | AROA | AA | 92.6 | 119.5 | 19.96 | GOOD | 0.10 | 19.72 | BMR | 8.15 |
| | | | | | | 23.94 | FAIR | 0.10 | 23.70 | | 12.13 |
| | | | | | | 30.09 | POOR | 0.10 | 29.85 | | 18.28 |
| | | | | | | 38.14 | POOR | 0.50 | 37.90 | | 26.33 |
| | | | | | | 39.74 | POOR | 0.50 | 39.50 | | 27.93 |
| | | | | | | 41.14 | FAIR | 0.50 | 40.90 | | 29.33 |
| 18 | 4 | AROA | AA | 133.6 | 126.3 | 25.64 | POOR | 0.50 | 25.66 | BMR | 8.96 |
| | | | | | | 26.89 | FAIR | 0.50 | 26.91 | | 10.21 |
| | | | | | | 39.74 | POOR | 0.50 | 39.76 | | 23.06 |
| 21 | 4 | AROA | AA | 62.0 | 87.3 | 15.10 | GOOD | 0.10 | 14.52 | BMR | 6.77 |
| | | | | | | 16.68 | GOOD | 0.50 | 16.10 | | 8.35 |
| | | | | | | 19.88 | FAIR | 0.50 | 19.30 | | 11.55 |
| | | | | | | 22.98 | FAIR | 0.50 | 22.40 | | 14.65 |
| | | | | | | 28.38 | FAIR | 0.50 | 27.80 | | 20.05 |
| 22 | 4 | AROA | AA | 68.0 | 79.4 | 16.04 | FAIR | 0.50 | 15.37 | BMR | 6.87 |
| | | | | | | 16.32 | GOOD | 0.10 | 15.65 | | 7.15 |
| | | | | | | 18.64 | FAIR | 0.50 | 17.97 | | 9.47 |
| | | | | | | 31.04 | POOR | 1.00 | 30.37 | | 21.87 |
| 23 | 4 | AROA | AA | 80.6 | 73.6 | 17.80 | GOOD | 0.10 | 17.12 | BMR | 7.04 |
| | | | | | | 18.59 | FAIR | 0.50 | 17.91 | | 7.83 |
| | | | | | | 24.29 | FAIR | 0.50 | 23.61 | | 13.53 |
| | | | | | | 28.79 | FAIR | 0.50 | 28.11 | | 18.03 |
| | | | | | | 45.19 | FAIR | 0.50 | 44.51 | | 34.43 |
| 24 | 4 | AROA | AA | 85.6 | 70.4 | 18.75 | GOOD | 0.10 | 18.05 | BMR | 7.35 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 19.53 | FAIR | 0.50 | 18.83 | | 8.13 |
| | | | | | | 22.53 | POOR | 0.50 | 21.83 | | 11.13 |
| | | | | | | 30.63 | POOR | 0.50 | 29.93 | | 19.23 |
| | | | | | | 33.13 | FAIR | 0.50 | 32.43 | | 21.73 |
| 25 | 4 | AROA | AA | 122.0 | 62.8 | 45.41 | FAIR | 0.50 | 44.76 | BMR | 29.51 |
| | | | | | | 52.31 | FAIR | 0.50 | 51.66 | | 36.41 |
| | | | | | | 63.81 | FAIR | 0.50 | 63.16 | | 47.91 |
| 28 | 4 | AROA | AA | 254.9 | 45.5 | 38.43 | POOR | 0.50 | 37.98 | BMR | 6.12 |
| | | | | | | 38.91 | GOOD | 0.50 | 38.46 | | 6.60 |
| | | | | | | 43.95 | POOR | 0.50 | 43.50 | | 11.64 |
| 29 | 4 | AROA | AA | 294.4 | 44.3 | 43.50 | FAIR | 0.50 | 43.00 | BMR | 6.20 |
| 31 | 4 | AROA | AA | 226.6 | 39.1 | 35.20 | FAIR | 0.50 | 34.79 | BMR | 6.47 |
| | | | | | | 36.00 | POOR | 0.50 | 35.59 | | 7.27 |
| | | | | | | 37.00 | POOR | 0.50 | 36.59 | | 8.27 |
| 32 | 4 | AROA | AA | 184.1 | 34.7 | 30.06 | POOR | 0.50 | 29.52 | BMR | 6.51 |
| | | | | | | 34.82 | FAIR | 1.00 | 34.28 | | 11.27 |
| | | | | | | 40.12 | FAIR | 0.50 | 39.58 | | 16.57 |
| 33 | 4 | AROA | AA | 141.5 | 26.7 | 26.22 | GOOD | 0.10 | 25.43 | BMR | 7.75 |
| | | | | | | 34.59 | FAIR | 0.50 | 33.80 | | 16.12 |
| | | | | | | 62.09 | FAIR | 0.50 | 61.30 | | 43.62 |
| 34 | 4 | AROA | AA | 117.2 | 20.4 | 22.47 | GOOD | 0.10 | 21.62 | BMR | 6.97 |
| | | | | | | 25.57 | FAIR | 0.50 | 25.72 | | 11.07 |
| | | | | | | 44.27 | FAIR | 0.50 | 43.42 | | 28.77 |
| 35 | 4 | AROA | AA | 108.4 | 16.7 | 21.48 | FAIR | 0.50 | 20.67 | BMR | 7.12 |
| | | | | | | 22.17 | GOOD | 0.10 | 21.36 | | 7.81 |
| | | | | | | 23.01 | FAIR | 0.50 | 22.20 | | 8.65 |
| | | | | | | 25.24 | POOR | 1.00 | 24.43 | | 10.88 |
| | | | | | | 41.67 | FAIR | 0.50 | 40.86 | | 27.31 |
| 36 | 4 | AROA | AA | 96.1 | 11.9 | 19.92 | POOR | 0.50 | 19.09 | BMR | 7.08 |
| | | | | | | 20.15 | GOOD | 0.10 | 19.32 | | 7.31 |
| | | | | | | 34.02 | FAIR | 0.50 | 33.19 | | 21.18 |
| | | | | | | 35.72 | FAIR | 0.50 | 34.89 | | 22.88 |
| | | | | | | 38.02 | FAIR | 0.50 | 37.19 | | 25.18 |
| 38 | 4 | AROA | AA | 77.8 | 359.6 | 17.32 | GOOD | 0.10 | 16.50 | BMR | 6.77 |
| | | | | | | 20.73 | FAIR | 0.50 | 19.91 | | 10.18 |
| | | | | | | 29.38 | FAIR | 0.50 | 28.56 | | 18.83 |
| | | | | | | 42.26 | FAIR | 0.50 | 41.44 | | 31.71 |
| 39 | 4 | AROA | AA | 98.5 | 327.5 | 19.86 | GOOD | 0.50 | 19.54 | BMR | 7.23 |
| | | | | | | 22.51 | FAIR | 1.00 | 22.19 | | 9.88 |
| | | | | | | 28.29 | POOR | 1.00 | 27.97 | | 15.66 |
| | | | | | | 43.60 | FAIR | 0.50 | 43.28 | | 30.97 |
| 41 | 4 | AROA | AA | 75.7 | 333.2 | 16.99 | POOR | 0.50 | 16.62 | BMR | 7.16 |
| | | | | | | 20.32 | FAIR | 0.50 | 19.95 | | 10.49 |
| | | | | | | 31.76 | FAIR | 0.50 | 31.39 | | 21.93 |
| 43 | 4 | AROA | AA | 124.1 | 328.1 | 24.14 | GOOD | 0.10 | 23.74 | BMR | 8.23 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 27.83 | FAIR | 0.50 | 27.43 | | 11.92 |
| | | | | | | 31.53 | POOR | 0.50 | 31.13 | | 15.62 |
| 44 | 4 | AROA | AA | 139.2 | 326.1 | 25.22 | GOOD | 0.10 | 25.00 | BMR | 7.60 |
| | | | | | | 26.73 | FAIR | 0.50 | 26.51 | | 9.11 |
| | | | | | | 29.62 | GOOD | 0.50 | 29.40 | | 12.00 |
| | | | | | | 35.70 | FAIR | 0.10 | 35.48 | | 18.08 |
| | | | | | | 37.37 | POOR | 0.50 | 37.15 | | 19.75 |
| | | | | | | 41.12 | POOR | 0.50 | 40.90 | | 23.50 |
| 45 | 4 | AROA | AA | 153.1 | 323.6 | 28.67 | FAIR | 0.10 | 28.27 | BMR | 9.13 |
| | | | | | | 32.17 | POOR | 0.50 | 31.77 | | 12.63 |
| 46 | 4 | AROA | AA | 163.5 | 320.2 | 29.84 | FAIR | 0.50 | 29.47 | BMR | 9.03 |
| | | | | | | 32.34 | POOR | 0.50 | 31.97 | | 11.53 |
| | | | | | | 35.64 | POOR | 0.50 | 35.27 | | 14.83 |
| 47 | 4 | AROA | AA | 172.6 | 317.3 | 29.48 | GOOD | 0.50 | 29.39 | BMR | 7.82 |
| | | | | | | 31.19 | FAIR | 0.50 | 31.10 | | 9.53 |
| | | | | | | 36.67 | GOOD | 0.10 | 36.58 | | 15.01 |
| | | | | | | 40.82 | POOR | 0.50 | 40.73 | | 19.16 |
| | | | | | | 41.82 | POOR | 0.50 | 41.73 | | 20.16 |
| | | | | | | 42.82 | POOR | 0.50 | 42.73 | | 21.16 |
| 48 | 4 | AROA | AA | 227.9 | 309.4 | 36.35 | FAIR | 0.50 | 35.99 | BMR | 7.50 |
| | | | | | | 44.41 | FAIR | 0.50 | 44.05 | | 15.56 |
| | | | | | | 57.12 | FAIR | 0.50 | 56.76 | | 28.27 |
| 50 | 4 | AROA | AA | 346.6 | 298.7 | 50.63 | FAIR | 0.50 | 50.48 | BMR | 7.16 |
| | | | | | | 61.83 | FAIR | 0.50 | 61.68 | | 18.36 |
| | | | | | | 67.73 | POOR | 0.50 | 67.58 | | 24.26 |
| 51 | 4 | AROA | AA | 450.0 | 289.6 | 22.05 | POOR | 0.50 | 21.87 | BMR | -34.39 |
| | | | | | | 5.20 | POOR | 1.00 | 5.02 | | -51.24 |
| 56 | 4 | AROA | AA | 206.9 | 250.3 | 35.75 | GOOD | 0.10 | 35.77 | BMR | 9.90 |
| 57 | 4 | AROA | AA | 217.0 | 248.8 | 36.79 | GOOD | 0.10 | 36.81 | BMR | 9.69 |
| | | | | | | 38.64 | FAIR | 0.50 | 38.66 | | 11.54 |
| | | | | | | 45.46 | FAIR | 0.50 | 45.48 | | 18.36 |
| 58 | 4 | AROA | AA | 221.3 | 248.8 | 37.27 | FAIR | 1.00 | 37.29 | BMR | 9.62 |
| 59 | 4 | AROA | AA | 231.1 | 247.9 | 38.38 | FAIR | 0.50 | 38.12 | BMR | 9.23 |
| 61 | 4 | AROA | AA | 254.0 | 244.9 | 44.63 | POOR | 0.50 | 43.35 | BMR | 11.60 |
| | | | | | | 46.02 | FAIR | 0.50 | 44.74 | | 12.99 |
| 62 | 4 | AROA | AA | 267.7 | 244.7 | 45.96 | GOOD | 0.50 | 44.23 | BMR | 10.76 |
| | | | | | | 49.06 | POOR | 0.50 | 47.33 | | 13.86 |
| 63 | 4 | AROA | AA | 301.7 | 242.5 | 51.54 | GOOD | 0.50 | 49.51 | BMR | 11.80 |
| | | | | | | 54.59 | FAIR | 0.50 | 52.56 | | 14.85 |
| 69 | 4 | AROA | AA | 245.8 | 186.1 | 38.88 | FAIR | 0.50 | 38.81 | BMR | 8.09 |
| | | | | | | 43.20 | POOR | 0.50 | 43.13 | | 12.41 |
| | | | | | | 45.78 | FAIR | 0.10 | 45.71 | | 14.99 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 49.39 | POOR | 0.50 | 49.32 | | 18.60 |
| 71 | 4 | AROA | AA | 221.1 | 189.5 | 39.28 | POOR | 0.50 | 39.16 | BMR | 11.53 |
| 73 | 4 | AROA | AA | 202.0 | 192.7 | 34.37 | POOR | 0.50 | 34.30 | BMR | 9.05 |
| 74 | 4 | AROA | AA | 198.1 | 195.4 | 33.50 | POOR | 0.50 | 33.25 | BMR | 8.49 |
| | | | | | | 34.84 | FAIR | 0.50 | 34.59 | | 9.83 |
| 75 | 4 | AROA | AA | 193.0 | 198.2 | 33.34 | FAIR | 0.10 | 33.29 | BMR | 9.17 |
| | | | | | | 39.44 | FAIR | 0.50 | 39.39 | | 15.27 |
| 77 | 4 | AROA | AA | 211.7 | 200.1 | 37.20 | FAIR | 0.50 | 36.70 | BMR | 10.23 |
| | | | | | | 38.93 | FAIR | 0.10 | 38.43 | | 11.96 |
| | | | | | | 46.21 | FAIR | 0.50 | 45.71 | | 19.24 |
| | | | | | | 51.25 | FAIR | 0.50 | 50.75 | | 24.28 |
| 79 | 4 | AROA | AA | 233.0 | 201.1 | 41.37 | POOR | 0.50 | 40.42 | BMR | 11.29 |
| | | | | | | 45.15 | FAIR | 0.50 | 44.20 | | 15.07 |
| 80 | 4 | AROA | AA | 255.8 | 203.1 | 44.91 | POOR | 1.00 | 44.32 | BMR | 12.35 |
| 97 | 4 | AROA | AA | 353.8 | 240.5 | 57.20 | FAIR | 0.50 | 55.01 | BMR | 10.78 |
| 98 | 4 | AROA | AA | 189.4 | 233.2 | 33.99 | GOOD | 0.10 | 33.82 | BMR | 10.15 |
| | | | | | | 37.30 | FAIR | 0.50 | 37.13 | | 13.46 |
| 99 | 4 | AROA | AA | 187.0 | 241.5 | 32.45 | FAIR | 0.50 | 32.47 | BMR | 9.09 |
| | | | | | | 36.46 | FAIR | 0.10 | 36.48 | | 13.10 |
| 101 | 4 | AROA | AA | 192.0 | 251.2 | 34.37 | FAIR | 0.50 | 34.38 | BMR | 10.38 |
| 104 | 4 | AROA | AA | 210.5 | 260.8 | 36.78 | FAIR | 0.10 | 36.80 | BMR | 10.48 |
| | | | | | | 37.19 | FAIR | 0.10 | 37.21 | | 10.89 |
| | | | | | | 38.80 | FAIR | 0.50 | 38.82 | | 12.50 |
| 107 | 4 | AROA | AA | 234.0 | 267.9 | 39.71 | FAIR | 0.10 | 39.72 | BMR | 10.47 |
| 110 | 4 | AROA | AA | 292.5 | 266.9 | 48.13 | FAIR | 0.10 | 48.03 | BMR | 11.47 |
| | | | | | | 54.53 | POOR | 0.50 | 54.43 | | 17.87 |
| 1 | 5 | YULE I. | YE | 100.2 | 338.2 | 21.83 | GOOD | 0.10 | 21.04 | BMR | 8.51 |
| | | | | | | 22.48 | FAIR | 0.50 | 21.69 | | 9.16 |
| | | | | | | 23.12 | FAIR | 0.50 | 22.33 | | 9.80 |
| | | | | | | 24.12 | FAIR | 0.50 | 23.33 | | 10.80 |
| | | | | | | 26.56 | FAIR | 0.50 | 25.77 | | 13.24 |
| | | | | | | 28.50 | FAIR | 0.50 | 27.71 | | 15.18 |
| 2 | 5 | YULE I. | YE | 99.7 | 330.7 | 20.89 | GOOD | 0.50 | 20.17 | BMR | 7.70 |
| | | | | | | 25.07 | FAIR | 0.50 | 24.35 | | 11.88 |
| 3 | 5 | YULE I. | YE | 86.8 | 331.0 | 18.65 | FAIR | 0.50 | 18.10 | BMR | 7.25 |
| | | | | | | 19.52 | GOOD | 0.50 | 18.97 | | 8.12 |
| | | | | | | 20.24 | FAIR | 0.50 | 19.69 | | 8.84 |
| 4 | 5 | YULE I. | YE | 98.5 | 325.9 | 18.87 | GOOD | 0.50 | 18.42 | BMR | 6.11 |
| | | | | | | 21.90 | GOOD | 0.50 | 21.45 | | 9.14 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 27.28 | FAIR | 0.50 | 26.83 | | 14.52 |
| 5 | 5 | YULE I. | YE | 76.6 | 334.8 | 16.37 | FAIR | 0.50 | 16.09 | BMR | 6.51 |
| | | | | | | 17.07 | GOOD | 0.50 | 16.79 | | 7.21 |
| 12 | 5 | YULE I. | YE | 23.2 | 58.4 | 7.65 | GOOD | 0.50 | 7.47 | BMR | 4.57 |
| | | | | | | 8.35 | FAIR | 0.50 | 8.17 | | 5.27 |
| 13 | 5 | YULE I. | YE | 27.5 | 83.9 | 8.77 | GOOD | 0.50 | 8.54 | BMR | 5.11 |
| | | | | | | 10.93 | FAIR | 0.50 | 10.70 | | 7.27 |
| | | | | | | 14.37 | FAIR | 0.50 | 14.14 | | 10.71 |
| 14 | 5 | YULE I. | YE | 35.4 | 99.9 | 10.08 | GOOD | 0.10 | 9.96 | BMR | 5.53 |
| | | | | | | 12.12 | GOOD | 0.10 | 12.00 | | 7.57 |
| | | | | | | 13.42 | FAIR | 0.50 | 13.30 | | 8.87 |
| | | | | | | 19.50 | FAIR | 0.50 | 19.38 | | 14.95 |
| 15 | 5 | YULE I. | YE | 46.2 | 109.9 | 12.47 | GOOD | 0.10 | 12.31 | BMR | 6.54 |
| | | | | | | 14.09 | FAIR | 0.10 | 13.93 | | 8.16 |
| | | | | | | 16.15 | FAIR | 0.10 | 15.99 | | 10.22 |
| 16 | 5 | YULE I. | YE | 57.3 | 115.6 | 14.16 | FAIR | 0.50 | 13.92 | BMR | 6.76 |
| | | | | | | 16.12 | FAIR | 0.50 | 15.88 | | 8.72 |
| | | | | | | 18.14 | FAIR | 0.50 | 17.90 | | 10.74 |
| 17 | 5 | YULE I. | YE | 68.9 | 119.2 | 15.65 | GOOD | 0.50 | 15.67 | BMR | 7.06 |
| | | | | | | 17.84 | FAIR | 0.50 | 17.86 | | 9.25 |
| | | | | | | 19.00 | FAIR | 0.50 | 19.02 | | 10.41 |
| | | | | | | 19.68 | FAIR | 0.50 | 19.70 | | 11.09 |
| 18 | 5 | YULE I. | YE | 98.0 | 126.4 | 21.11 | GOOD | 0.10 | 21.12 | BMR | 8.87 |
| | | | | | | 21.86 | FAIR | 0.50 | 21.87 | | 9.62 |
| | | | | | | 27.06 | GOOD | 0.50 | 27.07 | | 14.82 |
| 19 | 5 | YULE I. | YE | 143.9 | 114.4 | 26.90 | FAIR | 0.50 | 26.92 | BMR | 8.93 |
| | | | | | | 28.15 | FAIR | 0.50 | 28.17 | | 10.19 |
| | | | | | | 32.13 | FAIR | 0.50 | 32.15 | | 14.17 |
| | | | | | | 36.41 | FAIR | 1.00 | 36.43 | | 18.45 |
| 20 | 5 | YULE I. | YE | 32.4 | 62.2 | 9.83 | GOOD | 0.50 | 9.36 | BMR | 5.31 |
| | | | | | | 11.22 | FAIR | 0.50 | 10.75 | | 6.70 |
| | | | | | | 13.08 | FAIR | 0.50 | 12.61 | | 8.56 |
| 21 | 5 | YULE I. | YE | 40.7 | 54.2 | 11.57 | GOOD | 0.50 | 10.99 | BMR | 5.90 |
| | | | | | | 13.40 | FAIR | 0.50 | 12.82 | | 7.73 |
| | | | | | | 15.67 | FAIR | 0.50 | 15.09 | | 10.00 |
| 22 | 5 | YULE I. | YE | 50.5 | 48.7 | 12.89 | FAIR | 0.50 | 12.22 | BMR | 5.91 |
| | | | | | | 13.39 | GOOD | 0.50 | 12.72 | | 6.41 |
| | | | | | | 28.49 | GOOD | 0.50 | 27.82 | | 21.51 |
| 23 | 5 | YULE I. | YE | 65.2 | 48.0 | 15.29 | GOOD | 0.50 | 14.61 | BMR | 6.46 |
| | | | | | | 16.01 | FAIR | 0.50 | 15.33 | | 7.18 |
| | | | | | | 16.89 | FAIR | 0.50 | 16.21 | | 8.06 |
| | | | | | | 17.99 | FAIR | 0.50 | 17.31 | | 9.16 |
| | | | | | | 28.26 | FAIR | 0.50 | 27.58 | | 19.43 |
| 24 | 5 | YULE I. | YE | 71.6 | 46.2 | 16.21 | FAIR | 0.50 | 15.51 | BMR | 6.56 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 17.51 | FAIR | 0.50 | 16.81 | | 7.86 |
| | | | | | | 28.83 | FAIR | 0.50 | 28.13 | | 19.18 |
| | | | | | | 43.21 | FAIR | 0.50 | 43.21 | | 34.26 |
| 25 | 5 | YULE I. | YE | 110.5 | 46.1 | 21.38 | GOOD | 0.50 | 20.73 | BMR | 6.92 |
| | | | | | | 22.38 | FAIR | 0.50 | 21.73 | | 7.92 |
| | | | | | | 25.95 | FAIR | 0.50 | 25.30 | | 11.49 |
| 27 | 5 | YULE I. | YE | 198.7 | 38.2 | 32.35 | FAIR | 0.50 | 31.92 | BMR | 7.08 |
| | | | | | | 33.01 | FAIR | 0.50 | 32.58 | | 7.74 |
| | | | | | | 34.37 | FAIR | 0.50 | 33.94 | | 9.10 |
| | | | | | | 36.22 | FAIR | 0.50 | 35.79 | | 10.95 |
| | | | | | | 39.29 | FAIR | 0.50 | 38.86 | | 14.02 |
| | | | | | | 42.25 | FAIR | 0.50 | 41.82 | | 16.98 |
| 32 | 5 | YULE I. | YE | 188.3 | 23.8 | 30.58 | GOOD | 0.50 | 30.04 | BMR | 6.50 |
| | | | | | | 32.19 | FAIR | 0.50 | 31.65 | | 8.11 |
| | | | | | | 36.20 | GOOD | 0.50 | 35.66 | | 12.12 |
| | | | | | | 39.43 | FAIR | 0.50 | 38.89 | | 15.35 |
| | | | | | | 42.29 | FAIR | 0.50 | 41.75 | | 18.21 |
| 33 | 5 | YULE I. | YE | 151.3 | 13.2 | 27.35 | POOR | 0.50 | 26.56 | BMR | 7.65 |
| | | | | | | 29.30 | FAIR | 0.50 | 28.51 | | 9.60 |
| | | | | | | 34.50 | FAIR | 0.50 | 33.71 | | 14.80 |
| 40 | 5 | YULE I. | YE | 121.4 | 323.4 | 23.84 | GOOD | 0.10 | 23.50 | BMR | 8.32 |
| | | | | | | 24.90 | FAIR | 0.50 | 24.56 | | 9.38 |
| | | | | | | 26.37 | FAIR | 0.50 | 26.03 | | 10.85 |
| 41 | 5 | YULE I. | YE | 108.6 | 324.5 | 21.91 | FAIR | 0.50 | 21.54 | BMR | 7.97 |
| | | | | | | 22.56 | GOOD | 0.50 | 22.19 | | 8.62 |
| | | | | | | 24.45 | POOR | 0.50 | 24.08 | | 10.51 |
| | | | | | | 25.18 | POOR | 0.50 | 24.81 | | 11.24 |
| 42 | 5 | YULE I. | YE | 144.9 | 322.2 | 26.50 | FAIR | 0.50 | 26.19 | BMR | 8.08 |
| | | | | | | 27.75 | FAIR | 0.50 | 27.44 | | 9.33 |
| | | | | | | 29.96 | FAIR | 0.50 | 29.65 | | 11.54 |
| 43 | 5 | YULE I. | YE | 157.7 | 323.1 | 27.94 | POOR | 0.50 | 27.54 | BMR | 7.83 |
| | | | | | | 28.99 | FAIR | 0.50 | 28.59 | | 8.88 |
| | | | | | | 29.65 | POOR | 0.50 | 29.25 | | 9.54 |
| | | | | | | 31.60 | POOR | 0.50 | 31.20 | | 11.49 |
| 44 | 5 | YULE I. | YE | 173.1 | 321.9 | 29.53 | GOOD | 0.50 | 29.31 | BMR | 7.67 |
| | | | | | | 31.79 | POOR | 0.50 | 31.57 | | 9.93 |
| | | | | | | 32.88 | FAIR | 0.50 | 32.66 | | 11.02 |
| | | | | | | 37.82 | FAIR | 0.50 | 37.60 | | 15.96 |
| | | | | | | 43.92 | FAIR | 0.50 | 43.70 | | 22.06 |
| 45 | 5 | YULE I. | YE | 187.4 | 320.2 | 31.55 | FAIR | 0.50 | 31.15 | BMR | 7.72 |
| | | | | | | 34.27 | FAIR | 0.50 | 33.87 | | 10.44 |
| | | | | | | 35.49 | FAIR | 0.50 | 35.09 | | 11.66 |
| | | | | | | 37.01 | FAIR | 0.50 | 36.61 | | 13.18 |
| 46 | 5 | YULE I. | YE | 198.2 | 317.6 | 32.86 | GOOD | 0.50 | 32.48 | BMR | 7.71 |
| | | | | | | 33.76 | FAIR | 0.50 | 33.38 | | 8.61 |
| | | | | | | 38.98 | FAIR | 0.50 | 38.60 | | 13.83 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 47 | 5 | YULE I. | YE | 207.7 | 315.3 | 33.77 | GOOD | 0.10 | 33.68 | BMR | 7.72 |
| | | | | | | 38.79 | FAIR | 0.50 | 38.70 | | 12.74 |
| | | | | | | 41.52 | FAIR | 0.50 | 41.43 | | 15.47 |
| 48 | 5 | YULE I. | YE | 263.5 | 308.9 | 40.27 | FAIR | 0.50 | 39.91 | BMR | 6.97 |
| | | | | | | 41.69 | FAIR | 0.50 | 41.33 | | 8.39 |
| | | | | | | 42.86 | FAIR | 0.50 | 42.50 | | 9.56 |
| | | | | | | 47.12 | FAIR | 0.50 | 46.76 | | 13.82 |
| 49 | 5 | YULE I. | YE | 316.8 | 303.4 | 47.46 | GOOD | 0.50 | 46.90 | BMR | 7.30 |
| | | | | | | 55.33 | FAIR | 0.50 | 54.77 | | 15.17 |
| 75 | 5 | YULE I. | YE | 185.5 | 208.8 | 33.71 | FAIR | 1.00 | 33.66 | BMR | 10.47 |
| | | | | | | 44.81 | FAIR | 0.50 | 44.76 | | 21.57 |
| 1 | 6 | KUBUNA | KB | 110.3 | 353.0 | 22.92 | GOOD | 0.10 | 22.11 | BMR | 8.33 |
| | | | | | | 25.95 | FAIR | 0.50 | 25.14 | | 11.36 |
| | | | | | | 27.16 | FAIR | 0.50 | 26.35 | | 12.57 |
| | | | | | | 28.24 | GOOD | 0.50 | 27.43 | | 13.65 |
| | | | | | | 31.05 | FAIR | 0.50 | 30.24 | | 16.46 |
| | | | | | | 33.07 | FAIR | 0.50 | 32.26 | | 18.48 |
| 2 | 6 | KUBUNA | KB | 106.4 | 346.4 | 21.34 | GOOD | 0.10 | 20.60 | BMR | 7.30 |
| | | | | | | 23.30 | FAIR | 0.50 | 22.56 | | 9.26 |
| | | | | | | 24.54 | FAIR | 0.10 | 23.80 | | 10.50 |
| | | | | | | 26.64 | FAIR | 0.50 | 25.90 | | 12.60 |
| | | | | | | 29.01 | GOOD | 0.50 | 28.27 | | 14.97 |
| 3 | 6 | KUBUNA | KB | 94.2 | 348.7 | 19.41 | GOOD | 0.10 | 18.85 | BMR | 7.07 |
| | | | | | | 21.86 | FAIR | 0.50 | 21.30 | | 9.52 |
| | | | | | | 28.39 | FAIR | 0.50 | 27.83 | | 16.05 |
| 4 | 6 | KUBUNA | KB | 103.0 | 342.2 | 19.09 | GOOD | 0.10 | 18.63 | BMR | 5.76 |
| 5 | 6 | KUBUNA | KB | 86.2 | 354.1 | 17.24 | GOOD | 0.10 | 16.94 | BMR | 6.17 |
| | | | | | | 26.64 | FAIR | 0.50 | 26.34 | | 15.57 |
| 6 | 6 | KUBUNA | KB | 80.8 | 358.8 | 16.88 | GOOD | 0.10 | 16.60 | BMR | 6.50 |
| | | | | | | 19.58 | FAIR | 0.10 | 19.30 | | 9.20 |
| 7 | 6 | KUBUNA | KB | 74.6 | 3.4 | 16.08 | GOOD | 0.10 | 15.75 | BMR | 6.43 |
| 8 | 6 | KUBUNA | KB | 65.0 | 12.7 | 14.59 | GOOD | 0.10 | 14.32 | BMR | 6.19 |
| 9 | 6 | KUBUNA | KB | 59.4 | 18.7 | 13.44 | GOOD | 0.10 | 13.28 | BMR | 5.86 |
| | | | | | | 15.19 | FAIR | 0.50 | 15.03 | | 7.61 |
| | | | | | | 19.11 | FAIR | 0.50 | 18.95 | | 11.53 |
| 10 | 6 | KUBUNA | KB | 56.0 | 30.5 | 12.70 | FAIR | 0.50 | 12.30 | BMR | 5.30 |
| | | | | | | 13.27 | GOOD | 0.10 | 12.87 | | 5.87 |
| 11 | 6 | KUBUNA | KB | 50.0 | 42.8 | 12.39 | GOOD | 0.10 | 12.10 | BMR | 5.85 |
| | | | | | | 12.64 | POOR | 0.10 | 12.35 | | 6.10 |
| 12 | 6 | KUBUNA | KB | 52.2 | 56.8 | 12.40 | GOOD | 0.10 | 12.21 | BMR | 5.68 |
| | | | | | | 13.83 | FAIR | 0.50 | 13.64 | | 7.11 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 16.79 | FAIR | 0.50 | 16.60 | | 10.07 |
| | | | | | | 18.04 | FAIR | 0.50 | 17.85 | | 11.32 |
| 13 | 6 | KUBUNA | KB | 54.7 | 69.3 | 12.82 | GOOD | 0.10 | 12.58 | BMR | 5.74 |
| | | | | | | 13.68 | FAIR | 0.50 | 13.44 | | 6.60 |
| | | | | | | 15.04 | FAIR | 0.50 | 14.80 | | 7.96 |
| 14 | 6 | KUBUNA | KB | 59.6 | 80.1 | 13.84 | GOOD | 0.10 | 13.71 | BMR | 6.26 |
| 15 | 6 | KUBUNA | KB | 67.3 | 89.4 | 15.44 | GOOD | 0.10 | 15.27 | BMR | 6.86 |
| | | | | | | 19.71 | FAIR | 0.50 | 19.54 | | 11.13 |
| 16 | 6 | KUBUNA | KB | 76.0 | 96.3 | 16.82 | GOOD | 0.10 | 16.57 | BMR | 7.07 |
| | | | | | | 17.87 | FAIR | 0.50 | 17.62 | | 8.12 |
| | | | | | | 19.17 | FAIR | 0.50 | 18.92 | | 9.42 |
| 17 | 6 | KUBUNA | KB | 85.8 | 101.6 | 17.94 | GOOD | 0.10 | 17.95 | BMR | 7.22 |
| 18 | 6 | KUBUNA | KB | 110.9 | 112.1 | 22.31 | GOOD | 0.10 | 22.31 | BMR | 8.45 |
| 19 | 6 | KUBUNA | KB | 160.9 | 105.5 | 28.64 | GOOD | 0.10 | 28.65 | BMR | 8.54 |
| | | | | | | 32.20 | FAIR | 0.50 | 32.21 | | 12.10 |
| | | | | | | 35.99 | FAIR | 0.50 | 36.00 | | 15.89 |
| | | | | | | 37.41 | FAIR | 0.50 | 37.42 | | 17.31 |
| 20 | 6 | KUBUNA | KB | 61.2 | 59.0 | 14.41 | GOOD | 0.10 | 13.93 | BMR | 6.28 |
| 21 | 6 | KUBUNA | KB | 69.6 | 54.8 | 16.10 | GOOD | 0.10 | 15.51 | BMR | 6.81 |
| | | | | | | 17.35 | FAIR | 0.50 | 16.76 | | 8.06 |
| 22 | 6 | KUBUNA | KB | 79.3 | 51.2 | 17.86 | GOOD | 0.10 | 17.18 | BMR | 7.26 |
| 24 | 6 | KUBUNA | KB | 100.3 | 48.9 | 20.81 | GOOD | 0.10 | 20.10 | BMR | 7.56 |
| | | | | | | 23.71 | FAIR | 0.50 | 23.00 | | 10.46 |
| 25 | 6 | KUBUNA | KB | 139.1 | 48.0 | 25.00 | GOOD | 0.10 | 24.34 | BMR | 6.95 |
| | | | | | | 26.50 | GOOD | 0.10 | 25.84 | | 8.45 |
| 26 | 6 | KUBUNA | KB | 180.8 | 43.2 | 29.32 | GOOD | 0.10 | 28.63 | BMR | 6.03 |
| | | | | | | 32.36 | FAIR | 0.50 | 31.67 | | 9.07 |
| | | | | | | 34.07 | FAIR | 0.50 | 33.38 | | 10.78 |
| 27 | 6 | KUBUNA | KB | 226.4 | 40.4 | 34.63 | POOR | 0.50 | 34.18 | BMR | 5.88 |
| | | | | | | 35.65 | GOOD | 0.10 | 35.20 | | 6.90 |
| | | | | | | 41.06 | FAIR | 0.50 | 40.61 | | 12.31 |
| 28 | 6 | KUBUNA | KB | 279.2 | 39.3 | 40.94 | GOOD | 0.50 | 40.47 | BMR | 5.57 |
| | | | | | | 42.25 | FAIR | 0.50 | 41.78 | | 6.88 |
| | | | | | | 43.88 | FAIR | 0.50 | 43.41 | | 8.51 |
| 29 | 6 | KUBUNA | KB | 319.0 | 38.9 | 46.61 | GOOD | 0.10 | 46.09 | BMR | 6.22 |
| | | | | | | 48.88 | GOOD | 0.50 | 48.36 | | 8.49 |
| | | | | | | 64.06 | GOOD | 0.50 | 63.54 | | 23.67 |
| | | | | | | 68.36 | FAIR | 0.50 | 67.84 | | 27.97 |
| | | | | | | 70.76 | FAIR | 0.50 | 70.24 | | 30.37 |
| 30 | 6 | KUBUNA | KB | 290.6 | 36.3 | 42.34 | GOOD | 0.10 | 41.87 | BMR | 5.55 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 48.39 | FAIR | 0.50 | 47.92 | | 11.60 |
| 31 | 6 | KUBUNA | KB | 253.9 | 32.9 | 38.21 | GOOD | 0.10 | 37.79 | BMR | 6.05 |
| | | | | | | 38.91 | FAIR | 0.50 | 38.49 | | 6.75 |
| | | | | | | 42.49 | FAIR | 0.50 | 42.07 | | 10.33 |
| | | | | | | 45.89 | FAIR | 0.50 | 45.47 | | 13.73 |
| | | | | | | 48.09 | FAIR | 0.50 | 47.67 | | 15.93 |
| 32 | 6 | KUBUNA | KB | 213.4 | 27.9 | 33.50 | GOOD | 0.10 | 32.95 | BMR | 6.27 |
| | | | | | | 35.43 | FAIR | 0.50 | 34.88 | | 8.20 |
| | | | | | | 38.68 | GOOD | 0.50 | 38.13 | | 11.45 |
| | | | | | | 44.68 | FAIR | 0.50 | 44.13 | | 17.45 |
| | | | | | | 52.08 | FAIR | 0.50 | 51.53 | | 24.85 |
| 33 | 6 | KUBUNA | KB | 173.8 | 19.7 | 30.66 | GOOD | 0.10 | 29.86 | BMR | 8.13 |
| | | | | | | 33.35 | FAIR | 0.50 | 32.55 | | 10.82 |
| | | | | | | 34.16 | FAIR | 0.50 | 33.36 | | 11.63 |
| | | | | | | 36.01 | FAIR | 0.50 | 35.21 | | 13.48 |
| | | | | | | 41.85 | FAIR | 0.50 | 41.05 | | 19.32 |
| | | | | | | 45.51 | FAIR | 0.50 | 44.71 | | 22.98 |
| 34 | 6 | KUBUNA | KB | 151.4 | 13.7 | 27.76 | GOOD | 0.10 | 26.90 | BMR | 7.97 |
| | | | | | | 30.95 | POOR | 1.00 | 30.09 | | 11.16 |
| | | | | | | 33.52 | FAIR | 1.00 | 32.66 | | 13.73 |
| 35 | 6 | KUBUNA | KB | 143.4 | 10.4 | 25.43 | GOOD | 0.10 | 24.60 | BMR | 6.68 |
| | | | | | | 25.75 | GOOD | 0.10 | 24.92 | | 7.00 |
| | | | | | | 26.74 | GOOD | 0.10 | 25.91 | | 7.99 |
| 36 | 6 | KUBUNA | KB | 132.1 | 6.4 | 25.21 | GOOD | 0.10 | 24.36 | BMR | 7.85 |
| | | | | | | 25.34 | GOOD | 0.10 | 24.49 | | 7.98 |
| | | | | | | 28.51 | FAIR | 0.50 | 27.66 | | 11.15 |
| | | | | | | 33.61 | FAIR | 0.50 | 32.76 | | 16.25 |
| 37 | 6 | KUBUNA | KB | 122.6 | 1.5 | 23.18 | POOR | 1.00 | 22.33 | BMR | 7.01 |
| | | | | | | 23.61 | FAIR | 0.50 | 22.76 | | 7.44 |
| | | | | | | 24.11 | GOOD | 0.10 | 23.26 | | 7.94 |
| | | | | | | 28.36 | GOOD | 0.50 | 27.51 | | 12.19 |
| 38 | 6 | KUBUNA | KB | 115.2 | 357.2 | 22.41 | GOOD | 0.50 | 21.57 | BMR | 7.17 |
| | | | | | | 22.99 | FAIR | 0.50 | 22.15 | | 7.75 |
| 39 | 6 | KUBUNA | KB | 133.6 | 334.2 | 24.36 | GOOD | 0.10 | 24.02 | BMR | 7.32 |
| | | | | | | 25.45 | FAIR | 0.50 | 25.11 | | 8.41 |
| | | | | | | 26.90 | GOOD | 0.50 | 26.56 | | 9.86 |
| 40 | 6 | KUBUNA | KB | 123.8 | 336.9 | 23.39 | GOOD | 0.10 | 23.04 | BMR | 7.56 |
| | | | | | | 23.86 | FAIR | 0.10 | 23.51 | | 8.03 |
| | | | | | | 24.97 | FAIR | 0.50 | 24.62 | | 9.14 |
| 41 | 6 | KUBUNA | KB | 112.0 | 339.5 | 21.80 | GOOD | 0.10 | 21.42 | BMR | 7.42 |
| | | | | | | 22.24 | GOOD | 0.10 | 21.86 | | 7.86 |
| | | | | | | 24.72 | GOOD | 0.50 | 24.34 | | 10.34 |
| | | | | | | 29.62 | FAIR | 0.50 | 29.24 | | 15.24 |
| | | | | | | 39.14 | FAIR | 0.50 | 38.76 | | 24.76 |
| 43 | 6 | KUBUNA | KB | 159.2 | 333.6 | 27.84 | FAIR | 0.50 | 27.43 | BMR | 7.53 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 44 | 6 | KUBUNA | KB | 173.8 | 331.5 | 29.27 | GOOD | 0.10 | 29.04 | BMR | 7.31 |
| | | | | | | 31.64 | GOOD | 0.50 | 31.41 | | 9.68 |
| | | | | | | 47.23 | FAIR | 0.50 | 47.00 | | 25.27 |
| 45 | 6 | KUBUNA | KB | 187.0 | 329.1 | 31.10 | GOOD | 0.10 | 30.69 | BMR | 7.31 |
| | | | | | | 33.48 | GOOD | 0.50 | 33.07 | | 9.69 |
| | | | | | | 37.13 | FAIR | 0.50 | 36.72 | | 13.34 |
| 47 | 6 | KUBUNA | KB | 204.7 | 323.3 | 33.11 | GOOD | 0.10 | 33.01 | BMR | 7.42 |
| | | | | | | 36.54 | GOOD | 0.50 | 36.44 | | 10.85 |
| | | | | | | 38.54 | FAIR | 0.10 | 38.44 | | 12.85 |
| | | | | | | 41.24 | FAIR | 0.50 | 41.14 | | 15.55 |
| 48 | 6 | KUBUNA | KB | 256.9 | 315.1 | 39.60 | GOOD | 0.10 | 39.22 | BMR | 7.11 |
| | | | | | | 44.45 | GOOD | 0.50 | 44.07 | | 11.96 |
| | | | | | | 47.52 | FAIR | 0.50 | 47.14 | | 15.03 |
| 49 | 6 | KUBUNA | KB | 307.3 | 308.4 | 46.11 | GOOD | 0.10 | 45.53 | BMR | 7.12 |
| | | | | | | 50.51 | FAIR | 0.50 | 49.93 | | 11.52 |
| | | | | | | 55.14 | FAIR | 0.50 | 54.56 | | 16.15 |
| | | | | | | 59.23 | FAIR | 0.50 | 58.65 | | 20.24 |
| 50 | 6 | KUBUNA | KB | 370.5 | 303.3 | 53.77 | FAIR | 1.00 | 53.61 | BMR | 7.29 |
| | | | | | | 62.77 | FAIR | 0.50 | 62.61 | | 16.29 |
| 52 | 6 | KUBUNA | KB | 439.1 | 284.1 | 64.30 | POOR | 1.00 | 64.08 | BMR | 9.20 |
| 54 | 6 | KUBUNA | KB | 331.5 | 285.3 | 52.13 | FAIR | 1.00 | 52.01 | BMR | 10.57 |
| | | | | | | 60.63 | FAIR | 0.50 | 60.51 | | 19.07 |
| 55 | 6 | KUBUNA | KB | 304.2 | 280.5 | 48.58 | GOOD | 0.10 | 48.49 | BMR | 10.46 |
| | | | | | | 50.61 | FAIR | 0.50 | 50.52 | | 12.49 |
| 62 | 6 | KUBUNA | KB | 259.1 | 252.7 | 44.69 | GOOD | 0.10 | 42.94 | BMR | 10.55 |
| | | | | | | 46.22 | FAIR | 0.50 | 44.47 | | 12.08 |
| | | | | | | 52.01 | FAIR | 0.50 | 50.26 | | 17.87 |
| 69 | 6 | KUBUNA | KB | 209.6 | 188.6 | 35.81 | GOOD | 0.10 | 35.73 | BMR | 9.53 |
| | | | | | | 37.32 | FAIR | 0.50 | 37.24 | | 11.04 |
| | | | | | | 41.93 | FAIR | 0.50 | 41.85 | | 15.65 |
| 70 | 6 | KUBUNA | KB | 196.1 | 188.9 | 34.45 | GOOD | 0.50 | 34.39 | BMR | 9.87 |
| | | | | | | 34.86 | FAIR | 0.10 | 34.80 | | 10.28 |
| | | | | | | 36.41 | FAIR | 0.50 | 36.35 | | 11.83 |
| 71 | 6 | KUBUNA | KB | 185.6 | 193.0 | 31.48 | FAIR | 0.50 | 31.35 | BMR | 8.15 |
| | | | | | | 33.36 | GOOD | 0.10 | 33.23 | | 10.03 |
| | | | | | | 33.82 | FAIR | 0.50 | 33.69 | | 10.49 |
| | | | | | | 37.68 | FAIR | 0.50 | 37.55 | | 14.35 |
| 72 | 6 | KUBUNA | KB | 178.2 | 194.7 | 30.43 | GOOD | 0.50 | 30.22 | BMR | 7.94 |
| | | | | | | 31.65 | FAIR | 0.50 | 31.44 | | 9.16 |
| 73 | 6 | KUBUNA | KB | 167.3 | 197.2 | 28.91 | GOOD | 0.10 | 28.83 | BMR | 7.92 |
| | | | | | | 29.89 | FAIR | 0.50 | 29.81 | | 8.90 |
| | | | | | | 36.96 | FAIR | 0.50 | 36.88 | | 15.97 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 74 | 6 | KUBUNA | KB | 164.3 | 200.6 | 29.29 | GOOD | 0.10 | 29.03 | BMR | 8.49 |
| | | | | | | 30.09 | FAIR | 0.50 | 29.83 | | 9.29 |
| 75 | 6 | KUBUNA | KB | 160.1 | 204.2 | 28.78 | FAIR | 0.50 | 28.72 | BMR | 8.70 |
| | | | | | | 38.38 | FAIR | 0.50 | 38.32 | | 18.30 |
| 76 | 6 | KUBUNA | KB | 168.1 | 205.2 | 29.51 | GOOD | 0.50 | 29.22 | BMR | 8.21 |
| | | | | | | 33.18 | FAIR | 0.50 | 32.89 | | 11.88 |
| 77 | 6 | KUBUNA | KB | 179.4 | 205.8 | 32.23 | GOOD | 0.10 | 31.71 | BMR | 9.29 |
| | | | | | | 33.71 | GOOD | 0.50 | 33.19 | | 10.77 |
| | | | | | | 35.79 | FAIR | 0.50 | 35.27 | | 12.85 |
| 78 | 6 | KUBUNA | KB | 189.5 | 206.2 | 34.05 | GOOD | 1.00 | 33.34 | BMR | 9.65 |
| 79 | 6 | KUBUNA | KB | 200.9 | 206.3 | 35.44 | GOOD | 0.10 | 34.47 | BMR | 9.36 |
| | | | | | | 36.61 | GOOD | 0.50 | 35.64 | | 10.53 |
| | | | | | | 37.99 | FAIR | 0.10 | 37.02 | | 11.91 |
| 80 | 6 | KUBUNA | KB | 224.4 | 208.0 | 39.37 | FAIR | 0.50 | 38.77 | BMR | 10.72 |
| | | | | | | 39.96 | GOOD | 0.10 | 39.36 | | 11.31 |
| | | | | | | 44.90 | FAIR | 0.50 | 44.30 | | 16.25 |
| | | | | | | 46.86 | FAIR | 0.50 | 46.26 | | 18.21 |
| 82 | 6 | KUBUNA | KB | 154.0 | 215.6 | 26.11 | GOOD | 0.10 | 26.06 | BMR | 6.81 |
| | | | | | | 27.22 | FAIR | 0.10 | 27.17 | | 7.92 |
| | | | | | | 29.46 | GOOD | 0.50 | 29.41 | | 10.16 |
| | | | | | | 34.68 | FAIR | 0.50 | 34.63 | | 15.38 |
| 83 | 6 | KUBUNA | KB | 156.4 | 219.2 | 27.92 | FAIR | 0.50 | 27.86 | BMR | 8.31 |
| | | | | | | 29.37 | GOOD | 0.50 | 29.31 | | 9.76 |
| | | | | | | 31.19 | GOOD | 0.10 | 31.13 | | 11.58 |
| 84 | 6 | KUBUNA | KB | 156.5 | 221.9 | 27.48 | GOOD | 0.50 | 27.30 | BMR | 7.73 |
| | | | | | | 28.64 | GOOD | 0.10 | 28.46 | | 8.89 |
| | | | | | | 29.92 | GOOD | 0.50 | 29.74 | | 10.17 |
| | | | | | | 31.58 | GOOD | 0.50 | 31.40 | | 11.83 |
| 85 | 6 | KUBUNA | KB | 155.9 | 225.8 | 27.17 | GOOD | 0.10 | 26.89 | BMR | 7.40 |
| | | | | | | 28.33 | GOOD | 0.50 | 28.05 | | 8.56 |
| | | | | | | 30.12 | FAIR | 0.50 | 29.84 | | 10.35 |
| 86 | 6 | KUBUNA | KB | 156.9 | 229.1 | 27.14 | FAIR | 0.50 | 27.15 | BMR | 7.53 |
| | | | | | | 28.48 | GOOD | 0.10 | 28.49 | | 8.87 |
| | | | | | | 29.37 | FAIR | 0.10 | 29.38 | | 9.76 |
| | | | | | | 31.49 | FAIR | 0.50 | 31.50 | | 11.88 |
| 87 | 6 | KUBUNA | KB | 159.1 | 231.7 | 28.64 | GOOD | 0.50 | 28.26 | BMR | 8.37 |
| | | | | | | 29.51 | GOOD | 0.10 | 29.13 | | 9.24 |
| | | | | | | 30.04 | FAIR | 0.10 | 29.66 | | 9.77 |
| | | | | | | 36.61 | GOOD | 0.10 | 36.23 | | 16.34 |
| 88 | 6 | KUBUNA | KB | 181.1 | 241.0 | 31.71 | GOOD | 0.50 | 31.42 | BMR | 8.78 |
| | | | | | | 31.99 | GOOD | 0.10 | 31.70 | | 9.06 |
| | | | | | | 32.52 | FAIR | 0.10 | 32.23 | | 9.59 |
| | | | | | | 45.29 | GOOD | 0.10 | 45.00 | | 22.36 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 89 | 6 | KUBUNA | KB | 195.9 | 239.7 | 34.24 | GOOD | 0.10 | 33.75 | BMR | 9.26 |
| | | | | | | 34.47 | FAIR | 0.10 | 33.98 | | 9.49 |
| | | | | | | 35.32 | FAIR | 0.10 | 34.83 | | 10.34 |
| | | | | | | 40.78 | FAIR | 0.50 | 40.29 | | 15.80 |
| 90 | 6 | KUBUNA | KB | 207.0 | 238.8 | 35.56 | GOOD | 0.50 | 34.61 | BMR | 8.74 |
| | | | | | | 36.63 | FAIR | 0.50 | 35.68 | | 9.81 |
| | | | | | | 37.18 | FAIR | 0.10 | 36.23 | | 10.36 |
| | | | | | | 43.94 | GOOD | 0.50 | 42.99 | | 17.12 |
| | | | | | | 47.94 | GOOD | 0.50 | 46.99 | | 21.12 |
| 91 | 6 | KUBUNA | KB | 218.2 | 237.9 | 37.53 | GOOD | 0.50 | 36.69 | BMR | 9.42 |
| | | | | | | 38.99 | FAIR | 0.10 | 38.15 | | 10.88 |
| | | | | | | 42.14 | FAIR | 0.10 | 41.30 | | 14.03 |
| 92 | 6 | KUBUNA | KB | 235.5 | 237.2 | 41.61 | GOOD | 0.50 | 40.08 | BMR | 10.65 |
| 93 | 6 | KUBUNA | KB | 244.7 | 236.1 | 43.14 | GOOD | 0.50 | 41.21 | BMR | 10.62 |
| 94 | 6 | KUBUNA | KB | 257.4 | 235.9 | 45.43 | GOOD | 0.10 | 43.07 | BMR | 10.89 |
| | | | | | | 49.64 | FAIR | 0.50 | 47.28 | | 15.10 |
| 95 | 6 | KUBUNA | KB | 399.4 | 243.0 | 62.52 | GOOD | 0.10 | 59.98 | BMR | 10.05 |
| | | | | | | 64.64 | FAIR | 0.50 | 62.10 | | 12.17 |
| | | | | | | 70.64 | FAIR | 1.00 | 68.10 | | 18.17 |
| | | | | | | 78.18 | FAIR | 1.00 | 75.64 | | 25.71 |
| 96 | 6 | KUBUNA | KB | 371.8 | 244.4 | 57.35 | FAIR | 0.50 | 55.57 | BMR | 9.09 |
| | | | | | | 57.64 | GOOD | 0.10 | 55.86 | | 9.38 |
| | | | | | | 64.86 | FAIR | 0.50 | 63.08 | | 16.60 |
| 97 | 6 | KUBUNA | KB | 342.0 | 246.3 | 54.19 | GOOD | 0.10 | 51.98 | BMR | 9.23 |
| | | | | | | 56.80 | FAIR | 0.50 | 54.59 | | 11.84 |
| 98 | 6 | KUBUNA | KB | 174.5 | 244.1 | 29.99 | FAIR | 0.50 | 29.81 | BMR | 7.99 |
| | | | | | | 30.60 | GOOD | 0.50 | 30.42 | | 8.60 |
| | | | | | | 33.03 | FAIR | 0.50 | 32.85 | | 11.03 |
| 99 | 6 | KUBUNA | KB | 177.4 | 253.0 | 29.73 | FAIR | 0.50 | 29.73 | BMR | 7.56 |
| | | | | | | 30.24 | GOOD | 0.50 | 30.24 | | 8.07 |
| | | | | | | 30.84 | FAIR | 0.10 | 30.84 | | 8.67 |
| | | | | | | 32.28 | GOOD | 0.10 | 32.28 | | 10.11 |
| | | | | | | 36.08 | GOOD | 0.10 | 36.08 | | 13.91 |
| 100 | 6 | KUBUNA | KB | 180.7 | 25[illegible].3 | 31.02 | FAIR | 0.50 | 31.01 | BMR | 8.43 |
| | | | | | | 33.12 | FAIR | 0.50 | 33.11 | | 10.53 |
| 101 | 6 | KUBUNA | KB | 188.7 | 26[illegible].5 | 32.38 | FAIR | 0.50 | 32.38 | BMR | 8.79 |
| | | | | | | 33.29 | GOOD | 0.50 | 33.29 | | 9.70 |
| | | | | | | 35.73 | FAIR | 0.50 | 35.73 | | 12.14 |
| 102 | 6 | KUBUNA | KB | 191.4 | 265.3 | 33.86 | FAIR | 0.50 | 33.86 | BMR | 9.93 |
| | | | | | | 34.45 | GOOD | 0.10 | 34.45 | | 10.52 |
| 103 | 6 | KUBUNA | KB | 194.3 | 268.9 | 33.92 | GOOD | 0.50 | 33.92 | BMR | 9.63 |
| | | | | | | 34.81 | GOOD | 0.10 | 34.81 | | 10.52 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 104 | 6 | KUBUNA | KB | 213.2 | 270.9 | 36.32 | GOOD | 1.00 | 36.32 | BMR | 9.67 |
| | | | | | | 36.98 | FAIR | 0.50 | 36.98 | | 10.33 |
| | | | | | | 37.56 | FAIR | 0.50 | 37.56 | | 10.91 |
| 105 | 6 | KUBUNA | KB | 224.9 | 273.4 | 38.58 | GOOD | 0.50 | 38.58 | BMR | 10.47 |
| 106 | 6 | KUBUNA | KB | 234.3 | 274.1 | 39.44 | GOOD | 0.50 | 39.44 | BMR | 10.15 |
| | | | | | | 42.44 | FAIR | 0.50 | 42.44 | | 13.15 |
| 108 | 6 | KUBUNA | KB | 248.7 | 277.0 | 41.36 | GOOD | 0.50 | 41.36 | BMR | 10.27 |
| 109 | 6 | KUBUNA | KB | 271.5 | 276.3 | 44.16 | GOOD | 0.50 | 44.16 | BMR | 10.22 |
| | | | | | | 45.10 | GOOD | 0.10 | 45.10 | | 11.16 |
| | | | | | | 47.61 | FAIR | 0.50 | 47.61 | | 13.67 |
| 110 | 6 | KUBUNA | KB | 298.3 | 274.1 | 47.47 | GOOD | 0.50 | 47.36 | BMR | 10.07 |
| | | | | | | 48.17 | FAIR | 0.50 | 48.06 | | 10.77 |
| | | | | | | 54.26 | FAIR | 0.50 | 54.15 | | 16.86 |
| | | | | | | 60.92 | FAIR | 0.50 | 60.81 | | 23.52 |
| 111 | 6 | KUBUNA | KB | 296.9 | 266.5 | 46.05 | GOOD | 0.50 | 46.06 | BMR | 8.95 |
| | | | | | | 46.90 | GOOD | 0.10 | 46.91 | | 9.80 |
| | | | | | | 48.04 | FAIR | 0.50 | 48.05 | | 10.94 |
| 19 | 7 | BEREINA | BA | 133.2 | 106.0 | 25.66 | GOOD | 0.50 | 25.68 | BMR | 9.03 |
| | | | | | | 29.44 | GOOD | 0.50 | 29.46 | | 12.81 |
| 20 | 7 | BEREINA | BA | 45.6 | 34.0 | 12.15 | GOOD | 0.10 | 11.68 | BMR | 5.98 |
| | | | | | | 15.83 | FAIR | 0.50 | 15.36 | | 9.66 |
| 21 | 7 | BEREINA | BA | 55.2 | 32.8 | 14.04 | GOOD | 0.50 | 13.46 | BMR | 6.56 |
| | | | | | | 15.78 | GOOD | 0.50 | 15.20 | | 8.30 |
| 22 | 7 | BEREINA | BA | 66.0 | 31.9 | 15.95 | FAIR | 0.50 | 15.28 | BMR | 7.03 |
| | | | | | | 15.62 | GOOD | 0.50 | 14.95 | | 6.70 |
| 23 | 7 | BEREINA | BA | 80.3 | 34.3 | 18.29 | GOOD | 0.50 | 17.61 | BMR | 7.57 |
| 24 | 7 | BEREINA | BA | 87.1 | 33.9 | 19.35 | FAIR | 0.50 | 18.65 | BMR | 7.76 |
| | | | | | | 19.62 | GOOD | 0.10 | 18.92 | | 8.03 |
| 25 | 7 | BEREINA | BA | 125.3 | 37.6 | 24.82 | GOOD | 0.50 | 24.17 | BMR | 8.51 |
| | | | | | | 28.82 | GOOD | 0.50 | 28.17 | | 12.51 |
| | | | | | | 53.57 | FAIR | 0.50 | 52.92 | | 37.26 |
| 26 | 7 | BEREINA | BA | 168.7 | 35.0 | 101.38 | GOOD | 0.50 | 100.70 | BMR | 79.62 |
| 8 | 9 | MALALAUA | MA | 141.0 | 338.7 | 26.79 | FAIR | 0.50 | 26.53 | BMR | 8.90 |
| | | | | | | 28.34 | GOOD | 0.50 | 28.08 | | 10.45 |
| | | | | | | 30.71 | FAIR | 0.50 | 30.45 | | 12.82 |
| 11 | 9 | MALALAUA | MA | 109.3 | 343.3 | 22.77 | FAIR | 0.50 | 22.49 | BMR | 8.83 |
| | | | | | | 23.53 | GOOD | 0.50 | 23.25 | | 9.59 |
| | | | | | | 26.69 | FAIR | 0.50 | 26.41 | | 12.75 |
| | | | | | | 29.54 | FAIR | 0.50 | 29.26 | | 15.60 |
| 12 | 9 | MALALAUA | MA | 99.0 | 347.3 | 19.28 | POOR | 1.00 | 19.10 | BMR | 6.72 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 20.24 | POOR | 1.00 | 20.06 | | 7.68 |
| | | | | | | 23.48 | POOR | 1.00 | 23.30 | | 10.92 |
| | | | | | | 30.14 | POOR | 1.00 | 29.96 | | 17.58 |
| 13 | 9 | MALALAUA | MA | 88.5 | 350.8 | 18.67 | POOR | 1.00 | 18.44 | BMR | 7.38 |
| | | | | | | 19.92 | POOR | 1.00 | 19.69 | | 8.63 |
| 14 | 9 | MALALAUA | MA | 78.6 | 355.2 | 17.47 | GOOD | 0.10 | 17.35 | BMR | 7.53 |
| | | | | | | 18.67 | GOOD | 0.10 | 18.55 | | 8.73 |
| | | | | | | 21.02 | FAIR | 0.50 | 20.90 | | 11.08 |
| | | | | | | 33.66 | FAIR | 0.50 | 33.54 | | 23.72 |
| | | | | | | 38.18 | FAIR | 0.50 | 38.06 | | 28.24 |
| | | | | | | 39.30 | GOOD | 0.10 | 39.18 | | 29.36 |
| 15 | 9 | MALALAUA | MA | 68.8 | 1.7 | 16.39 | GOOD | 0.50 | 16.23 | BMR | 7.63 |
| | | | | | | 17.38 | GOOD | 0.10 | 17.22 | | 8.62 |
| | | | | | | 19.11 | FAIR | 0.50 | 18.95 | | 10.35 |
| | | | | | | 21.93 | FAIR | 0.50 | 21.77 | | 13.17 |
| 16 | 9 | MALALAUA | MA | 60.6 | 9.8 | 14.99 | POOR | 0.50 | 14.75 | BMR | 7.18 |
| | | | | | | 16.27 | GOOD | 0.50 | 16.03 | | 8.46 |
| 17 | 9 | MALALAUA | MA | 54.2 | 20.2 | 12.95 | GOOD | 0.10 | 12.97 | BMR | 6.20 |
| | | | | | | 15.05 | GOOD | 0.50 | 15.07 | | 8.30 |
| | | | | | | 20.44 | FAIR | 0.50 | 20.46 | | 13.69 |
| | | | | | | 23.50 | FAIR | 0.50 | 23.52 | | 16.75 |
| 18 | 9 | MALALAUA | MA | 45.8 | 54.9 | 12.15 | GOOD | 0.50 | 12.16 | BMR | 6.44 |
| | | | | | | 12.80 | GOOD | 0.50 | 12.81 | | 7.09 |
| | | | | | | 14.10 | FAIR | 0.50 | 14.11 | | 8.39 |
| 19 | 9 | MALALAUA | MA | 93.3 | 74.4 | 20.55 | GOOD | 0.10 | 20.57 | BMR | 8.91 |
| | | | | | | 24.66 | FAIR | 0.50 | 24.68 | | 13.02 |
| | | | | | | 25.95 | FAIR | 0.50 | 25.97 | | 14.31 |
| 20 | 9 | MALALAUA | MA | 100.4 | 352.6 | 21.31 | GOOD | 0.10 | 20.84 | BMR | 8.29 |
| | | | | | | 22.31 | FAIR | 0.10 | 21.84 | | 9.29 |
| | | | | | | 25.34 | POOR | 0.50 | 24.87 | | 12.32 |
| 22 | 9 | MALALAUA | MA | 117.8 | 358.3 | 24.83 | FAIR | 0.50 | 24.16 | BMR | 9.44 |
| | | | | | | 25.25 | GOOD | 0.10 | 24.58 | | 9.86 |
| 23 | 9 | MALALAUA | MA | 128.3 | 3.1 | 24.82 | GOOD | 0.50 | 24.14 | BMR | 8.10 |
| | | | | | | 26.70 | FAIR | 0.50 | 26.02 | | 9.98 |
| | | | | | | 32.33 | FAIR | 0.50 | 31.65 | | 15.61 |
| | | | | | | 36.96 | FAIR | 0.50 | 36.28 | | 20.24 |
| 25 | 9 | MALALAUA | MA | 165.6 | 13.3 | 31.12 | POOR | 1.00 | 30.47 | BMR | 9.77 |
| 26 | 9 | MALALAUA | MA | 208.4 | 16.3 | 35.12 | POOR | 1.00 | 34.45 | BMR | 8.40 |
| | | | | | | 36.78 | FAIR | 0.50 | 36.11 | | 10.06 |
| | | | | | | 38.64 | FAIR | 0.50 | 37.97 | | 11.92 |
| 35 | 9 | MALALAUA | MA | 212.7 | 349.3 | 38.77 | FAIR | 0.50 | 37.96 | BMR | 11.37 |
| | | | | | | 42.00 | FAIR | 1.00 | 41.19 | | 14.60 |
| | | | | | | 45.58 | FAIR | 0.50 | 44.77 | | 18.18 |
| | | | | | | 49.08 | FAIR | 0.50 | 48.27 | | 21.68 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 51.05 | FAIR | 0.50 | 50.24 | | 23.65 |
| 36 | 9 | MALALAUA | MA | 205.6 | 345.7 | 33.25 | POOR | 0.50 | 32.42 | BMR | 6.72 |
| | | | | | | 34.61 | POOR | 0.50 | 33.78 | | 8.08 |
| | | | | | | 38.23 | FAIR | 0.50 | 37.40 | | 11.70 |
| 37 | 9 | MALALAUA | MA | 200.4 | 341.9 | 35.98 | FAIR | 0.50 | 35.15 | BMR | 10.10 |
| | | | | | | 36.97 | FAIR | 0.50 | 36.14 | | 11.09 |
| | | | | | | 40.35 | FAIR | 0.50 | 39.52 | | 14.47 |
| 38 | 9 | MALALAUA | MA | 196.3 | 338.7 | 37.46 | FAIR | 0.50 | 36.64 | BMR | 12.10 |
| | | | | | | 38.40 | FAIR | 0.50 | 37.58 | | 13.04 |
| | | | | | | 42.22 | FAIR | 0.50 | 41.40 | | 16.86 |
| 39 | 9 | MALALAUA | MA | 225.2 | 326.7 | 41.86 | POOR | 0.50 | 41.54 | BMR | 13.39 |
| | | | | | | 45.22 | FAIR | 0.50 | 44.90 | | 16.75 |
| | | | | | | 48.31 | FAIR | 0.50 | 47.99 | | 19.84 |
| | | | | | | 51.11 | FAIR | 0.50 | 50.79 | | 22.64 |
| 44 | 9 | MALALAUA | MA | 265.9 | 326.0 | 46.64 | FAIR | 0.50 | 46.42 | BMR | 13.19 |
| | | | | | | 50.09 | FAIR | 0.50 | 49.87 | | 16.64 |
| | | | | | | 51.81 | FAIR | 0.50 | 51.59 | | 18.36 |
| | | | | | | 54.37 | FAIR | 0.50 | 54.15 | | 20.92 |
| 47 | 9 | MALALAUA | MA | 298.4 | 320.9 | 54.99 | POOR | 0.50 | 54.90 | BMR | 17.60 |
| | | | | | | 60.49 | FAIR | 0.50 | 60.40 | | 23.10 |
| 49 | 9 | MALALAUA | MA | 401.1 | 310.1 | 55.52 | POOR | 1.00 | 54.96 | BMR | 4.82 |
| | | | | | | 57.00 | FAIR | 0.50 | 56.44 | | 6.30 |
| | | | | | | 60.51 | FAIR | 0.50 | 59.95 | | 9.81 |
| | | | | | | 62.98 | FAIR | 0.50 | 62.42 | | 12.28 |
| 69 | 9 | MALALAUA | MA | 169.6 | 214.8 | 32.11 | GOOD | 0.50 | 32.04 | BMR | 10.84 |
| | | | | | | 36.57 | FAIR | 0.50 | 36.50 | | 15.30 |
| 71 | 9 | MALALAUA | MA | 155.6 | 223.5 | 29.77 | GOOD | 0.50 | 29.65 | BMR | 10.20 |
| 73 | 9 | MALALAUA | MA | 147.2 | 231.3 | 28.47 | GOOD | 0.10 | 28.40 | BMR | 10.00 |
| | | | | | | 30.30 | FAIR | 0.10 | 30.23 | | 11.83 |
| | | | | | | 52.15 | GOOD | 0.50 | 52.08 | | 33.68 |
| 75 | 9 | MALALAUA | MA | 152.7 | 239.2 | 29.56 | GOOD | 0.50 | 29.51 | BMR | 10.42 |
| 77 | 9 | MALALAUA | MA | 171.4 | 236.8 | 32.65 | GOOD | 0.10 | 32.15 | BMR | 10.72 |
| | | | | | | 35.28 | FAIR | 0.50 | 34.78 | | 13.35 |
| 79 | 9 | MALALAUA | MA | 191.0 | 234.0 | 36.24 | GOOD | 0.10 | 35.28 | BMR | 11.41 |
| | | | | | | 40.45 | FAIR | 0.50 | 39.49 | | 15.62 |
| 80 | 9 | MALALAUA | MA | 215.0 | 232.7 | 39.65 | GOOD | 0.50 | 39.06 | BMR | 12.19 |
| | | | | | | 48.39 | FAIR | 0.50 | 47.80 | | 20.93 |
| 8 | 10 | KEREMA | KM | 170.9 | 326.9 | 28.57 | POOR | 1.00 | 28.31 | MELB | 6.95 |
| 11 | 10 | KEREMA | KM | 137.8 | 327.7 | 25.60 | FAIR | 0.50 | 25.32 | MELB | 8.10 |
| | | | | | | 28.03 | FAIR | 0.50 | 27.75 | | 10.53 |
| | | | | | | 32.43 | FAIR | 0.50 | 32.15 | | 14.93 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 10 | KEREMA | KM | 114.1 | 330.4 | 23.37 | POOR | 1.00 | 23.14 | MELB | 8.88 |
| 15 | 10 | KEREMA | KM | 90.0 | 333.4 | 19.06 | GOOD | 0.50 | 18.90 | MELB | 7.65 |
| | | | | | | 23.88 | FAIR | 0.50 | 23.72 | | 12.47 |
| | | | | | | 30.28 | FAIR | 0.50 | 30.12 | | 18.87 |
| 16 | 10 | KEREMA | KM | 78.3 | 335.9 | 17.54 | GOOD | 0.50 | 17.30 | MELB | 7.51 |
| | | | | | | 21.13 | FAIR | 0.50 | 20.89 | | 11.10 |
| 17 | 10 | KEREMA | KM | 66.9 | 339.4 | 15.14 | GOOD | 0.50 | 15.16 | MELB | 6.80 |
| 18 | 10 | KEREMA | KM | 38.5 | 352.8 | 10.25 | GOOD | 0.10 | 10.26 | MELB | 5.45 |
| 19 | 10 | KEREMA | KM | 60.3 | 52.1 | 14.96 | GOOD | 0.50 | 14.98 | MELB | 7.44 |
| 20 | 10 | KEREMA | KM | 124.2 | 333.7 | 24.33 | FAIR | 0.50 | 23.86 | MELB | 8.33 |
| | | | | | | 44.65 | POOR | 0.50 | 44.18 | | 28.65 |
| | | | | | | 23.25 | FAIR | 0.50 | 22.78 | | 7.25 |
| 23 | 10 | KEREMA | KM | 144.3 | 345.8 | 26.26 | FAIR | 0.50 | 25.58 | MELB | 7.54 |
| | | | | | | 33.82 | FAIR | 0.50 | 33.14 | | 15.10 |
| | | | | | | 37.52 | FAIR | 0.50 | 36.84 | | 18.80 |
| | | | | | | 44.11 | FAIR | 0.50 | 43.43 | | 25.39 |
| 25 | 10 | KEREMA | KM | 173.0 | 358.6 | 29.23 | GOOD | 0.50 | 28.58 | MELB | 6.96 |
| | | | | | | 28.48 | FAIR | 0.50 | 27.83 | | 6.21 |
| | | | | | | 40.38 | FAIR | 0.50 | 39.73 | | 18.11 |
| 27 | 10 | KEREMA | KM | 255.6 | 8.9 | 40.09 | POOR | 1.00 | 39.66 | MELB | 7.71 |
| | | | | | | 70.69 | GOOD | 0.50 | 70.26 | | 38.31 |
| | | | | | | 74.39 | FAIR | 0.50 | 73.96 | | 42.01 |
| | | | | | | 88.49 | GOOD | 0.50 | 88.06 | | 56.11 |
| 31 | 10 | KEREMA | KM | 294.8 | 5.9 | 44.25 | POOR | 0.50 | 43.84 | MELB | 6.99 |
| 3 | 11 | GUARI | GU | 154.4 | 358.1 | 28.[illegible] | FAIR | 0.50 | 27.01 | BMR | 7.71 |
| 4 | 11 | GUARI | GU | 161.0 | 353.5 | 28.30 | GOOD | 0.50 | 27.28 | BMR | 7.16 |
| 5 | 11 | GUARI | GU | 147.7 | 1.7 | 24.80 | FAIR | 0.50 | 23.94 | BMR | 5.48 |
| 7 | 11 | GUARI | GU | 137.5 | 7.4 | 25.16 | FAIR | 0.50 | 24.27 | BMR | 7.08 |
| 8 | 11 | GUARI | GU | 128.3 | 12.4 | 24.07 | GOOD | 0.50 | 23.24 | BMR | 7.20 |
| 9 | 11 | GUARI | GU | 122.5 | 15.3 | 22.87 | FAIR | 0.50 | 22.15 | BMR | 6.84 |
| 10 | 11 | GUARI | GU | 117.8 | 20.7 | 23.48 | FAIR | 0.50 | 22.52 | BMR | 7.80 |
| 11 | 11 | GUARI | GU | 109.3 | 25.6 | 21.73 | FAIR | 0.50 | 20.88 | BMR | 7.22 |
| 20 | 11 | GUARI | GU | 114.2 | 35.1 | 22.15 | FAIR | 0.50 | 21.11 | BMR | 6.83 |
| 69 | 11 | GUARI | GU | 146.4 | 187.1 | 25.62 | GOOD | 0.50 | 24.98 | BMR | 6.68 |
| | | | | | | 35.37 | FAIR | 0.50 | 34.73 | | 16.43 |
| | | | | | | 45.47 | FAIR | 0.50 | 44.83 | | 26.53 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 70 | 11 | GUARI | GU | 132.9 | 187.5 | 21.95 | POOR | 0.50 | 21.33 | BMR | 4.71 |
| | | | | | | 25.85 | FAIR | 0.50 | 25.23 | | 8.61 |
| 71 | 11 | GUARI | GU | 122.3 | 193.5 | 19.17 | POOR | 1.00 | 18.48 | BMR | 3.19 |
| | | | | | | 23.27 | FAIR | 1.00 | 22.58 | | 7.29 |
| 73 | 11 | GUARI | GU | 104.4 | 200.4 | 17.95 | GOOD | 0.50 | 17.31 | BMR | 4.26 |
| 74 | 11 | GUARI | GU | 102.1 | 205.9 | 17.83 | FAIR | 0.50 | 17.01 | BMR | 4.25 |
| 75 | 11 | GUARI | GU | 99.1 | 212.0 | 17.78 | GOOD | 0.50 | 17.16 | BMR | 4.77 |
| 76 | 11 | GUARI | GU | 107.4 | 212.9 | 20.19 | POOR | 0.50 | 19.34 | BMR | 5.92 |
| | | | | | | 22.39 | FAIR | 0.50 | 21.54 | | 8.12 |
| 77 | 11 | GUARI | GU | 118.8 | 213.1 | 20.84 | GOOD | 0.50 | 19.76 | BMR | 4.91 |
| | | | | | | 20.97 | FAIR | 0.50 | 19.89 | | 5.04 |
| 79 | 11 | GUARI | GU | 140.5 | 212.7 | 24.96 | FAIR | 0.50 | 23.43 | BMR | 5.87 |
| 80 | 11 | GUARI | GU | 164.5 | 214.2 | 31.20 | POOR | 0.50 | 30.04 | BMR | 9.48 |
| | | | | | | 32.50 | GOOD | 0.50 | 31.34 | | 10.78 |
| 81 | 11 | GUARI | GU | 99.3 | 221.1 | 16.61 | POOR | 1.00 | 15.98 | BMR | 3.57 |
| | | | | | | 17.21 | FAIR | 0.50 | 16.58 | | 4.17 |
| 82 | 11 | GUARI | GU | 99.2 | 230.4 | 16.65 | GOOD | 0.50 | 16.04 | BMR | 3.64 |
| 83 | 11 | GUARI | GU | 104.3 | 235.4 | 17.70 | FAIR | 0.50 | 17.08 | BMR | 4.05 |
| | | | | | | 19.30 | FAIR | 0.50 | 18.68 | | 5.65 |
| 85 | 11 | GUARI | GU | 109.2 | 244.6 | 19.68 | FAIR | 0.50 | 18.84 | BMR | 5.19 |
| 88 | 11 | GUARI | GU | 147.7 | 260.0 | 25.28 | GOOD | 0.50 | 24.43 | BMR | 5.97 |
| 91 | 11 | GUARI | GU | 180.1 | 252.6 | 30.74 | GOOD | 0.50 | 29.34 | BMR | 6.83 |
| 94 | 11 | GUARI | GU | 216.6 | 247.7 | 39.18 | POOR | 0.50 | 36.26 | BMR | 9.18 |
| | | | | | | 40.58 | FAIR | 0.50 | 37.66 | | 10.58 |
| 99 | 11 | GUARI | GU | 157.0 | 273.7 | 27.35 | FAIR | 0.50 | 26.79 | BMR | 7.17 |
| | | | | | | 29.85 | FAIR | 0.50 | 29.29 | | 9.67 |
| 1 | 12 | TAPINI | TI | 147.0 | 4.6 | 27.41 | FAIR | 0.50 | 26.39 | BMR | 8.02 |
| | | | | | | 33.81 | GOOD | 0.50 | 32.79 | | 14.42 |
| | | | | | | 36.42 | FAIR | 0.50 | 35.40 | | 17.03 |
| 2 | 12 | TAPINI | TI | 140.5 | .1 | 26.42 | GOOD | 0.10 | 25.47 | BMR | 7.91 |
| | | | | | | 28.78 | FAIR | 0.50 | 27.83 | | 10.27 |
| | | | | | | 31.96 | FAIR | 0.50 | 31.01 | | 13.45 |
| 3 | 12 | TAPINI | TI | 129.6 | 3.0 | 24.68 | GOOD | 0.10 | 23.91 | BMR | 7.71 |
| | | | | | | 27.38 | FAIR | 0.10 | 26.61 | | 10.41 |
| | | | | | | 27.97 | FAIR | 0.50 | 27.20 | | 11.00 |
| | | | | | | 30.82 | FAIR | 0.10 | 30.05 | | 13.85 |
| 4 | 12 | TAPINI | TI | 135.3 | 357.3 | 24.70 | GOOD | 0.50 | 24.03 | BMR | 7.11 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 25.09 | GOOD | 0.50 | 24.42 | | 7.50 |
| | | | | | | 31.23 | FAIR | 0.50 | 30.56 | | 13.64 |
| | | | | | | 44.45 | FAIR | 0.50 | 43.78 | | 26.86 |
| 5 | 12 | TAPINI | TI | 123.8 | 7.6 | 23.00 | GOOD | 0.50 | 22.49 | BMR | 7.02 |
| | | | | | | 24.90 | FAIR | 0.50 | 24.39 | | 8.92 |
| | | | | | | 28.73 | FAIR | 0.50 | 28.22 | | 12.75 |
| 6 | 12 | TAPINI | TI | 120.1 | 11.3 | 22.75 | GOOD | 0.50 | 22.26 | BMR | 7.25 |
| | | | | | | 23.65 | FAIR | 0.50 | 23.16 | | 8.15 |
| | | | | | | 29.55 | FAIR | 0.50 | 29.06 | | 14.05 |
| | | | | | | 31.55 | FAIR | 0.50 | 31.06 | | 16.05 |
| 7 | 12 | TAPINI | TI | 115.4 | 14.8 | 22.11 | FAIR | 0.10 | 21.57 | BMR | 7.14 |
| | | | | | | 24.40 | FAIR | 0.50 | 23.86 | | 9.43 |
| | | | | | | 28.76 | FAIR | 0.50 | 28.22 | | 13.79 |
| 8 | 12 | TAPINI | TI | 107.9 | 21.4 | 21.31 | GOOD | 0.10 | 20.82 | BMR | 7.34 |
| 9 | 12 | TAPINI | TI | 103.2 | 25.4 | 20.57 | GOOD | 0.10 | 20.20 | BMR | 7.30 |
| | | | | | | 22.45 | FAIR | 0.50 | 22.08 | | 9.18 |
| 10 | 12 | TAPINI | TI | 100.8 | 32.1 | 20.51 | FAIR | 0.10 | 19.90 | BMR | 7.30 |
| | | | | | | 21.44 | FAIR | 0.50 | 20.83 | | 8.23 |
| | | | | | | 23.07 | FAIR | 0.50 | 22.46 | | 9.86 |
| 11 | 12 | TAPINI | TI | 94.5 | 38.7 | 19.12 | GOOD | 0.10 | 18.62 | BMR | 6.80 |
| 13 | 12 | TAPINI | TI | 94.9 | 53.6 | 19.14 | GOOD | 0.10 | 18.69 | BMR | 6.82 |
| | | | | | | 20.53 | FAIR | 0.50 | 20.08 | | 8.21 |
| | | | | | | 22.16 | FAIR | 0.50 | 21.71 | | 9.84 |
| 14 | 12 | TAPINI | TI | 96.3 | 60.6 | 19.31 | GOOD | 0.10 | 18.96 | BMR | 6.93 |
| | | | | | | 20.41 | FAIR | 0.50 | 20.06 | | 8.03 |
| 15 | 12 | TAPINI | TI | 99.9 | 67.8 | 20.34 | FAIR | 0.50 | 19.95 | BMR | 7.47 |
| | | | | | | 25.39 | FAIR | 0.50 | 25.00 | | 12.52 |
| 16 | 12 | TAPINI | TI | 104.8 | 74.1 | 21.06 | POOR | 0.50 | 20.60 | BMR | 7.50 |
| | | | | | | 21.53 | FAIR | 0.10 | 21.07 | | 7.97 |
| | | | | | | 23.97 | FAIR | 0.50 | 23.51 | | 10.41 |
| 17 | 12 | TAPINI | TI | 111.0 | 79.7 | 21.56 | GOOD | 0.10 | 21.36 | BMR | 7.48 |
| | | | | | | 29.45 | FAIR | 0.50 | 29.25 | | 15.37 |
| | | | | | | 34.36 | FAIR | 0.50 | 34.16 | | 20.28 |
| 18 | 12 | TAPINI | TI | 128.0 | 92.1 | 24.59 | GOOD | 0.10 | 24.38 | BMR | 8.38 |
| | | | | | | 26.69 | POOR | 0.10 | 26.48 | | 10.48 |
| 19 | 12 | TAPINI | TI | 180.4 | 91.9 | 31.18 | FAIR | 0.10 | 30.98 | BMR | 8.43 |
| | | | | | | 39.88 | POOR | 0.50 | 39.68 | | 17.13 |
| 20 | 12 | TAPINI | TI | 103.6 | 48.6 | 20.65 | GOOD | 0.10 | 19.95 | BMR | 7.00 |
| 21 | 12 | TAPINI | TI | 112.6 | 46.7 | 22.55 | GOOD | 0.10 | 21.74 | BMR | 7.67 |
| | | | | | | 25.10 | FAIR | 0.50 | 24.29 | | 10.22 |
| | | | | | | 27.16 | FAIR | 0.50 | 26.35 | | 12.28 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 29.76 | FAIR | 0.50 | 28.95 | | 14.88 |
| 22 | 12 | TAPINI | TI | 122.9 | 45.1 | 24.35 | GOOD | 0.10 | 23.45 | BMR | 8.09 |
| | | | | | | 25.91 | FAIR | 0.50 | 25.01 | | 9.65 |
| | | | | | | 27.51 | FAIR | 0.50 | 26.61 | | 11.25 |
| | | | | | | 30.40 | FAIR | 0.10 | 29.50 | | 14.14 |
| 23 | 12 | TAPINI | TI | 137.5 | 45.1 | 25.03 | FAIR | 0.50 | 24.12 | BMR | 6.93 |
| | | | | | | 26.42 | FAIR | 0.50 | 25.51 | | 8.32 |
| | | | | | | 30.22 | FAIR | 0.50 | 29.31 | | 12.12 |
| 24 | 12 | TAPINI | TI | 144.0 | 44.4 | 26.22 | FAIR | 0.50 | 25.30 | BMR | 7.30 |
| | | | | | | 27.72 | FAIR | 0.50 | 26.80 | | 8.80 |
| | | | | | | 29.52 | FAIR | 0.50 | 28.60 | | 10.60 |
| 25 | 12 | TAPINI | TI | 182.9 | 44.7 | 30.00 | FAIR | 0.10 | 29.12 | BMR | 6.26 |
| | | | | | | 33.49 | GOOD | 0.10 | 32.61 | | 9.75 |
| | | | | | | 34.92 | FAIR | 0.50 | 34.04 | | 11.18 |
| | | | | | | 39.14 | FAIR | 0.50 | 38.26 | | 15.40 |
| 26 | 12 | TAPINI | TI | 225.2 | 41.4 | 35.29 | FAIR | 0.50 | 34.39 | BMR | 6.24 |
| | | | | | | 45.29 | FAIR | 0.50 | 44.39 | | 16.24 |
| | | | | | | 51.19 | FAIR | 0.50 | 50.29 | | 22.14 |
| 27 | 12 | TAPINI | TI | 271.0 | 39.4 | 40.28 | FAIR | 0.50 | 39.62 | BMR | 5.74 |
| | | | | | | 47.18 | FAIR | 0.50 | 46.52 | | 12.64 |
| | | | | | | 55.28 | FAIR | 0.50 | 54.62 | | 20.74 |
| | | | | | | 57.48 | FAIR | 0.50 | 56.82 | | 22.94 |
| | | | | | | 61.48 | FAIR | 0.50 | 60.82 | | 26.94 |
| | | | | | | 67.08 | FAIR | 0.50 | 66.42 | | 32.54 |
| 31 | 12 | TAPINI | TI | 298.6 | 33.1 | 37.22 | FAIR | 0.50 | 36.59 | BMR | -.74 |
| 32 | 12 | TAPINI | TI | 257.9 | 29.0 | 38.64 | POOR | 0.50 | 37.87 | BMR | 5.63 |
| 35 | 12 | TAPINI | TI | 185.3 | 16.0 | 30.85 | GOOD | 0.50 | 29.81 | BMR | 6.65 |
| | | | | | | 33.32 | GOOD | 0.50 | 32.28 | | 9.12 |
| | | | | | | 35.03 | GOOD | 0.50 | 33.99 | | 10.83 |
| 37 | 12 | TAPINI | TI | 162.1 | 10.1 | 28.40 | FAIR | 0.50 | 27.34 | BMR | 7.08 |
| | | | | | | 30.90 | GOOD | 0.50 | 29.84 | | 9.58 |
| | | | | | | 36.10 | GOOD | 0.50 | 35.04 | | 14.78 |
| 38 | 12 | TAPINI | TI | 153.3 | 7.3 | 27.31 | GOOD | 0.10 | 26.26 | BMR | 7.10 |
| | | | | | | 33.13 | FAIR | 0.50 | 32.08 | | 12.92 |
| 39 | 12 | TAPINI | TI | 160.8 | 348.1 | 28.34 | GOOD | 0.50 | 27.79 | BMR | 7.69 |
| | | | | | | 31.62 | GOOD | 0.50 | 31.07 | | 10.97 |
| 40 | 12 | TAPINI | TI | 152.8 | 351.1 | 27.55 | POOR | 0.50 | 26.98 | BMR | 7.88 |
| 41 | 12 | TAPINI | TI | 142.6 | 354.3 | 26.62 | GOOD | 0.50 | 26.03 | BMR | 8.20 |
| | | | | | | 29.10 | GOOD | 0.50 | 28.51 | | 10.68 |
| 44 | 12 | TAPINI | TI | 198.4 | 343.0 | 32.95 | GOOD | 0.50 | 32.51 | BMR | 7.71 |
| | | | | | | 35.65 | GOOD | 0.50 | 35.21 | | 10.41 |
| | | | | | | 39.15 | GOOD | 0.50 | 38.71 | | 13.91 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 47 | 12 | TAPINI | TI | 223.5 | 334.2 | 38.60 | POOR | 0.50 | 38.28 | BMR | 10.34 |
| 48 | 12 | TAPINI | TI | 269.2 | 324.5 | 42.30 | FAIR | 0.50 | 41.71 | BMR | 8.06 |
| | | | | | | 49.10 | FAIR | 0.50 | 48.51 | | 14.86 |
| 50 | 12 | TAPINI | TI | 372.9 | 310.3 | 63.52 | FAIR | 0.50 | 63.14 | BMR | 16.53 |
| 55 | 12 | TAPINI | TI | 289.5 | 288.6 | 44.95 | FAIR | 0.50 | 44.65 | BMR | 8.46 |
| 56 | 12 | TAPINI | TI | 175.2 | 271.5 | 28.78 | GOOD | 0.50 | 28.57 | BMR | 6.67 |
| | | | | | | 31.98 | GOOD | 0.50 | 31.77 | | 9.87 |
| 59 | 12 | TAPINI | TI | 195.0 | 266.3 | 30.77 | FAIR | 0.50 | 30.28 | BMR | 5.90 |
| | | | | | | 31.37 | GOOD | 0.50 | 30.88 | | 6.50 |
| 61 | 12 | TAPINI | TI | 213.0 | 261.0 | 38.23 | FAIR | 1.00 | 36.72 | BMR | 10.10 |
| | | | | | | 41.23 | GOOD | 0.50 | 39.72 | | 13.10 |
| | | | | | | 47.33 | GOOD | 0.50 | 45.82 | | 19.20 |
| 62 | 12 | TAPINI | TI | 226.0 | 259.9 | 42.49 | FAIR | 0.50 | 40.53 | BMR | 12.28 |
| 63 | 12 | TAPINI | TI | 256.4 | 255.3 | 42.48 | GOOD | 0.50 | 40.22 | BMR | 8.17 |
| | | | | | | 45.28 | FAIR | 0.50 | 43.02 | | 10.97 |
| | | | | | | 56.18 | FAIR | 0.50 | 53.92 | | 21.87 |
| 69 | 12 | TAPINI | TI | 170.2 | 182.1 | 28.43 | GOOD | 0.50 | 28.13 | BMR | 6.86 |
| | | | | | | 31.13 | GOOD | 0.50 | 30.83 | | 9.56 |
| 70 | 12 | TAPINI | TI | 156.8 | 181.9 | 28.10 | POOR | 0.50 | 27.82 | BMR | 8.22 |
| | | | | | | 29.90 | FAIR | 0.50 | 29.62 | | 10.02 |
| 71 | 12 | TAPINI | TI | 144.7 | 186.6 | 25.41 | FAIR | 0.50 | 25.07 | BMR | 6.98 |
| | | | | | | 27.91 | GOOD | 0.50 | 27.57 | | 9.48 |
| | | | | | | 35.01 | GOOD | 0.50 | 34.67 | | 16.58 |
| 72 | 12 | TAPINI | TI | 136.8 | 188.5 | 27.61 | POOR | 1.00 | 27.19 | BMR | 10.09 |
| | | | | | | 31.31 | FAIR | 1.00 | 30.89 | | 13.79 |
| 73 | 12 | TAPINI | TI | 125.2 | 191.2 | 21.71 | GOOD | 0.50 | 21.42 | BMR | 5.77 |
| | | | | | | 23.51 | GOOD | 0.50 | 23.22 | | 7.57 |
| 74 | 12 | TAPINI | TI | 121.2 | 195.6 | 20.38 | GOOD | 0.50 | 19.91 | BMR | 4.76 |
| | | | | | | 23.78 | GOOD | 0.50 | 23.31 | | 8.16 |
| | | | | | | 26.98 | FAIR | 0.50 | 26.51 | | 11.36 |
| 75 | 12 | TAPINI | TI | 116.3 | 200.4 | 19.26 | GOOD | 0.50 | 18.98 | BMR | 4.45 |
| | | | | | | 23.16 | GOOD | 0.50 | 22.88 | | 8.35 |
| 76 | 12 | TAPINI | TI | 124.0 | 202.0 | 23.33 | FAIR | 0.50 | 22.83 | BMR | 7.33 |
| | | | | | | 27.23 | FAIR | 0.50 | 26.73 | | 11.23 |
| 77 | 12 | TAPINI | TI | 135.2 | 203.0 | 22.78 | FAIR | 1.00 | 22.05 | BMR | 5.15 |
| | | | | | | 24.78 | GOOD | 0.50 | 24.05 | | 7.15 |
| 79 | 12 | TAPINI | TI | 156.7 | 204.1 | 29.79 | FAIR | 0.50 | 28.61 | BMR | 9.02 |
| 80 | 12 | TAPINI | TI | 180.0 | 206.5 | 29.49 | POOR | 0.50 | 28.68 | BMR | 6.18 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 32.83 | GOOD | 0.50 | 32.02 | | 9.52 |
| | | | | | | 36.39 | GOOD | 0.50 | 35.58 | | 13.08 |
| 81 | 12 | TAPINI | TI | 113.1 | 208.1 | 18.71 | GOOD | 0.50 | 18.43 | BMR | 4.29 |
| | | | | | | 21.13 | FAIR | 0.50 | 20.85 | | 6.71 |
| 82 | 12 | TAPINI | TI | 109.2 | 216.2 | 18.00 | GOOD | 0.10 | 17.74 | BMR | 4.09 |
| 83 | 12 | TAPINI | TI | 111.9 | 221.3 | 18.56 | GOOD | 0.50 | 18.29 | BMR | 4.30 |
| | | | | | | 20.57 | FAIR | 0.50 | 20.30 | | 6.31 |
| | | | | | | 24.99 | FAIR | 0.50 | 24.72 | | 10.73 |
| 84 | 12 | TAPINI | TI | 112.3 | 225.1 | 19.27 | GOOD | 0.10 | 18.87 | BMR | 4.83 |
| | | | | | | 20.79 | GOOD | 0.50 | 20.39 | | 6.35 |
| | | | | | | 22.11 | FAIR | 0.50 | 21.71 | | 7.67 |
| 85 | 12 | TAPINI | TI | 112.4 | 230.4 | 19.49 | GOOD | 0.10 | 19.00 | BMR | 4.95 |
| 86 | 12 | TAPINI | TI | 114.3 | 235.0 | 19.77 | GOOD | 0.10 | 19.56 | BMR | 5.27 |
| 87 | 12 | TAPINI | TI | 117.3 | 238.4 | 21.10 | GOOD | 0.50 | 20.51 | BMR | 5.85 |
| 88 | 12 | TAPINI | TI | 142.7 | 249.3 | 24.73 | GOOD | 0.10 | 24.22 | BMR | 6.39 |
| | | | | | | 29.83 | FAIR | 0.50 | 29.32 | | 11.49 |
| | | | | | | 32.70 | GOOD | 0.50 | 32.19 | | 14.36 |
| 89 | 12 | TAPINI | TI | 156.8 | 246.8 | 27.10 | GOOD | 0.10 | 26.40 | BMR | 6.80 |
| | | | | | | 34.16 | FAIR | 0.50 | 33.46 | | 13.86 |
| 90 | 12 | TAPINI | TI | 167.5 | 245.3 | 29.33 | GOOD | 0.50 | 28.17 | BMR | 7.23 |
| | | | | | | 30.17 | FAIR | 0.50 | 29.01 | | 8.07 |
| | | | | | | 33.28 | FAIR | 0.50 | 32.12 | | 11.18 |
| 91 | 12 | TAPINI | TI | 178.2 | 243.8 | 30.42 | GOOD | 0.50 | 29.37 | BMR | 7.09 |
| | | | | | | 33.47 | FAIR | 0.50 | 32.42 | | 10.14 |
| | | | | | | 36.42 | FAIR | 0.50 | 35.37 | | 13.09 |
| 92 | 12 | TAPINI | TI | 195.2 | 242.4 | 33.73 | GOOD | 0.50 | 31.99 | BMR | 7.59 |
| | | | | | | 35.83 | FAIR | 0.50 | 34.09 | | 9.69 |
| | | | | | | 39.43 | FAIR | 0.50 | 37.69 | | 13.29 |
| | | | | | | 43.63 | FAIR | 0.50 | 41.89 | | 17.49 |
| 93 | 12 | TAPINI | TI | 204.0 | 240.9 | 32.45 | POOR | 0.50 | 30.31 | BMR | 4.81 |
| | | | | | | 38.05 | GOOD | 0.50 | 35.91 | | 10.41 |
| 94 | 12 | TAPINI | TI | 216.6 | 240.4 | 39.31 | GOOD | 0.50 | 36.74 | BMR | 9.66 |
| | | | | | | 40.96 | FAIR | 0.50 | 38.39 | | 11.31 |
| 95 | 12 | TAPINI | TI | 361.1 | 246.5 | 57.74 | GOOD | 0.10 | 54.99 | BMR | 9.85 |
| | | | | | | 59.27 | FAIR | 0.50 | 56.52 | | 11.38 |
| | | | | | | 66.17 | FAIR | 0.50 | 63.42 | | 18.28 |
| 96 | 12 | TAPINI | TI | 334.1 | 248.4 | 52.87 | GOOD | 0.50 | 50.88 | BMR | 9.11 |
| 97 | 12 | TAPINI | TI | 305.2 | 250.9 | 47.78 | GOOD | 0.50 | 45.36 | BMR | 7.21 |
| 98 | 12 | TAPINI | TI | 137.6 | 253.6 | 24.26 | FAIR | 1.00 | 23.86 | BMR | 6.66 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 99 | 12 | TAPINI | TI | 145.4 | 264.2 | 24.56 | GOOD | 0.50 | 24.35 | BMR | 6.17 |
| | | | | | | 27.60 | GOOD | 0.10 | 27.39 | | 9.21 |
| | | | | | | 31.16 | FAIR | 0.50 | 30.95 | | 12.77 |
| 101 | 12 | TAPINI | TI | 162.6 | 274.4 | 27.16 | GOOD | 0.10 | 26.94 | BMR | 6.62 |
| | | | | | | 27.62 | GOOD | 0.50 | 27.40 | | 7.08 |
| | | | | | | 30.71 | GOOD | 0.50 | 30.49 | | 10.17 |
| 104 | 12 | TAPINI | TI | 192.5 | 282.2 | 31.64 | GOOD | 0.50 | 31.43 | BMR | 7.37 |
| | | | | | | 34.54 | GOOD | 0.50 | 34.33 | | 10.27 |
| | | | | | | 37.84 | GOOD | 0.50 | 37.63 | | 13.57 |
| 105 | 12 | TAPINI | TI | 205.9 | 284.3 | 36.55 | GOOD | 0.50 | 36.34 | BMR | 10.60 |
| 107 | 12 | TAPINI | TI | 224.1 | 287.1 | 35.78 | FAIR | 0.50 | 35.56 | BMR | 7.55 |
| | | | | | | 38.94 | GOOD | 0.50 | 38.72 | | 10.71 |
| | | | | | | 40.27 | GOOD | 0.50 | 40.05 | | 12.04 |
| 109 | 12 | TAPINI | TI | 254.0 | 285.4 | 40.58 | GOOD | 0.50 | 40.37 | BMR | 8.62 |
| | | | | | | 42.08 | FAIR | 0.50 | 41.87 | | 10.12 |
| | | | | | | 45.68 | FAIR | 0.50 | 45.47 | | 13.72 |
| 110 | 12 | TAPINI | TI | 278.8 | 282.1 | 45.08 | GOOD | 0.50 | 44.75 | BMR | 9.90 |
| | | | | | | 48.08 | GOOD | 0.50 | 47.75 | | 12.90 |
| | | | | | | 58.78 | FAIR | 0.50 | 58.45 | | 23.60 |
| 1 | 13 | WOITAPE | WP | 132.2 | 18.0 | 26.12 | GOOD | 0.10 | 24.96 | BMR | 8.44 |
| | | | | | | 26.58 | GOOD | 0.50 | 25.42 | | 8.90 |
| | | | | | | 32.43 | FAIR | 0.50 | 31.27 | | 14.75 |
| 3 | 13 | WOITAPE | WP | 114.4 | 18.3 | 22.47 | GOOD | 0.10 | 21.56 | BMR | 7.26 |
| 4 | 13 | WOITAPE | WP | 116.6 | 11.3 | 22.33 | GOOD | 0.10 | 21.52 | BMR | 6.94 |
| | | | | | | 27.04 | FAIR | 0.50 | 26.23 | | 11.65 |
| | | | | | | 40.76 | FAIR | 0.50 | 39.95 | | 25.37 |
| 7 | 13 | WOITAPE | WP | 108.0 | 32.9 | 21.56 | GOOD | 0.50 | 20.88 | BMR | 7.38 |
| 8 | 13 | WOITAPE | WP | 105.1 | 40.8 | 20.15 | GOOD | 0.50 | 19.52 | BMR | 6.39 |
| 9 | 13 | WOITAPE | WP | 103.1 | 45.4 | 20.26 | GOOD | 0.10 | 19.75 | BMR | 6.86 |
| | | | | | | 26.91 | GOOD | 0.50 | 26.40 | | 13.51 |
| | | | | | | 28.21 | GOOD | 0.50 | 27.70 | | 14.81 |
| 10 | 13 | WOITAPE | WP | 104.9 | 52.1 | 21.43 | GOOD | 0.10 | 20.68 | BMR | 7.57 |
| 11 | 13 | WOITAPE | WP | 102.9 | 59.1 | 21.01 | GOOD | 0.50 | 20.37 | BMR | 7.50 |
| 14 | 13 | WOITAPE | WP | 116.1 | 76.8 | 23.27 | GOOD | 0.10 | 22.78 | BMR | 8.27 |
| 15 | 13 | WOITAPE | WP | 122.8 | 82.1 | 24.12 | GOOD | 0.10 | 23.59 | BMR | 8.24 |
| | | | | | | 27.69 | GOOD | 0.50 | 27.16 | | 11.81 |
| | | | | | | 29.30 | GOOD | 0.50 | 28.77 | | 13.42 |
| 16 | 13 | WOITAPE | WP | 130.1 | 86.6 | 26.55 | GOOD | 0.10 | 25.95 | BMR | 9.68 |
| | | | | | | 30.13 | GOOD | 0.50 | 29.53 | | 13.26 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 31.91 | GOOD | 0.50 | 31.31 | | 15.04 |
| 23 | 13 | WOITAPE | WP | 147.7 | 59.0 | 26.73 | GOOD | 0.10 | 25.68 | BMR | 7.22 |
| 71 | 13 | WOITAPE | WP | 165.1 | 175.6 | 31.62 | FAIR | 1.00 | 31.14 | BMR | 10.50 |
| 73 | 13 | WOITAPE | WP | 143.7 | 178.1 | 28.46 | GOOD | 0.10 | 28.03 | BMR | 10.06 |
| 74 | 13 | WOITAPE | WP | 137.6 | 181.5 | 23.73 | FAIR | 1.00 | 23.12 | BMR | 5.92 |
| 85 | 13 | WOITAPE | WP | 108.8 | 211.9 | 18.78 | GOOD | 0.10 | 18.15 | BMR | 4.55 |
| 88 | 13 | WOITAPE | WP | 126.3 | 235.6 | 23.29 | GOOD | 0.50 | 22.64 | BMR | 6.86 |
| 91 | 13 | WOITAPE | WP | 164.1 | 232.7 | 29.36 | GOOD | 0.10 | 28.17 | BMR | 7.65 |
| 1 | 14 | LAMINGTON | LMG | 163.5 | 59.1 | 29.35 | FAIR | 0.50 | 28.26 | RAB | 7.82 |
| | | | | | | 31.05 | FAIR | 0.50 | 29.96 | | 9.52 |
| | | | | | | 39.25 | FAIR | 0.50 | 38.16 | | 17.72 |
| 2 | 14 | LAMINGTON | LMG | 150.5 | 58.8 | 28.95 | POOR | 0.50 | 27.93 | RAB | 9.12 |
| 3 | 14 | LAMINGTON | LMG | 150.9 | 63.7 | 27.38 | FAIR | 0.50 | 26.53 | RAB | 7.67 |
| | | | | | | 28.48 | GOOD | 0.10 | 27.63 | | 8.77 |
| | | | | | | 31.08 | FAIR | 0.50 | 30.23 | | 11.37 |
| 4 | 14 | LAMINGTON | LMG | 142.2 | 59.3 | 24.35 | FAIR | 0.50 | 23.61 | RAB | 5.83 |
| | | | | | | 24.95 | GOOD | 0.50 | 24.21 | | 6.43 |
| | | | | | | 25.85 | FAIR | 0.50 | 25.11 | | 7.33 |
| | | | | | | 28.55 | FAIR | 0.50 | 27.81 | | 10.03 |
| 5 | 14 | LAMINGTON | LMG | 156.8 | 67.4 | 28.15 | GOOD | 0.10 | 27.57 | RAB | 7.97 |
| | | | | | | 29.45 | FAIR | 0.50 | 28.87 | | 9.27 |
| 6 | 14 | LAMINGTON | LMG | 161.7 | 70.0 | 28.71 | FAIR | 0.50 | 28.15 | RAB | 7.93 |
| | | | | | | 29.41 | GOOD | 0.10 | 28.85 | | 8.63 |
| 7 | 14 | LAMINGTON | LMG | 165.4 | 72.8 | 30.11 | GOOD | 0.10 | 29.50 | RAB | 8.82 |
| | | | | | | 36.01 | GOOD | 0.50 | 35.40 | | 14.72 |
| 8 | 14 | LAMINGTON | LMG | 172.1 | 77.3 | 30.72 | GOOD | 0.10 | 30.16 | RAB | 8.65 |
| | | | | | | 31.22 | GOOD | 0.10 | 30.66 | | 9.15 |
| 10 | 14 | LAMINGTON | LMG | 183.4 | 82.9 | 32.13 | GOOD | 0.50 | 31.45 | RAB | 8.52 |
| 11 | 14 | LAMINGTON | LMG | 187.8 | 86.6 | 32.88 | GOOD | 0.10 | 32.30 | RAB | 8.83 |
| | | | | | | 34.28 | FAIR | 0.50 | 33.70 | | 10.23 |
| | | | | | | 47.98 | FAIR | 0.50 | 47.40 | | 23.93 |
| 12 | 14 | LAMINGTON | LMG | 197.3 | 89.2 | 38.07 | POOR | 1.00 | 37.59 | RAB | 12.93 |
| 13 | 14 | LAMINGTON | LMG | 204.9 | 91.8 | 34.82 | FAIR | 1.00 | 34.30 | RAB | 8.68 |
| 14 | 14 | LAMINGTON | LMG | 212.8 | 94.2 | 35.49 | GOOD | 0.10 | 35.07 | RAB | 8.47 |
| | | | | | | 40.89 | FAIR | 0.50 | 40.47 | | 13.87 |
| | | | | | | 44.09 | FAIR | 0.50 | 43.67 | | 17.07 |
| | | | | | | 46.29 | FAIR | 0.50 | 45.87 | | 19.27 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 53.09 | FAIR | 0.50 | 52.67 | | 26.07 |
| 15 | 14 | LAMINGTON | LMG | 222.3 | 96.5 | 37.13 | FAIR | 1.00 | 36.67 | RAB | 8.89 |
| 16 | 14 | LAMINGTON | LMG | 231.7 | 98.5 | 38.38 | POOR | 1.00 | 37.84 | RAB | 8.88 |
| 17 | 14 | LAMINGTON | LMG | 241.4 | 100.3 | 39.05 | GOOD | 0.10 | 38.78 | RAB | 8.60 |
| | | | | | | 43.15 | FAIR | 0.50 | 42.88 | | 12.70 |
| | | | | | | 48.55 | FAIR | 0.50 | 48.28 | | 18.10 |
| 18 | 14 | LAMINGTON | LMG | 265.1 | 104.8 | 41.98 | FAIR | 0.50 | 41.70 | RAB | 8.56 |
| | | | | | | 45.18 | FAIR | 1.00 | 44.90 | | 11.76 |
| 19 | 14 | LAMINGTON | LMG | 316.2 | 102.6 | 48.72 | FAIR | 0.50 | 48.45 | RAB | 8.92 |
| | | | | | | 50.32 | FAIR | 0.50 | 50.04 | | 10.52 |
| | | | | | | 52.72 | FAIR | 0.50 | 52.45 | | 12.92 |
| | | | | | | 56.12 | FAIR | 0.50 | 55.84 | | 16.32 |
| 20 | 14 | LAMINGTON | LMG | 206.1 | 88.4 | 34.90 | GOOD | 0.50 | 34.13 | RAB | 8.37 |
| 21 | 14 | LAMINGTON | LMG | 210.9 | 86.1 | 35.91 | FAIR | 1.00 | 35.03 | RAB | 8.67 |
| | | | | | | 38.01 | FAIR | 1.00 | 37.13 | | 10.77 |
| 22 | 14 | LAMINGTON | LMG | 216.7 | 83.6 | 36.67 | GOOD | 0.50 | 35.70 | RAB | 8.61 |
| 23 | 14 | LAMINGTON | LMG | 228.4 | 81.4 | 36.82 | GOOD | 0.10 | 35.84 | RAB | 7.29 |
| | | | | | | 46.82 | GOOD | 0.50 | 45.84 | | 17.29 |
| | | | | | | 72.42 | FAIR | 0.50 | 71.44 | | 42.89 |
| 25 | 14 | LAMINGTON | LMG | 265.6 | 75.4 | 41.53 | GOOD | 0.50 | 40.58 | RAB | 7.38 |
| | | | | | | 46.43 | FAIR | 0.50 | 45.48 | | 12.28 |
| | | | | | | 47.93 | FAIR | 0.50 | 46.98 | | 13.78 |
| | | | | | | 52.43 | FAIR | 0.50 | 51.48 | | 18.28 |
| | | | | | | 154.13 | FAIR | 0.50 | 153.18 | | 119.98 |
| 26 | 14 | LAMINGTON | LMG | 296.8 | 69.1 | 44.74 | GOOD | 0.10 | 43.77 | RAB | 6.67 |
| | | | | | | 58.34 | GOOD | 0.50 | 57.37 | | 20.27 |
| | | | | | | 132.74 | FAIR | 0.50 | 131.77 | | 94.67 |
| | | | | | | 160.44 | FAIR | 0.50 | 159.47 | | 122.37 |
| 27 | 14 | LAMINGTON | LMG | 334.0 | 64.0 | 49.44 | FAIR | 0.50 | 48.71 | RAB | 6.96 |
| | | | | | | 55.94 | POOR | 0.50 | 55.21 | | 13.46 |
| | | | | | | 65.44 | POOR | 0.50 | 64.71 | | 22.96 |
| | | | | | | 72.14 | POOR | 0.50 | 71.41 | | 29.66 |
| | | | | | | 74.64 | POOR | 0.50 | 73.91 | | 32.16 |
| 28 | 14 | LAMINGTON | LMG | 380.9 | 60.1 | 54.55 | FAIR | 0.50 | 53.80 | RAB | 6.19 |
| | | | | | | 62.85 | POOR | 1.00 | 62.10 | | 14.49 |
| | | | | | | 66.85 | POOR | 1.00 | 66.10 | | 18.49 |
| | | | | | | 70.55 | POOR | 1.00 | 69.80 | | 22.19 |
| 29 | 14 | LAMINGTON | LMG | 417.7 | 57.9 | 59.31 | FAIR | 1.00 | 58.51 | RAB | 6.30 |
| 30 | 14 | LAMINGTON | LMG | 386.4 | 57.5 | 55.59 | GOOD | 0.50 | 54.84 | RAB | 6.54 |
| | | | | | | 59.39 | FAIR | 0.50 | 58.64 | | 10.34 |
| 31 | 14 | LAMINGTON | LMG | 346.2 | 57.3 | 50.30 | FAIR | 0.50 | 49.59 | RAB | 6.32 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 70.40 | POOR | 0.50 | 69.69 | | 26.42 |
| | | | | | | 72.90 | POOR | 0.50 | 72.19 | | 28.92 |
| | | | | | | 75.90 | POOR | 0.50 | 75.19 | | 31.92 |
| 32 | 14 | LAMINGTON | LMG | 301.1 | 57.3 | 45.02 | FAIR | 0.50 | 44.18 | RAB | 6.54 |
| 33 | 14 | LAMINGTON | LMG | 253.0 | 57.0 | 44.29 | GOOD | 1.00 | 43.20 | RAB | 11.58 |
| | | | | | | 47.09 | POOR | 0.50 | 46.00 | | 14.38 |
| | | | | | | 110.29 | FAIR | 0.50 | 109.20 | | 77.58 |
| 34 | 14 | LAMINGTON | LMG | 224.9 | 57.3 | 40.77 | POOR | 1.00 | 39.62 | RAB | 11.51 |
| | | | | | | 85.57 | GOOD | 0.50 | 84.42 | | 56.31 |
| 35 | 14 | LAMINGTON | LMG | 213.5 | 57.3 | 35.11 | GOOD | 0.50 | 34.00 | RAB | 7.31 |
| | | | | | | 39.31 | FAIR | 0.50 | 38.20 | | 11.51 |
| | | | | | | 51.21 | FAIR | 0.50 | 50.10 | | 23.41 |
| | | | | | | 81.51 | POOR | 1.00 | 80.40 | | 53.71 |
| 36 | 14 | LAMINGTON | LMG | 198.7 | 57.9 | 33.62 | FAIR | 0.50 | 32.49 | RAB | 7.65 |
| | | | | | | 36.12 | FAIR | 0.50 | 34.99 | | 10.15 |
| | | | | | | 67.22 | FAIR | 0.50 | 66.09 | | 41.25 |
| 37 | 14 | LAMINGTON | LMG | 184.5 | 58.3 | 31.79 | FAIR | 0.50 | 30.66 | RAB | 7.60 |
| | | | | | | 34.29 | FAIR | 0.50 | 33.16 | | 10.10 |
| | | | | | | 55.79 | FAIR | 0.50 | 54.66 | | 31.60 |
| 38 | 14 | LAMINGTON | LMG | 172.9 | 58.8 | 30.57 | GOOD | 0.50 | 29.45 | RAB | 7.83 |
| | | | | | | 32.27 | POOR | 0.50 | 31.15 | | 9.53 |
| | | | | | | 33.67 | FAIR | 0.50 | 32.55 | | 10.93 |
| | | | | | | 51.27 | FAIR | 0.50 | 50.15 | | 28.53 |
| 39 | 14 | LAMINGTON | LMG | 134.7 | 45.2 | 25.01 | GOOD | 0.50 | 24.39 | RAB | 7.55 |
| | | | | | | 25.61 | GOOD | 0.10 | 24.99 | | 8.15 |
| | | | | | | 29.51 | FAIR | 0.50 | 28.89 | | 12.05 |
| | | | | | | 31.41 | FAIR | 0.50 | 30.79 | | 13.95 |
| | | | | | | 33.61 | FAIR | 0.50 | 32.99 | | 16.15 |
| 40 | 14 | LAMINGTON | LMG | 137.4 | 49.9 | 25.95 | GOOD | 0.10 | 25.31 | RAB | 8.14 |
| | | | | | | 27.55 | FAIR | 0.50 | 26.91 | | 9.74 |
| | | | | | | 32.75 | FAIR | 0.50 | 32.11 | | 14.94 |
| | | | | | | 36.35 | FAIR | 0.50 | 35.71 | | 18.54 |
| 41 | 14 | LAMINGTON | LMG | 139.3 | 55.2 | 25.97 | GOOD | [illegible] | 25.31 | RAB | 7.89 |
| | | | | | | 28.17 | FAIR | 0.50 | 27.51 | | 10.09 |
| | | | | | | 31.27 | POOR | 0.50 | 30.61 | | 13.19 |
| | | | | | | 31.97 | FAIR | 0.50 | 31.31 | | 13.89 |
| 42 | 14 | LAMINGTON | LMG | 138.0 | 40.0 | 25.73 | GOOD | 0.10 | 25.13 | RAB | 7.88 |
| | | | | | | 27.53 | POOR | 0.50 | 26.93 | | 9.68 |
| | | | | | | 33.33 | POOR | 0.50 | 32.73 | | 15.48 |
| 43 | 14 | LAMINGTON | LMG | 143.6 | 35.2 | 26.55 | GOOD | 0.10 | 25.85 | RAB | 7.90 |
| | | | | | | 27.05 | GOOD | 0.10 | 26.35 | | 8.40 |
| 44 | 14 | LAMINGTON | LMG | 145.8 | 29.0 | 26.67 | GOOD | 0.10 | 26.15 | RAB | 7.93 |
| | | | | | | 27.17 | GOOD | 0.50 | 26.65 | | 8.43 |
| | | | | | | 28.97 | POOR | 1.00 | 28.45 | | 10.23 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 33.17 | POOR | 1.00 | 32.65 | | 14.43 |
| 45 | 14 | LAMINGTON | LMG | 147.0 | 23.1 | 26.64 | GOOD | 0.10 | 25.94 | RAB | 7.57 |
| | | | | | | 27.24 | GOOD | 0.10 | 26.54 | | 8.17 |
| | | | | | | 30.04 | POOR | 1.00 | 29.34 | | 10.97 |
| | | | | | | 32.64 | POOR | 1.00 | 31.94 | | 13.57 |
| 46 | 14 | LAMINGTON | LMG | 144.5 | 17.7 | 26.27 | GOOD | 0.10 | 25.60 | RAB | 7.53 |
| | | | | | | 26.77 | FAIR | 0.50 | 26.10 | | 8.03 |
| | | | | | | 29.57 | POOR | 1.00 | 28.90 | | 10.83 |
| | | | | | | 33.07 | POOR | 0.50 | 32.40 | | 14.33 |
| 47 | 14 | LAMINGTON | LMG | 142.5 | 12.7 | 25.95 | GOOD | 0.10 | 25.56 | RAB | 7.75 |
| | | | | | | 26.25 | GOOD | 0.10 | 25.86 | | 8.05 |
| | | | | | | 28.35 | FAIR | 1.00 | 27.96 | | 10.15 |
| | | | | | | 30.25 | POOR | 1.00 | 29.86 | | 12.05 |
| 48 | 14 | LAMINGTON | LMG | 159.5 | 350.0 | 27.95 | GOOD | 0.10 | 27.29 | RAB | 7.35 |
| | | | | | | 31.85 | POOR | 1.00 | 31.19 | | 11.25 |
| 49 | 14 | LAMINGTON | LMG | 187.8 | 332.4 | 31.31 | GOOD | 0.50 | 30.45 | RAB | 6.97 |
| | | | | | | 32.51 | GOOD | 0.10 | 31.65 | | 8.17 |
| | | | | | | 34.21 | FAIR | 0.50 | 33.35 | | 9.87 |
| 53 | 14 | LAMINGTON | LMG | 229.9 | 290.5 | 38.59 | FAIR | 1.00 | 38.23 | RAB | 9.49 |
| | | | | | | 52.29 | FAIR | 1.00 | 51.93 | | 23.19 |
| 54 | 14 | LAMINGTON | LMG | 177.5 | 290.9 | 26.32 | FAIR | 1.00 | 25.91 | RAB | 3.72 |
| | | | | | | 30.42 | FAIR | 1.00 | 30.01 | | 7.82 |
| | | | | | | 39.82 | FAIR | 1.00 | 39.41 | | 17.22 |
| | | | | | | 45.82 | FAIR | 1.00 | 45.41 | | 23.22 |
| 55 | 14 | LAMINGTON | LMG | 148.6 | 282.0 | 23.40 | FAIR | 0.50 | 23.02 | RAB | 4.45 |
| | | | | | | 25.10 | FAIR | 0.50 | 24.72 | | 6.15 |
| | | | | | | 26.50 | GOOD | 0.50 | 26.12 | | 7.55 |
| | | | | | | 27.60 | FAIR | 0.50 | 27.22 | | 8.65 |
| | | | | | | 46.00 | FAIR | 0.50 | 45.62 | | 27.05 |
| 56 | 14 | LAMINGTON | LMG | 73.8 | 219.0 | 13.73 | GOOD | 0.10 | 13.45 | RAB | 4.22 |
| | | | | | | 57.13 | FAIR | 1.00 | 56.85 | | 47.62 |
| 57 | 14 | LAMINGTON | LMG | 85.2 | 219.2 | 14.80 | GOOD | 0.10 | 14.52 | RAB | 3.87 |
| | | | | | | 15.60 | FAIR | 0.50 | 15.32 | | 4.67 |
| | | | | | | 17.50 | FAIR | 0.50 | 17.22 | | 6.57 |
| | | | | | | 31.30 | FAIR | 0.50 | 31.02 | | 20.37 |
| 58 | 14 | LAMINGTON | LMG | 89.0 | 220.6 | 15.31 | GOOD | 0.10 | 15.03 | RAB | 3.90 |
| | | | | | | 16.21 | FAIR | 0.50 | 15.93 | | 4.80 |
| | | | | | | 19.31 | FAIR | 0.50 | 19.03 | | 7.90 |
| | | | | | | 35.31 | FAIR | 0.50 | 35.03 | | 23.90 |
| 59 | 14 | LAMINGTON | LMG | 99.3 | 221.5 | 16.52 | GOOD | 0.10 | 15.96 | RAB | 3.54 |
| | | | | | | 18.82 | FAIR | 0.50 | 18.26 | | 5.84 |
| | | | | | | 40.82 | FAIR | 1.00 | 40.26 | | 27.84 |
| 60 | 14 | LAMINGTON | LMG | 112.7 | 221.8 | 18.78 | GOOD | 0.10 | 17.69 | RAB | 3.60 |
| | | | | | | 21.88 | FAIR | 0.50 | 20.79 | | 6.70 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 61 | 14 | LAMINGTON | LMG | 125.5 | 220.5 | 21.70 | GOOD | 0.50 | 20.12 | RAB | 4.43 |
| | | | | | | 22.00 | GOOD | 0.10 | 20.42 | | 4.73 |
| | | | | | | 43.10 | FAIR | 0.50 | 41.52 | | 25.83 |
| 62 | 14 | LAMINGTON | LMG | 138.2 | 222.7 | 24.59 | GOOD | 0.50 | 22.56 | RAB | 5.28 |
| | | | | | | 29.29 | POOR | 1.00 | 27.26 | | 9.98 |
| 63 | 14 | LAMINGTON | LMG | 174.0 | 223.2 | 30.71 | GOOD | 0.50 | 28.38 | RAB | 6.63 |
| | | | | | | 31.71 | GOOD | 0.50 | 29.38 | | 7.63 |
| 69 | 14 | LAMINGTON | LMG | 262.8 | 152.3 | 35.92 | GOOD | 0.50 | 35.55 | RAB | 2.70 |
| | | | | | | 40.62 | GOOD | 0.50 | 40.25 | | 7.40 |
| | | | | | | 53.62 | GOOD | 0.50 | 53.25 | | 20.40 |
| 70 | 14 | LAMINGTON | LMG | 251.4 | 150.7 | 41.10 | POOR | 1.00 | 40.75 | RAB | 9.33 |
| 71 | 14 | LAMINGTON | LMG | 234.7 | 151.5 | 32.72 | FAIR | 1.00 | 32.30 | RAB | 2.97 |
| | | | | | | 36.72 | FAIR | 0.50 | 36.30 | | 6.97 |
| | | | | | | 67.32 | FAIR | 0.50 | 66.90 | | 37.57 |
| 72 | 14 | LAMINGTON | LMG | 225.5 | 151.3 | 31.13 | POOR | 1.00 | 30.63 | RAB | 2.45 |
| 73 | 14 | LAMINGTON | LMG | 212.5 | 150.7 | 30.70 | GOOD | 0.50 | 30.33 | RAB | .77 |
| | | | | | | 36.40 | FAIR | 0.50 | 36.03 | | 9.47 |
| | | | | | | 46.70 | FAIR | 0.50 | 46.33 | | 19.77 |
| | | | | | | 66.20 | FAIR | 1.00 | 65.83 | | 39.27 |
| 74 | 14 | LAMINGTON | LMG | 203.1 | 151.8 | 29.78 | POOR | 1.00 | 29.23 | RAB | 3.85 |
| | | | | | | 34.68 | FAIR | 0.50 | 34.13 | | 8.75 |
| 75 | 14 | LAMINGTON | LMG | 192.6 | 152.8 | 27.93 | FAIR | 1.00 | 27.58 | RAB | 3.51 |
| | | | | | | 34.23 | FAIR | 0.50 | 33.88 | | 9.81 |
| 76 | 14 | LAMINGTON | LMG | 195.5 | 155.2 | 28.34 | POOR | 1.00 | 27.77 | RAB | 3.33 |
| | | | | | | 32.34 | FAIR | 1.00 | 31.77 | | 7.33 |
| | | | | | | 36.14 | FAIR | 1.00 | 35.57 | | 11.13 |
| | | | | | | 39.04 | FAIR | 0.50 | 38.47 | | 14.03 |
| 77 | 14 | LAMINGTON | LMG | 201.6 | 157.9 | 29.69 | POOR | 1.00 | 28.89 | RAB | 3.69 |
| | | | | | | 33.19 | FAIR | 0.50 | 32.39 | | 7.19 |
| | | | | | | 36.59 | GOOD | 0.50 | 35.79 | | 10.59 |
| | | | | | | 41.39 | FAIR | 0.50 | 40.59 | | 15.39 |
| 78 | 14 | LAMINGTON | LMG | 207.4 | 160.3 | 29.85 | POOR | 1.00 | 28.85 | RAB | 2.93 |
| 79 | 14 | LAMINGTON | LMG | 215.3 | 162.5 | 31.31 | POOR | 1.00 | 30.06 | RAB | 3.14 |
| | | | | | | 35.31 | FAIR | 0.50 | 34.06 | | 7.14 |
| | | | | | | 45.31 | FAIR | 0.50 | 44.06 | | 17.14 |
| | | | | | | 49.81 | POOR | 1.00 | 48.56 | | 21.64 |
| 80 | 14 | LAMINGTON | LMG | 228.4 | 167.8 | 36.35 | POOR | 1.00 | 35.47 | RAB | 6.92 |
| | | | | | | 38.75 | FAIR | 0.50 | 37.87 | | 9.32 |
| 81 | 14 | LAMINGTON | LMG | 178.7 | 155.1 | 25.96 | POOR | 1.00 | 25.61 | RAB | 3.27 |
| | | | | | | 28.46 | FAIR | 0.50 | 28.11 | | 5.77 |
| | | | | | | 33.36 | FAIR | 0.50 | 33.01 | | 10.67 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 82 | 14 | LAMINGTON | LMG | 163.6 | 156.9 | 24.10 | GOOD | 1.00 | 23.76 | RAB | 3.31 |
| | | | | | | 26.20 | GOOD | 0.50 | 25.86 | | 5.41 |
| | | | | | | 32.20 | FAIR | 0.50 | 31.86 | | 11.41 |
| 83 | 14 | LAMINGTON | LMG | 156.3 | 159.5 | 25.25 | GOOD | 0.50 | 24.91 | RAB | 5.37 |
| 84 | 14 | LAMINGTON | LMG | 149.9 | 160.9 | 23.57 | POOR | 0.50 | 23.10 | RAB | 4.36 |
| | | | | | | 24.27 | GOOD | 0.50 | 23.80 | | 5.06 |
| 85 | 14 | LAMINGTON | LMG | 140.3 | 162.6 | 21.83 | GOOD | 0.50 | 21.26 | RAB | 3.73 |
| | | | | | | 22.73 | FAIR | 0.50 | 22.16 | | 4.63 |
| 86 | 14 | LAMINGTON | LMG | 132.5 | 164.7 | 20.61 | FAIR | 0.50 | 20.33 | RAB | 3.77 |
| | | | | | | 25.51 | FAIR | 0.50 | 25.23 | | 8.67 |
| | | | | | | 32.61 | FAIR | 0.50 | 32.33 | | 15.77 |
| 87 | 14 | LAMINGTON | LMG | 127.0 | 166.9 | 21.52 | FAIR | 0.50 | 20.86 | RAB | 4.98 |
| | | | | | | 22.52 | GOOD | 0.50 | 21.86 | | 5.98 |
| 88 | 14 | LAMINGTON | LMG | 112.7 | 182.4 | 19.73 | GOOD | 0.10 | 19.15 | RAB | 5.07 |
| | | | | | | 21.23 | POOR | 0.50 | 20.65 | | 6.57 |
| | | | | | | 23.73 | POOR | 0.50 | 23.15 | | 9.07 |
| 89 | 14 | LAMINGTON | LMG | 124.8 | 187.1 | 21.22 | GOOD | 0.50 | 20.44 | RAB | 4.84 |
| | | | | | | 29.62 | FAIR | 0.50 | 28.84 | | 13.24 |
| | | | | | | 36.12 | FAIR | 0.50 | 35.34 | | 19.74 |
| 90 | 14 | LAMINGTON | LMG | 134.1 | 190.1 | 23.00 | GOOD | 0.10 | 21.77 | RAB | 5.01 |
| | | | | | | 26.20 | POOR | 1.00 | 24.97 | | 8.21 |
| 91 | 14 | LAMINGTON | LMG | 144.1 | 192.5 | 25.09 | GOOD | 0.50 | 23.97 | RAB | 5.95 |
| 92 | 14 | LAMINGTON | LMG | 158.7 | 196.2 | 28.40 | GOOD | 0.50 | 26.59 | RAB | 6.75 |
| | | | | | | 33.20 | FAIR | 0.50 | 31.39 | | 11.55 |
| 93 | 14 | LAMINGTON | LMG | 168.6 | 197.1 | 30.23 | GOOD | 0.50 | 28.01 | RAB | 6.94 |
| 94 | 14 | LAMINGTON | LMG | 179.1 | 199.4 | 31.83 | GOOD | 0.10 | 29.18 | RAB | 6.80 |
| | | | | | | 34.43 | FAIR | 0.50 | 31.78 | | 9.40 |
| | | | | | | 42.83 | FAIR | 0.50 | 40.18 | | 17.80 |
| | | | | | | 51.63 | FAIR | 0.50 | 48.98 | | 26.60 |
| 95 | 14 | LAMINGTON | LMG | 288.2 | 224.6 | 44.84 | GOOD | 0.50 | 42.01 | RAB | 5.99 |
| | | | | | | 53.94 | FAIR | 0.50 | 51.11 | | 15.09 |
| | | | | | | 76.54 | POOR | 1.00 | 73.71 | | 37.69 |
| 96 | 14 | LAMINGTON | LMG | 259.1 | 224.5 | 39.85 | GOOD | 0.10 | 37.78 | RAB | 5.40 |
| | | | | | | 66.65 | POOR | 1.00 | 64.58 | | 32.20 |
| | | | | | | 131.45 | POOR | 1.00 | 129.38 | | 97.00 |
| 97 | 14 | LAMINGTON | LMG | 227.0 | 224.6 | 36.35 | GOOD | 0.50 | 33.86 | RAB | 5.48 |
| | | | | | | 45.25 | FAIR | 0.50 | 42.76 | | 14.38 |
| | | | | | | 73.55 | FAIR | 0.50 | 71.06 | | 42.68 |
| | | | | | | 112.25 | POOR | 1.00 | 109.76 | | 81.38 |
| 98 | 14 | LAMINGTON | LMG | 101.1 | 181.9 | 17.64 | GOOD | 0.10 | 17.17 | RAB | 4.53 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 21.54 | FAIR | 0.50 | 21.07 | | 8.43 |
| 99 | 14 | LAMINGTON | LMG | 78.5 | 191.7 | 14.28 | GOOD | 0.10 | 14.00 | RAB | 4.19 |
| 100 | 14 | LAMINGTON | LMG | 68.4 | 199.3 | 12.47 | GOOD | 0.10 | 12.18 | RAB | 3.63 |
| 101 | 14 | LAMINGTON | LMG | 59.6 | 214.0 | 11.40 | GOOD | 0.10 | 11.11 | RAB | 3.66 |
| | | | | | | 13.50 | FAIR | 0.50 | 13.21 | | 5.76 |
| 102 | 14 | LAMINGTON | LMG | 54.8 | 222.5 | 11.14 | GOOD | 0.10 | 10.85 | RAB | 4.00 |
| | | | | | | 14.34 | FAIR | 0.50 | 14.05 | | 7.20 |
| 103 | 14 | LAMINGTON | LMG | 49.5 | 235.0 | 11.02 | GOOD | 0.10 | 10.73 | RAB | 4.55 |
| | | | | | | 12.12 | FAIR | 0.50 | 11.83 | | 5.65 |
| 104 | 14 | LAMINGTON | LMG | 63.1 | 250.3 | 12.23 | GOOD | 0.10 | 11.95 | RAB | 4.06 |
| | | | | | | 18.53 | FAIR | 0.50 | 18.25 | | 10.36 |
| 105 | 14 | LAMINGTON | LMG | 71.6 | 261.1 | 13.34 | GOOD | 0.10 | 13.06 | RAB | 4.11 |
| | | | | | | 16.94 | FAIR | 0.50 | 16.66 | | 7.71 |
| | | | | | | 19.84 | FAIR | 0.50 | 19.56 | | 10.61 |
| | | | | | | 26.14 | FAIR | 0.50 | 25.86 | | 16.91 |
| 106 | 14 | LAMINGTON | LMG | 80.3 | 264.4 | 14.21 | GOOD | 0.10 | 13.93 | RAB | 3.89 |
| | | | | | | 18.91 | FAIR | 0.50 | 18.63 | | 8.59 |
| | | | | | | 29.31 | FAIR | 0.50 | 29.03 | | 18.99 |
| 107 | 14 | LAMINGTON | LMG | 85.5 | 272.7 | 15.31 | GOOD | 0.50 | 15.02 | RAB | 4.34 |
| | | | | | | 17.51 | FAIR | 0.50 | 17.22 | | 6.54 |
| 108 | 14 | LAMINGTON | LMG | 93.3 | 273.6 | 15.51 | FAIR | 0.50 | 15.22 | RAB | 3.56 |
| | | | | | | 16.31 | GOOD | 0.50 | 16.02 | | 4.36 |
| | | | | | | 17.21 | FAIR | 0.50 | 16.92 | | 5.26 |
| | | | | | | 30.31 | FAIR | 0.50 | 30.02 | | 18.36 |
| 109 | 14 | LAMINGTON | LMG | 116.2 | 272.7 | 20.08 | GOOD | 0.10 | 19.80 | RAB | 5.27 |
| | | | | | | 20.58 | FAIR | 0.50 | 20.30 | | 5.77 |
| | | | | | | 31.58 | FAIR | 0.50 | 31.30 | | 16.77 |
| | | | | | | 34.08 | GOOD | 0.50 | 33.80 | | 19.27 |
| 110 | 14 | LAMINGTON | LMG | 143.8 | 268.7 | 24.78 | GOOD | 0.50 | 24.38 | RAB | 6.41 |
| | | | | | | 26.28 | FAIR | 0.50 | 25.88 | | 7.91 |
| | | | | | | 31.48 | FAIR | 0.50 | 31.08 | | 13.11 |
| | | | | | | 41.58 | FAIR | 0.50 | 41.18 | | 23.21 |
| 111 | 14 | LAMINGTON | LMG | 148.7 | 253.5 | 23.32 | FAIR | 0.50 | 23.05 | RAB | 4.46 |
| | | | | | | 24.12 | GOOD | 0.50 | 23.85 | | 5.26 |
| | | | | | | 26.92 | FAIR | 0.50 | 26.65 | | 8.06 |
| | | | | | | 47.02 | FAIR | 0.50 | 46.75 | | 28.16 |
| 1 | 15 | EFOGI | EI | 103.9 | 56.0 | 21.12 | GOOD | 0.50 | 20.04 | BMR | 7.05 |
| 2 | 15 | EFOGI | EI | 91.0 | 55.1 | 18.52 | GOOD | 0.50 | 17.51 | BMR | 6.13 |
| | | | | | | 20.69 | GOOD | 0.50 | 19.68 | | 8.30 |
| | | | | | | 23.20 | GOOD | 0.50 | 22.19 | | 10.81 |
| 3 | 15 | EFOGI | EI | 90.9 | 63.2 | 18.43 | GOOD | 0.10 | 17.59 | BMR | 6.23 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 19.43 | GOOD | 0.50 | 18.59 | | 7.23 |
| | | | | | | 21.14 | FAIR | 0.50 | 20.30 | | 8.94 |
| 4 | 15 | EFOGI | EI | 82.7 | 55.5 | 15.74 | GOOD | 0.50 | 15.01 | BMR | 4.67 |
| | | | | | | 17.06 | GOOD | 0.10 | 16.33 | | 5.99 |
| | | | | | | 18.46 | FAIR | 0.50 | 17.73 | | 7.39 |
| | | | | | | 19.45 | FAIR | 0.50 | 18.72 | | 8.38 |
| 5 | 15 | EFOGI | EI | 97.0 | 69.2 | 18.48 | GOOD | 0.10 | 17.91 | BMR | 5.78 |
| | | | | | | 19.04 | FAIR | 0.10 | 18.47 | | 6.34 |
| 6 | 15 | EFOGI | EI | 102.1 | 73.3 | 20.05 | GOOD | 0.50 | 19.50 | BMR | 6.74 |
| | | | | | | 20.76 | FAIR | 0.50 | 20.21 | | 7.45 |
| | | | | | | 23.73 | FAIR | 0.50 | 23.18 | | 10.42 |
| | | | | | | 24.76 | FAIR | 0.50 | 24.21 | | 11.45 |
| 7 | 15 | EFOGI | EI | 106.4 | 77.5 | 20.82 | GOOD | 0.50 | 20.22 | BMR | 6.92 |
| | | | | | | 24.26 | GOOD | 0.50 | 23.66 | | 10.36 |
| 8 | 15 | EFOGI | EI | 114.4 | 84.0 | 22.08 | GOOD | 0.10 | 21.53 | BMR | 7.23 |
| | | | | | | 23.74 | FAIR | 0.50 | 23.19 | | 8.89 |
| 9 | 15 | EFOGI | EI | 118.6 | 87.7 | 22.79 | GOOD | 0.10 | 22.36 | BMR | 7.54 |
| | | | | | | 24.48 | FAIR | 0.50 | 24.05 | | 9.23 |
| 10 | 15 | EFOGI | EI | 127.9 | 91.4 | 70.18 | GOOD | 0.10 | 69.51 | BMR | 53.52 |
| | | | | | | 71.72 | FAIR | 0.50 | 71.05 | | 55.06 |
| 11 | 15 | EFOGI | EI | 134.2 | 96.3 | 70.57 | GOOD | 0.10 | 70.00 | BMR | 53.23 |
| | | | | | | 73.12 | FAIR | 0.50 | 72.55 | | 55.78 |
| 12 | 15 | EFOGI | EI | 144.9 | 99.1 | 11.73 | GOOD | 0.10 | 11.26 | BMR | -6.85 |
| | | | | | | 14.24 | FAIR | 0.50 | 13.77 | | -4.34 |
| 13 | 15 | EFOGI | EI | 154.0 | 102.0 | 12.85 | FAIR | 0.50 | 12.34 | BMR | -6.91 |
| | | | | | | 18.85 | FAIR | 0.50 | 18.34 | | -.91 |
| 14 | 15 | EFOGI | EI | 163.4 | 104.6 | 74.14 | GOOD | 0.50 | 73.73 | BMR | 53.31 |
| 20 | 15 | EFOGI | EI | 153.2 | 97.5 | 28.69 | GOOD | 0.10 | 27.93 | BMR | 8.78 |
| | | | | | | 33.68 | FAIR | 0.50 | 32.92 | | 13.77 |
| 23 | 15 | EFOGI | EI | 171.9 | 87.2 | 30.80 | GOOD | 0.50 | 29.83 | BMR | 8.34 |
| | | | | | | 34.00 | POOR | 1.00 | 33.03 | | 11.54 |
| | | | | | | 38.57 | FAIR | 1.00 | 37.60 | | 16.11 |
| 42 | 15 | EFOGI | EI | 87.0 | 23.5 | 18.73 | GOOD | 0.50 | 18.14 | BMR | 7.26 |
| 43 | 15 | EFOGI | EI | 95.8 | 17.5 | 19.20 | GOOD | 0.50 | 18.51 | BMR | 6.54 |
| | | | | | | 19.86 | GOOD | 0.50 | 19.17 | | 7.20 |
| 44 | 15 | EFOGI | EI | 102.9 | 9.3 | 19.59 | GOOD | 0.50 | 19.08 | BMR | 6.22 |
| | | | | | | 20.45 | GOOD | 0.10 | 19.94 | | 7.08 |
| | | | | | | 23.88 | GOOD | 0.50 | 23.37 | | 10.51 |
| | | | | | | 26.88 | FAIR | 0.50 | 26.37 | | 13.51 |
| 45 | 15 | EFOGI | EI | 109.4 | 1.8 | 20.93 | GOOD | 0.10 | 20.24 | BMR | 6.57 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 21.40 | GOOD | 0.10 | 20.71 | | 7.04 |
| | | | | | | 26.27 | FAIR | 0.50 | 25.58 | | 11.91 |
| | | | | | | 31.40 | FAIR | 0.50 | 30.71 | | 17.04 |
| | | | | | | 35.62 | GOOD | 0.50 | 34.93 | | 21.26 |
| 46 | 15 | EFOGI | EI | 112.2 | 354.7 | 21.26 | GOOD | 0.10 | 20.60 | BMR | 6.57 |
| | | | | | | 24.34 | POOR | 0.50 | 23.68 | | 9.65 |
| | | | | | | 37.03 | POOR | 0.50 | 36.37 | | 22.34 |
| 47 | 15 | EFOGI | EI | 115.3 | 348.6 | 21.67 | GOOD | 0.10 | 21.29 | BMR | 6.88 |
| | | | | | | 22.25 | FAIR | 0.10 | 21.87 | | 7.46 |
| | | | | | | 24.34 | FAIR | 0.50 | 23.96 | | 9.55 |
| 48 | 15 | EFOGI | EI | 154.4 | 328.0 | 27.16 | GOOD | 0.10 | 26.51 | BMR | 7.21 |
| | | | | | | 32.40 | FAIR | 0.50 | 31.75 | | 12.45 |
| | | | | | | 48.65 | FAIR | 0.50 | 48.00 | | 28.70 |
| 49 | 15 | EFOGI | EI | 198.9 | 314.9 | 33.16 | GOOD | 0.10 | 32.31 | BMR | 7.45 |
| | | | | | | 42.25 | FAIR | 0.50 | 41.40 | | 16.54 |
| 50 | 15 | EFOGI | EI | 259.6 | 306.2 | 40.11 | GOOD | 0.50 | 39.67 | BMR | 7.22 |
| | | | | | | 42.71 | GOOD | 0.10 | 42.27 | | 9.82 |
| | | | | | | 46.95 | FAIR | 0.50 | 46.51 | | 14.06 |
| | | | | | | 49.05 | FAIR | 0.50 | 48.61 | | 16.16 |
| | | | | | | 52.66 | FAIR | 0.50 | 52.22 | | 19.77 |
| | | | | | | 56.16 | FAIR | 0.50 | 55.72 | | 23.27 |
| 54 | 15 | EFOGI | EI | 222.9 | 279.5 | 37.26 | GOOD | 0.50 | 36.86 | BMR | 9.00 |
| | | | | | | 40.39 | FAIR | 0.50 | 39.99 | | 12.13 |
| | | | | | | 47.89 | GOOD | 0.10 | 47.49 | | 19.63 |
| | | | | | | 49.93 | FAIR | 0.50 | 49.53 | | 21.67 |
| | | | | | | 38.34 | GOOD | 0.50 | 37.94 | | 10.08 |
| 55 | 15 | EFOGI | EI | 199.4 | 271.3 | 33.06 | GOOD | 0.50 | 32.69 | BMR | 7.77 |
| | | | | | | 34.88 | FAIR | 0.50 | 34.51 | | 9.59 |
| | | | | | | 38.27 | FAIR | 0.50 | 37.90 | | 12.98 |
| | | | | | | 41.66 | FAIR | 0.50 | 41.29 | | 16.37 |
| | | | | | | 44.58 | FAIR | 0.50 | 44.21 | | 19.29 |
| 59 | 15 | EFOGI | EI | 156.3 | 230.0 | 24.52 | GOOD | 0.10 | 23.97 | BMR | 4.43 |
| | | | | | | 25.69 | FAIR | 0.50 | 25.14 | | 5.60 |
| | | | | | | 27.18 | FAIR | 0.50 | 26.63 | | 7.09 |
| | | | | | | 33.87 | FAIR | 0.10 | 33.32 | | 13.78 |
| 62 | 15 | EFOGI | EI | 195.3 | 229.1 | 32.42 | GOOD | 0.10 | 30.40 | BMR | 5.98 |
| | | | | | | 34.21 | FAIR | 0.50 | 32.19 | | 7.77 |
| | | | | | | 36.73 | FAIR | 0.50 | 34.71 | | 10.29 |
| | | | | | | 38.28 | FAIR | 0.50 | 36.26 | | 11.84 |
| 77 | 15 | EFOGI | EI | 213.8 | 174.2 | 34.24 | GOOD | 0.50 | 33.45 | BMR | 6.72 |
| | | | | | | 35.03 | GOOD | 0.50 | 34.24 | | 7.51 |
| | | | | | | 36.73 | FAIR | 0.50 | 35.94 | | 9.21 |
| | | | | | | 39.79 | FAIR | 0.10 | 39.00 | | 12.27 |
| | | | | | | 40.56 | FAIR | 0.50 | 39.77 | | 13.04 |
| | | | | | | 42.93 | FAIR | 0.50 | 42.14 | | 15.41 |
| | | | | | | 47.02 | FAIR | 0.50 | 46.23 | | 19.50 |
| 96 | 15 | EFOGI | EI | 316.2 | 228.1 | 47.79 | GOOD | 0.50 | 45.73 | BMR | 6.21 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 49.01 | GOOD | 0.50 | 46.95 | | 7.43 |
| | | | | | | 50.05 | FAIR | 0.50 | 47.99 | | 8.47 |
| | | | | | | 51.17 | GOOD | 0.50 | 49.11 | | 9.59 |
| | | | | | | 55.25 | GOOD | 0.50 | 53.19 | | 13.67 |
| 99 | 15 | EFOGI | EI | 124.5 | 214.2 | 21.76 | GOOD | 0.50 | 21.49 | BMR | 5.93 |
| | | | | | | 40.16 | FAIR | 0.50 | 39.89 | | 24.33 |
| 100 | 15 | EFOGI | EI | 118.6 | 220.2 | 21.56 | POOR | 1.00 | 21.28 | BMR | 6.45 |
| | | | | | | 25.78 | POOR | 1.00 | 25.50 | | 10.67 |
| 101 | 15 | EFOGI | EI | 115.5 | 229.2 | 19.66 | GOOD | 0.50 | 19.38 | BMR | 4.95 |
| | | | | | | 20.85 | FAIR | 0.10 | 20.57 | | 6.14 |
| | | | | | | 25.34 | FAIR | 0.50 | 25.06 | | 10.53 |
| 102 | 15 | EFOGI | EI | 112.7 | 233.9 | 19.70 | GOOD | 0.50 | 19.42 | BMR | 5 34 |
| | | | | | | 20.14 | FAIR | 0.10 | 19.86 | | 5 78 |
| | | | | | | 21.69 | FAIR | 0.50 | 21.41 | | 7 33 |
| | | | | | | 25.12 | GOOD | 0.50 | 24.84 | | 10.76 |
| 103 | 15 | EFOGI | EI | 109.1 | 240.0 | 19.74 | GOOD | 0.50 | 19.46 | BMR | 5.83 |
| | | | | | | 22.56 | FAIR | 0.50 | 22.28 | | 8.65 |
| 104 | 15 | EFOGI | EI | 122.9 | 247.3 | 22.19 | GOOD | 0.50 | 21.92 | BMR | 6.55 |
| 105 | 15 | EFOGI | EI | 130.2 | 253.4 | 24.42 | FAIR | 0.50 | 24.15 | BMR | 7.87 |
| | | | | | | 28.68 | FAIR | 0.50 | 28.41 | | 12.13 |
| 107 | 15 | EFOGI | EI | 141.2 | 261.0 | 24.54 | FAIR | 0.50 | 24.26 | BMR | 6.61 |
| | | | | | | 26.44 | GOOD | 0.50 | 26.16 | | 8.51 |
| | | | | | | 27.95 | GOOD | 0.50 | 27.67 | | 10.02 |
| | | | | | | 30.11 | GOOD | 0.50 | 29.83 | | 12.18 |
| 108 | 15 | EFOGI | EI | 148.5 | 262.1 | 25.15 | FAIR | 0.50 | 24.87 | BMR | 6.31 |
| | | | | | | 26.00 | GOOD | 0.50 | 25.72 | | 7.16 |
| | | | | | | 28.81 | GOOD | 0.10 | 28.53 | | 9.97 |
| 109 | 15 | EFOGI | EI | 171.2 | 263.1 | 28.53 | GOOD | 0.50 | 28.26 | BMR | 6.86 |
| | | | | | | 31.23 | FAIR | 0.50 | 30.96 | | 9.56 |
| | | | | | | 34.93 | FAIR | 0.50 | 34.66 | | 13.26 |
| | | | | | | 51.53 | FAIR | 0.50 | 51.26 | | 29.86 |
| 110 | 15 | EFOGI | EI | 199.8 | 261.5 | 34.98 | GOOD | 0.50 | 34.59 | BMR | 9.62 |
| | | | | | | 36.58 | GOOD | 0.50 | 36.19 | | 11.22 |
| | | | | | | 38.88 | FAIR | 0.50 | 38.49 | | 13.52 |
| | | | | | | 43.56 | FAIR | 0.50 | 43.17 | | 18.20 |
| 111 | 15 | EFOGI | EI | 208.2 | 250.8 | 34.42 | FAIR | 0.50 | 34.16 | BMR | 8.13 |
| | | | | | | 35.02 | GOOD | 0.10 | 34.76 | | 8.73 |
| | | | | | | 37.69 | FAIR | 0.50 | 37.43 | | 11.40 |
| | | | | | | 48.94 | FAIR | 0.50 | 48.68 | | 22.65 |
| 1 | 16 | KUPIANO | KP | 149.6 | 107.0 | 28.25 | FAIR | 0.50 | 27.45 | RAB | 8.75 |
| 2 | 16 | KUPIANO | KP | 140.7 | 110.7 | 27.05 | FAIR | 0.50 | 26.32 | RAB | 8.74 |
| 4 | 16 | KUPIANO | KP | 136.8 | 113.8 | 23.25 | POOR | 1.00 | 22.80 | RAB | 5.70 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 25.05 | GOOD | 0.50 | 24.60 | | 7.50 |
| | | | | | | 26.45 | FAIR | 0.50 | 26.00 | | 8.90 |
| | | | | | | 30.55 | FAIR | 1.00 | 30.10 | | 13.00 |
| 5 | 16 | KUPIANO | KP | 162.4 | 114.6 | 29.35 | FAIR | 0.50 | 29.06 | RAB | 8.76 |
| 11 | 16 | KUPIANO | KP | 223.2 | 121.5 | 39.98 | FAIR | 1.00 | 39.70 | RAB | 11.80 |
| | | | | | | 43.68 | FAIR | 1.00 | 43.40 | | 15.50 |
| | | | | | | 47.18 | POOR | 1.00 | 46.90 | | 19.00 |
| 14 | 16 | KUPIANO | KP | 258.3 | 123.7 | 40.26 | FAIR | 0.50 | 40.14 | RAB | 7.85 |
| | | | | | | 46.26 | POOR | 1.00 | 46.14 | | 13.85 |
| | | | | | | 48.96 | FAIR | 0.50 | 48.84 | | 16.55 |
| | | | | | | 54.76 | FAIR | 0.50 | 54.64 | | 22.35 |
| | | | | | | 58.06 | POOR | 0.50 | 57.94 | | 25.65 |
| 20 | 16 | KUPIANO | KP | 241.7 | 120.3 | 46.16 | FAIR | 0.50 | 45.69 | RAB | 15.47 |
| 23 | 16 | KUPIANO | KP | 246.8 | 112.3 | 38.55 | POOR | 1.00 | 37.86 | RAB | 7.01 |
| | | | | | | 43.65 | POOR | 0.50 | 42.96 | | 12.11 |
| | | | | | | 50.55 | FAIR | 0.50 | 49.86 | | 19.01 |
| 25 | 16 | KUPIANO | KP | 266.5 | 103.2 | 39.08 | FAIR | 0.50 | 38.43 | RAB | 5.12 |
| | | | | | | 52.28 | FAIR | 0.50 | 51.63 | | 18.32 |
| 26 | 16 | KUPIANO | KP | 280.6 | 94.5 | 51.72 | POOR | 1.00 | 51.04 | RAB | 15.97 |
| | | | | | | 54.72 | FAIR | 0.50 | 54.04 | | 18.97 |
| 27 | 16 | KUPIANO | KP | 303.1 | 86.5 | 57.35 | POOR | 1.00 | 56.91 | RAB | 19.03 |
| 29 | 16 | KUPIANO | KP | 368.2 | 75.2 | 52.40 | POOR | 0.50 | 51.89 | RAB | 5.87 |
| | | | | | | 68.40 | POOR | | 67.89 | | 21.87 |
| 30 | 16 | KUPIANO | KP | 337.5 | 76.3 | 48.65 | POOR | 1.00 | 48.19 | RAB | 6.00 |
| | | | | | | 62.65 | POOR | | 62.19 | | 20.00 |
| | | | | | | 70.65 | FAIR | 0.50 | 70.19 | | 28.00 |
| 31 | 16 | KUPIANO | KP | 299.5 | 78.6 | 44.65 | POOR | 1.00 | 44.24 | RAB | 6.80 |
| | | | | | | 51.95 | FAIR | 0.50 | 51.54 | | 14.10 |
| | | | | | | 57.15 | FAIR | 0.50 | 56.74 | | 19.30 |
| 32 | 16 | KUPIANO | KP | 258.1 | 82.2 | 37.87 | FAIR | 0.50 | 37.33 | RAB | 5.06 |
| | | | | | | 47.87 | POOR | 1.00 | 47.33 | | 15.06 |
| | | | | | | 50.37 | POOR | 1.00 | 49.83 | | 17.56 |
| | | | | | | 52.67 | FAIR | 0.50 | 52.13 | | 19.86 |
| | | | | | | 60.57 | FAIR | 1.00 | 60.03 | | 27.76 |
| | | | | | | 82.37 | POOR | 1.00 | 81.83 | | 49.56 |
| 33 | 16 | KUPIANO | KP | 214.9 | 87.3 | 41.64 | FAIR | 0.50 | 40.85 | RAB | 13.99 |
| | | | | | | 45.14 | FAIR | 0.50 | 44.35 | | 17.49 |
| 35 | 16 | KUPIANO | KP | 182.8 | 93.9 | 30.56 | GOOD | 0.50 | 29.74 | RAB | 6.89 |
| | | | | | | 34.36 | GOOD | 0.50 | 33.54 | | 10.69 |
| | | | | | | 41.56 | FAIR | 1.00 | 40.74 | | 17.89 |
| | | | | | | 44.76 | FAIR | 1.00 | 43.94 | | 21.09 |
| | | | | | | 61.06 | POOR | 1.00 | 60.24 | | 37.39 |
| 38 | 16 | KUPIANO | KP | 155.5 | 104.2 | 27.41 | GOOD | 0.50 | 26.58 | RAB | 7.14 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 29.61 | FAIR | 0.50 | 28.78 | | 9.34 |
| | | | | | | 32.21 | POOR | 1.00 | 31.38 | | 11.94 |
| | | | | | | 35.51 | FAIR | 0.50 | 34.68 | | 15.24 |
| | | | | | | 42.01 | POOR | 1.00 | 41.18 | | 21.74 |
| | | | | | | 45.21 | FAIR | 0.50 | 44.38 | | 24.94 |
| 39 | 16 | KUPIANO | KP | 103.8 | 108.4 | 20.96 | GOOD | 0.50 | 20.63 | RAB | 7.66 |
| | | | | | | 23.36 | FAIR | 0.50 | 23.03 | | 10.06 |
| | | | | | | 26.26 | FAIR | 0.50 | 25.93 | | 12.96 |
| | | | | | | 32.16 | FAIR | 0.50 | 31.83 | | 18.86 |
| | | | | | | 37.36 | FAIR | 0.50 | 37.03 | | 24.06 |
| 40 | 16 | KUPIANO | KP | 114.9 | 110.0 | 22.64 | GOOD | 0.50 | 22.30 | RAB | 7.93 |
| | | | | | | 26.34 | FAIR | 0.50 | 26.00 | | 11.63 |
| | | | | | | 32.54 | POOR | 1.00 | 32.20 | | 17.83 |
| 41 | 16 | KUPIANO | KP | 126.8 | 112.4 | 24.60 | GOOD | 0.50 | 24.23 | RAB | 8.38 |
| | | | | | | 26.80 | FAIR | 0.50 | 26.43 | | 10.58 |
| | | | | | | 28.70 | FAIR | 1.00 | 28.33 | | 12.48 |
| | | | | | | 32.80 | FAIR | 0.50 | 32.43 | | 16.58 |
| 42 | 16 | KUPIANO | KP | 94.[illegible] | 103.5 | 18.87 | GOOD | 0.50 | 18.56 | RAB | 6.77 |
| 43 | 16 | KUPIANO | KP | 86.5 | 96.[illegible] | 19.23 | GOOD | 0.50 | 18.83 | RAB | 8.01 |
| 44 | 16 | KUPIANO | KP | 73.8 | 90.2 | 15.61 | GOOD | 0.50 | 15.39 | RAB | 6.16 |
| | | | | | | [illegible] | FAIR | 0.50 | 17.39 | | 8.16 |
| | | | | | | 19.11 | GOOD | 0.50 | 18.89 | | 9.66 |
| 45 | 16 | KUPIANO | KP | 61.1 | 82.9 | 13.32 | GOOD | 0.50 | 12.92 | RAB | 5.28 |
| | | | | | | 14.82 | FAIR | 0.50 | 14.42 | | 6.78 |
| | | | | | | 18.82 | FAIR | 0.50 | 18.42 | | 10.78 |
| 46 | 16 | KUPIANO | KP | 48.0 | 78.1 | 11.61 | GOOD | 0.50 | 11.23 | RAB | 5.23 |
| | | | | | | 16.31 | FAIR | 1.00 | 15.93 | | 9.93 |
| 47 | 16 | KUPIANO | KP | 36.3 | 72.0 | 8.85 | GOOD | 0.50 | 8.76 | RAB | 4.22 |
| | | | | | | 9.15 | FAIR | 0.50 | 9.06 | | 4.52 |
| | | | | | | 12.65 | FAIR | 0.50 | 12.56 | | 8.02 |
| | | | | | | 15.05 | FAIR | 0.50 | 14.96 | | 10.42 |
| 49 | 16 | KUPIANO | KP | 91.9 | 295.0 | 18.04 | GOOD | 0.50 | 17.47 | RAB | 5.99 |
| | | | | | | 30.04 | FAIR | 1.00 | 29.47 | | 17.99 |
| 50 | 16 | KUPIANO | KP | 160.4 | 288.8 | 25.48 | GOOD | 0.50 | 25.33 | RAB | 5.28 |
| | | | | | | 27.78 | FAIR | 0.50 | 27.63 | | 7.58 |
| | | | | | | 49.98 | FAIR | 1.00 | 49.83 | | 29.78 |
| 51 | 16 | KUPIANO | KP | 273.8 | 277.7 | 41.92 | GOOD | 0.50 | 41.73 | RAB | 7.51 |
| | | | | | | 44.62 | FAIR | 1.00 | 44.43 | | 10.21 |
| | | | | | | 48.32 | POOR | 1.00 | 48.13 | | 13.91 |
| | | | | | | 62.92 | FAIR | 1.00 | 62.73 | | 28.51 |
| 52 | 16 | KUPIANO | KP | 271.3 | 260.6 | 43.91 | GOOD | 0.50 | 43.70 | RAB | 9.79 |
| | | | | | | 47.31 | FAIR | 0.50 | 47.10 | | 13.19 |
| | | | | | | 50.41 | FAIR | 0.50 | 50.20 | | 16.29 |
| | | | | | | 53.61 | FAIR | 0.50 | 53.40 | | 19.49 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 53 | 16 | KUPIANO | KP | 216.6 | 257.4 | 34.87 | GOOD | 0.50 | 34.81 | RAB | 7.73 |
| | | | | | | 38.07 | FAIR | 0.50 | 38.01 | | 10.93 |
| | | | | | | 45.77 | FAIR | 0.50 | 45.71 | | 18.63 |
| 54 | 16 | KUPIANO | KP | 174.4 | 248.3 | 30.62 | GOOD | 0.50 | 30.51 | RAB | 8.71 |
| | | | | | | 32.72 | FAIR | 0.50 | 32.61 | | 10.81 |
| | | | | | | 34.92 | GOOD | 0.50 | 34.81 | | 13.01 |
| 55 | 16 | KUPIANO | KP | 171.6 | 235.6 | 30.02 | GOOD | 1.00 | 29.94 | RAB | 8.49 |
| | | | | | | 35.62 | FAIR | 1.00 | 35.54 | | 14.09 |
| 56 | 16 | KUPIANO | KP | 190.0 | 193.1 | 32.42 | GOOD | 0.50 | 32.43 | RAB | 8.68 |
| | | | | | | 38.32 | FAIR | 1.00 | 38.33 | | 14.58 |
| 57 | 16 | KUPIANO | KP | 200.2 | 194.6 | 33.45 | GOOD | 0.50 | 33.47 | RAB | 8.44 |
| | | | | | | 69.45 | FAIR | 1.00 | 69.47 | | 44.44 |
| 59 | 16 | KUPIANO | KP | 211.5 | 197.1 | 34.62 | FAIR | 0.50 | 34.35 | RAB | 7.91 |
| | | | | | | 40.82 | FAIR | 1.00 | 40.55 | | 14.11 |
| 62 | 16 | KUPIANO | KP | 246.5 | 201.4 | 41.86 | GOOD | 0.50 | 40.12 | RAB | 9.31 |
| 63 | 16 | KUPIANO | KP | 279.5 | 204.4 | 47.38 | GOOD | 0.50 | 45.35 | RAB | 10.41 |
| | | | | | | 52.48 | FAIR | 0.50 | 50.45 | | 15.51 |
| 71 | 16 | KUPIANO | KP | 353.2 | 161.0 | 56.50 | FAIR | 1.00 | 56.38 | RAB | 12.23 |
| | | | | | | 61.70 | FAIR | 1.00 | 61.58 | | 17.43 |
| 77 | 16 | KUPIANO | KP | 324.3 | 165.9 | 50.33 | FAIR | 1.00 | 49.82 | RAB | 9.29 |
| | | | | | | 53.83 | FAIR | 1.00 | 53.32 | | 12.79 |
| 82 | 16 | KUPIANO | KP | 286.2 | 166.4 | 34.43 | GOOD | 0.50 | 34.39 | RAB | -1.39 |
| | | | | | | 45.13 | FAIR | 1.00 | 45.09 | | 9.31 |
| | | | | | | 47.13 | GOOD | 1.00 | 47.09 | | 11.31 |
| 85 | 16 | KUPIANO | KP | 265.5 | 170.2 | 39.58 | FAIR | 1.00 | 39.31 | RAB | 6.12 |
| | | | | | | 42.68 | FAIR | 1.00 | 42.41 | | 9.22 |
| | | | | | | 43.68 | GOOD | 1.00 | 43.41 | | 10.22 |
| 88 | 16 | KUPIANO | KP | 240.4 | 180.3 | 40.01 | GOOD | 0.50 | 39.73 | RAB | 9.68 |
| | | | | | | 42.21 | FAIR | 0.50 | 41.93 | | 11.88 |
| | | | | | | 44.91 | FAIR | 0.50 | 44.63 | | 14.58 |
| 91 | 16 | KUPIANO | KP | 269.8 | 185.9 | 46.06 | POOR | 0.50 | 45.23 | RAB | 11.51 |
| | | | | | | 48.66 | GOOD | 0.50 | 47.83 | | 14.11 |
| 94 | 16 | KUPIANO | KP | 301.9 | 190.7 | 52.29 | POOR | 1.00 | 49.94 | RAB | 12.20 |
| | | | | | | 60.39 | FAIR | 0.50 | 58.04 | | 20.30 |
| | | | | | | 62.39 | FAIR | 0.50 | 60.04 | | 22.30 |
| 96 | 16 | KUPIANO | KP | 359.5 | 209.6 | 55.06 | FAIR | 1.00 | 53.29 | RAB | 8.35 |
| 101 | 16 | KUPIANO | KP | 179.7 | 189.6 | 32.33 | POOR | 0.50 | 32.34 | RAB | 9.87 |
| 102 | 16 | KUPIANO | KP | 171.5 | 191.3 | 32.45 | POOR | 1.00 | 32.46 | RAB | 11.02 |
| 104 | 16 | KUPIANO | KP | 159.1 | 200.6 | 29.32 | GOOD | 1.00 | 29.33 | RAB | 9.44 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 32.02 | FAIR | 1.00 | 32.03 | | 12.14 |
| 109 | 16 | KUPIANO | KP | 166.0 | 222.6 | 28.63 | GOOD | 0.50 | 28.64 | RAB | 7.89 |
| | | | | | | 31.63 | FAIR | 1.00 | 31.64 | | 10.89 |
| 110 | 16 | KUPIANO | KP | 191.7 | 226.9 | 33.63 | GOOD | 0.50 | 33.53 | RAB | 9.56 |
| | | | | | | 35.83 | FAIR | 0.50 | 35.73 | | 11.76 |
| 1 | 17 | CAPE RODNEY | CR | 174.8 | 108.6 | 32.13 | FAIR | 0.50 | 31.34 | BMR | 9.49 |
| | | | | | | 33.61 | FAIR | 0.50 | 32.82 | | 10.97 |
| | | | | | | 38.75 | FAIR | 0.50 | 37.96 | | 16.11 |
| | | | | | | 42.71 | FAIR | 0.50 | 41.92 | | 20.07 |
| 2 | 17 | CAPE RODNEY | CR | 166.1 | 111.9 | 31.04 | FAIR | 0.50 | 30.32 | BMR | 9.55 |
| | | | | | | 33.98 | FAIR | 0.50 | 33.26 | | 12.49 |
| | | | | | | 37.24 | FAIR | 0.50 | 36.52 | | 15.75 |
| | | | | | | 39.53 | FAIR | 0.50 | 38.81 | | 18.04 |
| 3 | 17 | CAPE RODNEY | CR | 176.5 | 114.4 | 36.88 | FAIR | 0.50 | 36.33 | BMR | 14.27 |
| 4 | 17 | CAPE RODNEY | CR | 162.3 | 114.4 | 29.92 | GOOD | 0.10 | 29.47 | BMR | 9.19 |
| | | | | | | 32.80 | FAIR | 0.50 | 32.35 | | 12.07 |
| 5 | 17 | CAPE RODNEY | CR | 187.9 | 115.1 | 33.25 | GOOD | 0.10 | 32.97 | BMR | 9.48 |
| | | | | | | 35.72 | FAIR | 0.50 | 35.44 | | 11.95 |
| 6 | 17 | CAPE RODNEY | CR | 196.5 | 115.5 | 35.36 | FAIR | 0.50 | 35.10 | BMR | 10.53 |
| | | | | | | 37.06 | FAIR | 0.50 | 36.80 | | 12.23 |
| | | | | | | 38.11 | FAIR | 0.50 | 37.85 | | 13.28 |
| 7 | 17 | CAPE RODNEY | CR | 204.7 | 116.4 | 37.19 | POOR | 0.50 | 36.87 | BMR | 11.29 |
| 8 | 17 | CAPE RODNEY | CR | 218.5 | 117.8 | 39.85 | FAIR | 0.50 | 39.59 | BMR | 12.28 |
| | | | | | | 41.90 | FAIR | 0.50 | 41.64 | | 14.33 |
| | | | | | | 44.60 | FAIR | 0.50 | 44.34 | | 17.03 |
| | | | | | | 47.61 | FAIR | 0.50 | 47.35 | | 20.04 |
| | | | | | | 50.85 | FAIR | 0.50 | 50.59 | | 23.28 |
| 11 | 17 | CAPE RODNEY | CR | 248.8 | 121.2 | 38.74 | FAIR | 0.50 | 38.46 | BMR | 7.36 |
| | | | | | | 42.90 | FAIR | 0.50 | 42.62 | | 11.52 |
| | | | | | | 44.60 | FAIR | 0.50 | 44.32 | | 13.22 |
| | | | | | | 46.50 | GOOD | 0.50 | 46.22 | | 15.12 |
| 14 | 17 | CAPE RODNEY | CR | 283.8 | 123.2 | 41.23 | POOR | 0.50 | 41.11 | BMR | 5.64 |
| | | | | | | 50.13 | FAIR | 0.50 | 50.01 | | 14.54 |
| | | | | | | 52.13 | GOOD | 0.50 | 52.01 | | 16.54 |
| | | | | | | 64.23 | GOOD | 0.50 | 64.11 | | 28.64 |
| | | | | | | 73.23 | GOOD | 0.50 | 73.11 | | 37.64 |
| 20 | 17 | CAPE RODNEY | CR | 267.3 | 120.1 | 41.41 | FAIR | 0.50 | 40.94 | BMR | 7.53 |
| | | | | | | 50.31 | FAIR | 0.50 | 49.84 | | 16.43 |
| 23 | 17 | CAPE RODNEY | CR | 272.3 | 112.8 | 41.57 | POOR | 1.00 | 40.89 | BMR | 6.85 |
| | | | | | | 56.32 | FAIR | 0.50 | 55.64 | | 21.60 |
| | | | | | | 58.22 | FAIR | 0.50 | 57.54 | | 23.50 |
| | | | | | | 63.22 | FAIR | 0.50 | 62.54 | | 28.50 |
| | | | | | | 69.02 | FAIR | 0.50 | 68.34 | | 34.30 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 17 | CAPE RODNEY | CR | 291.3 | 104.5 | 60.23 | POOR | 1.00 | 59.58 | BMR | 23.17 |
| 26 | 17 | CAPE RODNEY | CR | 304.2 | 96.5 | 43.62 | GOOD | 0.50 | 42.95 | BMR | 4.92 |
| | | | | | | 44.39 | GOOD | 0.10 | 43.72 | | 5.69 |
| | | | | | | 59.17 | GOOD | 0.10 | 58.50 | | 20.47 |
| 29 | 17 | CAPE RODNEY | CR | 387.3 | 77.8 | 53.93 | POOR | 0.50 | 53.43 | BMR | 5.02 |
| | | | | | | 76.28 | FAIR | 0.50 | 75.78 | | 27.37 |
| 30 | 17 | CAPE RODNEY | CR | 357.0 | 79.1 | 63.36 | FAIR | 1.00 | 62.91 | BMR | 18.28 |
| 31 | 17 | CAPE RODNEY | CR | 319.6 | 81.5 | 51.16 | FAIR | 0.50 | 50.75 | BMR | 10.80 |
| | | | | | | 59.56 | FAIR | 0.50 | 59.15 | | 19.20 |
| 32 | 17 | CAPE RODNEY | CR | 279.2 | 85.3 | 41.67 | FAIR | 1.00 | 41.13 | BMR | 6.23 |
| | | | | | | 57.47 | FAIR | 0.50 | 56.93 | | 22.03 |
| 33 | 17 | CAPE RODNEY | CR | 237.2 | 90.5 | 37.14 | FAIR | 0.50 | 36.35 | BMR | 6.70 |
| | | | | | | 43.44 | FAIR | 0.50 | 42.65 | | 13.00 |
| | | | | | | 51.44 | FAIR | 0.50 | 50.65 | | 21.00 |
| | | | | | | 73.74 | FAIR | 0.50 | 72.95 | | 43.30 |
| 34 | 17 | CAPE RODNEY | CR | 215.4 | 94.9 | 34.16 | GOOD | 0.50 | 33.31 | BMR | 6.39 |
| | | | | | | 38.71 | FAIR | 0.50 | 37.86 | | 10.94 |
| | | | | | | 42.06 | FAIR | 0.50 | 41.21 | | 14.29 |
| 35 | 17 | CAPE RODNEY | CR | 206.4 | 96.8 | 33.24 | GOOD | 0.10 | 32.43 | BMR | 6.63 |
| | | | | | | 34.72 | FAIR | 0.50 | 33.91 | | 8.11 |
| | | | | | | 37.84 | GOOD | 0.50 | 37.03 | | 11.23 |
| | | | | | | 43.29 | FAIR | 0.50 | 42.48 | | 16.68 |
| | | | | | | 47.50 | FAIR | 0.50 | 46.69 | | 20.89 |
| 36 | 17 | CAPE RODNEY | CR | 196.6 | 100.0 | 31.98 | POOR | 1.00 | 31.15 | BMR | 6.57 |
| | | | | | | 35.96 | FAIR | 0.50 | 35.13 | | 10.55 |
| | | | | | | 39.17 | FAIR | 0.50 | 38.34 | | 13.76 |
| 38 | 17 | CAPE RODNEY | CR | 180.5 | 106.2 | 30.26 | GOOD | 0.10 | 29.44 | BMR | 6.87 |
| | | | | | | 33.62 | GOOD | 0.50 | 32.80 | | 10.23 |
| | | | | | | 38.22 | GOOD | 0.50 | 37.40 | | 14.83 |
| 39 | 17 | CAPE RODNEY | CR | 129.1 | 110.3 | 23.50 | GOOD | 0.10 | 23.18 | BMR | 7.04 |
| | | | | | | 24.13 | GOOD | 0.10 | 23.81 | | 7.67 |
| | | | | | | 25.63 | GOOD | 0.10 | 25.31 | | 9.17 |
| | | | | | | 29.11 | FAIR | 0.10 | 28.79 | | 12.65 |
| | | | | | | 43.92 | FAIR | 0.50 | 43.60 | | 27.46 |
| 40 | 17 | CAPE RODNEY | CR | 140.3 | 111.4 | 25.02 | POOR | 1.00 | 24.68 | BMR | 7.14 |
| | | | | | | 25.95 | GOOD | 0.50 | 25.61 | | 8.07 |
| | | | | | | 26.38 | GOOD | 0.10 | 26.04 | | 8.50 |
| | | | | | | 27.60 | FAIR | 0.10 | 27.26 | | 9.72 |
| | | | | | | 29.49 | FAIR | 0.10 | 29.15 | | 11.61 |
| 41 | 17 | CAPE RODNEY | CR | 152.4 | 113.3 | 27.04 | POOR | 1.00 | 26.67 | BMR | 7.62 |
| | | | | | | 28.43 | GOOD | 0.10 | 28.06 | | 9.01 |
| | | | | | | 30.76 | FAIR | 0.50 | 30.39 | | 11.34 |
| | | | | | | 32.86 | FAIR | 0.10 | 32.49 | | 13.44 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 42 | 17 | CAPE RODNEY | CR | 119.3 | 106.6 | 22.81 | GOOD | 0.10 | 22.51 | BMR | 7.59 |
| | | | | | | 24.64 | FAIR | 0.50 | 24.34 | | 9.42 |
| 43 | 17 | CAPE RODNEY | CR | 110.8 | 101.7 | 20.91 | FAIR | 0.50 | 20.51 | BMR | 6.66 |
| | | | | | | 21.45 | GOOD | 0.50 | 21.05 | | 7.20 |
| | | | | | | 22.88 | FAIR | 0.50 | 22.48 | | 8.63 |
| | | | | | | 24.81 | FAIR | 0.10 | 24.41 | | 10.56 |
| 44 | 17 | CAPE RODNEY | CR | 97.2 | 97.3 | 18.74 | GOOD | 0.10 | 18.52 | BMR | 6.37 |
| | | | | | | 19.38 | GOOD | 0.10 | 19.16 | | 7.01 |
| | | | | | | 22.36 | GOOD | 0.10 | 22.14 | | 9.99 |
| | | | | | | 23.19 | FAIR | 0.10 | 22.97 | | 10.82 |
| | | | | | | 26.98 | GOOD | 0.50 | 26.76 | | 14.61 |
| | | | | | | 35.71 | FAIR | 0.50 | 35.49 | | 23.34 |
| | | | | | | 38.22 | GOOD | 0.50 | 38.00 | | 25.85 |
| 45 | 17 | CAPE RODNEY | CR | 83.4 | 93.1 | 16.74 | GOOD | 0.10 | 16.34 | BMR | 5.91 |
| | | | | | | 17.58 | GOOD | 0.10 | 17.18 | | 6.75 |
| | | | | | | 19.01 | GOOD | 0.10 | 18.61 | | 8.18 |
| | | | | | | 21.80 | FAIR | 0.50 | 21.40 | | 10.97 |
| | | | | | | 24.35 | FAIR | 0.10 | 23.95 | | 13.52 |
| | | | | | | 28.50 | FAIR | 0.10 | 28.10 | | 17.67 |
| 46 | 17 | CAPE RODNEY | CR | 69.6 | 91.7 | 14.74 | GOOD | 0.10 | 14.37 | BMR | 5.67 |
| | | | | | | 16.39 | FAIR | 0.50 | 16.02 | | 7.32 |
| | | | | | | 19.05 | GOOD | 0.10 | 18.68 | | 9.98 |
| | | | | | | 19.74 | GOOD | 0.10 | 19.37 | | 10.67 |
| | | | | | | 22.57 | GOOD | 0.50 | 22.20 | | 13.50 |
| 47 | 17 | CAPE RODNEY | CR | 57.2 | 90.8 | 12.44 | GOOD | 0.10 | 12.35 | BMR | 5.20 |
| | | | | | | 17.40 | GOOD | 0.50 | 17.31 | | 10.16 |
| 48 | 17 | CAPE RODNEY | CR | 17.4 | 354.6 | 5.12 | GOOD | 0.10 | 4.76 | BMR | 2.58 |
| | | | | | | 16.38 | GOOD | 0.50 | 16.02 | | 13.84 |
| 49 | 17 | CAPE RODNEY | CR | 66.3 | 293.9 | 14.15 | GOOD | 0.10 | 13.59 | BMR | 5.30 |
| | | | | | | 17.67 | FAIR | 0.50 | 17.11 | | 8.82 |
| | | | | | | 20.55 | GOOD | 0.10 | 19.99 | | 11.70 |
| | | | | | | 24.90 | FAIR | 0.50 | 24.34 | | 16.05 |
| 50 | 17 | CAPE RODNEY | CR | 135.1 | 287.1 | 22.83 | GOOD | 0.10 | 22.68 | BMR | 5.79 |
| | | | | | | 23.85 | GOOD | 0.50 | 23.70 | | 6.81 |
| | | | | | | 25.40 | FAIR | 0.10 | 25.25 | | 8.36 |
| | | | | | | 26.75 | GOOD | 0.10 | 26.60 | | 9.71 |
| | | | | | | 31.00 | GOOD | 0.50 | 30.85 | | 13.96 |
| | | | | | | 41.71 | GOOD | 0.50 | 41.56 | | 24.67 |
| 52 | 17 | CAPE RODNEY | CR | 251.3 | 257.1 | 41.61 | GOOD | 0.50 | 41.41 | BMR | 10.00 |
| | | | | | | 44.31 | GOOD | 0.50 | 44.11 | | 12.70 |
| 53 | 17 | CAPE RODNEY | CR | 197.7 | 252.6 | 33.31 | FAIR | 1.00 | 33.25 | BMR | 8.54 |
| 54 | 17 | CAPE RODNEY | CR | 158.9 | 241.3 | 27.51 | GOOD | 0.50 | 27.40 | BMR | 7.54 |
| | | | | | | 29.06 | FAIR | 0.50 | 28.95 | | 9.09 |
| | | | | | | 31.48 | FAIR | 0.50 | 31.37 | | 11.51 |
| | | | | | | 34.73 | FAIR | 0.50 | 34.62 | | 14.76 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 36.98 | FAIR | 0.50 | 36.87 | | 17.01 |
| | | | | | | 43.84 | FAIR | 0.50 | 43.73 | | 23.87 |
| 55 | 17 | CAPE RODNEY | CR | 161.1 | 227.5 | 27.10 | GOOD | 0.10 | 27.02 | BMR | 6.89 |
| | | | | | | 28.66 | GOOD | 0.10 | 28.58 | | 8.45 |
| | | | | | | 30.90 | GOOD | 0.10 | 30.82 | | 10.69 |
| 62 | 17 | CAPE RODNEY | CR | 250.6 | 195.6 | 42.43 | GOOD | 0.50 | 40.70 | BMR | 9.37 |
| | | | | | | 45.93 | GOOD | 0.50 | 44.20 | | 12.87 |
| 63 | 17 | CAPE RODNEY | CR | 282.2 | 199.2 | 47.37 | GOOD | 0.50 | 45.34 | BMR | 10.06 |
| 82 | 17 | CAPE RODNEY | CR | 303.8 | 162.8 | 51.12 | FAIR | 0.50 | 51.08 | BMR | 13.11 |
| 88 | 17 | CAPE RODNEY | CR | 253.2 | 175.2 | 48.93 | POOR | 0.50 | 48.65 | BMR | 17.00 |
| 99 | 17 | CAPE RODNEY | CR | 216.8 | 177.3 | 36.88 | POOR | 0.50 | 36.90 | BMR | 9.80 |
| 110 | 17 | CAPE RODNEY | CR | 184.8 | 219.4 | 35.34 | POOR | 0.50 | 35.24 | BMR | 12.14 |
| 1 | 18 | GORARI | GO | 138.4 | 52.5 | 25.84 | FAIR | 0.10 | 24.94 | BMR | 7.64 |
| | | | | | | 26.76 | FAIR | 0.10 | 25.86 | | 8.56 |
| | | | | | | 28.29 | FAIR | 0.10 | 27.39 | | 10.09 |
| 2 | 18 | GORARI | GO | 125.6 | 51.5 | 26.35 | POOR | 0.50 | 25.52 | BMR | 9.82 |
| | | | | | | 27.45 | POOR | 0.50 | 26.62 | | 10.92 |
| | | | | | | 32.95 | POOR | 0.50 | 32.12 | | 16.42 |
| | | | | | | 46.25 | FAIR | 0.50 | 45.42 | | 29.72 |
| 3 | 18 | GORARI | GO | 124.5 | 57.4 | 23.72 | POOR | 0.50 | 23.06 | BMR | 7.50 |
| | | | | | | 25.02 | POOR | 0.50 | 24.36 | | 8.80 |
| 4 | 18 | GORARI | GO | 117.3 | 51.6 | 20.94 | FAIR | 0.10 | 20.38 | BMR | 5.72 |
| | | | | | | 21.78 | GOOD | 0.10 | 21.22 | | 6.56 |
| | | | | | | 24.70 | FAIR | 0.10 | 24.14 | | 9.48 |
| 5 | 18 | GORARI | GO | 129.4 | 62.1 | 21.76 | POOR | 0.50 | 21.37 | BMR | 5.19 |
| | | | | | | 23.84 | GOOD | 0.50 | 23.45 | | 7.27 |
| | | | | | | 25.39 | FAIR | 0.50 | 25.00 | | 8.82 |
| | | | | | | 26.70 | GOOD | 0.50 | 26.31 | | 10.13 |
| | | | | | | 28.98 | POOR | 0.50 | 28.59 | | 12.41 |
| 6 | 18 | GORARI | GO | 133.6 | 65.5 | 24.50 | FAIR | 0.10 | 24.12 | BMR | 7.42 |
| | | | | | | 28.31 | FAIR | 0.10 | 27.93 | | 11.23 |
| 7 | 18 | GORARI | GO | 136.7 | 68.9 | 24.97 | POOR | 0.10 | 24.54 | BMR | 7.46 |
| | | | | | | 25.13 | FAIR | 0.10 | 24.70 | | 7.62 |
| | | | | | | 25.79 | FAIR | 0.10 | 25.36 | | 8.28 |
| | | | | | | 27.78 | FAIR | 0.10 | 27.35 | | 10.27 |
| | | | | | | 28.96 | FAIR | 0.10 | 28.53 | | 11.45 |
| | | | | | | 30.52 | FAIR | 0.10 | 30.09 | | 13.01 |
| | | | | | | 31.36 | FAIR | 0.10 | 30.93 | | 13.85 |
| 8 | 18 | GORARI | GO | 142.7 | 74.5 | 25.99 | GOOD | 0.10 | 25.62 | BMR | 7.78 |
| | | | | | | 26.25 | FAIR | 0.10 | 25.88 | | 8.04 |
| | | | | | | 27.33 | FAIR | 0.50 | 26.96 | | 9.12 |
| | | | | | | 33.50 | FAIR | 0.10 | 33.13 | | 15.29 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 35.81 | FAIR | 0.50 | 35.44 | | 17.60 |
| 10 | 18 | GORARI | GO | 153.3 | 81.4 | 27.93 | GOOD | 0.10 | 27.43 | BMR | 8.27 |
| | | | | | | 29.18 | FAIR | 0.10 | 28.68 | | 9.52 |
| | | | | | | 30.27 | FAIR | 0.10 | 29.77 | | 10.61 |
| | | | | | | 33.42 | FAIR | 0.10 | 32.92 | | 13.76 |
| 11 | 18 | GORARI | GO | 157.5 | 85.9 | 27.95 | FAIR | 0.10 | 27.56 | BMR | 7.87 |
| | | | | | | 28.69 | GOOD | 0.10 | 28.30 | | 8.61 |
| | | | | | | 29.16 | GOOD | 0.10 | 28.77 | | 9.08 |
| | | | | | | 30.48 | GOOD | 0.10 | 30.09 | | 10.40 |
| | | | | | | 31.00 | FAIR | 0.10 | 30.61 | | 10.92 |
| | | | | | | 33.55 | GOOD | 0.10 | 33.16 | | 13.47 |
| | | | | | | 35.86 | FAIR | 0.10 | 35.47 | | 15.78 |
| 12 | 18 | GORARI | GO | 166.8 | 88.9 | 29.41 | POOR | 1.00 | 29.12 | BMR | 8.27 |
| | | | | | | 37.61 | POOR | 1.00 | 37.32 | | 16.47 |
| 13 | 18 | GORARI | GO | 174.4 | 92.0 | 29.94 | POOR | 1.00 | 29.60 | BMR | 7.80 |
| | | | | | | 33.14 | POOR | 1.00 | 32.80 | | 11.00 |
| 14 | 18 | GORARI | GO | 182.5 | 94.8 | 31.20 | FAIR | 0.50 | 30.97 | BMR | 8.16 |
| | | | | | | 32.22 | FAIR | 0.50 | 31.99 | | 9.18 |
| | | | | | | 34.04 | FAIR | 0.10 | 33.81 | | 11.00 |
| | | | | | | 36.58 | FAIR | 0.10 | 36.35 | | 13.54 |
| | | | | | | 38.12 | FAIR | 0.50 | 37.89 | | 15.08 |
| | | | | | | 40.37 | FAIR | 0.50 | 40.14 | | 17.33 |
| | | | | | | 44.78 | FAIR | 0.10 | 44.55 | | 21.74 |
| 17 | 18 | GORARI | GO | 211.5 | 101.7 | 35.13 | FAIR | 0.10 | 35.04 | BMR | 8.60 |
| | | | | | | 38.87 | FAIR | 0.10 | 38.78 | | 12.35 |
| | | | | | | 48.40 | FAIR | 0.10 | 48.31 | | 21.88 |
| 19 | 18 | GORARI | GO | 286.5 | 103.9 | 45.36 | POOR | 1.00 | 45.27 | BMR | 9.46 |
| | | | | | | 47.46 | POOR | 1.00 | 47.37 | | 11.56 |
| 20 | 18 | GORARI | GO | 175.7 | 88.0 | 30.67 | GOOD | 0.10 | 30.09 | BMR | 8.13 |
| | | | | | | 31.02 | GOOD | 0.50 | 30.44 | | 8.48 |
| | | | | | | 34.84 | FAIR | 0.50 | 34.26 | | 12.30 |
| | | | | | | 35.85 | FAIR | 0.50 | 35.27 | | 13.31 |
| | | | | | | 37.53 | FAIR | 0.50 | 36.95 | | 14.99 |
| | | | | | | 40.48 | FAIR | 0.50 | 39.90 | | 17.94 |
| | | | | | | 42.41 | FAIR | 0.50 | 41.83 | | 19.87 |
| 23 | 18 | GORARI | GO | 198.4 | 80.0 | 33.19 | FAIR | 0.10 | 32.40 | BMR | 7.60 |
| | | | | | | 34.17 | POOR | 0.10 | 33.38 | | 8.58 |
| 25 | 18 | GORARI | GO | 236.4 | 73.4 | 38.47 | POOR | 0.50 | 37.71 | BMR | 8.16 |
| | | | | | | 40.97 | POOR | 0.50 | 40.21 | | 10.66 |
| | | | | | | 42.17 | POOR | 0.50 | 41.41 | | 11.86 |
| 26 | 18 | GORARI | GO | 268.8 | 66.7 | 41.20 | POOR | 0.50 | 40.42 | BMR | 6.82 |
| | | | | | | 48.80 | FAIR | 0.50 | 48.02 | | 14.42 |
| | | | | | | 54.60 | FAIR | 0.50 | 53.82 | | 20.22 |
| 27 | 18 | GORARI | GO | 307.1 | 61.5 | 45.97 | FAIR | 0.50 | 45.43 | BMR | 7.04 |
| | | | | | | 68.77 | FAIR | 0.50 | 68.23 | | 29.84 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 37 | 18 | GORARI | GO | 159.6 | 52.4 | 28.59 | POOR | 0.50 | 27.65 | BMR | 7.70 |
| | | | | | | 29.17 | FAIR | 0.10 | 28.23 | | 8.28 |
| | | | | | | 30.40 | FAIR | 0.10 | 29.46 | | 9.51 |
| | | | | | | 33.44 | FAIR | 0.50 | 32.50 | | 12.55 |
| 38 | 18 | GORARI | GO | 147.9 | 52.6 | 26.84 | FAIR | 0.50 | 25.90 | BMR | 7.42 |
| | | | | | | 27.64 | FAIR | 0.50 | 26.70 | | 8.22 |
| | | | | | | 33.83 | FAIR | 0.50 | 32.89 | | 14.41 |
| | | | | | | 35.72 | FAIR | 0.50 | 34.78 | | 16.30 |
| 39 | 18 | GORARI | GO | 115.4 | 34.3 | 21.63 | FAIR | 0.50 | 21.20 | BMR | 6.77 |
| | | | | | | 22.64 | FAIR | 0.50 | 22.21 | | 7.78 |
| | | | | | | 24.16 | POOR | 0.50 | 23.73 | | 9.30 |
| | | | | | | 24.61 | FAIR | 0.50 | 24.18 | | 9.75 |
| | | | | | | 38.70 | FAIR | 0.50 | 38.27 | | 23.84 |
| 40 | 18 | GORARI | GO | 116.0 | 40.0 | 22.01 | FAIR | 0.50 | 21.56 | BMR | 7.06 |
| | | | | | | 23.08 | FAIR | 0.50 | 22.63 | | 8.13 |
| | | | | | | 23.79 | FAIR | 0.50 | 23.34 | | 8.84 |
| | | | | | | 26.71 | FAIR | 0.50 | 26.26 | | 11.76 |
| 41 | 18 | GORARI | GO | 115.8 | 46.5 | 22.69 | GOOD | 0.10 | 22.21 | BMR | 7.74 |
| 54 | 18 | GORARI | GO | 206.3 | 287.9 | 36.12 | POOR | 1.00 | 35.90 | BMR | 10.11 |
| | | | | | | 38.32 | POOR | 1.00 | 38.10 | | 12.31 |
| | | | | | | 47.52 | FAIR | 0.50 | 47.30 | | 21.51 |
| 55 | 18 | GORARI | GO | 178.5 | 280.0 | 30.92 | FAIR | 0.50 | 30.73 | BMR | 8.42 |
| 56 | 18 | GORARI | GO | 95.8 | 233.3 | 16.17 | FAIR | 0.50 | 16.07 | BMR | 4.10 |
| | | | | | | 16.57 | FAIR | 0.50 | 16.47 | | 4.50 |
| | | | | | | 21.17 | FAIR | 0.50 | 21.07 | | 9.10 |
| 57 | 18 | GORARI | GO | 107.0 | 232.0 | 17.21 | FAIR | 0.50 | 17.12 | BMR | 3.74 |
| | | | | | | 19.27 | FAIR | 0.50 | 19.18 | | 5.80 |
| | | | | | | 28.41 | FAIR | 0.50 | 28.32 | | 14.94 |
| | | | | | | 31.06 | FAIR | 0.50 | 30.97 | | 17.59 |
| 58 | 18 | GORARI | GO | 111.1 | 232.7 | 17.62 | FAIR | 0.50 | 17.53 | BMR | 3.64 |
| | | | | | | 20.40 | FAIR | 0.50 | 20.31 | | 6.42 |
| 59 | 18 | GORARI | GO | 121.5 | 232.3 | 19.03 | FAIR | 0.50 | 18.65 | BMR | 3.47 |
| | | | | | | 24.53 | FAIR | 0.10 | 24.15 | | 8.97 |
| 60 | 18 | GORARI | GO | 134.8 | 231.5 | 21.88 | FAIR | 0.50 | 20.98 | BMR | 4.13 |
| | | | | | | 23.54 | FAIR | 0.50 | 22.64 | | 5.79 |
| | | | | | | 37.48 | FAIR | 0.50 | 36.58 | | 19.73 |
| 61 | 18 | GORARI | GO | 147.0 | 229.6 | 24.43 | FAIR | 0.50 | 23.04 | BMR | 4.66 |
| | | | | | | 26.74 | FAIR | 0.50 | 25.35 | | 6.97 |
| | | | | | | 29.16 | FAIR | 0.50 | 27.77 | | 9.39 |
| 62 | 18 | GORARI | GO | 160.4 | 230.7 | 26.93 | FAIR | 0.50 | 25.08 | BMR | 5.03 |
| | | | | | | 27.52 | FAIR | 0.10 | 25.67 | | 5.62 |
| | | | | | | 28.05 | FAIR | 0.10 | 26.20 | | 6.15 |
| | | | | | | 33.27 | FAIR | 0.50 | 31.42 | | 11.37 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 63 | 18 | GORARI | GO | 196.0 | 229.7 | 33.10 | FAIR | 0.10 | 30.96 | BMR | 6.46 |
| | | | | | | 37.95 | POOR | 0.50 | 35.81 | | 11.31 |
| 73 | 18 | GORARI | GO | 199.1 | 158.3 | 37.32 | POOR | 0.50 | 37.14 | BMR | 12.25 |
| | | | | | | 38.42 | POOR | 0.50 | 38.24 | | 13.35 |
| | | | | | | 35.92 | POOR | 0.50 | 35.74 | | 10.85 |
| 74 | 18 | GORARI | GO | 190.4 | 159.9 | 31.19 | POOR | 0.50 | 30.83 | BMR | 7.03 |
| | | | | | | 33.39 | POOR | 0.50 | 33.03 | | 9.23 |
| | | | | | | 37.99 | POOR | 0.50 | 37.63 | | 13.83 |
| 75 | 18 | GORARI | GO | 180.5 | 161.4 | 28.00 | POOR | 0.50 | 27.84 | BMR | 5.28 |
| | | | | | | 33.13 | FAIR | 0.50 | 32.97 | | 10.41 |
| | | | | | | 36.93 | FAIR | 0.50 | 36.77 | | 14.21 |
| 76 | 18 | GORARI | GO | 184.6 | 163.7 | 31.67 | POOR | 0.50 | 31.29 | BMR | 8.21 |
| | | | | | | 34.77 | POOR | 0.50 | 34.39 | | 11.31 |
| 77 | 18 | GORARI | GO | 192.0 | 166.3 | 27.61 | POOR | 0.50 | 27.00 | BMR | 3.00 |
| | | | | | | 31.31 | FAIR | 0.50 | 30.70 | | 6.70 |
| | | | | | | 34.71 | FAIR | 0.50 | 34.10 | | 10.10 |
| | | | | | | 36.71 | FAIR | 0.50 | 36.10 | | 12.10 |
| | | | | | | 38.31 | FAIR | 0.50 | 37.70 | | 13.70 |
| | | | | | | 41.01 | FAIR | 0.50 | 40.40 | | 16.40 |
| 79 | 18 | GORARI | GO | 208.0 | 170.5 | 58.28 | POOR | 0.50 | 57.21 | BMR | 31.21 |
| | | | | | | 60.83 | POOR | 0.50 | 59.76 | | 33.76 |
| | | | | | | 68.88 | FAIR | 0.50 | 67.81 | | 41.81 |
| 80 | 18 | GORARI | GO | 223.8 | 175.4 | 33.93 | POOR | 0.50 | 33.23 | BMR | 5.26 |
| | | | | | | 37.48 | FAIR | 0.50 | 36.78 | | 8.81 |
| | | | | | | 44.03 | FAIR | 0.50 | 43.33 | | 15.36 |
| 81 | 18 | GORARI | GO | 168.0 | 164.5 | 26.43 | FAIR | 0.10 | 26.26 | BMR | 5.26 |
| | | | | | | 32.38 | FAIR | 0.50 | 32.21 | | 11.21 |
| | | | | | | 34.04 | FAIR | 0.50 | 33.87 | | 12.87 |
| | | | | | | 37.93 | FAIR | 0.50 | 37.76 | | 16.76 |
| 82 | 18 | GORARI | GO | 154.0 | 167.3 | 22.99 | FAIR | 0.50 | 22.84 | BMR | 3.59 |
| | | | | | | 25.60 | FAIR | 0.50 | 25.45 | | 6.20 |
| | | | | | | 29.79 | FAIR | 0.50 | 29.64 | | 10.39 |
| | | | | | | 30.64 | FAIR | 0.50 | 30.49 | | 11.24 |
| 84 | 18 | GORARI | GO | 142.6 | 172.4 | 27.17 | POOR | 0.50 | 26.89 | BMR | 9.06 |
| | | | | | | 29.07 | FAIR | 0.50 | 28.79 | | 10.96 |
| | | | | | | 38.37 | FAIR | 0.50 | 38.09 | | 20.26 |
| 85 | 18 | GORARI | GO | 134.1 | 175.0 | 20.33 | POOR | 0.50 | 19.95 | BMR | 3.19 |
| | | | | | | 22.03 | FAIR | 0.50 | 21.65 | | 4.89 |
| 86 | 18 | GORARI | GO | 127.6 | 177.9 | 19.99 | POOR | 0.50 | 19.90 | BMR | 3.95 |
| | | | | | | 22.69 | FAIR | 0.50 | 22.60 | | 6.65 |
| | | | | | | 36.01 | FAIR | 0.50 | 35.92 | | 19.97 |
| 87 | 18 | GORARI | GO | 123.5 | 180.7 | 19.52 | POOR | 0.50 | 19.04 | BMR | 3.61 |
| | | | | | | 21.11 | FAIR | 0.10 | 20.63 | | 5.20 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 26.74 | FAIR | 0.10 | 26.26 | | 10.83 |
| 88 | 18 | GORARI | GO | 117.8 | 197.4 | 19.47 | GOOD | 0.10 | 19.08 | BMR | 4.36 |
| | | | | | | 22.05 | FAIR | 0.10 | 21.66 | | 6.94 |
| | | | | | | 24.41 | FAIR | 0.10 | 24.02 | | 9.30 |
| | | | | | | 27.27 | FAIR | 0.10 | 26.88 | | 12.16 |
| | | | | | | 35.47 | FAIR | 0.10 | 35.08 | | 20.36 |
| 89 | 18 | GORARI | GO | 131.9 | 200.3 | 21.93 | FAIR | 0.10 | 21.34 | BMR | 4.85 |
| | | | | | | 25.77 | FAIR | 0.10 | 25.18 | | 8.69 |
| | | | | | | 27.59 | FAIR | 0.50 | 27.00 | | 10.51 |
| 90 | 18 | GORARI | GO | 142.4 | 202.2 | 23.39 | FAIR | 0.50 | 22.35 | BMR | 4.55 |
| | | | | | | 25.45 | FAIR | 0.50 | 24.41 | | 6.61 |
| | | | | | | 26.93 | FAIR | 0.50 | 25.89 | | 8.09 |
| 91 | 18 | GORARI | GO | 153.4 | 203.7 | 25.43 | FAIR | 0.50 | 24.49 | BMR | 5.32 |
| | | | | | | 31.43 | FAIR | 0.50 | 30.49 | | 11.32 |
| | | | | | | 35.06 | FAIR | 0.50 | 34.12 | | 14.95 |
| 94 | 18 | GORARI | GO | 191.3 | 208.1 | 32.00 | FAIR | 1.00 | 29.54 | BMR | 5.63 |
| | | | | | | 35.00 | FAIR | 0.50 | 32.54 | | 8.63 |
| | | | | | | 38.10 | FAIR | 0.50 | 35.64 | | 11.73 |
| 97 | 18 | GORARI | GO | 249.3 | 229.6 | 38.64 | FAIR | 0.50 | 36.34 | BMR | 5.17 |
| 98 | 18 | GORARI | GO | 106.3 | 198.5 | 18.07 | GOOD | 0.10 | 17.79 | BMR | 4.50 |
| | | | | | | 20.76 | FAIR | 0.10 | 20.48 | | 7.19 |
| | | | | | | 22.60 | FAIR | 0.10 | 22.32 | | 9.03 |
| 99 | 18 | GORARI | GO | 89.6 | 211.1 | 15.08 | GOOD | 0.10 | 14.99 | BMR | 3.79 |
| | | | | | | 16.07 | GOOD | 0.50 | 15.98 | | 4.78 |
| | | | | | | 18.65 | FAIR | 0.10 | 18.56 | | 7.36 |
| | | | | | | 21.00 | GOOD | 0.10 | 20.91 | | 9.71 |
| | | | | | | 26.11 | FAIR | 0.10 | 26.02 | | 14.82 |
| 100 | 18 | GORARI | GO | 83.4 | 219.4 | 14.13 | GOOD | 0.10 | 14.03 | BMR | 3.60 |
| | | | | | | 14.49 | FAIR | 0.10 | 14.39 | | 3.96 |
| | | | | | | 16.30 | FAIR | 0.10 | 16.20 | | 5.77 |
| | | | | | | 17.22 | FAIR | 0.10 | 17.12 | | 6.69 |
| 101 | 18 | GORARI | GO | 80.6 | 232.3 | 13.92 | FAIR | 0.50 | 13.82 | BMR | 3.74 |
| | | | | | | 16.52 | POOR | 0.50 | 16.42 | | 6.34 |
| 102 | 18 | GORARI | GO | 78.6 | 239.2 | 14.20 | FAIR | 0.50 | 14.10 | BMR | 4.28 |
| | | | | | | 25.37 | FAIR | 0.50 | 25.27 | | 15.45 |
| 103 | 18 | GORARI | GO | 76.4 | 248.3 | 14.38 | FAIR | 0.10 | 14.28 | BMR | 4.73 |
| | | | | | | 14.62 | FAIR | 0.10 | 14.52 | | 4.97 |
| | | | | | | 16.24 | FAIR | 0.50 | 16.14 | | 6.59 |
| 104 | 18 | GORARI | GO | 92.3 | 256.8 | 15.98 | FAIR | 0.10 | 15.88 | BMR | 4.35 |
| | | | | | | 16.63 | FAIR | 0.10 | 16.53 | | 5.00 |
| | | | | | | 17.22 | FAIR | 0.50 | 17.12 | | 5.59 |
| | | | | | | 19.21 | FAIR | 0.50 | 19.11 | | 7.58 |
| 105 | 18 | GORARI | GO | 101.8 | 263.8 | 17.53 | POOR | 0.50 | 17.43 | BMR | 4.71 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 20.03 | FAIR | 0.50 | 19.93 | | 7.21 |
| | | | | | | 29.13 | FAIR | 0.50 | 29.03 | | 16.31 |
| | | | | | | 34.13 | FAIR | 0.50 | 34.03 | | 21.31 |
| 106 | 18 | GORARI | GO | 110.6 | 266.0 | 18.09 | FAIR | 0.50 | 17.99 | BMR | 4.17 |
| | | | | | | 19.49 | FAIR | 0.50 | 19.39 | | 5.57 |
| | | | | | | 24.99 | FAIR | 0.50 | 24.89 | | 11.07 |
| 109 | 18 | GORARI | GO | 146.6 | 272.2 | 23.68 | FAIR | 0.10 | 23.58 | BMR | 5.26 |
| | | | | | | 28.23 | FAIR | 0.10 | 28.13 | | 9.81 |
| 110 | 18 | GORARI | GO | 174.2 | 269.0 | 30.17 | POOR | 1.00 | 29.96 | BMR | 8.18 |
| | | | | | | 39.27 | FAIR | 0.50 | 39.06 | | 17.28 |
| 111 | 18 | GORARI | GO | 178.1 | 256.3 | 28.09 | POOR | 0.50 | 28.00 | BMR | 5.74 |
| | | | | | | 34.89 | POOR | 0.50 | 34.80 | | 12.54 |
| 3 | 20 | TUFI | TF | 267.4 | 79.5 | 42.38 | FAIR | 0.10 | 41.83 | QLD | 8.40 |
| 4 | 20 | TUFI | TF | 255.8 | 77.7 | 43.61 | FAIR | 0.10 | 43.16 | QLD | 11.19 |
| | | | | | | 47.94 | POOR | 0.10 | 47.49 | | 15.52 |
| 8 | 20 | TUFI | TF | 296.2 | 86.2 | 46.48 | POOR | 0.10 | 46.22 | QLD | 9.19 |
| 9 | 20 | TUFI | TF | 300.1 | 87.7 | 49.75 | POOR | 0.50 | 49.61 | QLD | 12.09 |
| 10 | 20 | TUFI | TF | 309.7 | 89.2 | 48.12 | POOR | 0.50 | 47.73 | QLD | 9.02 |
| 15 | 20 | TUFI | TF | 351.2 | 97.1 | 55.45 | POOR | 0.10 | 55.29 | QLD | 11.39 |
| 19 | 20 | TUFI | TF | 444.9 | 101.4 | 65.88 | POOR | 0.10 | 65.90 | QLD | 10.29 |
| | | | | | | 74.91 | POOR | 0.10 | 74.93 | | 19.32 |
| 20 | 20 | TUFI | TF | 333.9 | 92.2 | 50.10 | FAIR | 0.10 | 49.63 | QLD | 7.89 |
| | | | | | | 53.84 | FAIR | 0.10 | 53.37 | | 11.63 |
| | | | | | | 59.64 | FAIR | 0.10 | 59.17 | | 17.43 |
| 22 | 20 | TUFI | TF | 343.0 | 89.1 | 53.96 | POOR | 0.10 | 53.29 | QLD | 10.41 |
| 23 | 20 | TUFI | TF | 353.8 | 87.5 | 54.58 | FAIR | 0.10 | 53.89 | QLD | 9.67 |
| | | | | | | 55.91 | FAIR | 0.10 | 55.22 | | 11.00 |
| | | | | | | 61.50 | FAIR | 0.10 | 60.81 | | 16.59 |
| | | | | | | 64.04 | FAIR | 0.10 | 63.35 | | 19.13 |
| 24 | 20 | TUFI | TF | 357.4 | 86.5 | 57.10 | POOR | 0.10 | 56.40 | QLD | 11.73 |
| 25 | 20 | TUFI | TF | 387.6 | 82.8 | 56.47 | POOR | 0.10 | 55.82 | QLD | 7.37 |
| 27 | 20 | TUFI | TF | 446.4 | 73.4 | 63.99 | POOR | 0.10 | 63.55 | QLD | 7.75 |
| | | | | | | 64.85 | POOR | 0.10 | 64.41 | | 8.61 |
| | | | | | | 74.41 | FAIR | 0.10 | 73.97 | | 18.17 |
| 28 | 20 | TUFI | TF | 488.7 | 69.6 | 66.75 | POOR | 0.10 | 66.29 | QLD | 5.21 |
| | | | | | | 78.05 | FAIR | 0.10 | 77.59 | | 16.51 |
| 29 | 20 | TUFI | TF | 522.4 | 67.2 | 70.69 | FAIR | 0.10 | 70.18 | QLD | 4.88 |
| | | | | | | 78.01 | FAIR | 0.10 | 77.50 | | 12.20 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | 20 | TUFI | TF | 451.4 | 68.1 | 68.19 | POOR | 0.10 | 67.78 | QLD | 11.36 |
| | | | | | | 86.95 | POOR | 0.10 | 86.54 | | 30.12 |
| 32 | 20 | TUFI | TF | 407.2 | 69.3 | 59.29 | POOR | 0.10 | 58.75 | QLD | 7.85 |
| 33 | 20 | TUFI | TF | 360.0 | 70.7 | 63.92 | FAIR | 0.10 | 63.13 | QLD | 18.13 |
| | | | | | | 68.11 | FAIR | 0.10 | 67.32 | | 22.32 |
| 34 | 20 | TUFI | TF | 333.2 | 72.0 | 61.84 | POOR | 0.10 | 60.99 | QLD | 19.34 |
| | | | | | | 69.37 | FAIR | 0.10 | 68.52 | | 26.87 |
| | | | | | | 73.75 | FAIR | 0.10 | 72.90 | | 31.25 |
| 35 | 20 | TUFI | TF | 322.2 | 72.5 | 49.36 | GOOD | 0.10 | 48.54 | QLD | 8.27 |
| | | | | | | 51.94 | FAIR | 0.10 | 51.12 | | 10.85 |
| | | | | | | 57.88 | FAIR | 0.10 | 57.06 | | 16.79 |
| 36 | 20 | TUFI | TF | 308.5 | 73.6 | 54.98 | GOOD | 0.10 | 54.14 | QLD | 15.58 |
| | | | | | | 57.92 | GOOD | 0.10 | 57.08 | | 18.52 |
| 37 | 20 | TUFI | TF | 295.2 | 74.5 | 46.31 | FAIR | 0.10 | 45.48 | QLD | 8.58 |
| | | | | | | 48.14 | FAIR | 0.10 | 47.31 | | 10.41 |
| 38 | 20 | TUFI | TF | 284.6 | 75.5 | 45.28 | FAIR | 0.10 | 44.45 | QLD | 8.88 |
| | | | | | | 47.51 | FAIR | 0.10 | 46.68 | | 11.11 |
| | | | | | | 49.63 | FAIR | 0.10 | 48.80 | | 13.23 |
| 39 | 20 | TUFI | TF | 236.0 | 71.0 | 38.59 | FAIR | 0.10 | 38.27 | QLD | 8.77 |
| | | | | | | 39.28 | FAIR | 0.10 | 38.96 | | 9.46 |
| | | | | | | 43.40 | FAIR | 0.10 | 43.08 | | 13.58 |
| 40 | 20 | TUFI | TF | 243.1 | 73.2 | 39.86 | GOOD | 0.10 | 39.52 | QLD | 9.13 |
| | | | | | | 40.18 | FAIR | 0.10 | 39.84 | | 9.45 |
| | | | | | | 42.84 | FAIR | 0.10 | 42.50 | | 12.11 |
| 41 | 20 | TUFI | TF | 249.7 | 75.8 | 41.12 | FAIR | 0.10 | 40.75 | QLD | 9.54 |
| | | | | | | 43.14 | FAIR | 0.10 | 42.77 | | 11.56 |
| | | | | | | 45.90 | FAIR | 0.10 | 45.53 | | 14.32 |
| 42 | 20 | TUFI | TF | 233.4 | 68.0 | 38.06 | GOOD | 0.10 | 37.75 | QLD | 8.58 |
| | | | | | | 40.04 | FAIR | 0.10 | 39.73 | | 10.56 |
| | | | | | | 43.83 | FAIR | 0.10 | 43.52 | | 14.35 |
| 43 | 20 | TUFI | TF | 232.7 | 64.8 | 38.01 | FAIR | 0.10 | 37.61 | QLD | 8.52 |
| 44 | 20 | TUFI | TF | 226.6 | 61.1 | 36.99 | FAIR | 0.10 | 36.77 | QLD | 8.44 |
| 46 | 20 | TUFI | TF | 209.1 | 55.1 | 34.85 | FAIR | 0.10 | 34.47 | QLD | 8.33 |
| | | | | | | 37.78 | FAIR | 0.10 | 37.40 | | 11.26 |
| | | | | | | 39.46 | FAIR | 0.10 | 39.08 | | 12.94 |
| 47 | 20 | TUFI | TF | 199.8 | 52.7 | 32.55 | FAIR | 0.10 | 32.46 | QLD | 7.48 |
| | | | | | | 34.86 | FAIR | 0.10 | 34.77 | | 9.79 |
| 48 | 20 | TUFI | TF | 171.5 | 35.7 | 29.19 | GOOD | 0.10 | 28.82 | QLD | 7.39 |
| | | | | | | 30.80 | FAIR | 0.10 | 30.43 | | 9.00 |
| | | | | | | 32.56 | FAIR | 0.10 | 32.19 | | 10.76 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 49 | 20 | TUFI | TF | 154.4 | 15.3 | 27.20 | GOOD | 0.10 | 26.63 | QLD | 7.33 |
| | | | | | | 28.27 | FAIR | 0.10 | 27.70 | | 8.40 |
| | | | | | | 30.57 | FAIR | 0.10 | 30.00 | | 10.70 |
| 50 | 20 | TUFI | TF | 164.4 | 350.2 | 28.04 | GOOD | 0.10 | 27.89 | QLD | 7.34 |
| | | | | | | 28.98 | FAIR | 0.10 | 28.83 | | 8.28 |
| | | | | | | 31.06 | FAIR | 0.10 | 30.91 | | 10.36 |
| 51 | 20 | TUFI | TF | 208.8 | 315.0 | 34.35 | FAIR | 0.10 | 34.16 | QLD | 8.06 |
| | | | | | | 35.83 | FAIR | 0.10 | 35.64 | | 9.54 |
| 52 | 20 | TUFI | TF | 158.6 | 294.8 | 25.23 | FAIR | 0.10 | 25.02 | QLD | 5.20 |
| | | | | | | 27.46 | FAIR | 0.10 | 27.25 | | 7.43 |
| 53 | 20 | TUFI | TF | 108.1 | 305.8 | 17.32 | GOOD | 0.10 | 17.26 | QLD | 3.74 |
| | | | | | | 20.45 | FAIR | 0.10 | 20.39 | | 6.87 |
| 54 | 20 | TUFI | TF | 59.6 | 320.3 | 11.25 | GOOD | 0.10 | 11.14 | QLD | 3.69 |
| 55 | 20 | TUFI | TF | 22.1 | 307.4 | 6.33 | GOOD | 0.10 | 6.25 | QLD | 3.49 |
| 56 | 20 | TUFI | TF | 110.7 | 132.7 | 19.37 | GOOD | 0.10 | 19.38 | QLD | 5.54 |
| | | | | | | 20.12 | GOOD | 0.10 | 20.13 | | 6.29 |
| 57 | 20 | TUFI | TF | 111.7 | 138.6 | 19.13 | GOOD | 0.10 | 19.15 | QLD | 5.18 |
| | | | | | | 20.28 | FAIR | 0.10 | 20.30 | | 6.33 |
| | | | | | | 21.30 | FAIR | 0.10 | 21.32 | | 7.35 |
| 58 | 20 | TUFI | TF | 110.2 | 140.7 | 18.92 | GOOD | 0.10 | 18.93 | QLD | 5.16 |
| | | | | | | 20.69 | FAIR | 0.10 | 20.70 | | 6.93 |
| 59 | 20 | TUFI | TF | 110.9 | 146.1 | 19.07 | GOOD | 0.10 | 18.80 | QLD | 4.94 |
| 61 | 20 | TUFI | TF | 122.1 | 157.8 | 22.67 | GOOD | 0.10 | 21.39 | QLD | 6.12 |
| | | | | | | 26.38 | FAIR | 0.10 | 25.10 | | 9.83 |
| 62 | 20 | TUFI | TF | 124.0 | 164.1 | 23.84 | GOOD | 0.10 | 22.10 | QLD | 6.60 |
| 63 | 20 | TUFI | TF | 144.6 | 176.6 | 27.82 | GOOD | 0.10 | 25.79 | QLD | 7.71 |
| 69 | 20 | TUFI | TF | 354.1 | 135.1 | 51.23 | GOOD | 0.10 | 51.16 | QLD | 6.89 |
| | | | | | | 52.98 | FAIR | 0.10 | 52.91 | | 8.64 |
| 70 | 20 | TUFI | TF | 335.4 | 133.4 | 50.34 | POOR | 0.10 | 50.29 | QLD | 8.36 |
| | | | | | | 51.33 | POOR | 0.10 | 51.28 | | 9.35 |
| 71 | 20 | TUFI | TF | 328.3 | 133.1 | 48.44 | GOOD | 0.10 | 48.32 | QLD | 7.28 |
| | | | | | | 50.81 | FAIR | 0.10 | 50.69 | | 9.65 |
| | | | | | | 57.75 | FAIR | 0.10 | 57.63 | | 16.59 |
| 72 | 20 | TUFI | TF | 319.9 | 132.4 | 47.27 | FAIR | 0.10 | 47.07 | QLD | 7.08 |
| | | | | | | 47.83 | GOOD | 0.10 | 47.63 | | 7.64 |
| 73 | 20 | TUFI | TF | 308.4 | 131.3 | 45.13 | GOOD | 0.10 | 45.06 | QLD | 6.51 |
| | | | | | | 48.03 | FAIR | 0.10 | 47.96 | | 9.41 |
| 74 | 20 | TUFI | TF | 298.1 | 131.4 | 43.36 | POOR | 0.50 | 43.11 | QLD | 5.85 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 75 | 20 | TUFI | TF | 287.1 | 131.3 | 41.84 | GOOD | 0.10 | 41.79 | QLD | 5.90 |
| | | | | | | 44.29 | GOOD | 0.10 | 44.24 | | 8.35 |
| | | | | | | 45.71 | FAIR | 0.10 | 45.66 | | 9.77 |
| | | | | | | 47.54 | FAIR | 0.10 | 47.49 | | 11.60 |
| | | | | | | 49.14 | FAIR | 0.50 | 49.09 | | 13.20 |
| | | | | | | 55.98 | FAIR | 0.50 | 55.93 | | 20.04 |
| 76 | 20 | TUFI | TF | 286.8 | 133.0 | 44.62 | GOOD | 0.10 | 44.35 | QLD | 8.50 |
| | | | | | | 45.91 | FAIR | 0.10 | 45.64 | | 9.79 |
| | | | | | | 48.83 | FAIR | 0.10 | 48.56 | | 12.71 |
| 77 | 20 | TUFI | TF | 288.7 | 135.2 | 43.44 | GOOD | 0.10 | 42.93 | QLD | 6.85 |
| | | | | | | 44.76 | GOOD | 0.10 | 44.25 | | 8.17 |
| | | | | | | 45.37 | FAIR | 0.10 | 44.86 | | 8.78 |
| 78 | 20 | TUFI | TF | 290.9 | 137.2 | 46.23 | FAIR | 0.10 | 45.53 | QLD | 9.16 |
| 79 | 20 | TUFI | TF | 294.9 | 139.3 | 46.24 | GOOD | 0.10 | 45.28 | QLD | 8.42 |
| 80 | 20 | TUFI | TF | 298.6 | 143.9 | 46.14 | GOOD | 0.10 | 45.55 | QLD | 8.23 |
| | | | | | | 48.42 | FAIR | 0.50 | 47.83 | | 10.51 |
| | | | | | | 54.02 | POOR | 1.00 | 53.43 | | 16.11 |
| | | | | | | 67.27 | FAIR | 0.50 | 66.68 | | 29.36 |
| | | | | | | 88.82 | FAIR | 0.50 | 88.23 | | 50.91 |
| 81 | 20 | TUFI | TF | 271.5 | 131.6 | 39.93 | FAIR | 0.50 | 39.87 | QLD | 5.93 |
| | | | | | | 42.73 | GOOD | 0.10 | 42.67 | | 8.73 |
| | | | | | | 45.76 | FAIR | 0.10 | 45.70 | | 11.76 |
| 82 | 20 | TUFI | TF | 255.4 | 131.3 | 37.99 | FAIR | 0.10 | 37.95 | QLD | 6.03 |
| | | | | | | 40.97 | GOOD | 0.10 | 40.93 | | 9.01 |
| | | | | | | 37.98 | FAIR | 0.50 | 37.94 | | 6.02 |
| 85 | 20 | TUFI | TF | 227.7 | 131.8 | 36.01 | POOR | 0.50 | 35.74 | QLD | 7.28 |
| | | | | | | 38.58 | GOOD | 0.50 | 38.31 | | 9.85 |
| | | | | | | 40.37 | FAIR | 0.10 | 40.10 | | 11.64 |
| | | | | | | 45.36 | FAIR | 0.10 | 45.09 | | 16.63 |
| 86 | 20 | TUFI | TF | 218.4 | 131.8 | 36.70 | FAIR | 0.10 | 36.72 | QLD | 9.42 |
| | | | | | | 42.12 | FAIR | 0.50 | 42.14 | | 14.84 |
| | | | | | | 37.66 | GOOD | 0.10 | 37.68 | | 10.38 |
| 87 | 20 | TUFI | TF | 211.1 | 132.2 | 32.67 | FAIR | 0.10 | 32.30 | QLD | 5.91 |
| | | | | | | 36.23 | GOOD | 0.10 | 35.86 | | 9.47 |
| | | | | | | 38.17 | FAIR | 0.10 | 37.80 | | 11.41 |
| | | | | | | 41.02 | FAIR | 0.10 | 40.65 | | 14.26 |
| 88 | 20 | TUFI | TF | 179.3 | 136.7 | 28.61 | GOOD | 0.10 | 28.33 | QLD | 5.92 |
| 89 | 20 | TUFI | TF | 180.8 | 141.6 | 30.06 | FAIR | 0.10 | 29.58 | QLD | 6.98 |
| | | | | | | 30.81 | GOOD | 0.10 | 30.33 | | 7.73 |
| | | | | | | 33.78 | FAIR | 0.10 | 33.30 | | 10.70 |
| 90 | 20 | TUFI | TF | 182.5 | 145.2 | 30.95 | GOOD | 0.10 | 30.01 | QLD | 7.20 |
| 91 | 20 | TUFI | TF | 185.6 | 148.6 | 32.18 | GOOD | 0.10 | 31.35 | QLD | 8.15 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 92 | 20 | TUFI | TF | 189.6 | 153.9 | 32.37 | FAIR | 0.10 | 30.86 | QLD | 7.16 |
| | | | | | | 33.87 | FAIR | 0.10 | 32.36 | | 8.66 |
| 93 | 20 | TUFI | TF | 195.2 | 156.4 | 34.24 | FAIR | 0.10 | 32.32 | QLD | 7.92 |
| | | | | | | 36.76 | GOOD | 0.10 | 34.84 | | 10.44 |
| | | | | | | 39.84 | FAIR | 0.50 | 37.92 | | 13.52 |
| | | | | | | 42.56 | FAIR | 0.50 | 40.64 | | 16.24 |
| 94 | 20 | TUFI | TF | 198.6 | 159.9 | 34.87 | GOOD | 0.10 | 32.52 | QLD | 7.69 |
| 95 | 20 | TUFI | TF | 234.8 | 198.5 | 38.53 | GOOD | 0.10 | 36.00 | QLD | 6.65 |
| 96 | 20 | TUFI | TF | 209.1 | 194.9 | 34.16 | GOOD | 0.10 | 32.39 | QLD | 6.25 |
| 97 | 20 | TUFI | TF | 181.8 | 190.0 | 31.39 | GOOD | 0.10 | 29.19 | QLD | 6.47 |
| 98 | 20 | TUFI | TF | 172.1 | 133.7 | 27.71 | FAIR | 0.10 | 27.54 | QLD | 6.03 |
| | | | | | | 30.42 | FAIR | 0.10 | 30.25 | | 8.74 |
| | | | | | | 33.21 | FAIR | 0.10 | 33.04 | | 11.53 |
| 99 | 20 | TUFI | TF | 146.5 | 130.3 | 24.22 | GOOD | 0.10 | 24.23 | QLD | 5.92 |
| 100 | 20 | TUFI | TF | 133.6 | 128.1 | 23.14 | POOR | 0.10 | 23.14 | QLD | 6.44 |
| | | | | | | 24.61 | POOR | 0.10 | 24.61 | | 7.91 |
| | | | | | | 26.07 | POOR | 0.10 | 26.07 | | 9.37 |
| 101 | 20 | TUFI | TF | 115.8 | 125.5 | 20.31 | FAIR | 0.10 | 20.32 | QLD | 5.84 |
| | | | | | | 20.71 | GOOD | 0.10 | 20.72 | | 6.24 |
| | | | | | | 21.83 | FAIR | 0.10 | 21.84 | | 7.36 |
| | | | | | | 24.49 | FAIR | 0.10 | 24.50 | | 10.02 |
| 102 | 20 | TUFI | TF | 107.8 | 122.7 | 19.69 | GOOD | 0.10 | 19.70 | QLD | 6.22 |
| | | | | | | 20.46 | FAIR | 0.10 | 20.47 | | 6.99 |
| 103 | 20 | TUFI | TF | 98.7 | 117.9 | 18.63 | GOOD | 0.10 | 18.64 | QLD | 6.30 |
| 104 | 20 | TUFI | TF | 78.7 | 119.7 | 15.80 | GOOD | 0.10 | 15.81 | QLD | 5.97 |
| 105 | 20 | TUFI | TF | 63.8 | 116.8 | 13.44 | GOOD | 0.10 | 13.45 | QLD | 5.48 |
| 106 | 20 | TUFI | TF | 54.2 | 118.0 | 11.77 | GOOD | 0.10 | 11.78 | QLD | 5.01 |
| 107 | 20 | TUFI | TF | 44.5 | 107.9 | 9.71 | GOOD | 0.10 | 9.72 | QLD | 4.16 |
| 108 | 20 | TUFI | TF | 36.6 | 108.8 | 8.42 | GOOD | 0.10 | 8.43 | QLD | 3.85 |
| 109 | 20 | TUFI | TF | 16.8 | 135.6 | 4.51 | GOOD | 0.10 | 4.52 | QLD | 2.42 |
| 110 | 20 | TUFI | TF | 26.1 | 217.7 | 8.15 | GOOD | 0.10 | 8.05 | QLD | 4.78 |
| 111 | 20 | TUFI | TF | 61.5 | 194.0 | 12.55 | GOOD | 0.10 | 12.57 | QLD | 4.88 |
| | | | | | | 12.91 | FAIR | 0.10 | 12.93 | | 5.24 |
| | | | | | | 17.01 | FAIR | 0.10 | 17.03 | | 9.34 |
| 1 | 22 | AFORE | AF | 176.2 | 70.4 | 30.60 | FAIR | 0.50 | 29.63 | ANU | 7.61 |
| | | | | | | 31.90 | GOOD | 0.50 | 30.93 | | 8.91 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 34.10 | FAIR | 1.00 | 33.13 | | 11.11 |
| 4 | 22 | AFORE | AF | 155.6 | 72.1 | 27.30 | GOOD | 0.50 | 26.68 | ANU | 7.23 |
| | | | | | | 28.00 | GOOD | 0.50 | 27.38 | | 7.93 |
| 5 | 22 | AFORE | AF | 174.2 | 78.3 | 30.20 | GOOD | 0.50 | 29.74 | ANU | 7.97 |
| | | | | | | 31.00 | FAIR | 0.50 | 30.54 | | 8.77 |
| 6 | 22 | AFORE | AF | 180.3 | 80.3 | 32.20 | GOOD | 0.50 | 31.76 | ANU | 9.22 |
| | | | | | | 38.10 | FAIR | 0.50 | 37.66 | | 15.12 |
| 7 | 22 | AFORE | AF | 185.3 | 82.5 | 33.90 | FAIR | 0.50 | 33.41 | ANU | 10.25 |
| | | | | | | 38.00 | FAIR | 0.50 | 37.51 | | 14.35 |
| 8 | 22 | AFORE | AF | 194.1 | 86.2 | 33.05 | GOOD | 0.50 | 32.62 | ANU | 8.35 |
| | | | | | | 34.70 | GOOD | 0.50 | 34.27 | | 10.00 |
| 9 | 22 | AFORE | AF | 198.5 | 88.3 | 34.40 | GOOD | 0.50 | 34.08 | ANU | 9.27 |
| | | | | | | 35.10 | FAIR | 0.50 | 34.78 | | 9.97 |
| | | | | | | 45.90 | FAIR | 1.00 | 45.58 | | 20.77 |
| 10 | 22 | AFORE | AF | 207.8 | 90.6 | 36.10 | GOOD | 0.50 | 35.54 | ANU | 9.57 |
| | | | | | | 37.90 | FAIR | 0.50 | 37.34 | | 11.37 |
| | | | | | | 41.90 | FAIR | 0.50 | 41.34 | | 15.37 |
| | | | | | | 44.10 | FAIR | 0.50 | 43.54 | | 17.57 |
| 11 | 22 | AFORE | AF | 213.7 | 93.7 | 35.60 | GOOD | 0.50 | 35.15 | ANU | 8.44 |
| 14 | 22 | AFORE | AF | 241.4 | 99.6 | 39.20 | GOOD | 0.50 | 38.91 | ANU | 8.73 |
| | | | | | | 40.60 | FAIR | 0.50 | 40.31 | | 10.13 |
| | | | | | | 49.20 | FAIR | 0.50 | 48.91 | | 18.73 |
| 17 | 22 | AFORE | AF | 271.9 | 104.5 | 43.40 | FAIR | 1.00 | 43.25 | ANU | 9.26 |
| 20 | 22 | AFORE | AF | 232.5 | 94.7 | 38.30 | GOOD | 0.50 | 37.66 | ANU | 8.59 |
| | | | | | | 39.20 | FAIR | 0.50 | 38.56 | | 9.49 |
| | | | | | | 42.40 | FAIR | 0.50 | 41.76 | | 12.69 |
| 23 | 22 | AFORE | AF | 251.7 | 87.9 | 40.40 | FAIR | 0.50 | 39.54 | ANU | 8.08 |
| | | | | | | 47.70 | FAIR | 0.50 | 46.84 | | 15.38 |
| 25 | 22 | AFORE | AF | 285.8 | 81.5 | 45.20 | FAIR | 0.50 | 44.38 | ANU | 8.65 |
| 26 | 22 | AFORE | AF | 313.6 | 75.1 | 46.30 | FAIR | 1.00 | 45.45 | ANU | 6.25 |
| 32 | 22 | AFORE | AF | 311.2 | 63.7 | 46.40 | FAIR | 0.50 | 45.69 | ANU | 6.79 |
| 35 | 22 | AFORE | AF | 224.4 | 66.2 | 36.10 | GOOD | 0.50 | 35.11 | ANU | 7.06 |
| | | | | | | 42.60 | POOR | 1.00 | 41.61 | | 13.56 |
| | | | | | | 44.40 | FAIR | 1.00 | 43.41 | | 15.36 |
| 37 | 22 | AFORE | AF | 196.4 | 68.4 | 33.00 | FAIR | 0.50 | 31.99 | ANU | 7.44 |
| | | | | | | 34.70 | GOOD | 0.50 | 33.69 | | 9.14 |
| 38 | 22 | AFORE | AF | 185.3 | 69.6 | 31.50 | GOOD | 0.50 | 30.50 | ANU | 7.34 |
| | | | | | | 33.90 | FAIR | 0.50 | 32.90 | | 9.74 |
| | | | | | | 36.70 | FAIR | 0.50 | 35.70 | | 12.54 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 39 | 22 | AFORE | AF | 140.1 | 59.9 | 26.10 | GOOD | 0.50 | 25.60 | ANU | 8.09 |
| 40 | 22 | AFORE | AF | 145.5 | 64.0 | 26.60 | GOOD | 0.50 | 26.09 | ANU | 7.90 |
| | | | | | | 31.00 | FAIR | 0.50 | 30.49 | | 12.30 |
| | | | | | | 32.30 | FAIR | 0.50 | 31.79 | | 13.60 |
| 41 | 22 | AFORE | AF | 150.4 | 68.7 | 27.40 | GOOD | 0.50 | 26.86 | ANU | 8.06 |
| 42 | 22 | AFORE | AF | 140.2 | 54.7 | 25.90 | GOOD | 0.50 | 25.42 | ANU | 7.90 |
| 43 | 22 | AFORE | AF | 142.7 | 49.6 | 26.10 | GOOD | 0.50 | 25.53 | ANU | 7.69 |
| | | | | | | 27.80 | FAIR | 0.50 | 27.23 | | 9.39 |
| | | | | | | 29.30 | FAIR | 0.50 | 28.73 | | 10.89 |
| 44 | 22 | AFORE | AF | 141.0 | 43.2 | 25.70 | GOOD | 0.50 | 25.31 | ANU | 7.68 |
| | | | | | | 26.00 | GOOD | 0.50 | 25.61 | | 7.98 |
| 45 | 22 | AFORE | AF | 138 4 | 37.0 | 25.50 | GOOD | 0.50 | 24.93 | ANU | 7.63 |
| | | | | | | 26.50 | GOOD | 0.50 | 25.93 | | 8.63 |
| 46 | 22 | AFORE | AF | 132.7 | 31.7 | 24.50 | GOOD | 0.50 | 23.95 | ANU | 7.36 |
| | | | | | | 25.40 | GOOD | 0.50 | 24.85 | | 8.26 |
| 47 | 22 | AFORE | AF | 127.8 | 26.6 | 23.50 | GOOD | 0.50 | 23.24 | ANU | 7.26 |
| | | | | | | 24.00 | FAIR | 0.50 | 23.74 | | 7.76 |
| | | | | | | 24.50 | GOOD | 0.50 | 24.24 | | 8.26 |
| 48 | 22 | AFORE | AF | 132.4 | 359.2 | 24.10 | GOOD | 0.50 | 23.56 | ANU | 7.01 |
| 49 | 22 | AFORE | AF | 154.4 | 336.7 | 27.70 | GOOD | 0.50 | 26.96 | ANU | 7.66 |
| | | | | | | 28.50 | FAIR | 0.50 | 27.76 | | 8.46 |
| 50 | 22 | AFORE | AF | 202.0 | 320.0 | 33.30 | GOOD | 0.50 | 32.98 | ANU | 7.73 |
| | | | | | | 34.50 | GOOD | 0.50 | 34.18 | | 8.93 |
| 55 | 22 | AFORE | AF | 119.6 | 273.0 | 20.40 | GOOD | 0.50 | 20.15 | ANU | 5.20 |
| | | | | | | 22.30 | FAIR | 0.50 | 22.05 | | 7.10 |
| 56 | 22 | AFORE | AF | 84.6 | 194.0 | 15.30 | GOOD | 0.50 | 15.14 | ANU | 4.57 |
| | | | | | | 18.60 | GOOD | 0.50 | 18.44 | | 7.87 |
| | | | | | | 21.30 | GOOD | 0.50 | 21.14 | | 10.57 |
| 57 | 22 | AFORE | AF | 94.9 | 197.2 | 16.10 | GOOD | 0.50 | 15.95 | ANU | 4.08 |
| | | | | | | 17.00 | GOOD | 0.50 | 16.85 | | 4.98 |
| 58 | 22 | AFORE | AF | 97.6 | 199.2 | 16.50 | GOOD | 0.50 | 16.34 | ANU | 4.14 |
| 59 | 22 | AFORE | AF | 106.8 | 202.0 | 17.70 | GOOD | 0.50 | 17.26 | ANU | 3.91 |
| 60 | 22 | AFORE | AF | 119.3 | 204.4 | 20.20 | GOOD | 0.50 | 19.23 | ANU | 4.32 |
| | | | | | | 21.90 | FAIR | 0.50 | 20.93 | | 6.02 |
| 61 | 22 | AFORE | AF | 132.3 | 204.9 | 23.10 | GOOD | 0.50 | 21.64 | ANU | 5.11 |
| | | | | | | 24.40 | FAIR | 0.50 | 22.94 | | 6.41 |
| 62 | 22 | AFORE | AF | 143.4 | 208.2 | 25.10 | GOOD | 0.50 | 23.19 | ANU | 5.27 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 26.30 | FAIR | 0.50 | 24.39 | | 6.47 |
| | | | | | | 28.90 | FAIR | 0.50 | 26.99 | | 9.07 |
| | | | | | | 29.90 | FAIR | 0.50 | 27.99 | | 10.07 |
| 63 | 22 | AFORE | AF | 177.8 | 211.6 | 31.60 | GOOD | 0.50 | 29.40 | ANU | 7.17 |
| | | | | | | 32.50 | FAIR | 0.50 | 30.30 | | 8.07 |
| | | | | | | 36.90 | POOR | 0.50 | 34.70 | | 12.47 |
| | | | | | | 39.40 | FAIR | 0.50 | 37.20 | | 14.97 |
| 75 | 22 | AFORE | AF | 226.7 | 149.9 | 36.30 | FAIR | 0.50 | 36.08 | ANU | 7.74 |
| | | | | | | 37.90 | GOOD | 0.50 | 37.68 | | 9.34 |
| 77 | 22 | AFORE | AF | 234.6 | 154.4 | 37.70 | FAIR | 0.50 | 37.02 | ANU | 7.70 |
| | | | | | | 39.40 | FAIR | 0.50 | 38.72 | | 9.40 |
| 79 | 22 | AFORE | AF | 247.3 | 158.5 | 41.40 | FAIR | 0.50 | 40.27 | ANU | 9.36 |
| 80 | 22 | AFORE | AF | 258.8 | 163.4 | 43.20 | FAIR | 1.00 | 42.44 | ANU | 10.09 |
| 82 | 22 | AFORE | AF | 197.0 | 152.8 | 32.10 | POOR | 0.50 | 31.89 | ANU | 7.26 |
| | | | | | | 34.00 | FAIR | 0.50 | 33.79 | | 9.16 |
| 85 | 22 | AFORE | AF | 172.5 | 156.9 | 29.80 | FAIR | 0.50 | 29.36 | ANU | 7.80 |
| 87 | 22 | AFORE | AF | 158.1 | 159.8 | 27.50 | FAIR | 0.50 | 26.96 | ANU | 7.20 |
| | | | | | | 28.50 | FAIR | 0.50 | 27.96 | | 8.20 |
| 88 | 22 | AFORE | AF | 138.9 | 171.3 | 23.10 | GOOD | 0.50 | 22.65 | ANU | 5.29 |
| | | | | | | 26.70 | FAIR | 0.50 | 26.25 | | 8.89 |
| 89 | 22 | AFORE | AF | 148.9 | 176.0 | 24.80 | FAIR | 0.50 | 24.15 | ANU | 5.54 |
| | | | | | | 26.00 | FAIR | 0.50 | 25.35 | | 6.74 |
| 90 | 22 | AFORE | AF | 156.7 | 179.1 | 26.50 | FAIR | 0.50 | 25.39 | ANU | 5.81 |
| | | | | | | 29.60 | FAIR | 0.50 | 28.49 | | 8.91 |
| 91 | 22 | AFORE | AF | 165.4 | 181.8 | 28.90 | GOOD | 0.50 | 27.90 | ANU | 7.23 |
| 92 | 22 | AFORE | AF | 178.1 | 185.9 | 30.50 | GOOD | 0.50 | 28.81 | ANU | 6.55 |
| | | | | | | 35.00 | FAIR | 0.50 | 33.31 | | 11.05 |
| | | | | | | 37.60 | FAIR | 0.50 | 35.91 | | 13.65 |
| 94 | 22 | AFORE | AF | 196.5 | 189.9 | 35.70 | FAIR | 0.50 | 33.18 | ANU | 8.62 |
| | | | | | | 45.70 | GOOD | 0.50 | 43.18 | | 18.62 |
| 96 | 22 | AFORE | AF | 260.9 | 216.6 | 40.30 | GOOD | 0.50 | 38.36 | ANU | 5.75 |
| | | | | | | 44.30 | FAIR | 1.00 | 42.36 | | 9.75 |
| 97 | 22 | AFORE | AF | 229.1 | 215.6 | 36.70 | FAIR | 0.50 | 34.33 | ANU | 5.70 |
| 98 | 22 | AFORE | AF | 127.7 | 169.8 | 22.30 | FAIR | 0.50 | 21.96 | ANU | 5.99 |
| | | | | | | 25.40 | FAIR | 0.50 | 25.06 | | 9.09 |
| 99 | 22 | AFORE | AF | 102.0 | 174.4 | 17.60 | GOOD | 0.50 | 17.44 | ANU | 4.69 |
| | | | | | | 19.30 | FAIR | 0.50 | 19.14 | | 6.39 |
| 100 | 22 | AFORE | AF | 89.3 | 177.9 | 14.50 | FAIR | 1.00 | 14.33 | ANU | 3.17 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 103 | 22 | AFORE | AF | 55.1 | 195.4 | 12.40 | GOOD | 0.50 | 12.24 | ANU | 5.35 |
| 104 | 22 | AFORE | AF | 56.8 | 216.1 | 11.60 | GOOD | 0.50 | 11.44 | ANU | 4.34 |
| 105 | 22 | AFORE | AF | 57.4 | 231.4 | 11.70 | FAIR | 0.50 | 11.54 | ANU | 4.37 |
| | | | | | | 13.90 | FAIR | 0.50 | 13.74 | | 6.57 |
| 106 | 22 | AFORE | AF | 63.0 | 239.0 | 11.20 | GOOD | 0.50 | 11.04 | ANU | 3.17 |
| 109 | 22 | AFORE | AF | 92.1 | 258.0 | 16.10 | GOOD | 0.50 | 15.94 | ANU | 4.43 |
| 110 | 22 | AFORE | AF | 121.0 | 256.7 | 20.60 | GOOD | 0.50 | 20.33 | ANU | 5.20 |
| 4 | 23 | TETEBEDI | TT | 121.8 | 67.9 | 23.10 | FAIR | 0.50 | 22.41 | ANU | 7.18 |
| 5 | 23 | TETEBEDI | TT | 139.5 | 76.1 | 25.50 | GOOD | 0.50 | 24.97 | ANU | 7.53 |
| 6 | 23 | TETEBEDI | TT | 145.3 | 78.7 | 27.06 | GOOD | 0.50 | 26.55 | ANU | 8.39 |
| 7 | 23 | TETEBEDI | TT | 150.2 | 81.5 | 28.06 | GOOD | 0.50 | 27.50 | ANU | 8.72 |
| | | | | | | 30.26 | FAIR | 0.50 | 29.70 | | 10.92 |
| 8 | 23 | TETEBEDI | TT | 158.8 | 86.0 | 28.37 | GOOD | 0.50 | 27.86 | ANU | 8.01 |
| | | | | | | 29.47 | GOOD | 0.50 | 28.96 | | 9.11 |
| 9 | 23 | TETEBEDI | TT | 163.3 | 88.6 | 29.77 | GOOD | 0.50 | 29.38 | ANU | 8.97 |
| 10 | 23 | TETEBEDI | TT | 172.6 | 91.3 | 31.68 | GOOD | 0.50 | 31.05 | ANU | 9.47 |
| | | | | | | 36.18 | FAIR | 0.50 | 35.55 | | 13.97 |
| | | | | | | 41.38 | FAIR | 0.50 | 40.75 | | 19.17 |
| 11 | 23 | TETEBEDI | TT | 178.7 | 95.0 | 31.63 | GOOD | 0.50 | 31.11 | ANU | 8.77 |
| 25 | 23 | TETEBEDI | TT | 250.7 | 80.7 | 45.48 | GOOD | 0.50 | 44.58 | ANU | 13.25 |
| 26 | 23 | TETEBEDI | TT | 279.2 | 73.6 | 42.39 | GOOD | 0.50 | [illegible] 47 | ANU | 6.57 |
| | | | | | | 51.69 | GOOD | 0.50 | [illegible]7 | | 15.87 |
| 27 | 23 | TETEBEDI | TT | 314.4 | 67.6 | 46.89 | GOOD | 0.50 | [illegible].21 | ANU | 6.91 |
| 29 | 23 | TETEBEDI | TT | 395.8 | 60.5 | 56.06 | FAIR | 0.50 | 55.31 | ANU | 5.84 |
| 31 | 23 | TETEBEDI | TT | 324.2 | 60.4 | 47.15 | FAIR | 0.50 | 46.50 | ANU | 5.97 |
| 32 | 23 | TETEBEDI | TT | 279.2 | 60.9 | 42.17 | GOOD | 0.50 | 41.38 | ANU | 6.48 |
| 33 | 23 | TETEBEDI | TT | 231.1 | 61.2 | 38.24 | FAIR | 0.50 | 37.21 | ANU | 8.32 |
| | | | | | | 44.44 | FAIR | 0.50 | 43.41 | | 14.52 |
| 35 | 23 | TETEBEDI | TT | 191.9 | 62.5 | 32.26 | GOOD | 0.50 | 31.20 | ANU | 7.21 |
| | | | | | | 35.16 | GOOD | 0.50 | 34.10 | | 10.11 |
| 36 | 23 | TETEBEDI | TT | 177.4 | 63.6 | 30.87 | FAIR | 0.50 | 29.79 | ANU | 7.62 |
| 37 | 23 | TETEBEDI | TT | 163.4 | 64.5 | 28.74 | GOOD | 0.50 | 27.66 | ANU | 7.24 |
| | | | | | | 31.54 | FAIR | 0.50 | 30.46 | | 10.04 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 34.14 | FAIR | 0.50 | 33.06 | | 12.64 |
| 38 | 23 | TETEBEDI | TT | 152.1 | 65.6 | 27.72 | GOOD | 0.50 | 26.65 | ANU | 7.64 |
| 39 | 23 | TETEBEDI | TT | 109.9 | 51.6 | 21.36 | GOOD | 0.50 | 20.79 | ANU | 7.05 |
| 40 | 23 | TETEBEDI | TT | 113.9 | 57.1 | 22.20 | GOOD | 0.50 | 21.61 | ANU | 7.38 |
| 41 | 23 | TETEBEDI | TT | 117.5 | 63.3 | 23.12 | GOOD | 0.50 | 22.51 | ANU | 7.82 |
| 42 | 23 | TETEBEDI | TT | 112.0 | 45.1 | 22.48 | GOOD | 0.50 | 21.93 | ANU | 7.93 |
| | | | | | | 24.48 | FAIR | 0.50 | 23.93 | | 9.93 |
| 43 | 23 | TETEBEDI | TT | 116.7 | 39.0 | 23.10 | GOOD | 0.50 | 22.45 | ANU | 7.86 |
| 44 | 23 | TETEBEDI | TT | 118.0 | 31.3 | 22.62 | GOOD | 0.50 | 22.16 | ANU | 7.41 |
| 45 | 23 | TETEBEDI | TT | 118.8 | 23.9 | 22.59 | GOOD | 0.50 | 21.94 | ANU | 7.09 |
| | | | | | | 25.19 | FAIR | 0.50 | 24.54 | | 9.69 |
| | | | | | | 26.79 | GOOD | 0.50 | 26.14 | | 11.29 |
| 46 | 23 | TETEBEDI | TT | 116.2 | 17.2 | 22.12 | GOOD | 0.50 | 21.50 | ANU | 6.97 |
| 47 | 23 | TETEBEDI | TT | 114.4 | 11.1 | 21.50 | GOOD | 0.50 | 21.16 | ANU | 6.86 |
| 48 | 23 | TETEBEDI | TT | 135.5 | 344.1 | 24.60 | GOOD | 0.50 | 23.99 | ANU | 7.05 |
| 49 | 23 | TETEBEDI | TT | 169.7 | 325.5 | 30.06 | GOOD | 0.50 | 29.25 | ANU | 8.04 |
| 50 | 23 | TETEBEDI | TT | 224.7 | 312.8 | 36.72 | GOOD | 0.50 | 36.32 | ANU | 8.23 |
| | | | | | | 37.62 | FAIR | 0.50 | 37.22 | | 9.13 |
| 52 | 23 | TETEBEDI | TT | 286.7 | 281.4 | 45.65 | FAIR | 0.50 | 45.20 | ANU | 9.36 |
| 53 | 23 | TETEBEDI | TT | 230.9 | 283.5 | 39.64 | GOOD | 0.50 | 39.33 | ANU | 10.47 |
| 54 | 23 | TETEBEDI | TT | 178.9 | 281.8 | 32.47 | GOOD | 0.50 | 32.11 | ANU | 9.75 |
| | | | | | | 37.17 | FAIR | 0.50 | 36.81 | | 14.45 |
| 55 | 23 | TETEBEDI | TT | 154.7 | 271.5 | 26.45 | FAIR | 0.50 | 26.13 | ANU | 6.79 |
| | | | | | | 28.75 | GOOD | 0.50 | 28.43 | | 9.09 |
| 56 | 23 | TETEBEDI | TT | 100.9 | 213.5 | 17.08 | GOOD | 0.50 | 16.85 | ANU | 4.24 |
| 57 | 23 | TETEBEDI | TT | 112.3 | 214.2 | 19.15 | GOOD | 0.50 | 18.92 | ANU | 4.88 |
| | | | | | | 21.85 | GOOD | 0.50 | 21.62 | | 7.58 |
| | | | | | | 24.35 | FAIR | 0.50 | 24.12 | | 10.08 |
| 58 | 23 | TETEBEDI | TT | 115.8 | 215.5 | 18.96 | FAIR | 0.50 | 18.73 | ANU | 4.25 |
| 59 | 23 | TETEBEDI | TT | 125.9 | 216.6 | 19.67 | GOOD | 0.50 | 19.16 | ANU | 3.42 |
| 60 | 23 | TETEBEDI | TT | 139.2 | 217.3 | 23.13 | GOOD | 0.50 | 22.09 | ANU | 4.69 |
| 62 | 23 | TETEBEDI | TT | 164.6 | 218.7 | 28.05 | GOOD | 0.50 | 26.07 | ANU | 5.49 |
| 63 | 23 | TETEBEDI | TT | 200.2 | 219.9 | 34.89 | GOOD | 0.50 | 32.61 | ANU | 7.59 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 69 | 23 | TETEBEDI | TT | 282.8 | 156.5 | 42.37 | POOR | 0.50 | 42.05 | ANU | 6.70 |
| | | | | | | 48.27 | GOOD | 0.50 | 47.95 | | 12.60 |
| 74 | 23 | TETEBEDI | TT | 223.3 | 157.2 | 36.93 | FAIR | 0.50 | 36.44 | ANU | 8.52 |
| 75 | 23 | TETEBEDI | TT | 213.1 | 158.3 | 33.78 | FAIR | 0.50 | 33.48 | ANU | 6.85 |
| | | | | | | 37.68 | FAIR | 0.50 | 37.38 | | 10.75 |
| 76 | 23 | TETEBEDI | TT | 216.7 | 160.4 | 35.39 | POOR | 0.50 | 34.87 | ANU | 7.78 |
| | | | | | | 39.79 | FAIR | 0.50 | 39.27 | | 12.18 |
| 77 | 23 | TETEBEDI | TT | 223.6 | 162.7 | 36.64 | GOOD | 0.50 | 35.89 | ANU | 7.94 |
| | | | | | | 40.44 | GOOD | 0.50 | 39.69 | | 11.74 |
| 78 | 23 | TETEBEDI | TT | 230.1 | 164.7 | 41.65 | POOR | 1.00 | 40.70 | ANU | 11.94 |
| 79 | 23 | TETEBEDI | TT | 238.6 | 166.6 | 41.26 | GOOD | 0.50 | 40.06 | ANU | 10.23 |
| | | | | | | 46.16 | FAIR | 0.50 | 44.96 | | 15.13 |
| 80 | 23 | TETEBEDI | TT | 253.0 | 171.2 | 43.30 | FAIR | 0.50 | 42.47 | ANU | 10.84 |
| | | | | | | 46.40 | GOOD | 0.50 | 45.57 | | 13.94 |
| | | | | | | 50.20 | GOOD | 0.50 | 49.37 | | 17.74 |
| 81 | 23 | TETEBEDI | TT | 200.0 | 160.7 | 33.01 | GOOD | 0.50 | 32.71 | ANU | 7.71 |
| | | | | | | 34.91 | GOOD | 0.50 | 34.61 | | 9.61 |
| 82 | 23 | TETEBEDI | TT | 185.5 | 162.8 | 29.35 | GOOD | 0.50 | 29.07 | ANU | 5.88 |
| | | | | | | 30.85 | GOOD | 0.50 | 30.57 | | 7.38 |
| | | | | | | 33.55 | FAIR | 0.50 | 33.27 | | 10.08 |
| 83 | 23 | TETEBEDI | TT | 179.0 | 165.3 | 29.80 | FAIR | 0.50 | 29.51 | ANU | 7.14 |
| | | | | | | 35.30 | FAIR | 0.50 | 35.01 | | 12.64 |
| 84 | 23 | TETEBEDI | TT | 172.9 | 166.7 | 27.82 | FAIR | 0.50 | 27.40 | ANU | 5.79 |
| | | | | | | 31.82 | GOOD | 0.50 | 31.40 | | 9.79 |
| | | | | | | 35.52 | GOOD | 0.50 | 35.10 | | 13.49 |
| 85 | 23 | TETEBEDI | TT | 163.8 | 168.5 | 26.78 | GOOD | 0.50 | 26.27 | ANU | 5.79 |
| | | | | | | 29.78 | FAIR | 0.50 | 29.27 | | 8.79 |
| 86 | 23 | TETEBEDI | TT | 156.6 | 170.6 | 28.06 | GOOD | 0.50 | 27.83 | ANU | 8.26 |
| | | | | | | 31.86 | FAIR | 0.50 | 31.63 | | 12.06 |
| | | | | | | 39.06 | FAIR | 0.50 | 38.83 | | 19.26 |
| 87 | 23 | TETEBEDI | TT | 151.7 | 172.6 | 26.37 | GOOD | 0.50 | 25.76 | ANU | 6.80 |
| 88 | 23 | TETEBEDI | TT | 140.1 | 185.8 | 23.58 | GOOD | 0.50 | 23.05 | ANU | 5.54 |
| | | | | | | 27.18 | FAIR | 0.50 | 26.65 | | 9.14 |
| 90 | 23 | TETEBEDI | TT | 162.1 | 191.7 | 26.75 | GOOD | 0.50 | 25.57 | ANU | 5.31 |
| | | | | | | 31.25 | FAIR | 0.50 | 30.07 | | 9.81 |
| | | | | | | 36.15 | FAIR | 0.50 | 34.97 | | 14.71 |
| 91 | 23 | TETEBEDI | TT | 172.2 | 193.6 | 28.94 | GOOD | 0.50 | 27.87 | ANU | 6.34 |
| | | | | | | 35.14 | GOOD | 0.50 | 34.07 | | 12.54 |
| 92 | 23 | TETEBEDI | TT | 187.0 | 196.6 | 33.35 | GOOD | 0.50 | 31.59 | ANU | 8.22 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 93 | 23 | TETEBEDI | TT | 196.7 | 197.4 | 35.38 | GOOD | 0.50 | 33.22 | ANU | 8.63 |
| 94 | 23 | TETEBEDI | TT | 207.4 | 199.4 | 33.38 | POOR | 0.50 | 30.79 | ANU | 4.86 |
| | | | | | | 35.58 | GOOD | 0.50 | 32.99 | | 7.06 |
| | | | | | | 38.28 | GOOD | 0.50 | 35.69 | | 9.76 |
| 95 | 23 | TETEBEDI | TT | 314.0 | 222.3 | 48.59 | FAIR | 0.50 | 45.82 | ANU | 6.57 |
| 96 | 23 | TETEBEDI | TT | 284.9 | 222.1 | 43.40 | FAIR | 0.50 | 41.39 | ANU | 5.77 |
| | | | | | | 44.40 | GOOD | 0.50 | 42.39 | | 6.77 |
| | | | | | | 48.80 | FAIR | 0.50 | 46.79 | | 11.17 |
| 97 | 23 | TETEBEDI | TT | 252.9 | 221.8 | 41.30 | FAIR | 0.50 | 38.86 | ANU | 7.25 |
| | | | | | | 48.90 | GOOD | 0.50 | 46.46 | | 14.85 |
| 98 | 23 | TETEBEDI | TT | 128.4 | 185.6 | 21.80 | GOOD | 0.50 | 21.38 | ANU | 5.33 |
| | | | | | | 28.70 | FAIR | 0.50 | 28.28 | | 12.23 |
| 99 | 23 | TETEBEDI | TT | 106.6 | 193.7 | 18.05 | GOOD | 0.50 | 17.82 | ANU | 4.49 |
| | | | | | | 19.05 | GOOD | 0.50 | 18.82 | | 5.49 |
| 100 | 23 | TETEBEDI | TT | 96.7 | 199.2 | 16.36 | GOOD | 0.50 | 16.12 | ANU | 4.03 |
| | | | | | | 19.56 | FAIR | 0.50 | 19.32 | | 7.23 |
| 101 | 23 | TETEBEDI | TT | 87.3 | 209.3 | 15.60 | GOOD | 0.50 | 15.36 | ANU | 4.45 |
| | | | | | | 20.70 | FAIR | 0.50 | 20.46 | | 9.55 |
| 102 | 23 | TETEBEDI | TT | 81.6 | 214.6 | 14.75 | GOOD | 0.50 | 14.51 | ANU | 4.31 |
| 103 | 23 | TETEBEDI | TT | 74.3 | 222.1 | 14.52 | GOOD | 0.50 | 14.28 | ANU | 5.00 |
| 104 | 23 | TETEBEDI | TT | 83.8 | 235.0 | 15.08 | GOOD | 0.50 | 14.85 | ANU | 4.37 |
| 105 | 23 | TETEBEDI | TT | 88.6 | 244.7 | 15.59 | GOOD | 0.50 | 15.36 | ANU | 4.28 |
| | | | | | | 18.99 | GOOD | 0.50 | 18.76 | | 7.68 |
| | | | | | | 20.69 | FAIR | 0.50 | 20.46 | | 9.38 |
| 106 | 23 | TETEBEDI | TT | 95.7 | 248.8 | 16.06 | GOOD | 0.50 | 15.83 | ANU | 3.86 |
| | | | | | | 20.56 | FAIR | 0.50 | 20.33 | | 8.36 |
| 107 | 23 | TETEBEDI | TT | 97.4 | 256.5 | 15.76 | GOOD | 0.50 | 15.52 | ANU | 3.35 |
| | | | | | | 17.86 | GOOD | 0.50 | 17.62 | | 5.45 |
| 108 | 23 | TETEBEDI | TT | 104.5 | 258.4 | 16.96 | GOOD | 0.50 | 16.72 | ANU | 3.66 |
| | | | | | | 19.36 | GOOD | 0.50 | 19.12 | | 6.06 |
| | | | | | | 30.36 | FAIR | 0.50 | 30.12 | | 17.06 |
| 109 | 23 | TETEBEDI | TT | 127.1 | 260.4 | 21.43 | GOOD | 0.50 | 21.20 | ANU | 5.31 |
| | | | | | | 23.53 | GOOD | 0.50 | 23.30 | | 7.41 |
| | | | | | | 25.73 | FAIR | 0.50 | 25.50 | | 9.61 |
| | | | | | | 28.23 | FAIR | 0.50 | 28.00 | | 12.11 |
| 110 | 23 | TETEBEDI | TT | 155.9 | 258.9 | 27.13 | FAIR | 0.50 | 26.78 | ANU | 7.29 |
| | | | | | | 29.13 | FAIR | 0.50 | 28.78 | | 9.29 |
| 111 | 23 | TETEBEDI | TT | 166.8 | 245.5 | 26.67 | FAIR | 0.50 | 26.45 | ANU | 5.60 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 32.77 | POOR | 1.00 | 32.55 | | 11.70 |
| | | | | | | 35.47 | FAIR | 0.50 | 35.25 | | 14.40 |
| 1 | 24 | KOKODA | KA | 129.3 | 46.9 | 24.96 | GOOD | 0.50 | 24.07 | BMR | 7.91 |
| | | | | | | 30.24 | GOOD | 0.50 | 29.35 | | 13.19 |
| 3 | 24 | KOKODA | KA | 114.4 | 51.5 | 22.16 | GOOD | 0.50 | 21.51 | BMR | 7.21 |
| | | | | | | 23.85 | FAIR | 0.50 | 23.20 | | 8.90 |
| | | | | | | 27.53 | FAIR | 0.50 | 26.88 | | 12.58 |
| 5 | 24 | KOKODA | KA | 118.2 | 56.9 | 20.72 | POOR | 0.50 | 20.34 | BMR | 5.57 |
| | | | | | | 23.37 | FAIR | 0.50 | 22.99 | | 8.22 |
| 6 | 24 | KOKODA | KA | 121.7 | 60.7 | 23.14 | GOOD | 0.50 | 22.78 | BMR | 7.57 |
| | | | | | | 29.44 | FAIR | 0.50 | 29.08 | | 13.87 |
| 7 | 24 | KOKODA | KA | 124.2 | 64.6 | 23.74 | FAIR | 0.50 | 23.33 | BMR | 7.80 |
| 11 | 24 | KOKODA | KA | 142.6 | 83.8 | 26.42 | GOOD | 0.10 | 26.04 | BMR | 8.22 |
| | | | | | | 26.90 | GOOD | 0.50 | 26.52 | | 8.70 |
| | | | | | | 33.38 | FAIR | 0.50 | 33.00 | | 15.18 |
| 13 | 24 | KOKODA | KA | 159.0 | 90.7 | 28.15 | FAIR | 0.50 | 27.83 | BMR | 7.95 |
| | | | | | | 29.53 | FAIR | 0.50 | 29.21 | | 9.33 |
| | | | | | | 33.34 | GOOD | 0.50 | 33.02 | | 13.14 |
| 14 | 24 | KOKODA | KA | 166.8 | 93.8 | 29.38 | GOOD | 0.50 | 29.16 | BMR | 8.31 |
| | | | | | | 30.74 | GOOD | 0.50 | 30.52 | | 9.67 |
| | | | | | | 34.70 | FAIR | 0.50 | 34.48 | | 13.63 |
| | | | | | | 40.06 | GOOD | 0.50 | 39.84 | | 18.99 |
| 17 | 24 | KOKODA | KA | 195.6 | 101.4 | 35.16 | FAIR | 1.00 | 35.09 | BMR | 10.64 |
| | | | | | | 40.76 | FAIR | 0.50 | 40.69 | | 16.24 |
| 20 | 24 | KOKODA | KA | 160.6 | 86.4 | 28.57 | GOOD | 0.50 | 28.00 | BMR | 7.93 |
| | | | | | | 35.37 | FAIR | 0.50 | 34.80 | | 14.73 |
| 35 | 24 | KOKODA | KA | 179.6 | 48.2 | 30.67 | GOOD | 0.50 | 29.76 | BMR | 7.31 |
| | | | | | | 32.40 | FAIR | 0.50 | 31.49 | | 9.04 |
| | | | | | | 34.73 | FAIR | 0.50 | 33.82 | | 11.37 |
| 36 | 24 | KOKODA | KA | 164.6 | 48.1 | 28.87 | GOOD | 0.50 | 27.94 | BMR | 7.37 |
| | | | | | | 30.01 | FAIR | 0.50 | 29.08 | | 8.51 |
| | | | | | | 32.72 | GOOD | 0.50 | 31.79 | | 11.22 |
| 37 | 24 | KOKODA | KA | 150.4 | 47.6 | 27.48 | FAIR | 0.50 | 26.55 | BMR | 7.75 |
| 38 | 24 | KOKODA | KA | 138.7 | 47.4 | 25.83 | GOOD | 0.50 | 24.91 | BMR | 7.57 |
| | | | | | | 29.67 | FAIR | 0.50 | 28.75 | | 11.41 |
| | | | | | | 32.67 | GOOD | 0.50 | 31.75 | | 14.41 |
| 39 | 24 | KOKODA | KA | 111.1 | 26.6 | 22.06 | GOOD | 0.50 | 21.64 | BMR | 7.75 |
| | | | | | | 26.52 | GOOD | 1.00 | 26.10 | | 12.21 |
| | | | | | | 40.72 | GOOD | 0.50 | 40.30 | | 26.41 |
| 40 | 24 | KOKODA | KA | 110.1 | 32.5 | 21.26 | GOOD | 0.50 | 20.82 | BMR | 7.06 |
| | | | | | | 24.60 | FAIR | 0.50 | 24.16 | | 10.40 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | 24 | KOKODA | KA | 108.3 | 39.3 | 21.88 | FAIR | 0.50 | 21.42 | BMR | 7.88 |
| | | | | | | 24.38 | GOOD | 0.10 | 23.92 | | 10.38 |
| 43 | 24 | KOKODA | KA | 127.2 | 16.9 | 24.06 | GOOD | 0.50 | 23.56 | BMR | 7.66 |
| | | | | | | 27.40 | FAIR | 0.50 | 26.90 | | 11.00 |
| 44 | 24 | KOKODA | KA | 134.1 | 10.7 | 24.87 | GOOD | 0.50 | 24.55 | BMR | 7.79 |
| 47 | 24 | KOKODA | KA | 144.0 | 354.2 | 26.02 | GOOD | 0.10 | 25.83 | BMR | 7.83 |
| 48 | 24 | KOKODA | KA | 177.2 | 335.5 | 30.50 | GOOD | 0.50 | 30.04 | BMR | 7.89 |
| | | | | | | 31.57 | FAIR | 0.50 | 31.11 | | 8.96 |
| 49 | 24 | KOKODA | KA | 216.2 | 322.1 | 36.96 | GOOD | 0.50 | 36.30 | BMR | 9.27 |
| | | | | | | 40.66 | FAIR | 0.50 | 40.00 | | 12.97 |
| 59 | 24 | KOKODA | KA | 131.9 | 237.8 | 20.76 | GOOD | 0.50 | 20.40 | BMR | 3.91 |
| | | | | | | 24.26 | FAIR | 0.50 | 23.90 | | 7.41 |
| 62 | 24 | KOKODA | KA | 170.2 | 235.0 | 28.15 | GOOD | 0.50 | 26.32 | BMR | 5.04 |
| | | | | | | 31.25 | FAIR | 0.50 | 29.42 | | 8.14 |
| | | | | | | 34.85 | FAIR | 0.50 | 33.02 | | 11.74 |
| 63 | 24 | KOKODA | KA | 205.6 | 233.3 | 34.91 | GOOD | 0.50 | 32.78 | BMR | 7.08 |
| 73 | 24 | KOKODA | KA | 190.0 | 162.1 | 32.52 | FAIR | 1.00 | 32.35 | BMR | 8.60 |
| 75 | 24 | KOKODA | KA | 172.3 | 165.8 | 31.16 | POOR | 0.50 | 31.01 | BMR | 9.48 |
| | | | | | | 36.56 | POOR | 0.50 | 36.41 | | 14.88 |
| 77 | 24 | KOKODA | KA | 184.9 | 170.7 | 30.94 | FAIR | 0.50 | 30.34 | BMR | 7.23 |
| | | | | | | 34.54 | FAIR | 0.50 | 33.94 | | 10.83 |
| 80 | 24 | KOKODA | KA | 2[illegible]3.0 | 179.4 | 36.62 | GOOD | 0.50 | 35.94 | BMR | 8.56 |
| | | | | | | 41.72 | FAIR | 0.50 | 41.04 | | 13.66 |
| 82 | 24 | KOKODA | KA | 147.3 | 172.8 | 24.57 | FAIR | 1.00 | 24.44 | BMR | 6.02 |
| | | | | | | 31.07 | FAIR | 0.50 | 30.94 | | 12.52 |
| 85 | 24 | KOKODA | KA | 129.6 | 181.7 | 23.71 | FAIR | 0.50 | 23.35 | BMR | 7.15 |
| | | | | | | 28.21 | FAIR | 0.50 | 27.85 | | 11.65 |
| | | | | | | 34.31 | FAIR | 0.50 | 33.95 | | 17.75 |
| 87 | 24 | KOKODA | KA | 120.7 | 188.1 | 21.81 | FAIR | 0.50 | 21.35 | BMR | 6.26 |
| | | | | | | 26.01 | FAIR | 0.50 | 25.55 | | 10.46 |
| 88 | 24 | KOKODA | KA | 119.6 | 205.0 | 20.33 | GOOD | 0.50 | 19.95 | BMR | 5.00 |
| | | | | | | 25.13 | FAIR | 0.50 | 24.75 | | 9.80 |
| | | | | | | 27.33 | GOOD | 0.50 | 26.95 | | 12.00 |
| | | | | | | 30.63 | FAIR | 0.50 | 30.25 | | 15.30 |
| 90 | 24 | KOKODA | KA | 145.4 | 208.5 | 20.43 | FAIR | 0.50 | 19.40 | BMR | 1.23 |
| | | | | | | 32.91 | FAIR | 0.50 | 31.88 | | 13.71 |
| 91 | 24 | KOKODA | KA | 156.7 | 209.4 | 33.11 | FAIR | 1.00 | 32.19 | BMR | 12.60 |
| 99 | 24 | KOKODA | KA | 95.4 | 220.4 | 16.04 | GOOD | 0.50 | 15.96 | BMR | 4.03 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 16.92 | GOOD | 0.10 | 16.84 | | 4.91 |
| 103 | 24 | KOKODA | KA | 89.7 | 254.3 | 16.54 | GOOD | 0.50 | 16.45 | BMR | 5.24 |
| 104 | 24 | KOKODA | KA | 106.6 | 260.8 | 18.92 | GOOD | 0.50 | 18.84 | BMR | 5.51 |
| 107 | 24 | KOKODA | KA | 131.5 | 273.5 | 19.09 | POOR | 1.00 | 19.00 | BMR | 2.57 |
| | | | | | | 25.79 | POOR | 0.50 | 25.70 | | 9.27 |
| 3 | 25 | POPONDETTA | PP | 165.3 | 59.8 | 28.78 | FAIR | 0.10 | 28.20 | BMR | 7.54 |
| | | | | | | 28.88 | FAIR | 0.10 | 28.30 | | 7.64 |
| | | | | | | 30.03 | GOOD | 0.10 | 29.45 | | 8.79 |
| | | | | | | 34.46 | FAIR | 0.10 | 33.88 | | 13.22 |
| | | | | | | 39.65 | FAIR | 0.10 | 39.07 | | 18.41 |
| 4 | 25 | POPONDETTA | PP | 157.3 | 55.6 | 26.57 | FAIR | 0.10 | 26.10 | BMR | 6.43 |
| | | | | | | 27.02 | FAIR | 0.10 | 26.55 | | 6.88 |
| | | | | | | 29.14 | GOOD | 0.10 | 28.67 | | 9.00 |
| | | | | | | 32.50 | FAIR | 0.50 | 32.03 | | 12.36 |
| 6 | 25 | POPONDETTA | PP | 174.8 | 65.9 | 29.99 | FAIR | 0.10 | 29.70 | BMR | 7.85 |
| | | | | | | 30.56 | FAIR | 0.10 | 30.27 | | 8.42 |
| | | | | | | 32.85 | FAIR | 0.50 | 32.56 | | 10.71 |
| | | | | | | 34.15 | FAIR | 0.10 | 33.86 | | 12.01 |
| 7 | 25 | POPONDETTA | PP | 177.9 | 68.5 | 30.86 | FAIR | 0.50 | 30.52 | BMR | 8.28 |
| | | | | | | 36.46 | FAIR | 0.50 | 36.12 | | 13.88 |
| 8 | 25 | POPONDETTA | PP | 183.6 | 72.9 | 31.16 | FAIR | 0.10 | 30.87 | BMR | 7.92 |
| | | | | | | 32.01 | FAIR | 0.50 | 31.72 | | 8.77 |
| | | | | | | 32.13 | FAIR | 0.10 | 31.84 | | 8.89 |
| | | | | | | 34.76 | FAIR | 0.10 | 34.47 | | 11.52 |
| | | | | | | 42.16 | FAIR | 0.50 | 41.87 | | 18.92 |
| 9 | 25 | POPONDETTA | PP | 186.2 | 75.4 | 31.40 | GOOD | 0.10 | 31.23 | BMR | 7.95 |
| | | | | | | 32.95 | FAIR | 0.50 | 32.78 | | 9.50 |
| | | | | | | 34.84 | FAIR | 0.50 | 34.67 | | 11.39 |
| 11 | 25 | POPONDETTA | PP | 197.0 | 82.1 | 33.27 | GOOD | 0.10 | 32.96 | BMR | 8.34 |
| | | | | | | 34.02 | FAIR | 0.10 | 33.71 | | 9.09 |
| | | | | | | 34.40 | FAIR | 0.10 | 34.09 | | 9.47 |
| | | | | | | 36.72 | FAIR | 0.50 | 36.41 | | 11.79 |
| | | | | | | 38.26 | FAIR | 0.10 | 37.95 | | 13.33 |
| | | | | | | 43.88 | FAIR | 0.50 | 43.57 | | 18.95 |
| 14 | 25 | POPONDETTA | PP | 219.9 | 89.8 | 35.96 | GOOD | 0.50 | 35.81 | BMR | 8.32 |
| | | | | | | 36.40 | FAIR | 0.10 | 36.25 | | 8.76 |
| | | | | | | 36.68 | FAIR | 0.50 | 36.53 | | 9.04 |
| | | | | | | 39.17 | FAIR | 0.50 | 39.02 | | 11.53 |
| | | | | | | 44.63 | FAIR | 0.50 | 44.48 | | 16.99 |
| 15 | 25 | POPONDETTA | PP | 228.7 | 92.2 | 37.66 | FAIR | 0.10 | 37.47 | BMR | 8.89 |
| 23 | 25 | POPONDETTA | PP | 238.8 | 77.8 | 38.21 | FAIR | 0.50 | 37.50 | BMR | 7.65 |
| | | | | | | 42.02 | POOR | 0.50 | 41.31 | | 11.46 |
| | | | | | | 49.68 | FAIR | 0.50 | 48.97 | | 19.12 |
| 26 | 25 | POPONDETTA | PP | 310.0 | 66.8 | 45.98 | POOR | 1.00 | 45.28 | BMR | 6.53 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 62.68 | POOR | 1.00 | 61.98 | | 23.23 |
| 31 | 25 | POPONDETTA | PP | 361.5 | 55.8 | 64.33 | POOR | 1.00 | 63.89 | BMR | 18.71 |
| | | | | | | 69.73 | POOR | 1.00 | 69.29 | | 24.11 |
| 33 | 25 | POPONDETTA | PP | 268.3 | 55.0 | 47.01 | POOR | 1.00 | 46.19 | BMR | 12.66 |
| | | | | | | 52.01 | POOR | 1.00 | 51.19 | | 17.66 |
| 35 | 25 | POPONDETTA | PP | 228.8 | 54.9 | 38.73 | POOR | 1.00 | 37.89 | BMR | 9.29 |
| | | | | | | 44.13 | FAIR | 0.50 | 43.29 | | 14.69 |
| 39 | 25 | POPONDETTA | PP | 151.6 | 42.8 | 27.32 | GOOD | 0.10 | 26.97 | BMR | 8.02 |
| | | | | | | 27.77 | GOOD | 0.10 | 27.42 | | 8.47 |
| | | | | | | 31.29 | FAIR | 0.10 | 30.94 | | 11.99 |
| | | | | | | 34.99 | FAIR | 0.50 | 34.64 | | 15.69 |
| 40 | 25 | POPONDETTA | PP | 153.8 | 47.1 | 27.77 | GOOD | 0.10 | 27.40 | BMR | 8.18 |
| | | | | | | 28.64 | FAIR | 0.10 | 28.27 | | 9.05 |
| | | | | | | 29.85 | FAIR | 0.50 | 29.48 | | 10.26 |
| | | | | | | 37.36 | FAIR | 0.50 | 36.99 | | 17.77 |
| 56 | 25 | POPONDETTA | PP | 56.6 | 223.4 | 11.25 | POOR | 0.50 | 11.24 | BMR | 4.16 |
| | | | | | | 11.54 | GOOD | 0.10 | 11.53 | | 4.45 |
| | | | | | | 13.41 | FAIR | 0.50 | 13.40 | | 6.32 |
| | | | | | | 17.51 | POOR | 0.50 | 17.50 | | 10.42 |
| 58 | 25 | POPONDETTA | PP | 71.9 | 224.5 | 12.88 | FAIR | 0.50 | 12.87 | BMR | 3.88 |
| 59 | 25 | POPONDETTA | PP | 82.3 | 225.1 | 13.81 | POOR | 0.50 | 13.52 | BMR | 3.23 |
| | | | | | | 14.22 | FAIR | 0.10 | 13.93 | | 3.64 |
| | | | | | | 14.70 | GOOD | 0.10 | 14.41 | | 4.12 |
| | | | | | | 20.18 | FAIR | 0.10 | 19.89 | | 9.60 |
| | | | | | | 30.22 | FAIR | 0.50 | 29.93 | | 19.64 |
| 63 | 25 | POPONDETTA | PP | 157.2 | 225.3 | 29.21 | FAIR | 0.50 | 27.15 | BMR | 7.50 |
| 73 | 25 | POPONDETTA | PP | 202.6 | 146.5 | 28.94 | POOR | 0.50 | 28.84 | BMR | 3.52 |
| | | | | | | 30.44 | FAIR | 0.50 | 30.34 | | 5.02 |
| 75 | 25 | POPONDETTA | PP | 182.2 | 148.4 | 27.65 | POOR | 0.50 | 27.57 | BMR | 4.80 |
| | | | | | | 30.47 | FAIR | 0.50 | 30.39 | | 7.62 |
| | | | | | | 34.72 | FAIR | 0.50 | 34.64 | | 11.87 |
| 79 | 25 | POPONDETTA | PP | 202.5 | 159.1 | 33.37 | FAIR | 0.10 | 32.39 | BMR | 7.07 |
| | | | | | | 33.59 | FAIR | 0.10 | 32.61 | | 7.29 |
| | | | | | | 35.38 | FAIR | 0.50 | 34.40 | | 9.08 |
| | | | | | | 40.96 | FAIR | 0.50 | 39.98 | | 14.66 |
| 82 | 25 | POPONDETTA | PP | 152.2 | 151.9 | 23.47 | POOR | 1.00 | 23.40 | BMR | 4.38 |
| | | | | | | 24.90 | FAIR | 0.50 | 24.83 | | 5.81 |
| | | | | | | 27.65 | POOR | 0.50 | 27.58 | | 8.56 |
| 83 | 25 | POPONDETTA | PP | 144.3 | 154.4 | 23.62 | FAIR | 0.50 | 23.55 | BMR | 5.51 |
| | | | | | | 24.94 | FAIR | 0.50 | 24.87 | | 6.83 |
| 85 | 25 | POPONDETTA | PP | 127.6 | 157.2 | 22.16 | FAIR | 0.50 | 21.86 | BMR | 5.91 |
| | | | | | | 25.24 | FAIR | 0.50 | 24.94 | | 8.99 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 28.18 | FAIR | 0.50 | 27.88 | | 11.93 |
| 86 | 25 | POPONDETTA | PP | 119.4 | 159.1 | 20.01 | POOR | 1.00 | 20.00 | BMR | 5.08 |
| | | | | | | 21.06 | FAIR | 0.10 | 21.05 | | 6.13 |
| | | | | | | 24.95 | GOOD | 0.10 | 24.94 | | 10.02 |
| 89 | 25 | POPONDETTA | PP | 107.9 | 184.2 | 19.36 | FAIR | 0.10 | 18.85 | BMR | 5.37 |
| | | | | | | 20.09 | FAIR | 0.10 | 19.58 | | 6.10 |
| | | | | | | 24.71 | FAIR | 0.50 | 24.20 | | 10.72 |
| | | | | | | 25.47 | FAIR | 0.50 | 24.96 | | 11.48 |
| | | | | | | 29.30 | FAIR | 0.50 | 28.79 | | 15.31 |
| 90 | 25 | POPONDETTA | PP | 116.9 | 187.8 | 20.72 | POOR | 0.50 | 19.76 | BMR | 5.15 |
| | | | | | | 21.26 | GOOD | 0.10 | 20.30 | | 5.69 |
| | | | | | | 22.68 | FAIR | 0.50 | 21.72 | | 7.11 |
| | | | | | | 24.37 | FAIR | 0.50 | 23.41 | | 8.80 |
| | | | | | | 26.43 | FAIR | 0.50 | 25.47 | | 10.86 |
| 91 | 25 | POPONDETTA | PP | 126.7 | 190.8 | 22.94 | FAIR | 0.50 | 22.09 | BMR | 6.25 |
| | | | | | | 24.73 | FAIR | 0.50 | 23.88 | | 8.04 |
| | | | | | | 25.84 | FAIR | 0.50 | 24.99 | | 9.15 |
| | | | | | | 28.05 | FAIR | 0.50 | 27.20 | | 11.36 |
| | | | | | | 32.36 | FAIR | 0.10 | 31.51 | | 15.67 |
| | | | | | | 42.32 | FAIR | 0.50 | 41.47 | | 25.63 |
| 92 | 25 | POPONDETTA | PP | 141.1 | 195.1 | 26.87 | FAIR | 0.10 | 25.33 | BMR | 7.69 |
| | | | | | | 28.06 | POOR | 0.50 | 26.52 | | 8.88 |
| 94 | 25 | POPONDETTA | PP | 161.3 | 198.8 | 30.03 | FAIR | 0.50 | 27.65 | BMR | 7.49 |
| | | | | | | 32.57 | FAIR | 0.50 | 30.19 | | 10.03 |
| | | | | | | 40.38 | FAIR | 0.50 | 38.00 | | 17.84 |
| 96 | 25 | POPONDETTA | PP | 242.3 | 226.0 | 37.98 | FAIR | 0.50 | 36.18 | BMR | 5.90 |
| | | | | | | 43.62 | FAIR | 0.50 | 41.82 | | 11.54 |
| 98 | 25 | POPONDETTA | PP | 84.9 | 177.2 | 16.25 | GOOD | 0.10 | 16.05 | BMR | 5.44 |
| | | | | | | 16.79 | GOOD | 0.10 | 16.59 | | 5.98 |
| | | | | | | 18.11 | FAIR | 0.10 | 17.91 | | 7.30 |
| | | | | | | 19.39 | FAIR | 0.50 | 19.19 | | 8.58 |
| 99 | 25 | POPONDETTA | PP | 61.2 | 187.9 | 11.93 | FAIR | 0.10 | 11.92 | BMR | 4.27 |
| | | | | | | 11.99 | GOOD | 0.10 | 11.98 | | 4.33 |
| | | | | | | 13.27 | FAIR | 0.10 | 13.26 | | 5.61 |
| | | | | | | 15.83 | FAIR | 0.50 | 15.82 | | 8.17 |
| | | | | | | 21.87 | FAIR | 0.50 | 21.86 | | 14.21 |
| 100 | 25 | POPONDETTA | PP | 50.6 | 197.3 | 10.13 | FAIR | 0.50 | 10.11 | BMR | 3.78 |
| 101 | 25 | POPONDETTA | PP | 42.1 | 217.9 | 9.07 | GOOD | 0.10 | 9.05 | BMR | 3.79 |
| | | | | | | 9.68 | FAIR | 0.50 | 9.66 | | 4.40 |
| | | | | | | 17.74 | POOR | 0.50 | 17.72 | | 12.46 |
| | | | | | | 21.47 | FAIR | 0.50 | 21.45 | | 16.19 |
| 103 | 25 | POPONDETTA | PP | 35.2 | 249.7 | 9.31 | GOOD | 0.10 | 9.29 | BMR | 4.89 |
| | | | | | | 9.56 | FAIR | 0.10 | 9.54 | | 5.14 |
| | | | | | | 11.92 | GOOD | 0.10 | 11.90 | | 7.50 |
| | | | | | | 12.81 | FAIR | 0.10 | 12.79 | | 8.39 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 16.49 | FAIR | 0.50 | 16.47 | | 12.07 |
| | | | | | | 23.70 | FAIR | 0.50 | 23.68 | | 19.28 |
| 104 | 25 | POPONDETTA | PP | 52.1 | 264.5 | 11.17 | GOOD | 0.10 | 11.16 | BMR | 4.64 |
| | | | | | | 11.49 | FAIR | 0.10 | 11.48 | | 4.96 |
| | | | | | | 12.04 | FAIR | 0.10 | 12.03 | | 5.51 |
| | | | | | | 14.50 | FAIR | 0.50 | 14.49 | | 7.97 |
| 105 | 25 | POPONDETTA | PP | 63.5 | 274.6 | 12.47 | FAIR | 0.10 | 12.46 | BMR | 4.52 |
| | | | | | | 12.90 | GOOD | 0.10 | 12.89 | | 4.95 |
| | | | | | | 13.66 | FAIR | 0.10 | 13.65 | | 5.71 |
| | | | | | | 14.82 | FAIR | 0.10 | 14.81 | | 6.87 |
| | | | | | | 16.34 | FAIR | 0.50 | 16.33 | | 8.39 |
| | | | | | | 18.62 | POOR | 0.50 | 18.61 | | 10.67 |
| | | | | | | 22.31 | FAIR | 0.50 | 22.30 | | 14.36 |
| 106 | 25 | POPONDETTA | PP | 72.9 | 276.6 | 13.94 | FAIR | 0.10 | 13.93 | BMR | 4.81 |
| | | | | | | 14.07 | GOOD | 0.10 | 14.06 | | 4.94 |
| | | | | | | 14.22 | GOOD | 0.10 | 14.21 | | 5.09 |
| | | | | | | 16.11 | FAIR | 0.10 | 16.10 | | 6.98 |
| | | | | | | 17.60 | FAIR | 0.10 | 17.59 | | 8.47 |
| | | | | | | 20.16 | GOOD | 0.10 | 20.15 | | 11.03 |
| | | | | | | 21.32 | FAIR | 0.50 | 21.31 | | 12.19 |
| 107 | 25 | POPONDETTA | PP | 80.5 | 284.5 | 14.69 | GOOD | 0.10 | 14.67 | BMR | 4.61 |
| | | | | | | 15.01 | FAIR | 0.10 | 14.99 | | 4.93 |
| | | | | | | 15.60 | FAIR | 0.50 | 15.58 | | 5.52 |
| | | | | | | 17.95 | FAIR | 0.50 | 17.93 | | 7.87 |
| | | | | | | 21.06 | GOOD | 0.10 | 21.04 | | 10.98 |
| | | | | | | 24.68 | GOOD | 0.10 | 24.66 | | 14.60 |
| | | | | | | 28.45 | FAIR | 0.50 | 28.43 | | 18.37 |
| 109 | 25 | POPONDETTA | PP | 110.7 | 281.3 | 18.84 | FAIR | 0.50 | 18.83 | BMR | 4.99 |
| | | | | | | 19.49 | GOOD | 0.10 | 19.48 | | 5.64 |
| | | | | | | 23.59 | FAIR | 0.50 | 23.58 | | 9.74 |
| | | | | | | 27.32 | FAIR | 0.50 | 27.31 | | 13.47 |
| | | | | | | 41.71 | GOOD | 0.50 | 41.70 | | 27.86 |
| 110 | 25 | POPONDETTA | PP | 136.9 | 275.5 | 23.58 | FAIR | 0.50 | 23.45 | BMR | 6.34 |
| | | | | | | 27.98 | FAIR | 0.50 | 27.85 | | 10.74 |
| 111 | 25 | POPONDETTA | PP | 137.6 | 259.1 | 22.24 | FAIR | 0.50 | 22.24 | BMR | 5.03 |
| | | | | | | 22.59 | GOOD | 0.10 | 22.59 | | 5.38 |
| | | | | | | 27.63 | FAIR | 0.50 | 27.63 | | 10.43 |
| 56 | 26 | ORO BAY | OB | 55.3 | 190.5 | 11.72 | GOOD | 0.10 | 11.73 | BMR | 4.82 |
| 59 | 26 | ORO BAY | OB | 77.2 | 202.5 | 14.28 | GOOD | 0.10 | 14.01 | BMR | 4.36 |
| 106 | 26 | ORO BAY | OB | 43.9 | 263.7 | 13.31 | FAIR | 1.00 | 13.32 | BMR | 7.83 |
| 107 | 26 | ORO BAY | OB | 49.6 | 278.1 | 10.15 | GOOD | 0.50 | 10.16 | BMR | 3.96 |
| 11 | 27 | KILLERTON | KL | 213.6 | 78.2 | 36.43 | FAIR | 0.50 | 36.15 | HIG | 9.45 |
| | | | | | | 38.63 | FAIR | 0.50 | 38.35 | | 11.65 |
| | | | | | | 41.43 | FAIR | 0.50 | 41.15 | | 14.45 |
| 15 | 27 | KILLERTON | KL | 242.6 | 88.3 | 39.98 | FAIR | 0.50 | 39.82 | HIG | 9.50 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | 27 | KILLERTON | KL | 249.7 | 53.7 | 45.86 | POOR | 1.00 | 45.05 | HIG | 13.83 |
| | | | | | | 49.86 | FAIR | 1.00 | 49.05 | | 17.83 |
| 38 | 27 | KILLERTON | KL | 208.9 | 54.3 | 32.92 | GOOD | 0.50 | 32.10 | HIG | 5.98 |
| | | | | | | 38.22 | FAIR | 1.00 | 37.40 | | 11.28 |
| | | | | | | 40.72 | FAIR | 1.00 | 39.90 | | 13.78 |
| | | | | | | 43.22 | POOR | 1.00 | 42.40 | | 16.28 |
| 39 | 27 | KILLERTON | KL | 173.1 | 42.5 | 30.81 | GOOD | 0.50 | 30.49 | HIG | 8.85 |
| | | | | | | 35.76 | FAIR | 0.50 | 35.44 | | 13.80 |
| | | | | | | 38.16 | FAIR | 0.50 | 37.84 | | 16.20 |
| 40 | 27 | KILLERTON | KL | 175.2 | 46.3 | 31.90 | POOR | 1.00 | 31.56 | HIG | 9.66 |
| 41 | 27 | KILLERTON | KL | 176.1 | 50.5 | 34.37 | FAIR | | 34.00 | HIG | 11.99 |
| | | | | | | 36.12 | FAIR | | 35.75 | | 13.74 |
| | | | | | | 36.92 | FAIR | | 36.55 | | 14.54 |
| 42 | 27 | KILLERTON | KL | 176.9 | 38.6 | 31.08 | FAIR | 0.50 | 30.78 | HIG | 8.66 |
| 43 | 27 | KILLERTON | KL | 182.7 | 34.9 | 32.65 | GOOD | 0.10 | 32.25 | HIG | 9.41 |
| | | | | | | 35.10 | FAIR | 0.50 | 34.70 | | 11.86 |
| 44 | 27 | KILLERTON | KL | 184.8 | 30.0 | 32.67 | GOOD | 0.10 | 32.45 | HIG | 9.35 |
| | | | | | | 35.52 | GOOD | 0.50 | 35.30 | | 12.20 |
| 46 | 27 | KILLERTON | KL | 182.4 | 21.0 | 32.57 | GOOD | | 32.20 | HIG | 9.40 |
| | | | | | | 35.22 | FAIR | | 34.85 | | 12.05 |
| | | | | | | 37.15 | GOOD | | 36.78 | | 13.98 |
| | | | | | | 37.92 | FAIR | | 37.55 | | 14.75 |
| 47 | 27 | KILLERTON | KL | 179.5 | 17.1 | 31.60 | GOOD | 0.10 | 31.51 | HIG | 9.07 |
| | | | | | | 33.20 | FAIR | 0.50 | 33.11 | | 10.67 |
| | | | | | | 34.40 | FAIR | 0.50 | 34.31 | | 11.87 |
| 55 | 27 | KILLERTON | KL | 139.4 | 297.1 | 23.65 | POOR | 0.50 | 23.57 | HIG | 6.15 |
| | | | | | | 24.35 | GOOD | 0.10 | 24.27 | | 6.85 |
| | | | | | | 45.75 | FAIR | 0.50 | 45.67 | | 28.25 |
| | | | | | | 54.05 | FAIR | 0.50 | 53.97 | | 36.55 |
| | | | | | | 56.85 | FAIR | 0.50 | 56.77 | | 39.35 |
| 56 | 27 | KILLERTON | KL | 35.1 | 225.3 | 8.88 | GOOD | 0.50 | 8.90 | HIG | 4.51 |
| | | | | | | 20.38 | FAIR | 0.50 | 20.40 | | 16.01 |
| 57 | 27 | KILLERTON | KL | 46.6 | 224.2 | 10.25 | GOOD | 0.10 | 10.27 | HIG | 4.45 |
| | | | | | | 18.25 | FAIR | 0.50 | 18.27 | | 12.45 |
| | | | | | | 19.95 | FAIR | 0.50 | 19.97 | | 14.15 |
| | | | | | | 23.05 | FAIR | 0.50 | 23.07 | | 17.25 |
| | | | | | | 27.35 | FAIR | 0.50 | 27.37 | | 21.55 |
| 58 | 27 | KILLERTON | KL | 50.5 | 226.3 | 10.81 | GOOD | 0.10 | 10.83 | HIG | 4.52 |
| | | | | | | 28.26 | FAIR | 0.50 | 28.28 | | 21.97 |
| | | | | | | 29.56 | GOOD | 0.50 | 29.58 | | 23.27 |
| | | | | | | 33.46 | FAIR | 0.50 | 33.48 | | 27.17 |
| 59 | 27 | KILLERTON | KL | 60.9 | 226.8 | 12.09 | GOOD | | 11.83 | HIG | 4.21 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 16.78 | FAIR | | 16.52 | | 8.90 |
| | | | | | | 24.08 | FAIR | | 23.82 | | 16.20 |
| | | | | | | 28.68 | FAIR | | 28.42 | | 20.80 |
| 60 | 27 | KILLERTON | KL | 74.3 | 226.3 | 14.95 | GOOD | | 14.16 | HIG | 4.87 |
| | | | | | | 16.99 | FAIR | | 16.20 | | 6.91 |
| 61 | 27 | KILLERTON | KL | 86.9 | 223.8 | 17.85 | GOOD | 0.10 | 16.57 | HIG | 5.71 |
| | | | | | | 19.25 | FAIR | 0.50 | 17.97 | | 7.11 |
| | | | | | | 20.55 | FAIR | 0.50 | 19.27 | | 8.41 |
| | | | | | | 26.85 | | | 25.57 | | 14.71 |
| 62 | 27 | KILLERTON | KL | 99.9 | 226.3 | 20.45 | GOOD | 0.10 | 18.72 | HIG | 6.23 |
| 63 | 27 | KILLERTON | KL | 135.7 | 226.1 | 27.19 | GOOD | 0.10 | 25.16 | HIG | 8.20 |
| | | | | | | 29.39 | FAIR | 0.50 | 27.36 | | 10.40 |
| | | | | | | 36.09 | FAIR | 0.50 | 34.06 | | 17.10 |
| | | | | | | 41.29 | FAIR | 0.50 | 39.26 | | 22.30 |
| 75 | 27 | KILLERTON | KL | 176.8 | 141.7 | 28.28 | GOOD | 0.50 | 28.23 | HIG | 6.13 |
| 77 | 27 | KILLERTON | KL | 182.3 | 147.8 | 30.44 | FAIR | 0.50 | 29.94 | HIG | 7.15 |
| | | | | | | 36.04 | FAIR | 1.00 | 35.54 | | 12.75 |
| 79 | 27 | KILLERTON | KL | 193.1 | 153.5 | 34.76 | POOR | 1.00 | 33.81 | HIG | 9.67 |
| 80 | 27 | KILLERTON | KL | 203.0 | 159.9 | 35.90 | POOR | 1.00 | 35.31 | HIG | 9.94 |
| 82 | 27 | KILLERTON | KL | 145.7 | 144.0 | 24.44 | POOR | | 24.40 | HIG | 6.19 |
| 84 | 27 | KILLERTON | KL | 129.9 | 147.1 | 22.31 | FAIR | | 22.14 | HIG | 5.90 |
| 85 | 27 | KILLERTON | KL | 119.5 | 147.9 | 21.40 | GOOD | | 21.13 | HIG | 6.20 |
| 87 | 27 | KILLERTON | KL | 104.0 | 151.1 | 19.87 | GOOD | 0.50 | 19.51 | HIG | 6.51 |
| 88 | 27 | KILLERTON | KL | 81.7 | 168.2 | 16.38 | GOOD | 1.00 | 16.10 | HIG | 5.89 |
| 89 | 27 | KILLERTON | KL | 91.4 | 176.2 | 18.37 | FAIR | | 17.89 | HIG | 6.47 |
| | | | | | | 17.37 | FAIR | | 16.89 | | 5.47 |
| | | | | | | 22.87 | FAIR | | 22.39 | | 10.97 |
| 91 | 27 | KILLERTON | KL | 108.4 | 185.1 | 20.34 | POOR | | 19.52 | HIG | 5.97 |
| | | | | | | 24.34 | GOOD | | 23.52 | | 9.97 |
| 92 | 27 | KILLERTON | KL | 122.0 | 190.7 | 23.45 | POOR | | 21.94 | HIG | 6.69 |
| 93 | 27 | KILLERTON | KL | 131.5 | 192.3 | 26.34 | FAIR | 0.50 | 24.42 | HIG | 7.99 |
| 95 | 27 | KILLERTON | KL | 250.1 | 226.3 | 41.00 | GOOD | | 38.47 | HIG | 7.21 |
| 96 | 27 | KILLERTON | KL | 220.9 | 226.5 | 36.28 | POOR | | 34.51 | HIG | 6.90 |
| 98 | 27 | KILLERTON | KL | 70.8 | 165.1 | 15.32 | GOOD | | 15.15 | HIG | 6.30 |
| 99 | 27 | KILLERTON | KL | 44.6 | 172.9 | 9.92 | GOOD | | 9.94 | HIG | 4.36 |
| | | | | | | 12.72 | FAIR | | 12.74 | | 7.16 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 15.92 | FAIR | | 15.94 | | 10.36 |
| | | | | | | 18.22 | FAIR | | 18.24 | | 12.66 |
| 100 | 27 | KILLERTON | KL | 31.9 | 182.0 | 7.66 | POOR | | 7.67 | HIG | 3.68 |
| | | | | | | 7.92 | GOOD | | 7.93 | | 3.94 |
| | | | | | | 8.46 | FAIR | | 8.47 | | 4.48 |
| 101 | 27 | KILLERTON | KL | 20.6 | 215.4 | 6.36 | GOOD | 0.10 | 6.37 | HIG | 3.80 |
| | | | | | | 8.10 | FAIR | 0.50 | 8.11 | | 5.54 |
| | | | | | | 19.40 | FAIR | 0.50 | 19.41 | | 16.84 |
| 102 | 27 | KILLERTON | KL | 17.4 | 243.6 | 6.41 | GOOD | 0.10 | 6.42 | HIG | 4.25 |
| 103 | 27 | KILLERTON | KL | 19.5 | 282.5 | 7.07 | GOOD | | 7.08 | HIG | 4.65 |
| | | | | | | 8.60 | FAIR | | 8.61 | | 6.18 |
| | | | | | | 9.50 | FAIR | | 9.51 | | 7.08 |
| | | | | | | 13.30 | FAIR | | 13.31 | | 10.88 |
| 104 | 27 | KILLERTON | KL | 39.6 | 286.7 | 10.16 | GOOD | | 10.18 | HIG | 5.23 |
| | | | | | | 18.98 | FAIR | | 19.00 | | 14.05 |
| 105 | 27 | KILLERTON | KL | 53.8 | 293.6 | 12.45 | GOOD | 0.10 | 12.47 | HIG | 5.74 |
| | | | | | | 16.89 | FAIR | 0.50 | 16.91 | | 10.18 |
| | | | | | | 18.79 | GOOD | 0.50 | 18.81 | | 12.08 |
| | | | | | | 20.89 | FAIR | 0.50 | 20.91 | | 14.18 |
| 106 | 27 | KILLERTON | KL | 63.6 | 293.0 | 13.74 | GOOD | | 13.76 | HIG | 5.81 |
| 107 | 27 | KILLERTON | KL | 73.8 | 299.8 | 15.00 | GOOD | 0.10 | 15.01 | HIG | 5.79 |
| | | | | | | 15.76 | FAIR | 0.50 | 15.77 | | 6.55 |
| | | | | | | 16.46 | FAIR | 0.50 | 16.47 | | 7.25 |
| | | | | | | 19.66 | FAIR | 0.50 | 19.67 | | 10.45 |
| 108 | 27 | KILLERTON | KL | 81.4 | 298.2 | 18.46 | POOR | | 18.47 | HIG | 8.30 |
| | | | | | | 15.90 | GOOD | | 15.91 | | 5.74 |
| 109 | 27 | KILLERTON | KL | 102.1 | 292.0 | 19.15 | GOOD | | 19.17 | HIG | 6.40 |
| | | | | | | 22.23 | FAIR | | 22.25 | | 9.48 |
| | | | | | | 24.33 | FAIR | | 24.35 | | 11.58 |
| | | | | | | 30.83 | FAIR | | 30.85 | | 18.08 |
| | | | | | | 35.83 | FAIR | | 35.85 | | 23.08 |
| 110 | 27 | KILLERTON | KL | 125.9 | 283.5 | 22.10 | GOOD | 0.10 | 22.00 | HIG | 6.26 |
| | | | | | | 23.83 | POOR | 0.50 | 23.73 | | 7.99 |
| | | | | | | 26.93 | FAIR | 0.50 | 26.83 | | 11.09 |
| | | | | | | 28.53 | FAIR | 0.50 | 28.43 | | 12.69 |
| 111 | 27 | KILLERTON | KL | 121.6 | 265.5 | 20.67 | GOOD | | 20.69 | HIG | 5.49 |
| 1 | 28 | OWERS CNR. | OC | 75.7 | 62.3 | 16.36 | GOOD | 0.10 | 15.43 | BMR | 5.97 |
| | | | | | | 28.79 | POOR | 1.00 | 27.86 | | 18.40 |
| 2 | 28 | OWERS CNR. | OC | 62.6 | 62.3 | 14.10 | GOOD | 0.10 | 13.24 | BMR | 5.42 |
| | | | | | | 17.29 | FAIR | 0.50 | 16.43 | | 8.61 |
| 3 | 28 | OWERS CNR. | OC | 64.6 | 73.8 | 14.14 | GOOD | 0.10 | 13.46 | BMR | 5.38 |
| | | | | | | 15.36 | FAIR | 0.50 | 14.68 | | 6.60 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 28 | OWERS CNR. | OC | 54.5 | 64.2 | 11.05 | GOOD | 0.10 | 10.47 | BMR | 3.66 |
| | | | | | | 11.57 | FAIR | 0.50 | 10.99 | | 4.18 |
| | | | | | | 15.49 | POOR | 1.00 | 14.91 | | 8.10 |
| 5 | 28 | OWERS CNR. | OC | 72.5 | 81.0 | 14.70 | FAIR | 0.50 | 14.28 | BMR | 5.22 |
| | | | | | | 17.32 | FAIR | 0.50 | 16.90 | | 7.84 |
| | | | | | | 28.19 | FAIR | 0.50 | 27.77 | | 18.71 |
| 6 | 28 | OWERS CNR. | OC | 79.0 | 85.4 | 16.49 | GOOD | 0.50 | 16.09 | BMR | 6.21 |
| 7 | 28 | OWERS CNR. | OC | 84.8 | 89.9 | 17.90 | GOOD | 0.50 | 17.45 | BMR | 6.85 |
| | | | | | | 18.85 | POOR | 1.00 | 18.40 | | 7.80 |
| | | | | | | 21.15 | POOR | 1.00 | 20.70 | | 10.10 |
| 8 | 28 | OWERS CNR. | OC | 95.3 | 96.6 | 19.22 | GOOD | 0.10 | 18.82 | BMR | 6.91 |
| | | | | | | 19.76 | GOOD | 0.50 | 19.36 | | 7.45 |
| | | | | | | 20.36 | POOR | 0.50 | 19.96 | | 8.05 |
| 9 | 28 | OWERS CNR. | OC | 101.1 | 100.4 | 20.07 | GOOD | 0.10 | 19.79 | BMR | 7.15 |
| | | | | | | 21.96 | FAIR | 0.50 | 21.68 | | 9.04 |
| | | | | | | 24.16 | FAIR | 0.50 | 23.88 | | 11.24 |
| 10 | 28 | OWERS CNR. | OC | 111.9 | 103.5 | 22.21 | GOOD | 0.50 | 21.69 | BMR | 7.70 |
| 11 | 28 | OWERS CNR. | OC | 120.3 | 108.3 | 23.40 | GOOD | 0.10 | 22.99 | BMR | 7.95 |
| | | | | | | 23.92 | POOR | 0.50 | 23.51 | | 8.47 |
| | | | | | | 24.62 | POOR | 0.50 | 24.21 | | 9.17 |
| 12 | 28 | OWERS CNR. | OC | 132.2 | 110.3 | 24.74 | GOOD | 0.10 | 24.42 | BMR | 7.90 |
| | | | | | | 27.21 | FAIR | 0.50 | 26.89 | | 10.37 |
| 13 | 28 | OWERS CNR. | OC | 142.6 | 112.7 | 25.97 | FAIR | 0.50 | 25.61 | BMR | 7.78 |
| | | | | | | 26.32 | GOOD | 0.50 | 25.96 | | 8.13 |
| 14 | 28 | OWERS CNR. | OC | 153.1 | 114.8 | 27.26 | GOOD | 0.10 | 27.00 | BMR | 7.87 |
| 16 | 28 | OWERS CNR. | OC | 176.5 | 118.0 | 30.34 | FAIR | 0.50 | 29.97 | BMR | 7.90 |
| | | | | | | 33.09 | FAIR | 0.50 | 32.72 | | 10.65 |
| | | | | | | 34.10 | FAIR | 0.50 | 33.73 | | 11.66 |
| | | | | | | 36.95 | FAIR | 0.50 | 36.58 | | 14.51 |
| 17 | 28 | OWERS CNR. | OC | 188.1 | 119.2 | 31.31 | GOOD | 0.10 | 31.20 | BMR | 7.68 |
| | | | | | | 35.24 | POOR | 1.00 | 35.13 | | 11.62 |
| | | | | | | 35.99 | FAIR | 0.50 | 35.88 | | 12.37 |
| 18 | 28 | OWERS CNR. | OC | 216.8 | 122.4 | 36.03 | FAIR | 0.50 | 35.91 | BMR | 8.81 |
| | | | | | | 39.27 | FAIR | 0.50 | 39.15 | | 12.05 |
| 19 | 28 | OWERS CNR. | OC | 262.9 | 116.6 | 41.30 | FAIR | 0.50 | 41.19 | BMR | 8.32 |
| | | | | | | 46.93 | FAIR | 0.50 | 46.82 | | 13.96 |
| 20 | 28 | OWERS CNR. | OC | 139.5 | 107.9 | 25.62 | GOOD | 0.10 | 25.01 | BMR | 7.58 |
| | | | | | | 25.98 | FAIR | 0.50 | 25.37 | | 7.94 |
| 21 | 28 | OWERS CNR. | OC | 141.4 | 104.0 | 26.37 | GOOD | 0.10 | 25.65 | BMR | 7.98 |
| | | | | | | 26.93 | FAIR | 0.50 | 26.21 | | 8.54 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 | 28 | OWERS CNR. | OC | 144.2 | 99.9 | 26.63 | GOOD | 0.10 | 25.82 | BMR | 7.80 |
| | | | | | | 28.79 | FAIR | 0.50 | 27.98 | | 9.96 |
| | | | | | | 47.91 | GOOD | 0.10 | 47.10 | | 29.08 |
| 23 | 28 | OWERS CNR. | OC | 153.2 | 95.4 | 27.41 | GOOD | 0.10 | 26.59 | BMR | 7.44 |
| | | | | | | 27.84 | FAIR | 0.50 | 27.02 | | 7.87 |
| | | | | | | 30.74 | FAIR | 0.50 | 29.92 | | 10.77 |
| | | | | | | 34.94 | FAIR | 0.50 | 34.12 | | 14.97 |
| | | | | | | 41.74 | FAIR | 0.50 | 40.92 | | 21.77 |
| 24 | 28 | OWERS CNR. | OC | 156.0 | 93.1 | 28.18 | GOOD | 0.10 | 27.35 | BMR | 7.85 |
| 25 | 28 | OWERS CNR. | OC | 184.5 | 84.3 | 30.98 | GOOD | 0.10 | 30.20 | BMR | 7.13 |
| | | | | | | 31.92 | FAIR | 0.50 | 31.14 | | 8.07 |
| | | | | | | 34.25 | POOR | 1.00 | 33.47 | | 10.40 |
| | | | | | | 40.65 | FAIR | 0.50 | 39.87 | | 16.80 |
| | | | | | | 85.85 | FAIR | 0.50 | 85.07 | | 62.00 |
| 26 | 28 | OWERS CNR. | OC | 211.8 | 74.3 | 33.38 | GOOD | 0.10 | 32.57 | BMR | 6.10 |
| | | | | | | 39.26 | FAIR | 0.50 | 38.45 | | 11.98 |
| | | | | | | 42.76 | GOOD | 0.50 | 41.95 | | 15.48 |
| | | | | | | 111.66 | FAIR | 0.50 | 110.85 | | 84.38 |
| | | | | | | 116.16 | FAIR | 0.50 | 115.35 | | 88.88 |
| | | | | | | 126.46 | FAIR | 0.50 | 125.65 | | 99.18 |
| | | | | | | 135.26 | FAIR | 0.50 | 134.45 | | 107.98 |
| 27 | 28 | OWERS CNR. | OC | 247.0 | 66.7 | 37.73 | FAIR | 0.50 | 37.16 | BMR | 6.29 |
| | | | | | | 50.06 | POOR | 1.00 | 49.49 | | 18.62 |
| | | | | | | 54.16 | POOR | 1.00 | 53.59 | | 22.72 |
| | | | | | | 69.39 | FAIR | 0.50 | 68.82 | | 37.95 |
| 28 | 28 | OWERS CNR. | OC | 293.1 | 61.2 | 42.97 | FAIR | 0.10 | 42.38 | BMR | 5.74 |
| | | | | | | 44.22 | FAIR | 0.50 | 43.63 | | 6.99 |
| | | | | | | 47.24 | FAIR | 0.50 | 46.65 | | 10.01 |
| | | | | | | 53.48 | FAIR | 0.10 | 52.89 | | 16.25 |
| 29 | 28 | OWERS CNR. | OC | 329.7 | 58.3 | 47.57 | GOOD | 0.10 | 46.93 | BMR | 5.72 |
| | | | | | | 54.05 | FAIR | 0.50 | 53.41 | | 12.20 |
| | | | | | | 65.33 | FAIR | 0.50 | 64.69 | | 23.48 |
| 30 | 28 | OWERS CNR. | OC | 298.4 | 57.7 | 43.69 | GOOD | 0.10 | 43.10 | BMR | 5.80 |
| | | | | | | 56.51 | FAIR | 0.50 | 55.92 | | 18.62 |
| | | | | | | 60.81 | FAIR | 0.50 | 60.22 | | 22.92 |
| 31 | 28 | OWERS CNR. | OC | 258.2 | 57.5 | 38.69 | GOOD | 0.10 | 38.15 | BMR | 5.87 |
| | | | | | | 47.32 | FAIR | 0.50 | 46.78 | | 14.50 |
| | | | | | | 50.12 | FAIR | 0.50 | 49.58 | | 17.30 |
| 32 | 28 | OWERS CNR. | OC | 213.1 | 57.6 | 33.35 | GOOD | 0.10 | 32.67 | BMR | 6.04 |
| | | | | | | 38.14 | FAIR | 0.50 | 37.46 | | 10.83 |
| | | | | | | 43.09 | GOOD | 0.10 | 42.41 | | 15.78 |
| | | | | | | 69.94 | FAIR | 0.50 | 69.26 | | 42.63 |
| 33 | 28 | OWERS CNR. | OC | 164.9 | 57.3 | 27.83 | POOR | 1.00 | 26.91 | BMR | 6.29 |
| | | | | | | 30.13 | GOOD | 0.50 | 29.21 | | 8.59 |
| 34 | 28 | OWERS CNR. | OC | 136.9 | 57.9 | 24.71 | GOOD | 0.10 | 23.73 | BMR | 6.61 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 26.11 | FAIR | 0.50 | 25.13 | | 8.01 |
| | | | | | | 36.71 | FAIR | 0.50 | 35.73 | | 18.61 |
| | | | | | | 72.11 | FAIR | 0.50 | 71.13 | | 54.01 |
| 35 | 28 | OWERS CNR. | OC | 125.5 | 57.9 | 23.47 | GOOD | 0.10 | 22.52 | BMR | 6.83 |
| | | | | | | 24.29 | GOOD | 0.10 | 23.34 | | 7.65 |
| | | | | | | 29.05 | FAIR | 0.50 | 28.10 | | 12.41 |
| | | | | | | 66.55 | FAIR | 1.00 | 65.60 | | 49.91 |
| 36 | 28 | OWERS CNR. | OC | 110.7 | 59.1 | 21.83 | GOOD | 0.10 | 20.86 | BMR | 7.02 |
| | | | | | | 22.23 | GOOD | 0.10 | 21.26 | | 7.42 |
| 37 | 28 | OWERS CNR. | OC | 96.6 | 60.0 | 19.59 | GOOD | 0.10 | 18.62 | BMR | 6.55 |
| | | | | | | 19.94 | FAIR | 0.50 | 18.97 | | 6.90 |
| | | | | | | 23.24 | FAIR | 0.50 | 22.27 | | 10.20 |
| 38 | 28 | OWERS CNR. | OC | 85.1 | 61.4 | 17.98 | GOOD | 0.10 | 17.02 | BMR | 6.38 |
| | | | | | | 18.72 | FAIR | 0.50 | 17.76 | | 7.12 |
| | | | | | | 24.02 | FAIR | 1.00 | 23.06 | | 12.42 |
| | | | | | | 31.02 | FAIR | 1.00 | 30.06 | | 19.42 |
| | | | | | | 38.62 | FAIR | 1.00 | 37.66 | | 27.02 |
| 39 | 28 | OWERS CNR. | OC | 51.2 | 25.9 | 11.40 | GOOD | 0.10 | 10.94 | BMR | 4.54 |
| | | | | | | 12.21 | GOOD | 0.10 | 11.75 | | 5.35 |
| | | | | | | 13.06 | FAIR | 0.50 | 12.60 | | 6.20 |
| | | | | | | 14.66 | FAIR | 0.50 | 14.20 | | 7.80 |
| | | | | | | 17.66 | FAIR | 0.50 | 17.20 | | 10.80 |
| | | | | | | 28.86 | FAIR | 1.00 | 28.40 | | 22.00 |
| 40 | 28 | OWERS CNR. | OC | 50.8 | 38.8 | 11.65 | GOOD | 0.50 | 11.17 | BMR | 4.82 |
| | | | | | | 12.70 | FAIR | 0.50 | 12.22 | | 5.87 |
| | | | | | | 20.80 | FAIR | 0.50 | 20.32 | | 13.97 |
| 41 | 28 | OWERS CNR. | OC | 51.3 | 53.4 | 11.77 | GOOD | 0.10 | 11.27 | BMR | 4.86 |
| | | | | | | 12.42 | GOOD | 0.10 | 11.92 | | 5.51 |
| | | | | | | 16.02 | GOOD | 0.50 | 15.52 | | 9.11 |
| 42 | 28 | OWERS CNR. | OC | 58.9 | 15.3 | 12.91 | GOOD | 0.10 | 12.47 | BMR | 5.11 |
| | | | | | | 13.25 | GOOD | 0.10 | 12.81 | | 5.45 |
| | | | | | | 14.98 | GOOD | 0.50 | 14.54 | | 7.18 |
| | | | | | | 19.88 | FAIR | 1.00 | 19.44 | | 12.08 |
| 43 | 28 | OWERS CNR. | OC | 69.1 | 8.1 | 14.62 | GOOD | 0.10 | 14.08 | BMR | 5.45 |
| | | | | | | 14.90 | GOOD | 0.50 | 14.36 | | 5.73 |
| | | | | | | 16.60 | FAIR | 0.50 | 16.06 | | 7.43 |
| 44 | 28 | OWERS CNR. | OC | 78.6 | 358.2 | 16.12 | FAIR | 0.50 | 15.77 | BMR | 5.94 |
| | | | | | | 17.57 | GOOD | 0.10 | 17.22 | | 7.39 |
| 45 | 28 | OWERS CNR. | OC | 87.7 | 349.8 | 17.54 | GOOD | 0.10 | 17.00 | BMR | 6.04 |
| | | | | | | 18.69 | GOOD | 0.50 | 18.15 | | 7.19 |
| | | | | | | 30.99 | FAIR | 0.50 | 30.45 | | 19.49 |
| 46 | 28 | OWERS CNR. | OC | 93.4 | 341.7 | 18.32 | GOOD | 0.50 | 17.81 | BMR | 6.13 |
| | | | | | | 19.22 | FAIR | 0.50 | 18.71 | | 7.03 |
| | | | | | | 23.22 | POOR | 1.00 | 22.71 | | 11.03 |
| 47 | 28 | OWERS CNR. | OC | 99.2 | 335.1 | 19.00 | GOOD | 0.10 | 18.77 | BMR | 6.37 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 20.30 | FAIR | 0.50 | 20.07 | | 7.67 |
| 48 | 28 | OWERS CNR. | OC | 147.6 | 317.0 | 26.10 | GOOD | 0.10 | 25.60 | BMR | 7.15 |
| | | | | | | 26.58 | GOOD | 0.10 | 26.08 | | 7.63 |
| | | | | | | 32.00 | FAIR | 0.50 | 31.50 | | 13.05 |
| | | | | | | 49.60 | POOR | 1.00 | 49.10 | | 30.65 |
| 54 | 28 | OWERS CNR. | OC | 239.1 | 273.3 | 38.63 | FAIR | 0.50 | 38.38 | BMR | 8.50 |
| | | | | | | 39.53 | FAIR | 0.50 | 39.28 | | 9.40 |
| | | | | | | 40.53 | FAIR | 0.50 | 40.28 | | 10.40 |
| 55 | 28 | OWERS CNR. | OC | 219.0 | 265.2 | 34.75 | FAIR | 1.00 | 34.54 | BMR | 7.16 |
| | | | | | | 35.76 | GOOD | 0.50 | 35.55 | | 8.17 |
| | | | | | | 37.94 | FAIR | 0.50 | 37.73 | | 10.35 |
| | | | | | | 39.94 | FAIR | 0.50 | 39.73 | | 12.35 |
| 56 | 28 | OWERS CNR. | OC | 160.0 | 228.2 | 26.84 | GOOD | 0.10 | 26.72 | BMR | 6.72 |
| | | | | | | 26.95 | GOOD | 0.10 | 26.83 | | 6.83 |
| | | | | | | 30.03 | FAIR | 0.10 | 29.91 | | 9.91 |
| 57 | 28 | OWERS CNR. | OC | 171.4 | 227.7 | 27.88 | FAIR | 0.50 | 27.76 | BMR | 6.34 |
| | | | | | | 28.14 | GOOD | 0.10 | 28.02 | | 6.60 |
| | | | | | | 31.34 | FAIR | 0.50 | 31.22 | | 9.80 |
| 58 | 28 | OWERS CNR. | OC | 175.4 | 228.3 | 28.25 | FAIR | 1.00 | 28.13 | BMR | 6.21 |
| 59 | 28 | OWERS CNR. | OC | 185.8 | 228.3 | 29.64 | GOOD | 0.10 | 29.24 | BMR | 6.01 |
| | | | | | | 30.26 | FAIR | 0.50 | 29.86 | | 6.63 |
| | | | | | | 40.96 | FAIR | 0.50 | 40.56 | | 17.33 |
| | | | | | | 45.96 | FAIR | 0.50 | 45.56 | | 22.33 |
| 60 | 28 | OWERS CNR. | OC | 199.2 | 228.0 | 32.36 | GOOD | 0.10 | 31.43 | BMR | 6.53 |
| | | | | | | 37.02 | POOR | 1.00 | 36.09 | | 11.19 |
| 61 | 28 | OWERS CNR. | OC | 211.6 | 226.9 | 35.06 | GOOD | 0.10 | 33.64 | BMR | 7.19 |
| | | | | | | 37.36 | GOOD | 0.50 | 35.94 | | 9.49 |
| 62 | 28 | OWERS CNR. | OC | 224.8 | 227.8 | 37.44 | FAIR | 0.50 | 35.57 | BMR | 7.47 |
| | | | | | | 38.19 | FAIR | 0.50 | 36.32 | | 8.22 |
| | | | | | | 39.84 | FAIR | 0.50 | 37.97 | | 9.87 |
| | | | | | | 42.14 | FAIR | 0.50 | 40.27 | | 12.17 |
| | | | | | | 47.94 | FAIR | 0.50 | 46.07 | | 17.97 |
| 63 | 28 | OWERS CNR. | OC | 260.6 | 227.5 | 43.92 | GOOD | 0.10 | 41.75 | BMR | 9.18 |
| | | | | | | 45.36 | GOOD | 0.10 | 43.19 | | 10.62 |
| | | | | | | 52.08 | FAIR | 0.50 | 49.91 | | 17.34 |
| | | | | | | 54.98 | FAIR | 0.50 | 52.81 | | 20.24 |
| 69 | 28 | OWERS CNR. | OC | 285.7 | 170.1 | 46.00 | FAIR | 0.50 | 45.79 | BMR | 10.08 |
| | | | | | | 47.16 | GOOD | 0.50 | 46.95 | | 11.24 |
| 70 | 28 | OWERS CNR. | OC | 272.7 | 169.4 | 43.24 | FAIR | 0.50 | 43.05 | BMR | 8.97 |
| | | | | | | 44.48 | GOOD | 0.10 | 44.29 | | 10.21 |
| | | | | | | 45.84 | FAIR | 0.50 | 45.65 | | 11.57 |
| | | | | | | 50.74 | FAIR | 0.50 | 50.55 | | 16.47 |
| 71 | 28 | OWERS CNR. | OC | 258.1 | 171.3 | 40.81 | FAIR | 0.50 | 40.56 | BMR | 8.29 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 43.26 | FAIR | 0.50 | 43.01 | | 10.74 |
| | | | | | | 46.66 | FAIR | 0.50 | 46.41 | | 14.14 |
| 72 | 28 | OWERS CNR. | OC | 249.1 | 171.9 | 40.65 | FAIR | 0.50 | 40.32 | BMR | 9.18 |
| | | | | | | 42.56 | FAIR | 0.50 | 42.23 | | 11.09 |
| 73 | 28 | OWERS CNR. | OC | 236.2 | 172.5 | 36.23 | FAIR | 0.50 | 36.03 | BMR | 6.50 |
| | | | | | | 38.64 | FAIR | 0.50 | 38.44 | | 8.91 |
| | | | | | | 40.44 | FAIR | 0.50 | 40.24 | | 10.71 |
| | | | | | | 41.54 | FAIR | 0.50 | 41.34 | | 11.81 |
| 74 | 28 | OWERS CNR. | OC | 229.2 | 174.3 | 38.32 | FAIR | 0.50 | 37.94 | BMR | 9.29 |
| | | | | | | 39.62 | FAIR | 0.50 | 39.24 | | 10.59 |
| 75 | 28 | OWERS CNR. | OC | 220.8 | 176.1 | 34.67 | FAIR | 1.00 | 34.48 | BMR | 6.88 |
| | | | | | | 35.92 | GOOD | 0.50 | 35.73 | | 8.13 |
| | | | | | | 36.69 | GOOD | 0.10 | 36.50 | | 8.90 |
| | | | | | | 38.17 | FAIR | 0.50 | 37.98 | | 10.38 |
| | | | | | | 42.37 | FAIR | 0.50 | 42.18 | | 14.58 |
| 76 | 28 | OWERS CNR. | OC | 226.5 | 177.7 | 37.25 | FAIR | 0.50 | 36.84 | BMR | 8.53 |
| | | | | | | 38.68 | FAIR | 0.50 | 38.27 | | 9.96 |
| | | | | | | 39.98 | FAIR | 0.50 | 39.57 | | 11.26 |
| | | | | | | 41.58 | FAIR | 0.50 | 41.17 | | 12.86 |
| 77 | 28 | OWERS CNR. | OC | 235.8 | 179.4 | 38.41 | FAIR | 0.50 | 37.77 | BMR | 8.30 |
| | | | | | | 38.82 | GOOD | 0.10 | 38.18 | | 8.71 |
| | | | | | | 39.73 | FAIR | 0.50 | 39.09 | | 9.62 |
| | | | | | | 40.03 | FAIR | 0.50 | 39.39 | | 9.92 |
| 78 | 28 | OWERS CNR. | OC | 244.3 | 180.7 | 40.74 | FAIR | 0.50 | 39.90 | BMR | 9.37 |
| | | | | | | 43.14 | FAIR | 0.50 | 42.30 | | 11.77 |
| 79 | 28 | OWERS CNR. | OC | 254.5 | 181.9 | 43.29 | GOOD | 0.50 | 42.20 | BMR | 10.39 |
| | | | | | | 43.98 | FAIR | 0.50 | 42.89 | | 11.08 |
| | | | | | | 44.47 | GOOD | 0.50 | 43.38 | | 11.57 |
| 80 | 28 | OWERS CNR. | OC | 273.4 | 185.2 | 45.59 | FAIR | 0.50 | 44.87 | BMR | 10.69 |
| | | | | | | 46.99 | FAIR | 0.50 | 46.27 | | 12.09 |
| | | | | | | 47.99 | FAIR | 0.50 | 47.27 | | 13.09 |
| | | | | | | 49.24 | FAIR | 0.50 | 48.52 | | 14.34 |
| 81 | 28 | OWERS CNR. | OC | 211.1 | 179.4 | 34.44 | GOOD | 0.10 | 34.25 | BMR | 7.86 |
| 82 | 28 | OWERS CNR. | OC | 199.7 | 182.6 | 32.14 | FAIR | 0.50 | 31.97 | BMR | 7.00 |
| | | | | | | 32.72 | GOOD | 0.10 | 32.55 | | 7.58 |
| | | | | | | 33.34 | FAIR | 0.50 | 33.17 | | 8.20 |
| | | | | | | 34.94 | FAIR | 0.50 | 34.77 | | 9.80 |
| | | | | | | 36.64 | FAIR | 0.50 | 36.47 | | 11.50 |
| | | | | | | 40.07 | FAIR | 0.50 | 39.90 | | 14.93 |
| 83 | 28 | OWERS CNR. | OC | 196.3 | 185.3 | 32.19 | FAIR | 0.50 | 32.01 | BMR | 7.47 |
| | | | | | | 33.23 | GOOD | 0.10 | 33.05 | | 8.51 |
| | | | | | | 34.16 | GOOD | 0.10 | 33.98 | | 9.44 |
| | | | | | | 40.79 | FAIR | 1.00 | 40.61 | | 16.07 |
| 84 | 28 | OWERS CNR. | OC | 192.1 | 187.2 | 31.11 | FAIR | 0.50 | 30.80 | BMR | 6.79 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 32.01 | GOOD | 0.50 | 31.70 | | 7.69 |
| | | | | | | 33.11 | FAIR | 0.50 | 32.80 | | 8.79 |
| | | | | | | 34.91 | FAIR | 1.00 | 34.60 | | 10.59 |
| 85 | 28 | OWERS CNR. | OC | 185.5 | 189.6 | 30.37 | FAIR | 0.50 | 29.97 | BMR | 6.78 |
| | | | | | | 30.78 | GOOD | 0.50 | 30.38 | | 7.19 |
| | | | | | | 32.27 | FAIR | 1.00 | 31.87 | | 8.68 |
| | | | | | | 35.87 | FAIR | 0.50 | 35.47 | | 12.28 |
| 86 | 28 | OWERS CNR. | OC | 180.9 | 192.1 | 29.85 | FAIR | 0.50 | 29.73 | BMR | 7.12 |
| | | | | | | 32.15 | GOOD | 0.50 | 32.03 | | 9.42 |
| | | | | | | 32.70 | FAIR | 0.50 | 32.58 | | 9.97 |
| | | | | | | 34.65 | FAIR | 1.00 | 34.53 | | 11.92 |
| 87 | 28 | OWERS CNR. | OC | 178.3 | 194.4 | 29.86 | FAIR | 1.00 | 29.36 | BMR | 7.07 |
| | | | | | | 32.16 | FAIR | 1.00 | 31.66 | | 9.37 |
| | | | | | | 33.06 | FAIR | 0.50 | 32.56 | | 10.27 |
| | | | | | | 36.56 | FAIR | 0.50 | 36.06 | | 13.77 |
| | | | | | | 38.96 | FAIR | 1.00 | 38.46 | | 16.17 |
| 88 | 28 | OWERS CNR. | OC | 179.5 | 205.7 | 29.99 | GOOD | 0.10 | 29.58 | BMR | 7.14 |
| | | | | | | 31.07 | FAIR | 0.50 | 30.66 | | 8.22 |
| | | | | | | 33.54 | GOOD | 0.10 | 33.13 | | 10.69 |
| | | | | | | 37.67 | FAIR | 1.00 | 37.26 | | 14.82 |
| 89 | 28 | OWERS CNR. | OC | 194.3 | 207.1 | 32.36 | FAIR | 0.50 | 31.75 | BMR | 7.46 |
| | | | | | | 33.26 | GOOD | 0.50 | 32.65 | | 8.36 |
| | | | | | | 34.86 | FAIR | 0.50 | 34.25 | | 9.96 |
| | | | | | | 37.16 | FAIR | 0.50 | 36.55 | | 12.26 |
| | | | | | | 39.06 | FAIR | 0.50 | 38.45 | | 14.16 |
| 90 | 28 | OWERS CNR. | OC | 205.2 | 208.0 | 34.54 | FAIR | 1.00 | 33.47 | BMR | 7.82 |
| | | | | | | 36.64 | FAIR | 0.50 | 35.57 | | 9.92 |
| | | | | | | 39.94 | FAIR | 1.00 | 38.87 | | 13.22 |
| 91 | 28 | OWERS CNR. | OC | 216.5 | 208.7 | 37.33 | FAIR | 0.50 | 36.37 | BMR | 9.31 |
| | | | | | | 40.19 | GOOD | 0.10 | 39.23 | | 12.17 |
| | | | | | | 42.19 | FAIR | 0.10 | 41.23 | | 14.17 |
| | | | | | | 45.73 | FAIR | 0.50 | 44.77 | | 17.71 |
| | | | | | | 62.93 | FAIR | 0.50 | 61.97 | | 34.91 |
| 92 | 28 | OWERS CNR. | OC | 233.2 | 210.1 | 40.24 | FAIR | 0.50 | 38.59 | BMR | 9.44 |
| | | | | | | 42.04 | FAIR | 0.50 | 40.39 | | 11.24 |
| | | | | | | 42.74 | FAIR | 0.50 | 41.09 | | 11.94 |
| | | | | | | 47.84 | FAIR | 0.50 | 46.19 | | 17.04 |
| 93 | 28 | OWERS CNR. | OC | 243.4 | 210.2 | 43.87 | POOR | 1.00 | 41.82 | BMR | 11.39 |
| | | | | | | 50.37 | POOR | 0.50 | 48.32 | | 17.89 |
| | | | | | | 57.27 | POOR | 0.50 | 55.22 | | 24.79 |
| 94 | 28 | OWERS CNR. | OC | 255.2 | 211.3 | 43.40 | GOOD | 0.10 | 40.92 | BMR | 9.02 |
| | | | | | | 45.40 | GOOD | 0.10 | 42.92 | | 11.02 |
| | | | | | | 48.37 | FAIR | 0.50 | 45.89 | | 13.99 |
| | | | | | | 50.17 | FAIR | 0.50 | 47.69 | | 15.79 |
| | | | | | | 54.57 | FAIR | 0.50 | 52.09 | | 20.19 |
| 95 | 28 | OWERS CNR. | OC | 375.0 | 227.2 | 57.68 | POOR | 1.00 | 55.02 | BMR | 6.14 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 58.78 | FAIR | 0.50 | 56.12 | | 9.24 |
| | | | | | | 59.88 | FAIR | 0.50 | 57.22 | | 10.34 |
| | | | | | | 60.48 | FAIR | 0.50 | 57.82 | | 10.94 |
| 96 | 28 | OWERS CNR. | OC | 345.8 | 227.4 | 52.87 | GOOD | 0.50 | 50.97 | BMR | 7.74 |
| | | | | | | 53.39 | FAIR | 0.50 | 51.49 | | 8.26 |
| | | | | | | 54.69 | FAIR | 0.50 | 52.79 | | 9.56 |
| | | | | | | 56.59 | FAIR | 0.50 | 54.69 | | 11.46 |
| 97 | 28 | OWERS CNR. | OC | 313.8 | 227.8 | 49.59 | GOOD | 0.50 | 47.26 | BMR | 8.04 |
| | | | | | | 49.89 | GOOD | 0.50 | 47.56 | | 8.34 |
| | | | | | | 51.29 | FAIR | 0.50 | 48.96 | | 9.74 |
| | | | | | | 52.29 | FAIR | 0.50 | 49.96 | | 10.74 |
| | | | | | | 60.79 | FAIR | 0.50 | 58.46 | | 19.24 |
| 98 | 28 | OWERS CNR. | OC | 168.4 | 206.9 | 28.19 | FAIR | 0.50 | 27.88 | BMR | 6.83 |
| | | | | | | 30.59 | GOOD | 0.50 | 30.28 | | 9.23 |
| | | | | | | 33.52 | FAIR | 0.50 | 33.21 | | 12.16 |
| | | | | | | 33.89 | POOR | 1.00 | 33.58 | | 12.53 |
| 99 | 28 | OWERS CNR. | OC | 154.3 | 215.2 | 25.84 | GOOD | 0.10 | 25.72 | BMR | 6.43 |
| | | | | | | 29.54 | POOR | 1.00 | 29.42 | | 10.13 |
| 100 | 28 | OWERS CNR. | OC | 148.5 | 220.0 | 24.85 | FAIR | 0.50 | 24.72 | BMR | 6.16 |
| | | | | | | 25.95 | GOOD | 0.50 | 25.82 | | 7.26 |
| | | | | | | 27.55 | FAIR | 0.50 | 27.42 | | 8.86 |
| 101 | 28 | OWERS CNR. | OC | 145.0 | 227.2 | 24.64 | GOOD | 0.10 | 24.51 | BMR | 6.39 |
| | | | | | | 25.19 | FAIR | 0.50 | 25.06 | | 6.94 |
| | | | | | | 25.69 | FAIR | 0.50 | 25.56 | | 7.44 |
| | | | | | | 28.59 | FAIR | 0.50 | 28.46 | | 10.34 |
| 102 | 28 | OWERS CNR. | OC | 141.9 | 230.9 | 24.84 | GOOD | 0.50 | 24.72 | BMR | 6.98 |
| | | | | | | 25.14 | FAIR | 0.50 | 25.02 | | 7.28 |
| | | | | | | 28.14 | FAIR | 0.50 | 28.02 | | 10.28 |
| | | | | | | 30.34 | FAIR | 0.50 | 30.22 | | 12.48 |
| 103 | 28 | OWERS CNR. | OC | 137.5 | 235.6 | 24.93 | GOOD | 0.10 | 24.81 | BMR | 7.62 |
| | | | | | | 25.83 | GOOD | 0.10 | 25.71 | | 8.52 |
| | | | | | | 27.51 | FAIR | 0.50 | 27.39 | | 10.20 |
| | | | | | | 31.61 | FAIR | 0.50 | 31.49 | | 14.30 |
| 104 | 28 | OWERS CNR. | OC | 150.0 | 242.0 | 26.17 | GOOD | 0.50 | 26.05 | BMR | 7.30 |
| | | | | | | 26.47 | GOOD | 0.50 | 26.35 | | 7.60 |
| | | | | | | 27.87 | GOOD | 0.50 | 27.75 | | 9.00 |
| | | | | | | 29.77 | GOOD | 0.50 | 29.65 | | 10.90 |
| | | | | | | 33.67 | FAIR | 0.50 | 33.55 | | 14.80 |
| 105 | 28 | OWERS CNR. | OC | 155.9 | 247.2 | 26.68 | FAIR | 0.50 | 26.56 | BMR | 7.07 |
| | | | | | | 28.68 | FAIR | 0.50 | 28.56 | | 9.07 |
| | | | | | | 29.78 | GOOD | 0.50 | 29.66 | | 10.17 |
| | | | | | | 34.28 | FAIR | 0.50 | 34.16 | | 14.67 |
| 106 | 28 | OWERS CNR. | OC | 163.2 | 249.5 | 27.15 | GOOD | 0.50 | 27.03 | BMR | 6.63 |
| | | | | | | 29.45 | FAIR | 0.50 | 29.33 | | 8.93 |
| | | | | | | 30.05 | GOOD | 0.50 | 29.93 | | 9.53 |
| | | | | | | 34.45 | FAIR | 0.50 | 34.33 | | 13.93 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 37.85 | FAIR | 0.50 | 37.73 | | 17.33 |
| 107 | 28 | OWERS CNR. | OC | 164.7 | 254.0 | 27.95 | GOOD | 0.50 | 27.83 | BMR | 7.24 |
| | | | | | | 29.75 | GOOD | 0.50 | 29.63 | | 9.04 |
| | | | | | | 29.95 | FAIR | 0.50 | 29.83 | | 9.24 |
| | | | | | | 34.65 | FAIR | 0.50 | 34.53 | | 13.94 |
| | | | | | | 36.35 | FAIR | 0.50 | 36.23 | | 15.64 |
| 108 | 28 | OWERS CNR. | OC | 171.7 | 255.3 | 28.85 | FAIR | 0.50 | 28.73 | BMR | 7.26 |
| | | | | | | 30.25 | FAIR | 0.50 | 30.13 | | 8.66 |
| | | | | | | 31.35 | GOOD | 0.50 | 31.23 | | 9.76 |
| | | | | | | 36.85 | FAIR | 0.50 | 36.73 | | 15.26 |
| 109 | 28 | OWERS CNR. | OC | 193.9 | 257.0 | 32.80 | GOOD | 0.10 | 32.68 | BMR | 8.44 |
| | | | | | | 33.82 | FAIR | 0.50 | 33.70 | | 9.46 |
| | | | | | | 34.66 | GOOD | 0.10 | 34.54 | | 10.30 |
| | | | | | | 37.02 | FAIR | 0.50 | 36.90 | | 12.66 |
| | | | | | | 42.52 | FAIR | 0.50 | 42.40 | | 18.16 |
| 110 | 28 | OWERS CNR. | OC | 222.9 | 256.4 | 37.69 | FAIR | 0.50 | 37.45 | BMR | 9.59 |
| | | | | | | 38.12 | FAIR | 0.50 | 37.88 | | 10.02 |
| | | | | | | 41.02 | POOR | 1.00 | 40.78 | | 12.92 |
| 111 | 28 | OWERS CNR. | OC | 234.2 | 247.0 | 38.26 | FAIR | 0.50 | 38.15 | BMR | 8.87 |
| | | | | | | 38.66 | FAIR | 0.50 | 38.55 | | 9.27 |
| | | | | | | 41.56 | POOR | 1.00 | 41.45 | | 12.17 |
| | | | | | | 45.76 | FAIR | 0.50 | 45.65 | | 16.37 |
| 1 | 29 | IOMA | IA | 179.3 | 35.6 | 30.46 | FAIR | 0.50 | 29.66 | BMR | 7.25 |
| | | | | | | 31.69 | GOOD | 0.50 | 30.89 | | 8.48 |
| | | | | | | 32.90 | GOOD | 0.50 | 32.10 | | 9.69 |
| | | | | | | 39.59 | FAIR | 0.50 | 38.79 | | 16.38 |
| | | | | | | 43.79 | FAIR | 0.50 | 42.99 | | 20.58 |
| 2 | 29 | IOMA | IA | 167.7 | 33.6 | 28.96 | GOOD | 0.50 | 28.23 | BMR | 7.26 |
| | | | | | | 32.76 | FAIR | 0.50 | 32.03 | | 11.06 |
| | | | | | | 33.62 | GOOD | 0.50 | 32.89 | | 11.92 |
| 3 | 29 | IOMA | IA | 162.6 | 37.7 | 28.56 | GOOD | 0.10 | 28.00 | BMR | 7.68 |
| | | | | | | 29.30 | FAIR | 0.10 | 28.74 | | 8.42 |
| | | | | | | 30.17 | GOOD | 0.10 | 29.61 | | 9.29 |
| | | | | | | 32.74 | FAIR | 0.50 | 32.18 | | 11.86 |
| 4 | 29 | IOMA | IA | 159.7 | 32.8 | 28.42 | GOOD | 0.50 | 27.96 | BMR | 8.00 |
| | | | | | | 29.30 | GOOD | 0.50 | 28.84 | | 8.88 |
| | | | | | | 31.14 | FAIR | 0.50 | 30.68 | | 10.72 |
| 5 | 29 | IOMA | IA | 163.5 | 41.8 | 28.43 | GOOD | 0.50 | 28.14 | BMR | 7.70 |
| | | | | | | 28.83 | GOOD | 0.50 | 28.54 | | 8.10 |
| | | | | | | 29.45 | FAIR | 0.50 | 29.16 | | 8.72 |
| | | | | | | 30.29 | FAIR | 0.50 | 30.00 | | 9.56 |
| | | | | | | 31.00 | GOOD | 0.50 | 30.71 | | 10.27 |
| | | | | | | 32.22 | FAIR | 0.50 | 31.93 | | 11.49 |
| | | | | | | 33.78 | FAIR | 0.50 | 33.49 | | 13.05 |
| 6 | 29 | IOMA | IA | 164.8 | 44.8 | 29.11 | GOOD | 0.10 | 28.84 | BMR | 8.24 |
| | | | | | | 30.13 | FAIR | 0.50 | 29.86 | | 9.26 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 31.14 | FAIR | 0.50 | 30.87 | | 10.27 |
| | | | | | | 31.57 | GOOD | 0.50 | 31.30 | | 10.70 |
| | | | | | | 34.04 | FAIR | 0.50 | 33.77 | | 13.17 |
| | | | | | | 34.75 | FAIR | 0.50 | 34.48 | | 13.88 |
| 8 | 29 | IOMA | IA | 165.4 | 53.0 | 29.28 | GOOD | 0.10 | 29.01 | BMR | 8.33 |
| | | | | | | 30.05 | GOOD | 0.10 | 29.78 | | 9.10 |
| | | | | | | 30.91 | FAIR | 0.10 | 30.64 | | 9.96 |
| | | | | | | 32.71 | FAIR | 0.50 | 32.44 | | 11.76 |
| | | | | | | 34.61 | GOOD | 0.10 | 34.34 | | 13.66 |
| | | | | | | 40.03 | FAIR | 0.50 | 39.76 | | 19.08 |
| 9 | 29 | IOMA | IA | 165.2 | 56.0 | 29.37 | GOOD | 0.10 | 29.22 | BMR | 8.57 |
| | | | | | | 30.82 | FAIR | 0.50 | 30.67 | | 10.02 |
| | | | | | | 31.71 | GOOD | 0.10 | 31.56 | | 10.91 |
| 10 | 29 | IOMA | IA | 168.9 | 60.0 | 29.80 | GOOD | 0.50 | 29.41 | BMR | 8.29 |
| | | | | | | 31.78 | FAIR | 0.50 | 31.39 | | 10.27 |
| 11 | 29 | IOMA | IA | 168.3 | 64.4 | 30.20 | GOOD | 0.10 | 29.91 | BMR | 8.88 |
| | | | | | | 31.26 | GOOD | 0.50 | 30.97 | | 9.94 |
| | | | | | | 32.30 | FAIR | 0.50 | 32.01 | | 10.98 |
| | | | | | | 34.60 | GOOD | 0.50 | 34.31 | | 13.28 |
| | | | | | | 35.95 | FAIR | 0.50 | 35.66 | | 14.63 |
| | | | | | | 36.58 | FAIR | 0.50 | 36.29 | | 15.26 |
| 13 | 29 | IOMA | IA | 177.9 | 71.9 | 32.23 | GOOD | 0.10 | 31.99 | BMR | 9.76 |
| | | | | | | 34.22 | FAIR | 0.50 | 33.98 | | 11.75 |
| 15 | 29 | IOMA | IA | 188.9 | 78.8 | 33.07 | GOOD | 0.50 | 32.90 | BMR | 9.29 |
| | | | | | | 33.93 | GOOD | 0.50 | 33.76 | | 10.15 |
| 17 | 29 | IOMA | IA | 202.8 | 84.7 | 34.35 | GOOD | 0.10 | 34.36 | BMR | 9.01 |
| | | | | | | 37.40 | FAIR | 0.50 | 37.41 | | 12.06 |
| | | | | | | 39.14 | FAIR | 0.50 | 39.15 | | 13.80 |
| 20 | 29 | IOMA | IA | 183.2 | 68.4 | 32.31 | GOOD | 0.10 | 31.83 | BMR | 8.93 |
| | | | | | | 33.24 | GOOD | 0.10 | 32.76 | | 9.86 |
| | | | | | | 34.13 | GOOD | 0.10 | 33.65 | | 10.75 |
| | | | | | | 35.42 | GOOD | 0.50 | 34.94 | | 12.04 |
| | | | | | | 37.30 | FAIR | 0.10 | 36.82 | | 13.92 |
| | | | | | | 37.94 | FAIR | 0.50 | 37.46 | | 14.56 |
| 21 | 29 | IOMA | IA | 190.6 | 66.5 | 35.52 | POOR | 0.50 | 34.93 | BMR | 11.10 |
| | | | | | | 39.52 | POOR | 0.50 | 38.93 | | 15.10 |
| 23 | 29 | IOMA | IA | 213.0 | 63.2 | 35.62 | GOOD | 0.10 | 34.93 | BMR | 8.30 |
| | | | | | | 36.24 | GOOD | 0.10 | 35.55 | | 8.92 |
| | | | | | | 37.12 | GOOD | 0.50 | 36.43 | | 9.80 |
| | | | | | | 38.02 | FAIR | 0.50 | 37.33 | | 10.70 |
| | | | | | | 39.62 | FAIR | 0.50 | 38.93 | | 12.30 |
| 25 | 29 | IOMA | IA | 256.1 | 59.8 | 40.55 | GOOD | 0.50 | 39.89 | BMR | 7.88 |
| 28 | 29 | IOMA | IA | 387.6 | 49.5 | 55.50 | GOOD | 0.50 | 55.04 | BMR | 6.59 |
| | | | | | | 60.14 | FAIR | 0.50 | 59.68 | | 11.23 |
| 30 | 29 | IOMA | IA | 396.2 | 47.1 | 56.49 | GOOD | 0.50 | 56.03 | BMR | 6.50 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 56.89 | GOOD | 0.10 | 56.43 | | 6.90 |
| | | | | | | 58.00 | FAIR | 0.10 | 57.54 | | 8.01 |
| 31 | 29 | IOMA | IA | 356.9 | 45.8 | 51.73 | GOOD | 0.50 | 51.31 | BMR | 6.70 |
| | | | | | | 52.44 | FAIR | 0.50 | 52.02 | | 7.41 |
| | | | | | | 53.54 | GOOD | 0.50 | 53.12 | | 8.51 |
| 32 | 29 | IOMA | IA | 312.7 | 44.1 | 46.41 | GOOD | 0.50 | 45.86 | BMR | 6.77 |
| | | | | | | 47.73 | FAIR | 0.50 | 47.18 | | 8.09 |
| 35 | 29 | IOMA | IA | 228.2 | 39.1 | 37.31 | GOOD | 0.10 | 36.49 | BMR | 7.96 |
| | | | | | | 38.21 | FAIR | 0.10 | 37.39 | | 8.86 |
| | | | | | | 41.06 | FAIR | 0.50 | 40.24 | | 11.71 |
| 36 | 29 | IOMA | IA | 213.5 | 38.4 | 35.49 | GOOD | 0.10 | 34.65 | BMR | 7.96 |
| | | | | | | 36.08 | GOOD | 0.10 | 35.24 | | 8.55 |
| 37 | 29 | IOMA | IA | 199.7 | 37.4 | 33.74 | GOOD | 0.10 | 32.90 | BMR | 7.94 |
| | | | | | | 34.75 | FAIR | 0.10 | 33.91 | | 8.95 |
| 38 | 29 | IOMA | IA | 188.2 | 36.6 | 32.40 | GOOD | 0.10 | 31.57 | BMR | 8.04 |
| | | | | | | 32.85 | GOOD | 0.10 | 32.02 | | 8.49 |
| | | | | | | 33.68 | GOOD | 0.10 | 32.85 | | 9.32 |
| | | | | | | 34.72 | GOOD | 0.10 | 33.89 | | 10.36 |
| | | | | | | 35.93 | FAIR | 0.50 | 35.10 | | 11.57 |
| | | | | | | 36.83 | FAIR | 0.50 | 36.00 | | 12.47 |
| | | | | | | 38.35 | GOOD | 0.10 | 37.52 | | 13.99 |
| 39 | 29 | IOMA | IA | 167.6 | 20.9 | 29.25 | GOOD | 0.10 | 28.92 | BMR | 7.97 |
| | | | | | | 29.96 | GOOD | 0.10 | 29.63 | | 8.68 |
| | | | | | | 30.36 | FAIR | 0.50 | 30.03 | | 9.08 |
| | | | | | | 32.19 | FAIR | 0.50 | 31.86 | | 10.91 |
| 40 | 29 | IOMA | IA | 165.4 | 24.7 | 29.41 | GOOD | 0.10 | 29.06 | BMR | 8.39 |
| | | | | | | 29.94 | FAIR | 0.10 | 29.59 | | 8.92 |
| | | | | | | 30.48 | GOOD | 0.10 | 30.13 | | 9.46 |
| | | | | | | 32.12 | GOOD | 0.10 | 31.77 | | 11.10 |
| | | | | | | 33.51 | FAIR | 0.50 | 33.16 | | 12.49 |
| | | | | | | 39.04 | GOOD | 0.50 | 38.69 | | 18.02 |
| 41 | 29 | IOMA | IA | 161.5 | 29.1 | 29.35 | GOOD | 0.50 | 28.97 | BMR | 8.79 |
| | | | | | | 31.38 | GOOD | 0.50 | 31.00 | | 10.82 |
| | | | | | | 33.84 | GOOD | 0.10 | 33.46 | | 13.28 |
| | | | | | | 36.07 | FAIR | 0.10 | 35.69 | | 15.51 |
| 42 | 29 | IOMA | IA | 175.5 | 17.5 | 30.98 | GOOD | 0.50 | 30.67 | BMR | 8.73 |
| 47 | 29 | IOMA | IA | 200.6 | 358.7 | 33.80 | GOOD | 0.50 | 33.70 | BMR | 8.62 |
| | | | | | | 35.31 | FAIR | 0.10 | 35.21 | | 10.13 |
| | | | | | | 35.95 | FAIR | 0.50 | 35.85 | | 10.77 |
| | | | | | | 38.82 | FAIR | 0.10 | 38.72 | | 13.64 |
| | | | | | | 39.80 | FAIR | 0.50 | 39.70 | | 14.62 |
| | | | | | | 41.53 | FAIR | 0.50 | 41.43 | | 16.35 |
| 48 | 29 | IOMA | IA | 227.7 | 343.7 | 38.47 | GOOD | 0.50 | 38.10 | BMR | 9.63 |
| | | | | | | 40.37 | FAIR | 0.50 | 40.00 | | 11.53 |
| | | | | | | 44.47 | FAIR | 0.50 | 44.10 | | 15.63 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 56 | 29 | IOMA | IA | 82.5 | 272.9 | 15.03 | GOOD | 0.10 | 15.04 | BMR | 4.72 |
| | | | | | | 15.87 | FAIR | 0.50 | 15.88 | | 5.56 |
| | | | | | | 16.62 | FAIR | 0.50 | 16.63 | | 6.31 |
| | | | | | | 17.52 | FAIR | 0.50 | 17.53 | | 7.21 |
| 57 | 29 | IOMA | IA | 90.1 | 267.1 | 15.44 | GOOD | 0.10 | 15.45 | BMR | 4.19 |
| | | | | | | 16.19 | GOOD | 0.10 | 16.20 | | 4.94 |
| | | | | | | 19.91 | FAIR | 0.50 | 19.92 | | 8.66 |
| 58 | 29 | IOMA | IA | 94.2 | 266.3 | 15.82 | GOOD | 0.50 | 15.83 | BMR | 4.05 |
| | | | | | | 16.25 | FAIR | 0.10 | 16.26 | | 4.48 |
| | | | | | | 17.12 | FAIR | 0.50 | 17.13 | | 5.35 |
| | | | | | | 18.17 | FAIR | 0.50 | 18.18 | | 6.40 |
| 59 | 29 | IOMA | IA | 102.7 | 262.8 | 17.14 | GOOD | 0.10 | 16.87 | BMR | 4.03 |
| 60 | 29 | IOMA | IA | 113.5 | 258.6 | 19.46 | GOOD | 0.10 | 18.66 | BMR | 4.47 |
| | | | | | | 19.88 | GOOD | 0.10 | 19.08 | | 4.89 |
| | | | | | | 21.02 | FAIR | 0.10 | 20.22 | | 6.03 |
| | | | | | | 21.89 | FAIR | 0.50 | 21.09 | | 6.90 |
| | | | | | | 25.96 | FAIR | 0.50 | 25.16 | | 10.97 |
| 61 | 29 | IOMA | IA | 122.4 | 253.9 | 21.93 | GOOD | 0.10 | 20.64 | BMR | 5.34 |
| | | | | | | 33.39 | FAIR | 0.50 | 32.10 | | 16.80 |
| 62 | 29 | IOMA | IA | 135.9 | 252.8 | 24.92 | GOOD | 0.50 | 23.18 | BMR | 6.19 |
| 63 | 29 | IOMA | IA | 168.5 | 247.2 | 30.50 | GOOD | 0.10 | 28.46 | BMR | 7.40 |
| | | | | | | 31.52 | GOOD | 0.50 | 29.48 | | 8.42 |
| | | | | | | 32.79 | FAIR | 0.10 | 30.75 | | 9.69 |
| | | | | | | 39.58 | FAIR | 0.50 | 37.54 | | 16.48 |
| 69 | 29 | IOMA | IA | 191.6 | 153.2 | 28.20 | GOOD | 0.50 | 28.12 | BMR | 4.17 |
| | | | | | | 34.38 | FAIR | 0.50 | 34.30 | | 10.35 |
| 71 | 29 | IOMA | IA | 163.4 | 152.2 | 24.62 | GOOD | 1.00 | 24.49 | BMR | 4.07 |
| 73 | 29 | IOMA | IA | 141.2 | 151.1 | 20.57 | GOOD | 0.50 | 20.49 | BMR | 2.84 |
| 74 | 29 | IOMA | IA | 131.9 | 152.9 | 21.34 | POOR | 0.50 | 21.08 | BMR | 4.60 |
| | | | | | | 25.69 | FAIR | 0.50 | 25.43 | | 8.95 |
| 75 | 29 | IOMA | IA | 121.5 | 154.6 | 18.66 | GOOD | 0.10 | 18.60 | BMR | 3.41 |
| | | | | | | 19.88 | FAIR | 0.50 | 19.82 | | 4.63 |
| | | | | | | 21.38 | GOOD | 0.10 | 21.32 | | 6.13 |
| | | | | | | 21.83 | FAIR | 0.50 | 21.77 | | 6.58 |
| | | | | | | 22.83 | GOOD | 0.50 | 22.77 | | 7.58 |
| | | | | | | 24.16 | GOOD | 0.10 | 24.10 | | 8.91 |
| 76 | 29 | IOMA | IA | 124.7 | 158.2 | 21.09 | GOOD | 0.50 | 20.81 | BMR | 5.22 |
| | | | | | | 28.99 | FAIR | 0.50 | 28.71 | | 13.12 |
| 77 | 29 | IOMA | IA | 131.4 | 162.3 | 21.47 | GOOD | 0.10 | 20.96 | BMR | 4.53 |
| | | | | | | 22.10 | FAIR | 0.10 | 21.59 | | 5.16 |
| | | | | | | 22.82 | GOOD | 0.10 | 22.31 | | 5.88 |
| | | | | | | 23.70 | GOOD | 0.10 | 23.19 | | 6.76 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 24.72 | FAIR | 0.50 | 24.21 | | 7.78 |
| | | | | | | 25.64 | FAIR | 0.50 | 25.13 | | 8.70 |
| | | | | | | 30.82 | GOOD | 0.50 | 30.31 | | 13.88 |
| 79 | 29 | IOMA | IA | 146.6 | 168.7 | 21.36 | GOOD | 0.50 | 20.39 | BMR | 2.07 |
| 81 | 29 | IOMA | IA | 108.0 | 158.6 | 17.93 | GOOD | 0.50 | 17.87 | BMR | 4.37 |
| | | | | | | 22.13 | FAIR | 0.50 | 22.07 | | 8.57 |
| 83 | 29 | IOMA | IA | 86.9 | 167.4 | 14.84 | GOOD | 0.10 | 14.79 | BMR | 3.93 |
| | | | | | | 15.63 | GOOD | 0.10 | 15.58 | | 4.72 |
| | | | | | | 16.93 | FAIR | 0.50 | 16.88 | | 6.02 |
| | | | | | | 18.80 | FAIR | 0.50 | 18.75 | | 7.89 |
| | | | | | | 25.13 | FAIR | 0.10 | 25.08 | | 14.22 |
| | | | | | | 27.74 | GOOD | 0.50 | 27.69 | | 16.83 |
| | | | | | | 32.40 | GOOD | 0.50 | 32.35 | | 21.49 |
| 84 | 29 | IOMA | IA | 81.1 | 170.6 | 14.35 | GOOD | 0.10 | 14.17 | BMR | 4.03 |
| | | | | | | 15.59 | GOOD | 0.10 | 15.41 | | 5.27 |
| | | | | | | 18.03 | FAIR | 0.50 | 17.85 | | 7.71 |
| | | | | | | 20.75 | FAIR | 0.50 | 20.57 | | 10.43 |
| 85 | 29 | IOMA | IA | 72.5 | 175.2 | 13.04 | GOOD | 0.10 | 12.76 | BMR | 3.70 |
| | | | | | | 13.93 | FAIR | 0.10 | 13.65 | | 4.59 |
| | | | | | | 15.23 | GOOD | 0.50 | 14.95 | | 5.89 |
| | | | | | | 16.03 | GOOD | 0.50 | 15.75 | | 6.69 |
| | | | | | | 16.83 | GOOD | 0.50 | 16.55 | | 7.49 |
| 88 | 29 | IOMA | IA | 65.3 | 218.6 | 13.40 | GOOD | 0.10 | 13.11 | BMR | 4.95 |
| | | | | | | 14.10 | GOOD | 0.50 | 13.81 | | 5.65 |
| 89 | 29 | IOMA | IA | 80.8 | 219.5 | 16.09 | GOOD | 0.50 | 15.60 | BMR | 5.50 |
| 90 | 29 | IOMA | IA | 92.2 | 220.2 | 16.72 | GOOD | 0.10 | 15.78 | BMR | 4.25 |
| | | | | | | 17.55 | GOOD | 0.10 | 16.61 | | 5.08 |
| | | | | | | 19.20 | FAIR | 0.50 | 18.26 | | 6.73 |
| | | | | | | 21.52 | FAIR | 0.10 | 20.58 | | 9.05 |
| | | | | | | 25.54 | FAIR | 0.50 | 24.60 | | 13.07 |
| 91 | 29 | IOMA | IA | 103.8 | 220.3 | 19.84 | GOOD | 0.10 | 19.00 | BMR | 6.03 |
| | | | | | | 20.18 | GOOD | 0.10 | 19.34 | | 6.37 |
| | | | | | | 22.83 | FAIR | 0.50 | 21.99 | | 9.02 |
| | | | | | | 28.94 | GOOD | 0.50 | 28.10 | | 15.13 |
| 92 | 29 | IOMA | IA | 121.3 | 221.4 | 24.05 | FAIR | 0.50 | 22.53 | BMR | 7.37 |
| | | | | | | 24.84 | FAIR | 0.50 | 23.32 | | 8.16 |
| 93 | 29 | IOMA | IA | 131.3 | 220.6 | 25.78 | FAIR | 0.50 | 23.85 | BMR | 7.44 |
| 94 | 29 | IOMA | IA | 143.8 | 221.7 | 27.38 | GOOD | 0.10 | 25.02 | BMR | 7.05 |
| | | | | | | 28.21 | GOOD | 0.10 | 25.85 | | 7.88 |
| | | | | | | 31.50 | FAIR | 0.50 | 29.14 | | 11.17 |
| 95 | 29 | IOMA | IA | 278.6 | 238.9 | 43.80 | GOOD | 0.50 | 41.26 | BMR | 6.44 |
| | | | | | | 44.35 | GOOD | 0.10 | 41.81 | | 6.99 |
| | | | | | | 45.39 | FAIR | 0.50 | 42.85 | | 8.03 |
| 96 | 29 | IOMA | IA | 250.4 | 240.5 | 39.29 | GOOD | 0.50 | 37.51 | BMR | 6.21 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 39.80 | GOOD | 0.10 | 38.02 | | 6.72 |
| | | | | | | 46.00 | GOOD | 0.50 | 44.22 | | 12.92 |
| 97 | 29 | IOMA | IA | 219.8 | 242.9 | 35.76 | GOOD | 0.50 | 33.56 | BMR | 6.08 |
| | | | | | | 36.57 | FAIR | 0.50 | 34.37 | | 6.89 |
| | | | | | | 37.01 | GOOD | 0.50 | 34.81 | | 7.33 |
| | | | | | | 37.78 | GOOD | 0.50 | 35.58 | | 8.10 |
| 98 | 29 | IOMA | IA | 55.7 | 224.9 | 11.60 | GOOD | 0.10 | 11.42 | BMR | 4.46 |
| 99 | 29 | IOMA | IA | 54.2 | 253.5 | 10.67 | GOOD | 0.10 | 10.68 | BMR | 3.90 |
| | | | | | | 11.51 | GOOD | 0.50 | 11.52 | | 4.74 |
| 100 | 29 | IOMA | IA | 58.6 | 267.1 | 11.25 | GOOD | 0.10 | 11.25 | BMR | 3.92 |
| | | | | | | 11.91 | FAIR | 0.10 | 11.91 | | 4.58 |
| | | | | | | 14.13 | GOOD | 0.50 | 14.13 | | 6.80 |
| | | | | | | 16.48 | GOOD | 0.10 | 16.48 | | 9.15 |
| | | | | | | 17.21 | FAIR | 0.10 | 17.21 | | 9.88 |
| 101 | 29 | IOMA | IA | 70.4 | 279.9 | 13.24 | GOOD | 0.10 | 13.24 | BMR | 4.44 |
| | | | | | | 14.80 | FAIR | 0.50 | 14.80 | | 6.00 |
| 102 | 29 | IOMA | IA | 76.1 | 286.1 | 14.37 | GOOD | 0.10 | 14.37 | BMR | 4.86 |
| | | | | | | 15.36 | FAIR | 0.10 | 15.36 | | 5.85 |
| | | | | | | 16.57 | GOOD | 0.50 | 16.57 | | 7.06 |
| | | | | | | 17.85 | FAIR | 0.50 | 17.85 | | 8.34 |
| | | | | | | 19.58 | GOOD | 0.10 | 19.58 | | 10.07 |
| | | | | | | 21.69 | GOOD | 0.50 | 21.69 | | 12.18 |
| | | | | | | 29.64 | FAIR | 0.10 | 29.64 | | 20.13 |
| 103 | 29 | IOMA | IA | 83.4 | 293.4 | 15.29 | GOOD | 0.50 | 15.29 | BMR | 4.87 |
| | | | | | | 16.47 | FAIR | 0.50 | 16.47 | | 6.05 |
| | | | | | | 18.63 | FAIR | 0.50 | 18.63 | | 8.21 |
| | | | | | | 20.76 | FAIR | 0.50 | 20.76 | | 10.34 |
| | | | | | | 24.65 | GOOD | 0.50 | 24.65 | | 14.23 |
| 104 | 29 | IOMA | IA | 103.6 | 292.9 | 18.39 | GOOD | 0.10 | 18.40 | BMR | 5.45 |
| | | | | | | 19.63 | GOOD | 0.50 | 19.64 | | 6.69 |
| | | | | | | 20.63 | FAIR | 0.50 | 20.64 | | 7.69 |
| | | | | | | 23.15 | GOOD | 0.50 | 23.16 | | 10.21 |
| 105 | 29 | IOMA | IA | 118.1 | 295.2 | 20.29 | GOOD | 0.50 | 20.30 | BMR | 5.53 |
| | | | | | | 22.80 | FAIR | 0.50 | 22.81 | | 8.04 |
| | | | | | | 25.12 | FAIR | 0.50 | 25.13 | | 10.36 |
| 106 | 29 | IOMA | IA | 127.8 | 94.8 | 21.24 | GOOD | 0.50 | 21.24 | BMR | 5.27 |
| | | | | | | 21.78 | GOOD | 0.10 | 21.78 | | 5.81 |
| | | | | | | 22.11 | FAIR | 0.10 | 22.11 | | 6.14 |
| | | | | | | 24.20 | FAIR | 0.50 | 24.20 | | 8.23 |
| | | | | | | 25.63 | GOOD | 0.50 | 25.63 | | 9.66 |
| | | | | | | 27.37 | FAIR | 0.50 | 27.37 | | 11.40 |
| 107 | 29 | IOMA | IA | 138.0 | 298.3 | 22.34 | GOOD | 0.10 | 22.34 | BMR | 5.09 |
| | | | | | | 22.61 | FAIR | 0.10 | 22.61 | | 5.36 |
| | | | | | | 23.46 | GOOD | 0.10 | 23.46 | | 6.21 |
| 108 | 29 | IOMA | IA | 145.7 | 297.5 | 23.52 | GOOD | 0.10 | 23.52 | BMR | 5.31 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSI. (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 109 | 29 | IOMA | IA | 166.3 | 293.7 | 25.94 | GOOD | 0.10 | 25.94 | BMR | 5.16 |
| | | | | | | 28.43 | GOOD | 0.50 | 28.43 | | 7.65 |
| 110 | 29 | IOMA | IA | 189.1 | 287.9 | 28.81 | GOOD | 0.50 | 28.70 | BMR | 5.06 |
| | | | | | | 29.88 | FAIR | 0.50 | 29.77 | | 6.13 |
| | | | | | | 30.81 | FAIR | 0.50 | 30.70 | | 7.06 |
| | | | | | | 31.73 | GOOD | 0.10 | 31.62 | | 7.98 |
| | | | | | | 33.08 | FAIR | 0.10 | 32.97 | | 9.33 |
| | | | | | | 35.50 | GOOD | 0.10 | 35.39 | | 11.75 |
| | | | | | | 37.35 | FAIR | 0.10 | 37.24 | | 13.60 |
| 111 | 29 | IOMA | IA | 179.8 | 276.1 | 27.57 | GOOD | 0.10 | 27.58 | BMR | 5.11 |
| | | | | | | 28.87 | GOOD | 0.50 | 28.88 | | 6.41 |
| | | | | | | 29.95 | FAIR | 0.50 | 29.96 | | 7.49 |
| | | | | | | 33.95 | FAIR | 0.50 | 33.96 | | 11.49 |
| 1 | 30 | MT.LAWES | ML | 54.7 | 45.8 | 13.10 | GOOD | 0.10 | 12.21 | BMR | 5.37 |
| | | | | | | 14.02 | FAIR | 0.50 | 13.13 | | 6.29 |
| | | | | | | 24.38 | GOOD | 0.50 | 23.49 | | 16.65 |
| | | | | | | 20.30 | FAIR | 0.50 | 19.41 | | 12.57 |
| 2 | 30 | MT.LAWES | ML | 42.3 | 40.8 | 10.32 | GOOD | 0.10 | 9.50 | BMR | 4.21 |
| | | | | | | 15.13 | POOR | 0.50 | 14.31 | | 9.02 |
| | | | | | | 19.73 | FAIR | 0.10 | 18.91 | | 13.62 |
| 3 | 30 | MT.LAWES | ML | 40.2 | 58.5 | 9.94 | GOOD | 0.10 | 9.29 | BMR | 4.27 |
| | | | | | | 11.84 | FAIR | 0.10 | 11.19 | | 6.17 |
| | | | | | | 18.65 | POOR | 0.10 | 18.00 | | 12.98 |
| 4 | 30 | MT.LAWES | ML | 34.1 | 38.5 | 7.19 | GOOD | 0.50 | 6.65 | BMR | 2.38 |
| | | | | | | 9.36 | FAIR | 0.50 | 8.82 | | 4.55 |
| 5 | 30 | MT.LAWES | ML | 46.1 | 71.8 | 10.16 | GOOD | 0.10 | 9.78 | BMR | 4.02 |
| | | | | | | 18.89 | FAIR | 0.10 | 18.51 | | 12.75 |
| 6 | 30 | MT.LAWES | ML | 51.8 | 79.6 | 11.70 | GOOD | 0.10 | 11.34 | BMR | 4.86 |
| | | | | | | 13.65 | FAIR | 0.50 | 13.29 | | 6.81 |
| 7 | 30 | MT.LAWES | ML | 57.0 | 86.9 | 12.71 | GOOD | 0.10 | 12.30 | BMR | 5.17 |
| 8 | 30 | MT.LAWES | ML | 67.3 | 96.8 | 14.57 | GOOD | 0.10 | 14.21 | BMR | 5.80 |
| | | | | | | 26.11 | FAIR | 0.50 | 25.75 | | 17.34 |
| 9 | 30 | MT.LAWES | ML | 73.2 | 102.0 | 15.42 | GOOD | 0.10 | 15.18 | BMR | 6.03 |
| | | | | | | 16.75 | FAIR | 0.50 | 16.51 | | 7.36 |
| | | | | | | 18.45 | FAIR | 0.50 | 18.21 | | 9.06 |
| 10 | 30 | MT.LAWES | ML | 84.2 | 105.9 | 17.71 | GOOD | 0.10 | 17.23 | BMR | 6.70 |
| | | | | | | 20.93 | POOR | 0.50 | 20.45 | | 9.92 |
| 11 | 30 | MT.LAWES | ML | 93.1 | 111.9 | 19.10 | GOOD | 0.10 | 18.72 | BMR | 7.09 |
| | | | | | | 24.05 | FAIR | 0.50 | 23.67 | | 12.04 |
| | | | | | | 33.79 | POOR | 0.50 | 33.41 | | 21.78 |
| 12 | 30 | MT.LAWES | ML | 105.3 | 114.0 | 21.15 | GOOD | 0.10 | 20.87 | BMR | 7.71 |
| | | | | | | 21.72 | FAIR | 0.50 | 21.44 | | 8.28 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 22.77 | FAIR | 0.50 | 22.49 | | 9.33 |
| 13 | 30 | MT.LAWES | ML | 116.0 | 116.7 | 22.50 | GOOD | 0.10 | 22.18 | BMR | 7.68 |
| | | | | | | 25.22 | FAIR | 0.50 | 24.90 | | 10.40 |
| 14 | 30 | MT.LAWES | ML | 126.9 | 118.8 | 23.83 | GOOD | 0.10 | 23.61 | BMR | 7.75 |
| | | | | | | 26.68 | FAIR | 0.50 | 26.46 | | 10.60 |
| | | | | | | 34.73 | FAIR | 1.00 | 34.51 | | 18.65 |
| 15 | 30 | MT.LAWES | ML | 139.1 | 120.6 | 25.39 | FAIR | 0.50 | 25.13 | BMR | 7.75 |
| | | | | | | 26.89 | GOOD | 0.50 | 26.63 | | 9.25 |
| 16 | 30 | MT.LAWES | ML | 150.8 | 121.9 | 26.98 | FAIR | 0.10 | 26.64 | BMR | 7.79 |
| | | | | | | 33.54 | POOR | 0.50 | 33.20 | | 14.35 |
| | | | | | | 37.24 | FAIR | 0.50 | 36.90 | | 18.05 |
| | | | | | | 39.83 | FAIR | 0.50 | 39.49 | | 20.64 |
| 17 | 30 | MT.LAWES | ML | 162.7 | 123.0 | 27.80 | GOOD | 0.50 | 27.73 | BMR | 7.39 |
| | | | | | | 29.99 | FAIR | 0.50 | 29.92 | | 9.58 |
| | | | | | | 34.24 | FAIR | 1.00 | 34.17 | | 13.83 |
| | | | | | | 38.97 | FAIR | 0.10 | 38.90 | | 18.56 |
| 18 | 30 | MT.LAWES | ML | 192.1 | 126.1 | 31.55 | POOR | 1.00 | 31.47 | BMR | 7.45 |
| | | | | | | 35.83 | FAIR | 0.10 | 35.75 | | 11.73 |
| | | | | | | 40.50 | FAIR | 0.10 | 40.42 | | 16.40 |
| | | | | | | 60.95 | FAIR | 0.50 | 60.87 | | 36.85 |
| 19 | 30 | MT.LAWES | ML | 236.9 | 118.9 | 37.89 | FAIR | 0.10 | 37.82 | BMR | 8.20 |
| | | | | | | 42.34 | FAIR | 0.50 | 42.27 | | 12.65 |
| 20 | 30 | MT.LAWES | ML | 112.3 | 110.8 | 22.11 | GOOD | 0.10 | 21.54 | BMR | 7.50 |
| | | | | | | 32.88 | POOR | 0.50 | 32.31 | | 18.27 |
| | | | | | | 35.91 | POOR | 0.50 | 35.34 | | 21.30 |
| 21 | 30 | MT.LAWES | ML | 113.7 | 106.0 | 22.64 | GOOD | 0.10 | 21.96 | BMR | 7.75 |
| | | | | | | 27.02 | FAIR | 0.50 | 26.34 | | 12.13 |
| | | | | | | 42.94 | POOR | 0.50 | 42.26 | | 28.05 |
| | | | | | | 41.96 | POOR | 0.50 | 41.28 | | 27.07 |
| 22 | 30 | MT.LAWES | ML | 116.3 | 100.8 | 23.00 | GOOD | 0.10 | 22.23 | BMR | 7.69 |
| | | | | | | 29.91 | GOOD | 0.50 | 29.14 | | 14.60 |
| | | | | | | 39.68 | FAIR | 0.50 | 38.91 | | 24.37 |
| 23 | 30 | MT.LAWES | ML | 125.2 | 95.2 | 23.47 | GOOD | 0.10 | 22.69 | BMR | 7.04 |
| | | | | | | 26.14 | FAIR | 0.50 | 25.36 | | 9.71 |
| | | | | | | 31.44 | FAIR | 0.10 | 30.66 | | 15.01 |
| | | | | | | 46.74 | FAIR | 0.50 | 45.96 | | 30.31 |
| 24 | 30 | MT.LAWES | ML | 128.1 | 92.5 | 24.51 | FAIR | 0.50 | 23.72 | BMR | 7.70 |
| | | | | | | 27.24 | POOR | 0.50 | 26.45 | | 10.43 |
| | | | | | | 29.71 | POOR | 0.50 | 28.92 | | 12.90 |
| 25 | 30 | MT.LAWES | ML | 157.3 | 82.2 | 27.36 | GOOD | 0.10 | 26.61 | BMR | 6.95 |
| | | | | | | 28.45 | FAIR | 0.50 | 27.70 | | 8.04 |
| | | | | | | 28.99 | GOOD | 0.10 | 28.24 | | 8.58 |
| | | | | | | 35.01 | FAIR | 0.50 | 34.26 | | 14.60 |
| | | | | | | 39.00 | POOR | 0.50 | 38.25 | | 18.59 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 46.75 | FAIR | 0.10 | 46.00 | | 26.34 |
| | | | | | | 56.33 | FAIR | 0.50 | 55.58 | | 35.92 |
| 26 | 30 | MT.LAWES | ML | 186.2 | 71.1 | 30.23 | GOOD | 0.10 | 29.46 | BMR | 6.18 |
| | | | | | | 33.04 | GOOD | 0.50 | 32.27 | | 8.99 |
| | | | | | | 37.90 | FAIR | 1.00 | 37.13 | | 13.85 |
| 27 | 30 | MT.LAWES | ML | 223.1 | 63.1 | 34.62 | GOOD | 0.10 | 34.09 | BMR | 6.20 |
| | | | | | | 40.69 | FAIR | 0.50 | 40.16 | | 12.27 |
| | | | | | | 44.29 | FAIR | 0.50 | 43.76 | | 15.87 |
| | | | | | | 61.53 | FAIR | 0.50 | 61.00 | | 33.11 |
| | | | | | | 74.61 | POOR | 0.50 | 74.08 | | 46.19 |
| 28 | 30 | MT.LAWES | ML | 270.8 | 57.8 | 40.15 | GOOD | 0.10 | 39.60 | BMR | 5.75 |
| | | | | | | 43.58 | FAIR | 0.50 | 43.03 | | 9.18 |
| | | | | | | 46.78 | POOR | 0.50 | 46.23 | | 12.38 |
| | | | | | | 56.76 | POOR | 0.50 | 56.21 | | 22.36 |
| 29 | 30 | MT.LAWES | ML | 308.2 | 55.1 | 44.90 | GOOD | 0.10 | 44.30 | BMR | 5.77 |
| | | | | | | 49.07 | POOR | 1.00 | 48.47 | | 9.94 |
| | | | | | | 53.10 | FAIR | 0.50 | 52.50 | | 13.97 |
| | | | | | | 62.83 | POOR | 0.50 | 62.23 | | 23.70 |
| | | | | | | 129.90 | FAIR | 0.50 | 129.30 | | 90.77 |
| 30 | 30 | MT.LAWES | ML | 277.1 | 54.1 | 40.98 | GOOD | 0.10 | 40.43 | BMR | 5.79 |
| | | | | | | 50.23 | FAIR | 0.50 | 49.68 | | 15.04 |
| | | | | | | 51.89 | FAIR | 0.50 | 51.34 | | 16.70 |
| | | | | | | 58.79 | FAIR | 0.50 | 58.24 | | 23.60 |
| | | | | | | 61.31 | FAIR | 0.50 | 60.76 | | 26.12 |
| | | | | | | 63.51 | FAIR | 0.50 | 62.96 | | 28.32 |
| | | | | | | 72.76 | FAIR | 0.50 | 72.21 | | 37.57 |
| 31 | 30 | MT.LAWES | ML | 237.0 | 53.3 | 35.83 | GOOD | 0.50 | 35.32 | BMR | 5.70 |
| | | | | | | 42.03 | FAIR | 0.50 | 41.52 | | 11.90 |
| | | | | | | 45.93 | FAIR | 0.50 | 45.42 | | 15.80 |
| | | | | | | 51.59 | FAIR | 0.50 | 51.08 | | 21.46 |
| | | | | | | 62.58 | FAIR | 0.50 | 62.07 | | 32.45 |
| | | | | | | 67.53 | FAIR | 0.50 | 67.02 | | 37.40 |
| | | | | | | 71.23 | POOR | 1.00 | 70.72 | | 41.10 |
| 32 | 30 | MT.LAWES | ML | 192.0 | 52.4 | 30.78 | GOOD | 0.10 | 30.14 | BMR | 6.14 |
| | | | | | | 35.89 | FAIR | 0.50 | 35.25 | | 11.25 |
| | | | | | | 39.95 | POOR | 1.00 | 39.31 | | 15.31 |
| | | | | | | 43.46 | FAIR | 0.50 | 42.82 | | 18.82 |
| | | | | | | 45.82 | FAIR | 0.50 | 45.18 | | 21.18 |
| | | | | | | 53.42 | POOR | 0.50 | 52.78 | | 28.78 |
| | | | | | | 87.12 | FAIR | 0.50 | 86.48 | | 62.48 |
| 33 | 30 | MT.LAWES | ML | 144.3 | 50.3 | 25.03 | GOOD | 0.10 | 24.14 | BMR | 6.11 |
| | | | | | | 31.33 | GOOD | 0.10 | 30.44 | | 12.41 |
| | | | | | | 44.98 | POOR | 0.50 | 44.09 | | 26.06 |
| | | | | | | 52.57 | FAIR | 0.10 | 51.68 | | 33.65 |
| | | | | | | 55.37 | FAIR | 0.10 | 54.48 | | 36.45 |
| | | | | | | 59.07 | GOOD | 0.10 | 58.18 | | 40.15 |
| | | | | | | 71.47 | FAIR | 0.10 | 70.58 | | 52.55 |
| 34 | 30 | MT.LAWES | ML | 116.2 | 49.4 | 22.41 | GOOD | 0.10 | 21.46 | BMR | 6.94 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 27.66 | FAIR | 0.10 | 26.71 | | 12.19 |
| | | | | | | 38.24 | POOR | 0.50 | 37.29 | | 22.77 |
| | | | | | | 39.09 | FAIR | 0.50 | 38.14 | | 23.62 |
| | | | | | | 42.09 | FAIR | 0.50 | 41.14 | | 26.62 |
| 35 | 30 | MT.LAWES | ML | 105.0 | 48.4 | 20.67 | GOOD | 0.10 | 19.76 | BMR | 6.63 |
| | | | | | | 21.51 | FAIR | 0.50 | 20.60 | | 7.47 |
| | | | | | | 25.74 | POOR | 0.50 | 24.83 | | 11.70 |
| | | | | | | 35.44 | POOR | 1.00 | 34.53 | | 21.40 |
| | | | | | | 41.29 | FAIR | 0.50 | 40.38 | | 27.25 |
| | | | | | | 55.68 | FAIR | 0.50 | 54.77 | | 41.64 |
| 36 | 30 | MT.LAWES | ML | 90.0 | 48.3 | 18.28 | GOOD | 0.10 | 17.35 | BMR | 6.10 |
| | | | | | | 19.39 | GOOD | 0.10 | 18.46 | | 7.21 |
| | | | | | | 23.76 | FAIR | 0.50 | 22.83 | | 11.58 |
| | | | | | | 31.00 | FAIR | 0.50 | 30.07 | | 18.82 |
| | | | | | | 32.42 | FAIR | 0.10 | 31.49 | | 20.24 |
| | | | | | | 49.64 | GOOD | 0.10 | 48.71 | | 37.46 |
| 37 | 30 | MT.LAWES | ML | 75.8 | 47.5 | 16.05 | GOOD | 0.10 | 15.12 | BMR | 5.64 |
| | | | | | | 17.67 | GOOD | 0.10 | 16.74 | | 7.26 |
| | | | | | | 24.76 | FAIR | 0.50 | 23.83 | | 14.35 |
| | | | | | | 33.09 | FAIR | 0.50 | 32.16 | | 22.68 |
| | | | | | | 38.39 | FAIR | 0.50 | 37.46 | | 27.98 |
| | | | | | | 39.89 | FAIR | 0.50 | 38.96 | | 29.48 |
| | | | | | | 48.79 | FAIR | 0.10 | 47.86 | | 38.38 |
| 38 | 30 | MT.LAWES | ML | 64.1 | 47.0 | 14.37 | GOOD | 0.10 | 13.45 | BMR | 5.43 |
| | | | | | | 19.16 | POOR | 0.50 | 18.24 | | 10.22 |
| | | | | | | 39.02 | GOOD | 0.10 | 38.10 | | 30.08 |
| 39 | 30 | MT.LAWES | ML | 49.3 | 353.6 | 10.99 | GOOD | 0.10 | 10.57 | BMR | 4.41 |
| | | | | | | 13.96 | GOOD | 0.10 | 13.54 | | 7.38 |
| | | | | | | 29.78 | FAIR | 0.50 | 29.36 | | 23.20 |
| 40 | 30 | MT.LAWES | ML | 42.8 | 5.4 | 10.13 | GOOD | 0.10 | 9.69 | BMR | 4.34 |
| | | | | | | 13.69 | FAIR | 0.10 | 13.25 | | 7.90 |
| | | | | | | 17.17 | FAIR | 0.50 | 16.73 | | 11.38 |
| | | | | | | 27.73 | FAIR | 0.10 | 27.29 | | 21.94 |
| 41 | 30 | MT.LAWES | ML | 36.1 | 21.7 | 9.14 | GOOD | 0.10 | 8.68 | BMR | 4.16 |
| | | | | | | 11.41 | FAIR | 0.50 | 10.95 | | 6.43 |
| | | | | | | 13.03 | FAIR | 0.50 | 12.57 | | 8.05 |
| 42 | 30 | MT.LAWES | ML | 61.0 | 348.4 | 13.29 | FAIR | 0.10 | 12.89 | BMR | 5.26 |
| | | | | | | 23.44 | POOR | 0.50 | 23.04 | | 15.41 |
| 43 | 30 | MT.LAWES | ML | 73.6 | 345.7 | 15.18 | FAIR | 0.10 | 14.68 | BMR | 5.48 |
| | | | | | | 16.71 | FAIR | 0.10 | 16.21 | | 7.01 |
| | | | | | | 17.73 | FAIR | 0.50 | 17.23 | | 8.03 |
| | | | | | | 18.92 | FAIR | 0.50 | 18.42 | | 9.22 |
| 44 | 30 | MT.LAWES | ML | 86.9 | 339.6 | 16.90 | GOOD | 0.10 | 16.58 | BMR | 5.72 |
| | | | | | | 18.17 | FAIR | 0.50 | 17.85 | | 6.99 |
| | | | | | | 26.29 | FAIR | 0.50 | 25.97 | | 15.11 |
| | | | | | | 30.20 | FAIR | 0.50 | 29.88 | | 19.02 |
| | | | | | | 42.25 | FAIR | 0.50 | 41.93 | | 31.07 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 64.05 | FAIR | 0.50 | 63.73 | | 52.87 |
| 45 | 30 | MT.LAWES | ML | 99.2 | 334.0 | 19.15 | GOOD | 0.10 | 18.65 | BMR | 6.25 |
| | | | | | | 32.00 | FAIR | 0.50 | 31.50 | | 19.10 |
| | | | | | | 38.60 | FAIR | 0.50 | 38.10 | | 25.70 |
| 46 | 30 | MT.LAWES | ML | 107.9 | 328.0 | 20.73 | GOOD | 0.10 | 20.26 | BMR | 6.77 |
| | | | | | | 24.66 | FAIR | 0.10 | 24.19 | | 10.70 |
| | | | | | | 26.31 | FAIR | 0.50 | 25.84 | | 12.35 |
| | | | | | | 28.01 | FAIR | 0.50 | 27.54 | | 14.05 |
| | | | | | | 36.01 | FAIR | 0.50 | 35.54 | | 22.05 |
| 47 | 30 | MT.LAWES | ML | 116.0 | 323.2 | 21.79 | GOOD | 0.10 | 21.60 | BMR | 7.10 |
| | | | | | | 24.01 | FAIR | 0.50 | 23.82 | | 9.32 |
| | | | | | | 26.41 | FAIR | 0.50 | 26.22 | | 11.72 |
| | | | | | | 29.51 | FAIR | 0.50 | 29.32 | | 14.82 |
| | | | | | | 40.11 | POOR | 1.00 | 39.92 | | 25.42 |
| | | | | | | 65.56 | FAIR | 0.50 | 65.37 | | 50.87 |
| 48 | 30 | MT.LAWES | ML | 169.7 | 310.7 | 28.61 | GOOD | 0.50 | 28.15 | BMR | 6.93 |
| | | | | | | 33.65 | FAIR | 0.50 | 33.19 | | 11.98 |
| | | | | | | 52.71 | FAIR | 0.50 | 52.25 | | 31.04 |
| 49 | 30 | MT.LAWES | ML | 222.8 | 302.6 | 35.38 | GOOD | 0.10 | 34.72 | BMR | 6.87 |
| | | | | | | 37.67 | FAIR | 0.50 | 37.01 | | 9.16 |
| | | | | | | 41.37 | FAIR | 0.50 | 40.71 | | 12.86 |
| | | | | | | 45.34 | GOOD | 0.10 | 44.68 | | 16.83 |
| | | | | | | 56.56 | FAIR | 0.50 | 55.90 | | 28.05 |
| | | | | | | 60.78 | FAIR | 0.50 | 60.12 | | 32.27 |
| | | | | | | 64.44 | FAIR | 0.50 | 63.78 | | 35.93 |
| 50 | 30 | MT.LAWES | ML | 288.7 | 297.4 | 42.66 | GOOD | 0.10 | 42.41 | BMR | 6.32 |
| | | | | | | 49.03 | FAIR | 0.50 | 48.78 | | 12.69 |
| | | | | | | 54.39 | FAIR | 0.50 | 54.14 | | 18.05 |
| | | | | | | 62.34 | FAIR | 0.10 | 62.09 | | 26.00 |
| | | | | | | 70.54 | FAIR | 0.50 | 70.29 | | 34.20 |
| | | | | | | 83.03 | FAIR | 0.50 | 82.78 | | 46.69 |
| | | | | | | 87.43 | FAIR | 0.50 | 87.18 | | 51.09 |
| 51 | 30 | MT.LAWES | ML | 394.0 | 287.3 | 57.52 | GOOD | 0.10 | 57.24 | BMR | 7.99 |
| | | | | | | 65.54 | FAIR | 0.50 | 65.26 | | 16.01 |
| | | | | | | 68.20 | FAIR | 0.50 | 67.92 | | 18.67 |
| | | | | | | 71.69 | FAIR | 0.10 | 71.41 | | 22.16 |
| 52 | 30 | MT.LAWES | ML | 374.2 | 275.6 | 62.27 | GOOD | 0.10 | 61.97 | BMR | 15.19 |
| | | | | | | 64.83 | GOOD | 0.10 | 64.53 | | 17.75 |
| | | | | | | 69.05 | FAIR | 0.50 | 68.75 | | 21.97 |
| | | | | | | 74.87 | FAIR | 0.50 | 74.57 | | 27.79 |
| | | | | | | 77.42 | FAIR | 0.50 | 77.12 | | 30.34 |
| 53 | 30 | MT.LAWES | ML | 317.8 | 276.1 | 48.66 | FAIR | 0.10 | 48.50 | BMR | 8.78 |
| | | | | | | 54.78 | POOR | 1.00 | 54.62 | | 14.90 |
| | | | | | | 61.32 | FAIR | 0.10 | 61.16 | | 21.44 |
| | | | | | | 64.79 | POOR | 0.50 | 64.63 | | 24.91 |
| | | | | | | 74.38 | FAIR | 0.50 | 74.22 | | 34.50 |
| 54 | 30 | MT.LAWES | ML | 267.1 | 273.6 | 43.21 | POOR | 1.00 | 43.00 | BMR | 9.61 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 47.34 | FAIR | 0.50 | 47.13 | | 13.74 |
| | | | | | | 49.40 | FAIR | 0.50 | 49.19 | | 15.80 |
| | | | | | | 56.04 | FAIR | 0.50 | 55.83 | | 22.44 |
| 55 | 30 | MT.LAWES | ML | 246.6 | 266.3 | 38.98 | FAIR | 1.00 | 38.80 | BMR | 7.98 |
| | | | | | | 50.36 | FAIR | 1.00 | 50.18 | | 19.36 |
| 56 | 30 | MT.LAWES | ML | 180.1 | 234.8 | 30.15 | GOOD | 0.10 | 30.07 | BMR | 7.55 |
| | | | | | | 31.24 | FAIR | 0.50 | 31.16 | | 8.64 |
| | | | | | | 60.09 | POOR | 1.00 | 60.01 | | 37.49 |
| | | | | | | 62.79 | POOR | 1.00 | 62.71 | | 40.19 |
| 57 | 30 | MT.LAWES | ML | 191.2 | 234.0 | 31.20 | GOOD | 0.10 | 31.12 | BMR | 7.22 |
| | | | | | | 32.58 | FAIR | 0.50 | 32.50 | | 8.60 |
| | | | | | | 56.55 | FAIR | 0.50 | 56.47 | | 32.57 |
| 58 | 30 | MT.LAWES | ML | 195.4 | 234.4 | 31.78 | GOOD | 0.50 | 31.70 | BMR | 7.27 |
| | | | | | | 60.74 | POOR | 1.00 | 60.66 | | 36.23 |
| 59 | 30 | MT.LAWES | ML | 205.8 | 234.1 | 32.97 | GOOD | 0.10 | 32.61 | BMR | 6.88 |
| | | | | | | 33.63 | FAIR | 0.50 | 33.27 | | 7.54 |
| | | | | | | 37.60 | FAIR | 0.50 | 37.24 | | 11.51 |
| | | | | | | 60.73 | FAIR | 0.50 | 60.37 | | 34.[illegible] |
| 60 | 30 | MT.LAWES | ML | 219.0 | 233.5 | 35.98 | FAIR | 0.50 | 35.09 | BMR | 7.71 |
| | | | | | | 37.61 | POOR | 0.50 | 36.72 | | 9.34 |
| | | | | | | 69.28 | POOR | | 68.39 | | 41.01 |
| 61 | 30 | MT.LAWES | ML | 231.0 | 232.1 | 38.22 | FAIR | 0.50 | 36.84 | BMR | 7.96 |
| | | | | | | 40.07 | GOOD | 0.50 | 38.69 | | 9.81 |
| | | | | | | 43.85 | FAIR | 0.50 | 42.47 | | 13.59 |
| | | | | | | 50.03 | POOR | 1.00 | 48.65 | | 19.77 |
| 62 | 30 | MT.LAWES | ML | 244.4 | 232.7 | 40.71 | GOOD | 0.10 | 38.88 | BMR | 8.33 |
| | | | | | | 46.86 | FAIR | 0.50 | 45.03 | | 14.48 |
| | | | | | | 62.26 | FAIR | 0.50 | 60.43 | | 29.88 |
| 63 | 30 | MT.LAWES | ML | 280.0 | 231.8 | 46.72 | POOR | 0.50 | 44.59 | BMR | 9.59 |
| | | | | | | 48.68 | FAIR | 0.50 | 46.55 | | 11.55 |
| | | | | | | 69.04 | POOR | 0.50 | 66.91 | | 31.91 |
| 69 | 30 | MT.LAWES | ML | 279.3 | 175.6 | 44.72 | GOOD | 0.10 | 44.55 | BMR | 9.64 |
| | | | | | | 83.64 | POOR | | 83.47 | | 48.56 |
| 71 | 30 | MT.LAWES | ML | 252.4 | 177.5 | 40.55 | FAIR | 0.50 | 40.33 | BMR | 8.78 |
| | | | | | | 69.83 | POOR | 1.00 | 69.61 | | 38.06 |
| | | | | | | 74.53 | POOR | 1.00 | 74.31 | | 42.76 |
| 72 | 30 | MT.LAWES | ML | 243.8 | 178.3 | 40.10 | POOR | 1.00 | 39.80 | BMR | 9.33 |
| 73 | 30 | MT.LAWES | ML | 231.2 | 179.2 | 37.07 | FAIR | 0.50 | 36.90 | BMR | 8.00 |
| | | | | | | 37.75 | GOOD | 0.50 | 37.58 | | 8.68 |
| | | | | | | 67.52 | GOOD | 0.50 | 67.35 | | 38.45 |
| 74 | 30 | MT.LAWES | ML | 225.1 | 181.3 | 36.77 | FAIR | 0.50 | 36.42 | BMR | 8.29 |
| | | | | | | 69.65 | FAIR | 0.50 | 69.30 | | 41.17 |
| 75 | 30 | MT.LAWES | ML | 217.7 | 183.4 | 36.18 | GOOD | 0.50 | 36.03 | BMR | 8.82 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 64.87 | FAIR | 0.50 | 64.72 | | 37.51 |
| 76 | 30 | MT.LAWES | ML | 224.2 | 184.8 | 37.33 | FAIR | 0.50 | 36.96 | BMR | 8.93 |
| | | | | | | 67.11 | POOR | 1.00 | 66.74 | | 38.71 |
| 77 | 30 | MT.LAWES | ML | 234.2 | 186.2 | 38.65 | GOOD | 0.50 | 38.05 | BMR | 8.77 |
| 78 | 30 | MT.LAWES | ML | 243.3 | 187.3 | 40.76 | POOR | 1.00 | 39.96 | BMR | 9.55 |
| | | | | | | 71.26 | POOR | 1.00 | 70.46 | | 40.05 |
| 79 | 30 | MT.LAWES | ML | 254.0 | 188.2 | 43.28 | GOOD | 0.50 | 42.23 | BMR | 10.48 |
| | | | | | | 48.37 | FAIR | 0.50 | 47.32 | | 15.57 |
| | | | | | | 75.08 | POOR | 1.00 | 74.03 | | 42.28 |
| 80 | 30 | MT.LAWES | ML | 274.5 | 191.1 | 46.65 | GOOD | 0.50 | 45.97 | BMR | 11.65 |
| 81 | 30 | MT.LAWES | ML | 209.7 | 187.0 | 34.91 | GOOD | 0.10 | 34.76 | BMR | 8.54 |
| 82 | 30 | MT.LAWES | ML | 199.9 | 190.6 | 34.05 | GOOD | 0.50 | 33.91 | BMR | 8.93 |
| | | | | | | 60.21 | POOR | 1.00 | 60.07 | | 35.09 |
| 83 | 30 | MT.LAWES | ML | 197.9 | 193.5 | 34.35 | GOOD | 0.50 | 34.21 | BMR | 9.47 |
| 84 | 30 | MT.LAWES | ML | 194.7 | 195.4 | 33.56 | FAIR | 1.00 | 33.29 | BMR | 8.95 |
| 85 | 30 | MT.LAWES | ML | 189.4 | 198.1 | 31.90 | FAIR | 1.00 | 31.53 | BMR | 7.86 |
| | | | | | | 36.16 | FAIR | 0.50 | 35.79 | | 12.12 |
| | | | | | | 39.34 | FAIR | 0.50 | 38.97 | | 15.30 |
| | | | | | | 42.17 | FAIR | 0.50 | 41.80 | | 18.13 |
| | | | | | | 43.94 | FAIR | 0.50 | 43.57 | | 19.90 |
| | | | | | | 57.65 | FAIR | 0.50 | 57.28 | | 33.61 |
| 86 | 30 | MT.LAWES | ML | 186.0 | 200.7 | 32.08 | FAIR | 0.50 | 32.00 | BMR | 8.75 |
| 87 | 30 | MT.LAWES | ML | 184.5 | 203.0 | 32.14 | FAIR | 0.50 | 31.68 | BMR | 8.61 |
| | | | | | | 36.78 | FAIR | 0.50 | 36.32 | | 13.25 |
| 88 | 30 | MT.LAWES | ML | 190.8 | 213.6 | 32.30 | GOOD | 0.50 | 31.92 | BMR | 8.07 |
| | | | | | | 33.45 | FAIR | 0.50 | 33.07 | | 9.22 |
| | | | | | | 44.97 | FAIR | 0.50 | 44.59 | | 20.74 |
| | | | | | | 56.20 | GOOD | 0.50 | 55.82 | | 31.97 |
| | | | | | | 64.30 | GOOD | 0.50 | 63.92 | | 40.07 |
| 89 | 30 | MT.LAWES | ML | 206.1 | 214.4 | 36.55 | FAIR | 0.50 | 35.97 | BMR | 10.21 |
| | | | | | | 41.83 | FAIR | 0.50 | 41.25 | | 15.49 |
| | | | | | | 46.08 | FAIR | 0.50 | 45.50 | | 19.74 |
| | | | | | | 52.28 | FAIR | 0.50 | 51.70 | | 25.94 |
| 90 | 30 | MT.LAWES | ML | 217.3 | 214.9 | 37.45 | FAIR | 0.50 | 36.42 | BMR | 9.26 |
| 91 | 30 | MT.LAWES | ML | 228.9 | 215.2 | 39.71 | FAIR | 0.10 | 38.79 | BMR | 10.17 |
| | | | | | | 41.64 | FAIR | 0.50 | 40.72 | | 12.10 |
| | | | | | | 46.88 | FAIR | 0.50 | 45.96 | | 17.34 |
| | | | | | | 49.12 | POOR | 0.50 | 48.20 | | 19.58 |
| | | | | | | 62.83 | FAIR | 0.50 | 61.91 | | 33.29 |
| | | | | | | 70.23 | FAIR | 0.50 | 69.31 | | 40.69 |
| | | | | | | 81.33 | FAIR | 0.50 | 80.41 | | 51.79 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 92 | 30 | MT.LAWES | ML | 246.1 | 216.1 | 42.82 | FAIR | 0.50 | 41.21 | BMR | 10.45 |
| | | | | | | 56.62 | POOR | 1.00 | 55.01 | | 24.25 |
| 94 | 30 | MT.LAWES | ML | 268.4 | 216.7 | 46.41 | FAIR | 0.10 | 43.96 | BMR | 10.41 |
| | | | | | | 52.10 | FAIR | 0.50 | 49.65 | | 16.10 |
| | | | | | | 56.04 | FAIR | 0.50 | 53.59 | | 20.04 |
| 95 | 30 | MT.LAWES | ML | 394.1 | 230.2 | 61.25 | FAIR | 0.50 | 58.62 | BMR | 9.36 |
| | | | | | | 70.05 | FAIR | 0.50 | 67.42 | | 18.16 |
| 96 | 30 | MT.LAWES | ML | 365.0 | 230.7 | 55.90 | FAIR | 0.10 | 54.03 | BMR | 8.41 |
| | | | | | | 68.81 | FAIR | 0.50 | 66.94 | | 21.32 |
| 97 | 30 | MT.LAWES | ML | 333.2 | 231.3 | 52.84 | FAIR | 0.50 | 50.55 | BMR | 8.90 |
| | | | | | | 64.47 | FAIR | 0.50 | 62.18 | | 20.53 |
| 98 | 30 | MT.LAWES | ML | 180.4 | 215.3 | 31.17 | FAIR | 0.50 | 30.90 | BMR | 8.35 |
| | | | | | | 33.00 | FAIR | 0.50 | 32.73 | | 10.18 |
| 99 | 30 | MT.LAWES | ML | 169.7 | 223.5 | 28.17 | FAIR | 0.10 | 28.09 | BMR | 6.88 |
| | | | | | | 30.34 | FAIR | 0.50 | 30.26 | | 9.05 |
| | | | | | | 59.82 | FAIR | 0.50 | 59.74 | | 38.53 |
| | | | | | | 68.82 | FAIR | 0.50 | 68.74 | | 47.53 |
| 100 | 30 | MT.LAWES | ML | 165.8 | 228.1 | 30.03 | FAIR | 0.50 | 29.94 | BMR | 9.21 |
| | | | | | | 31.17 | POOR | 0.50 | 31.08 | | 10.35 |
| 101 | 30 | MT.LAWES | ML | 164.8 | 234.5 | 27.86 | FAIR | 0.50 | 27.77 | BMR | 7.17 |
| | | | | | | 30.06 | FAIR | 0.50 | 29.97 | | 9.37 |
| 102 | 30 | MT.LAWES | ML | 162.9 | 237.8 | 28.00 | POOR | 1.00 | 27.91 | BMR | 7.55 |
| | | | | | | 35.60 | FAIR | 0.50 | 35.51 | | 15.15 |
| | | | | | | 55.90 | FAIR | 0.50 | 55.81 | | 35.45 |
| 103 | 30 | MT.LAWES | ML | 159.9 | 242.1 | 29.02 | POOR | 0.50 | 28.93 | BMR | 8.95 |
| | | | | | | 53.12 | POOR | 1.00 | 53.03 | | 33.05 |
| | | | | | | 30.46 | POOR | 0.50 | 30.37 | | 10.39 |
| 104 | 30 | MT.LAWES | ML | 173.9 | 247.1 | 30.78 | FAIR | 0.50 | 30.70 | BMR | 8.96 |
| | | | | | | 31.62 | FAIR | 0.10 | 31.54 | | 9.80 |
| | | | | | | 55.38 | POOR | 1.00 | 55.30 | | 33.56 |
| 105 | 30 | MT.LAWES | ML | 180.9 | 251.5 | 31.83 | GOOD | 0.10 | 31.75 | BMR | 9.13 |
| | | | | | | 56.28 | FAIR | 1.00 | 56.20 | | 33.58 |
| 106 | 30 | MT.LAWES | ML | 188.7 | 253.3 | 32.74 | GOOD | 0.50 | 32.66 | BMR | 9.07 |
| | | | | | | 37.67 | FAIR | 0.50 | 37.59 | | 14.00 |
| 107 | 30 | MT.LAWES | ML | 191.0 | 257.2 | 33.06 | GOOD | 0.10 | 32.97 | BMR | 9.10 |
| | | | | | | 35.18 | FAIR | 0.50 | 35.09 | | 11.22 |
| | | | | | | 37.43 | FAIR | 0.50 | 37.34 | | 13.47 |
| | | | | | | 49.96 | FAIR | 0.50 | 49.87 | | 26.00 |
| 108 | 30 | MT.LAWES | ML | 198.1 | 258.2 | 34.50 | GOOD | 0.10 | 34.41 | BMR | 9.65 |
| | | | | | | 37.13 | FAIR | 0.50 | 37.04 | | 12.28 |
| 109 | 30 | MT.LAWES | ML | 220.6 | 259.3 | 37.59 | FAIR | 0.10 | 37.51 | BMR | 9.93 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 44.55 | FAIR | 0.50 | 44.47 | | 16.89 |
| | | | | | | 49.65 | FAIR | 0.50 | 49.57 | | 21.99 |
| | | | | | | 55.15 | FAIR | 0.50 | 55.07 | | 27.49 |
| 110 | 30 | MT.LAWES | ML | 249.5 | 258.5 | 41.04 | FAIR | 0.10 | 40.84 | BMR | 9.65 |
| | | | | | | 45.04 | FAIR | 0.50 | 44.84 | | 13.65 |
| | | | | | | 60.44 | FAIR | 0.50 | 60.24 | | 29.05 |
| | | | | | | 64.64 | POOR | 0.50 | 64.44 | | 33.25 |
| | | | | | | 75.34 | POOR | 0.50 | 75.14 | | 43.95 |
| 111 | 30 | MT.LAWES | ML | 259.0 | 249.9 | 41.69 | FAIR | 0.10 | 41.62 | BMR | 9.24 |
| | | | | | | 47.46 | FAIR | 0.50 | 47.39 | | 15.01 |
| | | | | | | 51.37 | FAIR | 0.50 | 51.29 | | 18.92 |
| 2 | 31 | MOROBE | ME | 213.5 | 18.4 | 41.81 | FAIR | 0.10 | 41.09 | MELB | 14.40 |
| 3 | 31 | MOROBE | ME | 205.3 | 21.2 | 36.83 | POOR | 0.50 | 36.28 | MELB | 10.62 |
| | | | | | | 39.09 | POOR | 0.50 | 38.54 | | 12.88 |
| 4 | 31 | MOROBE | ME | 206.4 | 17.2 | 35.40 | POOR | 0.50 | 34.96 | MELB | 9.16 |
| 5 | 31 | MOROBE | ME | 202.8 | 24.4 | 34.60 | POOR | 0.50 | 34.32 | MELB | 8.97 |
| 8 | 31 | MOROBE | ME | 194.4 | 33.3 | 35.12 | POOR | 0.50 | 34.86 | MELB | 10.56 |
| 10 | 31 | MOROBE | ME | 190.6 | 39.4 | 35.18 | POOR | 0.50 | 34.80 | MELB | 10.97 |
| 11 | 31 | MOROBE | ME | 185.5 | 43.0 | 32.75 | GOOD | 0.10 | 32.47 | MELB | 9.29 |
| 14 | 31 | MOROBE | ME | 186.6 | 54.2 | 33.44 | FAIR | 1.00 | 33.32 | MELB | 10.00 |
| | | | | | | 34.30 | FAIR | 1.00 | 34.18 | | 10.86 |
| 16 | 31 | MOROBE | ME | 191.0 | 61.7 | 41.07 | POOR | 0.50 | 40.83 | MELB | 16.96 |
| 17 | 31 | MOROBE | ME | 194.6 | 65.2 | 33.36 | FAIR | 0.10 | 33.38 | MELB | 9.06 |
| 18 | 31 | MOROBE | ME | 203.6 | 73.7 | 37.31 | POOR | 0.10 | 37.33 | MELB | 11.88 |
| 23 | 31 | MOROBE | ME | 229.0 | 46.1 | 37.99 | GOOD | 0.50 | 37.31 | MELB | 8.68 |
| 35 | 31 | MOROBE | ME | 267.7 | 26.3 | 47.76 | POOR | 0.50 | 46.95 | MELB | 13.48 |
| | | | | | | 56.46 | POOR | 0.50 | 55.65 | | 22.18 |
| 39 | 31 | MOROBE | ME | 222.2 | 8.9 | 38.06 | FAIR | 0.10 | 37.74 | MELB | 9.96 |
| 44 | 31 | MOROBE | ME | 252.2 | 2.1 | 43.39 | POOR | 0.50 | 43.17 | MELB | 11.65 |
| 47 | 31 | MOROBE | ME | 265.1 | 353.5 | 43.96 | FAIR | 0.50 | 43.87 | MELB | 10.73 |
| 57 | 31 | MOROBE | ME | 129.5 | 296.7 | 21.41 | FAIR | 0.50 | 21.43 | MELB | 5.24 |
| 59 | 31 | MOROBE | ME | 137.0 | 291.4 | 22.30 | FAIR | 0.50 | 22.04 | MELB | 4.91 |
| 60 | 31 | MOROBE | ME | 142.8 | 286.4 | 25.03 | POOR | 0.50 | 24.24 | MELB | 6.39 |
| 61 | 31 | MOROBE | ME | 146.3 | 281.4 | 26.45 | FAIR | 1.00 | 25.17 | MELB | 6.88 |
| | | | | | | 27.45 | FAIR | 1.00 | 26.17 | | 7.88 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 62 | 31 | MOROBE | ME | 157.2 | 278.2 | 29.15 | GOOD | 0.50 | 27.42 | MELB | 7.77 |
| 63 | 31 | MOROBE | ME | 181.1 | 269.2 | 31.39 | FAIR | 0.50 | 29.36 | MELB | 6.72 |
| 69 | 31 | MOROBE | ME | 124.1 | 150.5 | 17.57 | GOOD | 0.50 | 17.50 | MELB | 1.99 |
| 71 | 31 | MOROBE | ME | 96.2 | 148.2 | 14.94 | GOOD | 0.50 | 14.82 | MELB | 2.80 |
| 72 | 31 | MOROBE | ME | 87.0 | 147.3 | 13.76 | GOOD | 0.50 | 13.56 | MELB | 2.69 |
| 73 | 31 | MOROBE | ME | 74.3 | 144.8 | 11.75 | GOOD | 0.50 | 11.68 | MELB | 2.40 |
| 74 | 31 | MOROBE | ME | 64.6 | 147.7 | 11.07 | GOOD | 0.10 | 10.82 | MELB | 2.75 |
| 75 | 31 | MOROBE | ME | 53.9 | 150.3 | 9.23 | GOOD | 0.10 | 9.18 | MELB | 2.44 |
| 77 | 31 | MOROBE | ME | 63.9 | 167.0 | 10.79 | GOOD | 0.10 | 10.29 | MELB | 2.30 |
| 78 | 31 | MOROBE | ME | 71.3 | 173.0 | 13.37 | FAIR | 0.10 | 12.67 | MELB | 3.76 |
| 79 | 31 | MOROBE | ME | 81.0 | 177.7 | 15.76 | FAIR | 0.50 | 14.81 | MELB | 4.68 |
| 80 | 31 | MOROBE | ME | 99.7 | 187.6 | 19.40 | GOOD | 0.10 | 18.81 | MELB | 6.35 |
| 81 | 31 | MOROBE | ME | 40.1 | 159.6 | 7.12 | GOOD | 0.10 | 7.07 | MELB | 2.05 |
| 82 | 31 | MOROBE | ME | 26.1 | 173.9 | 4.93 | GOOD | 0.10 | 4.89 | MELB | 1.63 |
| 83 | 31 | MOROBE | ME | 22.9 | 196.8 | 4.65 | GOOD | 0.10 | 4.61 | MELB | 1.75 |
| 84 | 31 | MOROBE | ME | 21.1 | 215.7 | 4.52 | GOOD | 0.10 | 4.35 | MELB | 1.71 |
| 85 | 31 | MOROBE | ME | 21.6 | 244.2 | 5.09 | GOOD | 0.10 | 4.82 | MELB | 2.12 |
| 86 | 31 | MOROBE | ME | 26.7 | 262.8 | 6.21 | GOOD | 0.10 | 6.23 | MELB | 2.89 |
| 87 | 31 | MOROBE | ME | 32.7 | 271.3 | 7.78 | GOOD | 0.10 | 7.42 | MELB | 3.33 |
| 88 | 31 | MOROBE | ME | 67.4 | 280.0 | 13.52 | GOOD | 0.10 | 13.24 | MELB | 4.82 |
| 90 | 31 | MOROBE | ME | 85.5 | 264.9 | 15.99 | POOR | 0.10 | 15.06 | MELB | 4.37 |
| 91 | 31 | MOROBE | ME | 94.3 | 260.0 | 18.44 | GOOD | 0.10 | 17.62 | MELB | 5.83 |
| 92 | 31 | MOROBE | ME | 109.6 | 255.1 | 21.80 | POOR | 0.50 | 20.29 | MELB | 6.59 |
| 93 | 31 | MOROBE | ME | 117.2 | 251.7 | 23.45 | GOOD | 0.10 | 21.53 | MELB | 6.88 |
| 94 | 31 | MOROBE | ME | 129.3 | 249.8 | 25.43 | FAIR | 0.50 | 23.08 | MELB | 6.92 |
| 98 | 31 | MOROBE | ME | 69.0 | 289.8 | 13.96 | FAIR | 0.50 | 13.79 | MELB | 5.17 |
| 99 | 31 | MOROBE | ME | 91.0 | 301.5 | 17.55 | GOOD | 0.10 | 17.57 | MELB | 6.19 |
| 100 | 31 | MOROBE | ME | 103.3 | 305.4 | 18.42 | FAIR | 0.10 | 18.43 | MELB | 5.52 |
| 101 | 31 | MOROBE | ME | 121.0 | 308.2 | 21.10 | FAIR | 0.50 | 21.11 | MELB | 5.99 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 104 | 31 | MOROBE | ME | 159.0 | 310.4 | 26.43 | POOR | 0.50 | 26.45 | MELB | 6.57 |
| | | | | | | 31.43 | POOR | 0.50 | 31.45 | | 11.57 |
| 107 | 31 | MOROBE | ME | 195.3 | 311.0 | 30.75 | POOR | 0.50 | 30.76 | MELB | 6.35 |
| | | | | | | 33.09 | POOR | 0.50 | 33.10 | | 8.69 |
| 109 | 31 | MOROBE | ME | 220.2 | 306.1 | 33.13 | POOR | 0.50 | 33.15 | MELB | 5.62 |
| | | | | | | 37.29 | POOR | 0.50 | 37.31 | | 9.78 |
| 110 | 31 | MOROBE | ME | 238.6 | 300.4 | 38.59 | POOR | 0.50 | 38.49 | MELB | 8.66 |
| 1 | 32 | GARAINA | GA | 200.2 | 8.2 | 34.90 | FAIR | 0.50 | 33.93 | MELB | 8.91 |
| | | | | | | 40.60 | POOR | 0.50 | 39.63 | | 14.61 |
| 2 | 32 | GARAINA | GA | 192.8 | 5.1 | 34.00 | POOR | 1.00 | 33.10 | MELB | 9.00 |
| 3 | 32 | GARAINA | GA | 182.6 | 7.5 | 33.00 | FAIR | 0.50 | 32.28 | MELB | 9.45 |
| | | | | | | 33.65 | FAIR | 0.50 | 32.93 | | 10.10 |
| | | | | | | 36.55 | FAIR | 0.50 | 35.83 | | 13.00 |
| 4 | 32 | GARAINA | GA | 187.0 | 3.3 | 32.11 | GOOD | 0.50 | 31.49 | MELB | 8.11 |
| | | | | | | 33.50 | FAIR | 0.50 | 32.88 | | 9.50 |
| | | | | | | 58.10 | FAIR | 0.50 | 57.48 | | 34.10 |
| 5 | 32 | GARAINA | GA | 177.5 | 10.8 | 31.51 | FAIR | 0.50 | 31.05 | MELB | 8.86 |
| 6 | 32 | GARAINA | GA | 174.1 | 13.4 | 31.84 | POOR | 0.50 | 31.40 | MELB | 9.64 |
| 7 | 32 | GARAINA | GA | 169.6 | 15.9 | 29.76 | FAIR | 0.50 | 29.27 | MELB | 8.07 |
| | | | | | | 31.25 | FAIR | 0.50 | 30.76 | | 9.56 |
| 8 | 32 | GARAINA | GA | 162.2 | 20.4 | 28.87 | FAIR | 1.00 | 28.43 | MELB | 8.16 |
| 9 | 32 | GARAINA | GA | 157.2 | 22.9 | 27.22 | POOR | 1.00 | 26.90 | MELB | 7.25 |
| 10 | 32 | GARAINA | GA | 154.0 | 27.3 | 28.43 | POOR | 1.00 | 27.87 | MELB | 8.62 |
| 11 | 32 | GARAINA | GA | 146.6 | 31.3 | 27.48 | GOOD | 0.10 | 27.03 | MELB | 8.70 |
| 12 | 32 | GARAINA | GA | 145.2 | 36.2 | 27.59 | POOR | 0.50 | 27.23 | MELB | 9.08 |
| 13 | 32 | GARAINA | GA | 142.7 | 40.9 | 26.84 | FAIR | 0.50 | 26.44 | MELB | 8.60 |
| | | | | | | 31.37 | FAIR | 0.50 | 30.97 | | 13.13 |
| | | | | | | 35.37 | FAIR | 0.50 | 34.97 | | 17.13 |
| | | | | | | 38.62 | FAIR | 0.50 | 38.22 | | 20.38 |
| 14 | 32 | GARAINA | GA | 141.3 | 45.6 | 26.53 | GOOD | 0.10 | 26.23 | MELB | 8.57 |
| | | | | | | 29.89 | FAIR | 0.50 | 29.59 | | 11.93 |
| 15 | 32 | GARAINA | GA | 141.3 | 50.8 | 27.09 | GOOD | 0.50 | 26.75 | MELB | 9.09 |
| | | | | | | 29.23 | FAIR | 0.50 | 28.89 | | 11.23 |
| 16 | 32 | GARAINA | GA | 142.5 | 55.8 | 26.61 | FAIR | 0.50 | 26.20 | MELB | 8.38 |
| | | | | | | 27.73 | FAIR | 0.50 | 27.32 | | 9.50 |
| 17 | 32 | GARAINA | GA | 145.0 | 60.5 | 26.89 | GOOD | 0.10 | 26.74 | MELB | 8.61 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 27.40 | FAIR | 0.50 | 27.25 | | 9.12 |
| 18 | 32 | GARAINA | GA | 152.4 | 72.1 | 28.83 | GOOD | 0.50 | 28.67 | MELB | 9.62 |
| 19 | 32 | GARAINA | GA | 202.6 | 77.0 | 34.87 | FAIR | 0.50 | 34.72 | MELB | 9.39 |
| | | | | | | 38.22 | FAIR | 0.50 | 38.07 | | 12.74 |
| | | | | | | 40.67 | FAIR | 0.50 | 40.52 | | 15.19 |
| | | | | | | 43.12 | FAIR | 0.50 | 42.97 | | 17.64 |
| 21 | 32 | GARAINA | GA | 162.4 | 37.6 | 28.76 | FAIR | 0.50 | 28.00 | MELB | 7.70 |
| | | | | | | 31.36 | FAIR | 0.50 | 30.60 | | 10.30 |
| | | | | | | 33.36 | FAIR | 0.50 | 32.60 | | 12.30 |
| | | | | | | 35.66 | FAIR | 0.50 | 34.90 | | 14.60 |
| | | | | | | 38.16 | GOOD | 0.50 | 37.40 | | 17.10 |
| 22 | 32 | GARAINA | GA | 173.1 | 37.0 | 32.47 | FAIR | 0.50 | 31.62 | MELB | 9.99 |
| 23 | 32 | GARAINA | GA | 187.6 | 37.6 | 40.85 | GOOD | 0.50 | 39.99 | MELB | 16.54 |
| | | | | | | 42.17 | POOR | 0.50 | 41.31 | | 17.86 |
| | | | | | | 42.42 | FAIR | 0.50 | 41.56 | | 18.11 |
| | | | | | | 46.32 | FAIR | 0.50 | 45.46 | | 22.01 |
| 25 | 32 | GARAINA | GA | 232.8 | 38.8 | 41.23 | FAIR | 0.50 | 40.40 | MELB | 11.30 |
| | | | | | | 46.88 | FAIR | 0.50 | 46.05 | | 16.95 |
| 26 | 32 | GARAINA | GA | 276.0 | 37.0 | 45.29 | POOR | 1.00 | 44.44 | MELB | 9.94 |
| 27 | 32 | GARAINA | GA | 322.3 | 35.9 | 36.99 | POOR | 1.00 | 36.38 | MELB | -3.91 |
| | | | | | | 59.01 | POOR | 0.50 | 58.40 | | 18.11 |
| 32 | 32 | GARAINA | GA | 311.5 | 27.1 | 45.01 | POOR | 1.00 | 44.29 | MELB | 5.35 |
| | | | | | | 59.06 | POOR | 1.00 | 58.34 | | 19.40 |
| 34 | 32 | GARAINA | GA | 248.2 | 18.3 | 43.82 | POOR | 0.50 | 42.79 | MELB | 11.77 |
| | | | | | | 48.82 | POOR | 0.50 | 47.79 | | 16.77 |
| 35 | 32 | GARAINA | GA | 239.5 | 16.5 | 37.06 | POOR | 1.00 | 36.07 | MELB | 6.13 |
| | | | | | | 41.85 | POOR | 1.00 | 40.86 | | 10.92 |
| 36 | 32 | GARAINA | GA | 227.1 | 14.5 | 41.57 | POOR | 0.50 | 40.56 | MELB | 12.17 |
| 37 | 32 | GARAINA | GA | 216.0 | 12.1 | 31.39 | FAIR | 1.00 | 30.38 | MELB | 3.38 |
| | | | | | | 33.59 | POOR | 1.00 | 32.58 | | 5.58 |
| 38 | 32 | GARAINA | GA | 206.9 | 10.1 | 35.22 | FAIR | 0.50 | 34.22 | MELB | 8.36 |
| | | | | | | 39.02 | FAIR | 1.00 | 38.02 | | 12.16 |
| 39 | 32 | GARAINA | GA | 209.7 | 355.6 | 37.01 | POOR | 0.50 | 36.51 | MELB | 10.30 |
| | | | | | | 38.11 | FAIR | 0.50 | 37.61 | | 11.40 |
| | | | | | | 41.11 | FAIR | 0.50 | 40.61 | | 14.40 |
| | | | | | | 43.26 | FAIR | 0.50 | 42.76 | | 16.55 |
| 40 | 32 | GARAINA | GA | 202.7 | 358.1 | 34.51 | POOR | 0.50 | 33.99 | MELB | 8.66 |
| | | | | | | 36.25 | POOR | 0.50 | 35.73 | | 10.40 |
| | | | | | | 42.65 | FAIR | 0.50 | 42.13 | | 16.80 |
| 41 | 32 | GARAINA | GA | 193.6 | .8 | 36.96 | FAIR | 0.50 | 36.42 | MELB | 12.22 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 39.92 | FAIR | 0.50 | 39.38 | | 15.18 |
| | | | | | | 43.47 | FAIR | 0.50 | 42.93 | | 18.73 |
| 44 | 32 | GARAINA | GA | 244.9 | 350.3 | 39.16 | FAIR | 0.50 | 38.77 | MELB | 8.15 |
| | | | | | | 41.37 | FAIR | 0.50 | 40.98 | | 10.36 |
| | | | | | | 44.42 | FAIR | 0.50 | 44.03 | | 13.41 |
| | | | | | | 46.02 | FAIR | 0.50 | 45.63 | | 15.01 |
| 47 | 32 | GARAINA | GA | 265.3 | 342.3 | 42.20 | FAIR | 0.50 | 41.93 | MELB | 8.77 |
| | | | | | | 45.55 | GOOD | 0.50 | 45.28 | | 12.12 |
| | | | | | | 48.50 | FAIR | 0.50 | 48.23 | | 15.07 |
| 48 | 32 | GARAINA | GA | 304.6 | 332.7 | 44.70 | POOR | 1.00 | 44.16 | MELB | 6.08 |
| | | | | | | 48.46 | FAIR | 0.50 | 47.92 | | 9.84 |
| | | | | | | 52.50 | FAIR | 0.50 | 51.96 | | 13.88 |
| 49 | 32 | GARAINA | GA | 343.6 | 324.6 | 58.51 | POOR | 1.00 | 57.77 | MELB | 14.82 |
| | | | | | | 61.31 | POOR | 0.50 | 60.57 | | 17.62 |
| | | | | | | 64.06 | POOR | 1.00 | 63.32 | | 20.37 |
| 50 | 32 | GARAINA | GA | 396.9 | 317.5 | 63.87 | POOR | 1.00 | 63.54 | MELB | 13.93 |
| | | | | | | 68.57 | POOR | 1.00 | 68.24 | | 18.63 |
| | | | | | | 73.07 | POOR | 1.00 | 72.74 | | 23.13 |
| | | | | | | 61.12 | POOR | 0.50 | 60.79 | | 11.18 |
| 56 | 32 | GARAINA | GA | 168.1 | 289.6 | 30.89 | POOR | 0.50 | 30.73 | MELB | 9.72 |
| | | | | | | 33.58 | POOR | 0.50 | 33.42 | | 12.41 |
| | | | | | | 37.28 | POOR | 0.50 | 37.12 | | 16.11 |
| 57 | 32 | GARAINA | GA | 172.7 | 286.0 | 26.95 | POOR | 1.00 | 26.79 | MELB | 5.20 |
| 59 | 32 | GARAINA | GA | 182.2 | 282.4 | 28.27 | POOR | 0.50 | 27.83 | MELB | 5.05 |
| 61 | 32 | GARAINA | GA | 194.6 | 275.4 | 24.91 | POOR | 0.50 | 23.45 | MELB | -.87 |
| | | | | | | 27.60 | FAIR | 0.50 | 26.14 | | 1.82 |
| 62 | 32 | GARAINA | GA | 206.2 | 273.3 | 33.45 | POOR | 0.50 | 31.54 | MELB | 5.76 |
| | | | | | | 35.85 | POOR | 1.00 | 33.94 | | 8.16 |
| | | | | | | 38.35 | POOR | 1.00 | 36.44 | | 10.66 |
| 69 | 32 | GARAINA | GA | 119.0 | 174.8 | 23.07 | FAIR | 0.50 | 22.82 | MELB | 7.95 |
| | | | | | | 25.07 | FAIR | 0.50 | 24.82 | | 9.95 |
| | | | | | | 27.17 | FAIR | 0.50 | 26.92 | | 12.05 |
| 71 | 32 | GARAINA | GA | 92.2 | 179.8 | 17.57 | FAIR | 0.50 | 17.28 | MELB | 5.75 |
| | | | | | | 18.67 | FAIR | 0.50 | 18.38 | | 6.85 |
| | | | | | | 20.27 | FAIR | 0.50 | 19.98 | | 8.45 |
| | | | | | | 24.02 | FAIR | 0.50 | 23.73 | | 12.20 |
| | | | | | | 27.02 | FAIR | 0.50 | 26.73 | | 15.20 |
| 72 | 32 | GARAINA | GA | 83.8 | 182.2 | 18.03 | POOR | 0.50 | 17.66 | MELB | 7.18 |
| | | | | | | 22.68 | POOR | 0.50 | 22.31 | | 11.83 |
| 73 | 32 | GARAINA | GA | 71.6 | 186.0 | 12.10 | FAIR | 0.50 | 11.85 | MELB | 2.90 |
| | | | | | | 14.55 | POOR | 0.50 | 14.30 | | 5.35 |
| | | | | | | 15.60 | POOR | 0.50 | 15.35 | | 6.40 |
| 74 | 32 | GARAINA | GA | 67.0 | 193.6 | 11.43 | FAIR | 0.50 | 11.01 | MELB | 2.63 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 12.43 | FAIR | 0.50 | 12.01 | | 3.63 |
| 75 | 32 | GARAINA | GA | 62.0 | 202.5 | 10.03 | FAIR | 0.50 | 9.80 | MELB | 2.05 |
| | | | | | | 11.38 | FAIR | 0.50 | 11.15 | | 3.40 |
| 76 | 32 | GARAINA | GA | 70.0 | 205.0 | 11.84 | FAIR | 0.50 | 11.39 | MELB | 2.64 |
| | | | | | | 13.14 | FAIR | 0.50 | 12.69 | | 3.94 |
| 77 | 32 | GARAINA | GA | 81.2 | 206.3 | 13.44 | POOR | 0.50 | 12.76 | MELB | 2.61 |
| | | | | | | 16.29 | POOR | 0.50 | 15.61 | | 5.46 |
| 79 | 32 | GARAINA | GA | 102.8 | 207.2 | 18.86 | FAIR | 0.50 | 17.73 | MELB | 4.88 |
| | | | | | | 20.80 | FAIR | 0.50 | 19.67 | | 6.82 |
| | | | | | | 23.96 | FAIR | 0.50 | 22.83 | | 9.98 |
| 80 | 32 | GARAINA | GA | 126.5 | 210.2 | 25.15 | POOR | 0.50 | 24.39 | MELB | 8.57 |
| | | | | | | 27.60 | FAIR | 0.50 | 26.84 | | 11.02 |
| | | | | | | 29.70 | FAIR | 0.50 | 28.94 | | 13.12 |
| 81 | 32 | GARAINA | GA | 60.3 | 217.1 | 10.31 | GOOD | 0.50 | 10.08 | MELB | 2.54 |
| | | | | | | 17.56 | FAIR | 0.50 | 17.33 | | 9.79 |
| | | | | | | 23.71 | FAIR | 0.50 | 23.48 | | 15.94 |
| 82 | 32 | GARAINA | GA | 60.0 | 232.5 | 10.20 | GOOD | 0.50 | 9.99 | MELB | 2.49 |
| 83 | 32 | GARAINA | GA | 65.6 | 240.3 | 10.50 | FAIR | 1.00 | 10.28 | MELB | 2.08 |
| | | | | | | 12.30 | FAIR | 1.00 | 12.08 | | 3.88 |
| 85 | 32 | GARAINA | GA | 72.6 | 254.0 | 12.53 | FAIR | 0.50 | 12.09 | MELB | 3.01 |
| | | | | | | 14.88 | FAIR | 0.50 | 14.44 | | 5.36 |
| 86 | 32 | GARAINA | GA | 78.1 | 259.8 | 13.41 | FAIR | 0.50 | 13.25 | MELB | 3.49 |
| | | | | | | 17.81 | FAIR | 0.50 | 17.65 | | 7.89 |
| 87 | 32 | GARAINA | GA | 83.6 | 263.2 | 14.55 | FAIR | 0.50 | 14.01 | MELB | 3.56 |
| 88 | 32 | GARAINA | GA | 116.7 | 270.6 | 20.59 | POOR | 0.50 | 20.13 | MELB | 5.55 |
| | | | | | | 21.93 | POOR | 1.00 | 21.47 | | 6.89 |
| 89 | 32 | GARAINA | GA | 127.8 | 265.5 | 21.67 | FAIR | 0.50 | 21.02 | MELB | 5.04 |
| | | | | | | 23.87 | FAIR | 0.50 | 23.22 | | 7.24 |
| | | | | | | 26.37 | FAIR | 0.50 | 25.72 | | 9.74 |
| | | | | | | 27.87 | FAIR | 0.50 | 27.22 | | 11.24 |
| 90 | 32 | GARAINA | GA | 136.7 | 262.3 | 22.72 | FAIR | 0.50 | 21.61 | MELB | 4.52 |
| | | | | | | 25.10 | POOR | 0.50 | 23.99 | | 6.90 |
| | | | | | | 27.65 | POOR | 0.50 | 26.54 | | 9.45 |
| 91 | 32 | GARAINA | GA | 145.7 | 259.3 | 24.54 | FAIR | 0.50 | 23.54 | MELB | 5.32 |
| | | | | | | 25.55 | FAIR | 0.50 | 24.55 | | 6.33 |
| | | | | | | 27.49 | FAIR | 0.50 | 26.49 | | 8.27 |
| | | | | | | 29.49 | FAIR | 0.50 | 28.49 | | 10.27 |
| 94 | 32 | GARAINA | GA | 180.3 | 252.1 | 33.20 | FAIR | 0.50 | 30.68 | MELB | 8.14 |
| | | | | | | 37.38 | FAIR | 0.50 | 34.86 | | 12.32 |
| 97 | 32 | GARAINA | GA | 276.0 | 260.0 | 35.55 | POOR | 1.00 | 33.18 | MELB | -1.32 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 99 | 32 | GARAINA | GA | 133.1 | 286.1 | 21.21 | FAIR | 0.50 | 21.05 | MELB | 4.41 |
| | | | | | | 22.62 | FAIR | 0.50 | 22.46 | | 5.82 |
| | | | | | | 24.25 | FAIR | 0.50 | 24.09 | | 7.45 |
| | | | | | | 29.15 | FAIR | 0.50 | 28.99 | | 12.35 |
| 104 | 32 | GARAINA | GA | 194.8 | 298.3 | 34.30 | FAIR | 0.50 | 34.14 | MELB | 9.79 |
| | | | | | | 36.38 | FAIR | 0.50 | 36.22 | | 11.87 |
| | | | | | | 38.43 | FAIR | 0.50 | 38.27 | | 13.92 |
| 107 | 32 | GARAINA | GA | 229.9 | 300.7 | 39.36 | FAIR | 0.50 | 39.19 | MELB | 10.46 |
| | | | | | | 41.86 | FAIR | 0.50 | 41.69 | | 12.96 |
| 8 | 33 | KUI | KU | 209.2 | 20.0 | 37.48 | POOR | 1.00 | 37.22 | ANU | 11.07 |
| | | | | | | 40.38 | FAIR | 0.50 | 40.12 | | 13.97 |
| | | | | | | 43.58 | FAIR | 0.50 | 43.32 | | 17.17 |
| 11 | 33 | KUI | KU | 192.7 | 28.2 | 33.77 | FAIR | 1.00 | 33.49 | ANU | 9.40 |
| | | | | | | 36.97 | FAIR | 1.00 | 36.69 | | 12.60 |
| | | | | | | 39.27 | FAIR | 0.50 | 38.99 | | 14.90 |
| 14 | 33 | KUI | KU | 184.4 | 38.9 | 34.59 | POOR | 1.00 | 34.47 | ANU | 11.42 |
| 19 | 33 | KUI | KU | 230.8 | 67.0 | 51.38 | FAIR | 0.50 | 51.40 | ANU | 22.55 |
| 20 | 33 | KUI | KU | 197.8 | 33.7 | 33.79 | GOOD | 0.50 | 33.32 | ANU | 8.59 |
| | | | | | | 35.79 | FAIR | 0.50 | 35.32 | | 10.59 |
| | | | | | | 38.09 | POOR | 0.50 | 37.62 | | 12.89 |
| | | | | | | 41.39 | FAIR | 0.50 | 40.92 | | 16.19 |
| 22 | 33 | KUI | KU | 218.2 | 33.1 | 34.66 | POOR | 0.50 | 33.99 | ANU | 6.71 |
| | | | | | | 38.86 | FAIR | 0.50 | 38.19 | | 10.91 |
| 23 | 33 | KUI | KU | 232.6 | 33.8 | 37.32 | GOOD | 0.50 | 36.64 | ANU | 7.56 |
| | | | | | | 38.02 | FAIR | 0.50 | 37.34 | | 8.26 |
| | | | | | | 41.22 | FAIR | 0.50 | 40.54 | | 11.46 |
| | | | | | | 46.12 | FAIR | 0.50 | 45.44 | | 16.36 |
| | | | | | | 47.82 | FAIR | 0.50 | 47.14 | | 18.06 |
| | | | | | | 58.02 | FAIR | 0.50 | 57.34 | | 28.26 |
| 25 | 33 | KUI | KU | 277.4 | 35.4 | 43.86 | POOR | 0.50 | 43.21 | ANU | 8.54 |
| | | | | | | 48.46 | FAIR | 0.50 | 47.81 | | 13.14 |
| | | | | | | 52.86 | FAIR | 0.50 | 52.21 | | 17.54 |
| 32 | 33 | KUI | KU | 358.1 | 26.0 | 52.10 | FAIR | 0.50 | 51.56 | ANU | 6.80 |
| 35 | 33 | KUI | KU | 286.5 | 16.9 | 48.92 | FAIR | 0.50 | 48.10 | ANU | 12.29 |
| | | | | | | 53.12 | FAIR | 0.50 | 52.30 | | 16.49 |
| | | | | | | 55.62 | FAIR | 0.50 | 54.80 | | 18.99 |
| 38 | 33 | KUI | KU | 253.5 | 11.7 | 41.08 | FAIR | 0.50 | 40.25 | ANU | 8.57 |
| | | | | | | 44.18 | FAIR | 0.50 | 43.35 | | 11.67 |
| | | | | | | 50.58 | FAIR | 0.50 | 49.75 | | 18.07 |
| 39 | 33 | KUI | KU | 253.7 | 359.7 | 40.25 | FAIR | 0.50 | 39.93 | ANU | 8.21 |
| | | | | | | 41.35 | FAIR | 0.50 | 41.03 | | 9.31 |
| | | | | | | 43.55 | FAIR | 0.50 | 43.23 | | 11.51 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 33 | KUI | KU | 247.3 | 1.9 | 40.00 | FAIR | 1.00 | 39.66 | ANU | 8.75 |
| | | | | | | 43.40 | FAIR | 0.50 | 43.06 | | 12.15 |
| | | | | | | 47.70 | FAIR | 0.50 | 47.36 | | 16.45 |
| 43 | 33 | KUI | KU | 276.3 | 357.1 | 43.14 | FAIR | 0.50 | 42.74 | ANU | 8.20 |
| 44 | 33 | KUI | KU | 287.3 | 354.8 | 44.58 | POOR | 1.00 | 44.36 | ANU | 8.45 |
| 46 | 33 | KUI | KU | 300.9 | 349.8 | 47.88 | FAIR | 0.50 | 47.50 | ANU | 9.89 |
| | | | | | | 52.18 | FAIR | 0.50 | 51.80 | | 14.19 |
| | | | | | | 54.88 | FAIR | 0.50 | 54.50 | | 16.89 |
| 47 | 33 | KUI | KU | 304.6 | 347.5 | 48.97 | GOOD | 0.50 | 48.88 | ANU | 10.80 |
| | | | | | | 53.57 | FAIR | 0.50 | 53.48 | | 15.40 |
| | | | | | | 56.17 | FAIR | 0.50 | 56.08 | | 18.00 |
| 48 | 33 | KUI | KU | 339.2 | 338.4 | 52.70 | FAIR | 0.50 | 52.34 | ANU | 9.93 |
| | | | | | | 58.50 | POOR | 1.00 | 58.13 | | 15.74 |
| | | | | | | 62.20 | POOR | 0.50 | 61.83 | | 19.44 |
| 55 | 33 | KUI | KU | 307.9 | 307.8 | 45.72 | FAIR | 0.50 | 45.64 | ANU | 7.15 |
| | | | | | | 47.32 | GOOD | 0.50 | 47.24 | | 8.75 |
| | | | | | | 49.02 | FAIR | 0.50 | 48.94 | | 10.45 |
| | | | | | | 60.02 | POOR | 0.50 | 59.94 | | 21.45 |
| 56 | 33 | KUI | KU | 175.6 | 305.1 | 26.76 | GOOD | 0.50 | 26.77 | ANU | 4.82 |
| | | | | | | 31.86 | GOOD | 0.50 | 31.87 | | 9.92 |
| | | | | | | 39.06 | FAIR | 0.50 | 39.07 | | 17.12 |
| 57 | 33 | KUI | KU | 177.2 | 301.4 | 26.54 | GOOD | 0.50 | 26.56 | ANU | 4.41 |
| | | | | | | 28.44 | FAIR | 0.50 | 28.46 | | 6.31 |
| | | | | | | 29.64 | FAIR | 0.50 | 29.66 | | 7.51 |
| | | | | | | 32.34 | FAIR | 0.50 | 32.36 | | 10.21 |
| 59 | 33 | KUI | KU | 183.5 | 297.2 | 28.58 | POOR | 1.00 | 28.31 | ANU | 5.38 |
| | | | | | | 30.28 | FAIR | 0.50 | 30.01 | | 7.08 |
| 60 | 33 | KUI | KU | 187.9 | 293.3 | 29.15 | FAIR | 0.50 | 28.36 | ANU | 4.87 |
| | | | | | | 31.55 | FAIR | 0.50 | 30.76 | | 7.27 |
| | | | | | | 35.55 | POOR | 0.50 | 34.76 | | 11.27 |
| 61 | 33 | KUI | KU | 189.7 | 289.3 | 32.15 | FAIR | 0.50 | 30.87 | ANU | 7.15 |
| | | | | | | 33.95 | FAIR | 0.50 | 32.67 | | 8.95 |
| 62 | 33 | KUI | KU | 199.3 | 286.5 | 32.66 | GOOD | 0.50 | 30.92 | ANU | 6.01 |
| | | | | | | 35.16 | FAIR | 0.50 | 33.42 | | 8.51 |
| | | | | | | 39.76 | GOOD | 0.50 | 38.02 | | 13.11 |
| 63 | 33 | KUI | KU | 219.0 | 278.2 | 35.22 | FAIR | 0.50 | 33.19 | ANU | 5.81 |
| | | | | | | 38.02 | FAIR | 0.50 | 35.99 | | 8.61 |
| | | | | | | 43.32 | FAIR | 0.50 | 41.29 | | 13.91 |
| 69 | 33 | KUI | KU | 78.2 | 160.9 | 12.19 | GOOD | 0.50 | 12.12 | ANU | 2.34 |
| 70 | 33 | KUI | KU | 66.0 | 156.3 | 10.25 | GOOD | 0.50 | 10.20 | ANU | 1.95 |
| | | | | | | 11.15 | FAIR | 0.50 | 11.10 | | 2.85 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 13.45 | FAIR | 0.50 | 13.40 | | 5.15 |
| | | | | | | 15.45 | POOR | 0.50 | 15.40 | | 7.15 |
| 71 | 33 | KUI | KU | 50.0 | 162.2 | 8.18 | GOOD | 0.50 | 8.06 | ANU | 1.81 |
| | | | | | | 11.08 | FAIR | 0.50 | 10.96 | | 4.71 |
| | | | | | | 16.58 | FAIR | 0.50 | 16.46 | | 10.21 |
| 72 | 33 | KUI | KU | 40.8 | 163.5 | 7.20 | GOOD | 0.50 | 7.00 | ANU | 1.90 |
| | | | | | | 9.60 | FAIR | 0.50 | 9.40 | | 4.30 |
| | | | | | | 12.70 | FAIR | 0.50 | 12.50 | | 7.40 |
| 73 | 33 | KUI | KU | 27.5 | 164.5 | 4.78 | GOOD | 0.50 | 4.71 | ANU | 1.27 |
| 74 | 33 | KUI | KU | 20.5 | 182.6 | 4.37 | GOOD | 0.50 | 4.12 | ANU | 1.56 |
| 75 | 33 | KUI | KU | 15.5 | 214.8 | 3.63 | GOOD | 0.50 | 3.58 | ANU | 1.64 |
| 76 | 33 | KUI | KU | 23.9 | 218.0 | 5.51 | GOOD | 0.50 | 5.24 | ANU | 2.25 |
| 77 | 33 | KUI | KU | 35.3 | 216.9 | 7.67 | GOOD | 0.50 | 7.17 | ANU | 2.75 |
| 78 | 33 | KUI | KU | 45.5 | 216.2 | 9.78 | GOOD | 0.50 | 9.08 | ANU | 3.39 |
| | | | | | | 12.78 | FAIR | 0.50 | 12.08 | | 6.39 |
| | | | | | | 16.98 | FAIR | 0.50 | 16.28 | | 10.59 |
| 79 | 33 | KUI | KU | 56.8 | 214.5 | 12.33 | GOOD | 0.50 | 11.37 | ANU | 4.27 |
| 80 | 33 | KUI | KU | 81.0 | 217.0 | 16.68 | GOOD | 0.50 | 16.09 | ANU | 5.97 |
| | | | | | | 21.98 | FAIR | 0.50 | 21.39 | | 11.27 |
| | | | | | | 27.28 | FAIR | 0.50 | 26.69 | | 16.57 |
| 81 | 33 | KUI | KU | 21.8 | 260.7 | 4.96 | GOOD | 0.50 | 4.90 | ANU | 2.18 |
| 82 | 33 | KUI | KU | 33.7 | 283.9 | 6.61 | GOOD | 0.50 | 6.57 | ANU | 2.36 |
| | | | | | | 8.11 | FAIR | 0.50 | 8.07 | | 3.86 |
| 83 | 33 | KUI | KU | 43.8 | 286.1 | 8.46 | GOOD | 0.50 | 8.42 | ANU | 2.94 |
| | | | | | | 9.36 | FAIR | 0.50 | 9.32 | | 3.84 |
| | | | | | | 14.66 | FAIR | 0.50 | 14.62 | | 9.14 |
| 84 | 33 | KUI | KU | 50.7 | 289.5 | 9.59 | GOOD | 0.50 | 9.42 | ANU | 3.08 |
| | | | | | | 12.19 | FAIR | 0.50 | 12.02 | | 5.68 |
| | | | | | | 14.39 | FAIR | 0.50 | 14.22 | | 7.88 |
| | | | | | | 16.09 | FAIR | 0.50 | 15.92 | | 9.58 |
| 85 | 33 | KUI | KU | 60.3 | 294.1 | 11.06 | GOOD | 0.50 | 10.79 | ANU | 3.25 |
| | | | | | | 13.26 | FAIR | 0.50 | 12.99 | | 5.45 |
| | | | | | | 14.06 | FAIR | 0.50 | 13.79 | | 6.25 |
| | | | | | | 28.26 | FAIR | 0.50 | 27.99 | | 20.45 |
| 86 | 33 | KUI | KU | 69.2 | 296.4 | 12.45 | GOOD | 0.50 | 12.47 | ANU | 3.82 |
| | | | | | | 13.75 | FAIR | 0.50 | 13.77 | | 5.12 |
| | | | | | | 22.75 | GOOD | 0.50 | 22.77 | | 14.12 |
| 87 | 33 | KUI | KU | 76.6 | 297.0 | 13.97 | GOOD | 0.50 | 13.60 | ANU | 4.03 |
| | | | | | | 17.07 | FAIR | 0.50 | 16.70 | | 7.13 |
| | | | | | | 18.97 | FAIR | 0.50 | 18.60 | | 9.03 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 88 | 33 | KUI | KU | 111.7 | 294.2 | 19.25 | GOOD | 0.50 | 18.97 | ANU | 5.01 |
| | | | | | | 21.55 | FAIR | 0.50 | 21.27 | | 7.31 |
| | | | | | | 24.95 | FAIR | 0.50 | 24.67 | | 10.71 |
| | | | | | | 29.45 | FAIR | 0.50 | 29.17 | | 15.21 |
| 89 | 33 | KUI | KU | 117.8 | 287.0 | 20.75 | GOOD | 0.50 | 20.27 | ANU | 5.55 |
| | | | | | | 22.15 | FAIR | 0.50 | 21.67 | | 6.95 |
| | | | | | | 23.85 | FAIR | 0.50 | 23.37 | | 8.65 |
| | | | | | | 25.65 | FAIR | 0.50 | 25.17 | | 10.45 |
| 90 | 33 | KUI | KU | 123.5 | 282.3 | 21.34 | GOOD | 0.50 | 20.41 | ANU | 4.97 |
| | | | | | | 22.24 | GOOD | 0.50 | 21.31 | | 5.87 |
| | | | | | | 23.44 | FAIR | 0.50 | 22.51 | | 7.07 |
| | | | | | | 27.54 | FAIR | 0.50 | 26.61 | | 11.17 |
| 91 | 33 | KUI | KU | 129.6 | 277.8 | 23.04 | GOOD | 0.50 | 22.21 | ANU | 6.01 |
| | | | | | | 23.84 | GOOD | 0.50 | 23.01 | | 6.81 |
| | | | | | | 25.24 | FAIR | 0.50 | 24.41 | | 8.21 |
| | | | | | | 29.04 | FAIR | 0.50 | 28.21 | | 12.01 |
| | | | | | | 32.54 | FAIR | 0.50 | 31.71 | | 15.51 |
| 93 | 33 | KUI | KU | 146.8 | 268.9 | 27.09 | GOOD | 0.50 | 25.17 | ANU | 6.82 |
| | | | | | | 41.69 | FAIR | 0.50 | 39.77 | | 21.42 |
| 94 | 33 | KUI | KU | 157.3 | 266.1 | 28.70 | GOOD | 0.50 | 26.35 | ANU | 6.69 |
| | | | | | | 30.40 | FAIR | 0.50 | 28.05 | | 8.39 |
| | | | | | | 37.80 | FAIR | 0.50 | 35.45 | | 15.79 |
| 98 | 33 | KUI | KU | 115.7 | 299.7 | 20.13 | GOOD | 0.50 | 19.96 | ANU | 5.50 |
| | | | | | | 21.43 | FAIR | 0.50 | 21.26 | | 6.80 |
| | | | | | | 27.43 | FAIR | 0.50 | 27.26 | | 12.80 |
| 99 | 33 | KUI | KU | 139.5 | 305.8 | 22.49 | GOOD | 0.50 | 22.51 | ANU | 5.07 |
| | | | | | | 23.69 | FAIR | 0.50 | 23.71 | | 6.27 |
| | | | | | | 46.19 | FAIR | 0.50 | 46.21 | | 28.77 |
| 102 | 33 | KUI | KU | 178.7 | 311.3 | 27.62 | GOOD | 0.50 | 27.63 | ANU | 5.29 |
| | | | | | | 29.32 | FAIR | 0.50 | 29.33 | | 6.99 |
| | | | | | | 32.42 | FAIR | 0.50 | 32.43 | | 10.09 |
| 103 | 33 | KUI | KU | 189.4 | 313.3 | 28.57 | GOOD | 0.50 | 28.58 | ANU | 4.91 |
| | | | | | | 30.77 | FAIR | 0.50 | 30.78 | | 7.11 |
| | | | | | | 36.17 | FAIR | 0.50 | 36.18 | | 12.51 |
| | | | | | | 45.07 | FAIR | 0.50 | 45.08 | | 21.41 |
| 104 | 33 | KUI | KU | 208.2 | 311.1 | 31.24 | GOOD | 0.50 | 31.25 | ANU | 5.23 |
| | | | | | | 33.49 | FAIR | 0.50 | 33.50 | | 7.48 |
| | | | | | | 35.44 | GOOD | 0.50 | 35.45 | | 9.43 |
| 107 | 33 | KUI | KU | 244.4 | 311.6 | 35.75 | FAIR | 0.50 | 35.76 | ANU | 5.21 |
| | | | | | | 37.05 | FAIR | 0.50 | 37.06 | | 6.51 |
| | | | | | | 38.85 | FAIR | 0.50 | 38.86 | | 8.31 |
| | | | | | | 45.75 | FAIR | 0.50 | 45.76 | | 15.21 |
| 1 | 34 | SIRINUMU DAM | SD | 66.0 | 70.5 | 14.60 | GOOD | 0.50 | 13.69 | BMR | 5.44 |
| | | | | | | 15.23 | GOOD | 0.10 | 14.32 | | 6.07 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 19.53 | FAIR | 0.50 | 18.62 | | 10.37 |
| | | | | | | 22.65 | FAIR | 0.50 | 21.74 | | 13.49 |
| 2 | 34 | SIRINUMU DAM | SD | 53.2 | 72.5 | 12.27 | GOOD | 0.10 | 11.43 | BMR | 4.78 |
| | | | | | | 13.74 | FAIR | 0.50 | 12.90 | | 6.25 |
| | | | | | | 14.79 | FAIR | 0.50 | 13.95 | | 7.30 |
| | | | | | | 17.25 | FAIR | 0.50 | 16.41 | | 9.76 |
| 3 | 34 | SIRINUMU DAM | SD | 57.5 | 85.1 | 12.74 | FAIR | 0.50 | 12.08 | BMR | 4.89 |
| | | | | | | 12.99 | GOOD | 0.10 | 12.33 | | 5.14 |
| | | | | | | 14.00 | FAIR | 0.50 | 13.34 | | 6.15 |
| | | | | | | 16.41 | POOR | 0.50 | 15.75 | | 8.56 |
| | | | | | | 17.34 | FAIR | 0.50 | 16.68 | | 9.49 |
| | | | | | | 18.68 | FAIR | 0.50 | 18.02 | | 10.83 |
| 4 | 34 | SIRINUMU DAM | SD | 45.6 | 76.4 | 9.21 | FAIR | 0.50 | 8.65 | BMR | 2.95 |
| | | | | | | 9.59 | GOOD | 0.10 | 9.03 | | 3.33 |
| | | | | | | 10.61 | FAIR | 0.50 | 10.05 | | 4.35 |
| | | | | | | 26.98 | FAIR | 0.50 | 26.42 | | 20.72 |
| 5 | 34 | SIRINUMU DAM | SD | 66.8 | 91.5 | 13.72 | GOOD | 0.50 | 13.32 | BMR | 4.97 |
| | | | | | | 13.94 | FAIR | 0.10 | 13.54 | | 5.19 |
| | | | | | | 14.39 | GOOD | 0.10 | 13.99 | | 5.64 |
| | | | | | | 15.29 | FAIR | 0.50 | 14.89 | | 6.54 |
| | | | | | | 18.37 | FAIR | 0.50 | 17.97 | | 9.62 |
| 6 | 34 | SIRINUMU DAM | SD | 74.2 | 95.2 | 15.74 | GOOD | 0.10 | 15.36 | BMR | 6.09 |
| | | | | | | 16.41 | FAIR | 0.50 | 16.03 | | 6.76 |
| | | | | | | 17.32 | GOOD | 0.50 | 16.94 | | 7.67 |
| | | | | | | 19.78 | FAIR | 0.50 | 19.40 | | 10.13 |
| 7 | 34 | SIRINUMU DAM | SD | 81.0 | 99.2 | 16.87 | GOOD | 0.10 | 16.44 | BMR | 6.32 |
| | | | | | | 17.48 | POOR | 0.10 | 17.05 | | 6.93 |
| | | | | | | 17.75 | FAIR | 0.50 | 17.32 | | 7.20 |
| | | | | | | 20.30 | FAIR | 0.50 | 19.87 | | 9.75 |
| | | | | | | 21.30 | FAIR | 0.10 | 20.87 | | 10.75 |
| 8 | 34 | SIRINUMU DAM | SD | 93.0 | 105.0 | 18.88 | GOOD | 0.10 | 18.51 | BMR | 6.88 |
| | | | | | | 22.24 | FAIR | 0.50 | 21.87 | | 10.24 |
| | | | | | | 32.27 | FAIR | 0.50 | 31.90 | | 20.27 |
| 9 | 34 | SIRINUMU DAM | SD | 99.7 | 108.3 | 19.54 | POOR | 0.50 | 19.28 | BMR | 6.82 |
| | | | | | | 19.99 | GOOD | 0.10 | 19.73 | | 7.27 |
| | | | | | | 21.15 | FAIR | 0.50 | 20.89 | | 8.43 |
| | | | | | | 22.97 | FAIR | 0.50 | 22.71 | | 10.25 |
| 10 | 34 | SIRINUMU DAM | SD | 111.1 | 110.7 | 22.03 | GOOD | 0.10 | 21.53 | BMR | 7.64 |
| | | | | | | 22.21 | FAIR | 0.10 | 21.71 | | 7.82 |
| 11 | 34 | SIRINUMU DAM | SD | 120.7 | 114.9 | 23.23 | GOOD | 0.10 | 22.84 | BMR | 7.75 |
| 12 | 34 | SIRINUMU DAM | SD | 132.9 | 116.3 | 24.98 | GOOD | 0.50 | 24.69 | BMR | 8.07 |
| | | | | | | 25.81 | FAIR | 0.50 | 25.52 | | 8.90 |
| 13 | 34 | SIRINUMU DAM | SD | 143.9 | 118.3 | 26.14 | POOR | 0.50 | 25.80 | BMR | 7.81 |
| | | | | | | 30.98 | POOR | 0.50 | 30.64 | | 12.65 |
| 14 | 34 | SIRINUMU DAM | SD | 154.8 | 119.9 | 27.23 | FAIR | 0.50 | 27.00 | BMR | 7.65 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 27.46 | GOOD | 0.10 | 27.23 | | 7.88 |
| | | | | | | 28.45 | FAIR | 0.50 | 28.22 | | 8.87 |
| | | | | | | 30.32 | FAIR | 0.50 | 30.09 | | 10.74 |
| | | | | | | 32.57 | FAIR | 0.50 | 32.34 | | 12.99 |
| | | | | | | 35.61 | FAIR | 0.50 | 35.38 | | 16.03 |
| 15 | 34 | SIRINUMU DAM | SD | 167.1 | 121.3 | 31.91 | POOR | 0.50 | 31.64 | BMR | 10.75 |
| 17 | 34 | SIRINUMU DAM | SD | 190.8 | 123.3 | 31.37 | FAIR | 0.50 | 31.28 | BMR | 7.43 |
| | | | | | | 34.23 | POOR | 0.50 | 34.14 | | 10.29 |
| | | | | | | 35.07 | FAIR | 0.50 | 34.98 | | 11.13 |
| | | | | | | 36.21 | FAIR | 0.50 | 36.12 | | 12.27 |
| | | | | | | 39.57 | FAIR | 0.50 | 39.48 | | 15.63 |
| | | | | | | 42.57 | FAIR | 0.50 | 42.48 | | 18.63 |
| | | | | | | 47.27 | FAIR | 0.50 | 47.18 | | 23.33 |
| 18 | 34 | SIRINUMU DAM | SD | 220.1 | 126.0 | 35.03 | POOR | 1.00 | 34.93 | BMR | 7.42 |
| | | | | | | 41.10 | POOR | 1.00 | 41.00 | | 13.49 |
| 20 | 34 | SIRINUMU DAM | SD | 139.7 | 113.6 | 25.87 | GOOD | 0.50 | 25.29 | BMR | 7.82 |
| | | | | | | 27.44 | FAIR | 0.50 | 26.86 | | 9.39 |
| | | | | | | 31.68 | FAIR | 0.50 | 31.10 | | 13.63 |
| 21 | 34 | SIRINUMU DAM | SD | 140.6 | 109.7 | 26.52 | POOR | 0.50 | 25.83 | BMR | 8.25 |
| | | | | | | 27.16 | FAIR | 0.50 | 26.47 | | 8.89 |
| | | | | | | 29.45 | FAIR | 0.50 | 28.76 | | 11.18 |
| | | | | | | 33.34 | FAIR | 0.50 | 32.65 | | 15.07 |
| 22 | 34 | SIRINUMU DAM | SD | 142.4 | 105.4 | 26.98 | POOR | 0.50 | 26.20 | BMR | 8.40 |
| | | | | | | 33.08 | POOR | 0.50 | 32.30 | | 14.50 |
| | | | | | | 45.28 | POOR | 0.50 | 44.50 | | 26.70 |
| 23 | 34 | SIRINUMU DAM | SD | 150.2 | 100.6 | 27.13 | FAIR | 0.50 | 26.33 | BMR | 7.56 |
| | | | | | | 27.90 | FAIR | 0.10 | 27.10 | | 8.33 |
| | | | | | | 28.90 | POOR | 0.10 | 28.10 | | 9.33 |
| | | | | | | 35.02 | GOOD | 0.50 | 34.22 | | 15.45 |
| 25 | 34 | SIRINUMU DAM | SD | 178.9 | 88.3 | 30.23 | FAIR | 0.50 | 29.47 | BMR | 7.11 |
| | | | | | | 31.78 | GOOD | 0.50 | 31.02 | | 8.66 |
| | | | | | | 36.92 | FAIR | 0.50 | 36.16 | | 13.80 |
| | | | | | | 38.90 | FAIR | 0.50 | 38.14 | | 15.78 |
| | | | | | | 39.71 | FAIR | 0.50 | 38.95 | | 16.59 |
| | | | | | | 41.94 | FAIR | 0.50 | 41.18 | | 18.82 |
| | | | | | | 46.01 | FAIR | 0.50 | 45.25 | | 22.89 |
| 26 | 34 | SIRINUMU DAM | SD | 203.9 | 77.5 | 32.05 | FAIR | 0.50 | 31.26 | BMR | 5.78 |
| | | | | | | 36.49 | FAIR | 0.50 | 35.70 | | 10.22 |
| | | | | | | 41.21 | POOR | 0.50 | 40.42 | | 14.94 |
| | | | | | | 48.89 | FAIR | 0.10 | 48.10 | | 22.62 |
| 27 | 34 | SIRINUMU DAM | SD | 237.6 | 69.1 | 36.24 | FAIR | 1.00 | 35.69 | BMR | 5.99 |
| | | | | | | 42.14 | FAIR | 0.50 | 41.59 | | 11.89 |
| | | | | | | 45.74 | FAIR | 0.50 | 45.19 | | 15.49 |
| | | | | | | 52.24 | FAIR | 0.50 | 51.69 | | 21.99 |
| 28 | 34 | SIRINUMU DAM | SD | 282.7 | 63.0 | 41.65 | FAIR | 0.50 | 41.08 | BMR | 5.75 |
| | | | | | | 45.11 | FAIR | 0.50 | 44.54 | | 9.21 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 50.86 | FAIR | 0.50 | 50.29 | | 14.96 |
| | | | | | | 58.50 | FAIR | 0.50 | 57.93 | | 22.60 |
| 29 | 34 | SIRINUMU DAM | SD | 318.8 | 59.8 | 45.91 | FAIR | 0.50 | 45.29 | BMR | 5.44 |
| | | | | | | 55.41 | FAIR | 0.50 | 54.79 | | 14.94 |
| | | | | | | 59.31 | FAIR | 0.50 | 58.69 | | 18.84 |
| | | | | | | 64.91 | FAIR | 0.50 | 64.29 | | 24.44 |
| | | | | | | 69.01 | FAIR | 0.50 | 68.39 | | 28.54 |
| | | | | | | 95.11 | FAIR | 0.50 | 94.49 | | 54.64 |
| 30 | 34 | SIRINUMU DAM | SD | 287.4 | 59.4 | 42.19 | POOR | 0.50 | 41.62 | BMR | 5.70 |
| | | | | | | 43.29 | POOR | 0.50 | 42.72 | | 6.80 |
| | | | | | | 45.09 | POOR | 0.50 | 44.52 | | 8.60 |
| | | | | | | 58.79 | FAIR | 0.50 | 58.22 | | 22.30 |
| | | | | | | 72.89 | FAIR | 0.50 | 72.32 | | 36.40 |
| 31 | 34 | SIRINUMU DAM | SD | 247.2 | 59.5 | 36.89 | POOR | 1.00 | 36.37 | BMR | 5.47 |
| | | | | | | 45.69 | POOR | 0.50 | 45.17 | | 14.27 |
| | | | | | | 48.19 | FAIR | 0.50 | 47.67 | | 16.77 |
| | | | | | | 56.09 | FAIR | 0.50 | 55.57 | | 24.67 |
| | | | | | | 59.69 | FAIR | 0.50 | 59.17 | | 28.27 |
| | | | | | | 62.29 | FAIR | 0.50 | 61.77 | | 30.87 |
| 32 | 34 | SIRINUMU DAM | SD | 202.2 | 60.0 | 31.71 | GOOD | 0.50 | 31.06 | BMR | 5.78 |
| | | | | | | 33.01 | FAIR | 0.50 | 32.36 | | 7.08 |
| | | | | | | 36.01 | FAIR | 0.50 | 35.36 | | 10.08 |
| | | | | | | 40.81 | GOOD | 0.50 | 40.16 | | 14.88 |
| | | | | | | 45.31 | FAIR | 0.50 | 44.66 | | 19.38 |
| 33 | 34 | SIRINUMU DAM | SD | 154.1 | 60.4 | 25.68 | POOR | 1.00 | 24.78 | BMR | 5.52 |
| | | | | | | 26.96 | GOOD | 0.50 | 26.06 | | 6.80 |
| | | | | | | 27.92 | GOOD | 0.10 | 27.02 | | 7.76 |
| | | | | | | 34.19 | FAIR | 0.50 | 33.29 | | 14.03 |
| | | | | | | 35.99 | FAIR | 0.50 | 35.09 | | 15.83 |
| 34 | 34 | SIRINUMU DAM | SD | 126.2 | 61.8 | 23.46 | GOOD | 0.50 | 22.50 | BMR | 6.72 |
| | | | | | | 23.81 | FAIR | 0.10 | 22.85 | | 7.07 |
| | | | | | | 24.91 | FAIR | 0.50 | 23.95 | | 8.17 |
| 35 | 34 | SIRINUMU DAM | SD | 114.8 | 62.2 | 21.89 | GOOD | 0.50 | 20.96 | BMR | 6.61 |
| | | | | | | 22.49 | GOOD | 0.10 | 21.56 | | 7.21 |
| | | | | | | 25.27 | FAIR | 0.50 | 24.34 | | 9.99 |
| | | | | | | 27.71 | FAIR | 0.50 | 26.78 | | 12.43 |
| | | | | | | 32.09 | POOR | 0.50 | 31.16 | | 16.81 |
| 36 | 34 | SIRINUMU DAM | SD | 100.3 | 64.1 | 19.71 | FAIR | 0.50 | 18.76 | BMR | 6.23 |
| | | | | | | 20.00 | GOOD | 0.50 | 19.05 | | 6.52 |
| | | | | | | 20.25 | GOOD | 0.50 | 19.30 | | 6.77 |
| | | | | | | 24.82 | FAIR | 0.50 | 23.87 | | 11.34 |
| 37 | 34 | SIRINUMU DAM | SD | 86.4 | 66.0 | 17.69 | FAIR | 0.50 | 16.74 | BMR | 5.94 |
| | | | | | | 17.94 | GOOD | 0.10 | 16.99 | | 6.19 |
| | | | | | | 18.54 | GOOD | 0.50 | 17.59 | | 6.79 |
| | | | | | | 22.71 | POOR | 0.50 | 21.76 | | 10.96 |
| | | | | | | 36.24 | FAIR | 0.50 | 35.29 | | 24.49 |
| | | | | | | 29.27 | FAIR | 0.50 | 28.32 | | 17.52 |
| 38 | 34 | SIRINUMU DAM | SD | 75.2 | 68.4 | 16.24 | GOOD | 0.10 | 15.30 | BMR | 5.90 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 17.25 | FAIR | 0.50 | 16.31 | | 6.91 |
| | | | | | | 25.18 | FAIR | 0.50 | 24.24 | | 14.84 |
| 39 | 34 | SIRINUMU DAM | SD | 37.4 | 28.0 | 8.79 | FAIR | 0.50 | 8.35 | BMR | 3.68 |
| | | | | | | 9.16 | GOOD | 0.10 | 8.72 | | 4.05 |
| | | | | | | 10.04 | FAIR | 0.50 | 9.60 | | 4.93 |
| | | | | | | 11.44 | FAIR | 0.50 | 11.00 | | 6.33 |
| | | | | | | 13.34 | FAIR | 0.50 | 12.90 | | 8.23 |
| | | | | | | 14.96 | FAIR | 0.50 | 14.52 | | 9.85 |
| 40 | 34 | SIRINUMU DAM | SD | 37.9 | 45.6 | 9.34 | GOOD | 0.10 | 8.89 | BMR | 4.15 |
| | | | | | | 11.22 | FAIR | 0.50 | 10.77 | | 6.03 |
| | | | | | | 13.38 | FAIR | 0.50 | 12.93 | | 8.19 |
| | | | | | | 16.16 | FAIR | 0.50 | 15.71 | | 10.97 |
| 41 | 34 | SIRINUMU DAM | SD | 40.4 | 64.3 | 9.94 | GOOD | 0.10 | 9.46 | BMR | 4.41 |
| | | | | | | 10.95 | FAIR | 0.50 | 10.47 | | 5.42 |
| | | | | | | 12.98 | FAIR | 0.50 | 12.50 | | 7.45 |
| | | | | | | 14.15 | POOR | 0.50 | 13.67 | | 8.62 |
| | | | | | | 16.84 | POOR | 0.50 | 16.36 | | 11.31 |
| | | | | | | 20.85 | FAIR | 0.50 | 20.37 | | 15.32 |
| | | | | | | 22.56 | POOR | 0.50 | 22.08 | | 17.03 |
| 42 | 34 | SIRINUMU DAM | SD | 45.0 | 13.9 | 10.41 | GOOD | 0.10 | 9.99 | BMR | 4.37 |
| | | | | | | 11.58 | GOOD | 0.10 | 11.16 | | 5.54 |
| | | | | | | 13.43 | FAIR | 0.50 | 13.01 | | 7.39 |
| | | | | | | 17.22 | GOOD | 0.50 | 16.80 | | 11.18 |
| | | | | | | 18.07 | POOR | 0.50 | 17.65 | | 12.03 |
| | | | | | | 18.59 | POOR | 0.50 | 18.17 | | 12.55 |
| | | | | | | 19.45 | POOR | 0.50 | 19.03 | | 13.41 |
| 43 | 34 | SIRINUMU DAM | SD | 55.5 | 5.1 | 12.20 | GOOD | 0.10 | 11.69 | BMR | 4.75 |
| | | | | | | 13.74 | GOOD | 0.50 | 13.23 | | 6.29 |
| | | | | | | 14.21 | FAIR | 0.50 | 13.70 | | 6.76 |
| | | | | | | 15.81 | FAIR | 0.50 | 15.30 | | 8.36 |
| | | | | | | 17.41 | FAIR | 0.50 | 16.90 | | 9.96 |
| | | | | | | 21.98 | FAIR | 0.50 | 21.47 | | 14.53 |
| 44 | 34 | SIRINUMU DAM | SD | 65.8 | 353.8 | 13.61 | GOOD | 0.50 | 13.28 | BMR | 5.05 |
| | | | | | | 15.26 | FAIR | 0.10 | 14.93 | | 6.70 |
| | | | | | | 18.09 | FAIR | 0.10 | 17.76 | | 9.53 |
| | | | | | | 22.82 | FAIR | 0.50 | 22.49 | | 14.26 |
| | | | | | | 31.38 | FAIR | 0.50 | 31.05 | | 22.82 |
| 45 | 34 | SIRINUMU DAM | SD | 76.0 | 344.5 | 15.18 | GOOD | 0.50 | 14.67 | BMR | 5.17 |
| | | | | | | 15.85 | POOR | 0.50 | 15.34 | | 5.84 |
| | | | | | | 17.27 | POOR | 0.50 | 16.76 | | 7.26 |
| | | | | | | 18.65 | FAIR | 0.50 | 18.14 | | 8.64 |
| | | | | | | 20.95 | FAIR | 0.50 | 20.44 | | 10.94 |
| | | | | | | 22.16 | FAIR | 0.50 | 21.65 | | 12.15 |
| 46 | 34 | SIRINUMU DAM | SD | 82.9 | 335.7 | 16.31 | GOOD | 0.50 | 15.82 | BMR | 5.46 |
| | | | | | | 17.20 | GOOD | 0.10 | 16.71 | | 6.35 |
| | | | | | | 17.76 | FAIR | 0.10 | 17.27 | | 6.91 |
| | | | | | | 19.84 | FAIR | 0.50 | 19.35 | | 8.99 |
| | | | | | | 21.07 | GOOD | 0.50 | 20.58 | | 10.22 |
| | | | | | | 23.39 | FAIR | 0.50 | 22.90 | | 12.54 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 47 | 34 | SIRINUMU DAM | SD | 89.8 | 328.8 | 17.52 | FAIR | 0.50 | 17.32 | BMR | 6.09 |
| | | | | | | 17.76 | GOOD | 0.10 | 17.56 | | 6.33 |
| | | | | | | 18.63 | FAIR | 0.10 | 18.43 | | 7.20 |
| | | | | | | 22.25 | FAIR | 0.10 | 22.05 | | 10.82 |
| | | | | | | 31.48 | FAIR | 0.50 | 31.28 | | 20.05 |
| 48 | 34 | SIRINUMU DAM | SD | 141.8 | 312.0 | 24.99 | GOOD | 0.50 | 24.51 | BMR | 6.79 |
| | | | | | | 25.75 | GOOD | 0.10 | 25.27 | | 7.55 |
| | | | | | | 27.59 | FAIR | 0.50 | 27.11 | | 9.39 |
| | | | | | | 32.26 | FAIR | 0.50 | 31.78 | | 14.06 |
| | | | | | | 37.88 | FAIR | 0.50 | 37.40 | | 19.68 |
| 49 | 34 | SIRINUMU DAM | SD | 194.7 | 302.3 | 32.04 | GOOD | 0.10 | 31.36 | BMR | 7.03 |
| | | | | | | 34.05 | FAIR | 0.50 | 33.37 | | 9.04 |
| | | | | | | 36.99 | FAIR | 0.50 | 36.31 | | 11.98 |
| | | | | | | 39.32 | FAIR | 0.50 | 38.64 | | 14.31 |
| 50 | 34 | SIRINUMU DAM | SD | 260.8 | 296.6 | 39.21 | FAIR | 0.50 | 38.95 | BMR | 6.35 |
| | | | | | | 39.38 | GOOD | 0.50 | 39.12 | | 6.52 |
| | | | | | | 43.69 | FAIR | 0.50 | 43.43 | | 10.83 |
| | | | | | | 47.00 | FAIR | 0.50 | 46.74 | | 14.14 |
| | | | | | | 48.84 | POOR | 0.50 | 48.58 | | 15.98 |
| | | | | | | 50.31 | FAIR | 0.10 | 50.05 | | 17.45 |
| 51 | 34 | SIRINUMU DAM | SD | 367.2 | 286.1 | 55.13 | GOOD | 0.50 | 54.83 | BMR | 8.93 |
| | | | | | | 56.28 | FAIR | 0.50 | 55.98 | | 10.08 |
| | | | | | | 58.25 | FAIR | 0.50 | 57.95 | | 12.05 |
| | | | | | | 62.18 | FAIR | 0.50 | 61.88 | | 15.98 |
| 52 | 34 | SIRINUMU DAM | SD | 349.8 | 273.4 | 60.41 | POOR | 0.50 | 60.09 | BMR | 16.37 |
| 53 | 34 | SIRINUMU DAM | SD | 293.4 | 273.5 | 49.63 | POOR | 0.50 | 49.46 | BMR | 12.78 |
| | | | | | | 51.55 | POOR | 0.50 | 51.38 | | 14.70 |
| | | | | | | 59.98 | POOR | 0.50 | 59.81 | | 23.13 |
| 54 | 34 | SIRINUMU DAM | SD | 243.4 | 270.2 | 39.95 | POOR | 1.00 | 39.73 | BMR | 9.30 |
| | | | | | | 41.25 | FAIR | 0.50 | 41.03 | | 10.60 |
| | | | | | | 49.65 | FAIR | 0.50 | 49.43 | | 19.00 |
| 55 | 34 | SIRINUMU DAM | SD | 225.1 | 261.9 | 36.93 | FAIR | 0.50 | 36.74 | BMR | 8.60 |
| | | | | | | 38.03 | FAIR | 0.50 | 37.84 | | 9.70 |
| | | | | | | 43.83 | POOR | 0.50 | 43.64 | | 15.50 |
| 56 | 34 | SIRINUMU DAM | SD | 172.4 | 226.0 | 29.14 | GOOD | 0.10 | 29.04 | BMR | 7.49 |
| | | | | | | 29.96 | FAIR | 0.50 | 29.86 | | 8.31 |
| | | | | | | 31.42 | FAIR | 0.50 | 31.32 | | 9.77 |
| | | | | | | 34.59 | GOOD | 0.50 | 34.49 | | 12.94 |
| 57 | 34 | SIRINUMU DAM | SD | 183.8 | 225.7 | 30.22 | POOR | 0.50 | 30.13 | BMR | 7.15 |
| 59 | 34 | SIRINUMU DAM | SD | 198.2 | 226.4 | 31.76 | GOOD | 0.50 | 31.38 | BMR | 6.61 |
| | | | | | | 32.93 | FAIR | 0.50 | 32.55 | | 7.78 |
| | | | | | | 34.54 | FAIR | 0.50 | 34.16 | | 9.39 |
| | | | | | | 39.14 | FAIR | 0.50 | 38.76 | | 13.99 |
| 60 | 34 | SIRINUMU DAM | SD | 211.6 | 226.3 | 34.50 | FAIR | 0.50 | 33.59 | BMR | 7.14 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 36.80 | FAIR | 0.50 | 35.89 | | 9.44 |
| | | | | | | 43.20 | POOR | 0.50 | 42.29 | | 15.84 |
| | | | | | | 48.70 | POOR | 0.50 | 47.79 | | 21.34 |
| 61 | 34 | SIRINUMU DAM | SD | 224.1 | 225.3 | 37.21 | FAIR | 0.50 | 35.81 | BMR | 7.80 |
| | | | | | | 40.21 | FAIR | 0.50 | 38.81 | | 10.80 |
| 62 | 34 | SIRINUMU DAM | SD | 237.2 | 226.2 | 39.71 | GOOD | 0.50 | 37.86 | BMR | 8.21 |
| | | | | | | 42.01 | FAIR | 0.50 | 40.16 | | 10.51 |
| | | | | | | 44.51 | GOOD | 0.50 | 42.66 | | 13.01 |
| | | | | | | 46.51 | FAIR | 0.50 | 44.66 | | 15.01 |
| 63 | 34 | SIRINUMU DAM | SD | 273.0 | 226.1 | 46.28 | GOOD | 0.50 | 44.14 | BMR | 10.01 |
| | | | | | | 47.65 | GOOD | 0.10 | 45.51 | | 11.38 |
| | | | | | | 49.71 | FAIR | 0.50 | 47.57 | | 13.44 |
| | | | | | | 52.35 | FAIR | 0.50 | 50.21 | | 16.08 |
| 69 | 34 | SIRINUMU DAM | SD | 297.9 | 171.4 | 47.41 | FAIR | 0.50 | 47.23 | BMR | 9.99 |
| | | | | | | 53.85 | FAIR | 0.10 | 53.67 | | 16.43 |
| 71 | 34 | SIRINUMU DAM | SD | 270.4 | 172.7 | 43.51 | GOOD | 0.50 | 43.28 | BMR | 9.48 |
| | | | | | | 49.71 | FAIR | 0.50 | 49.48 | | 15.68 |
| 73 | 34 | SIRINUMU DAM | SD | 248.6 | 173.9 | 39.67 | GOOD | 0.50 | 39.49 | BMR | 8.41 |
| | | | | | | 42.71 | FAIR | 0.50 | 42.53 | | 11.45 |
| | | | | | | 45.40 | FAIR | 0.10 | 45.22 | | 14.14 |
| | | | | | | 52.79 | FAIR | 0.50 | 52.61 | | 21.53 |
| 74 | 34 | SIRINUMU DAM | SD | 241.8 | 175.7 | 39.50 | GOOD | 0.50 | 39.14 | BMR | 8.91 |
| | | | | | | 42.22 | FAIR | 0.50 | 41.86 | | 11.63 |
| 75 | 34 | SIRINUMU DAM | SD | 233.6 | 177.5 | 38.15 | GOOD | 0.50 | 37.99 | BMR | 8.79 |
| | | | | | | 46.61 | POOR | 0.50 | 46.45 | | 17.25 |
| | | | | | | 50.61 | POOR | 0.50 | 50.45 | | 21.25 |
| 82 | 34 | SIRINUMU DAM | SD | 213.0 | 183.7 | 35.43 | GOOD | 0.50 | 35.28 | BMR | 8.65 |
| | | | | | | 36.69 | GOOD | 0.10 | 36.54 | | 9.91 |
| | | | | | | 39.20 | GOOD | 0.10 | 39.05 | | 12.42 |
| 85 | 34 | SIRINUMU DAM | SD | 199.2 | 190.4 | 34.18 | GOOD | 0.50 | 33.80 | BMR | 8.90 |
| | | | | | | 37.19 | FAIR | 0.50 | 36.81 | | 11.91 |
| 86 | 34 | SIRINUMU DAM | SD | 194.7 | 192.7 | 33.84 | GOOD | 0.50 | 33.75 | BMR | 9.41 |
| | | | | | | 35.68 | FAIR | 0.10 | 35.59 | | 11.25 |
| | | | | | | 37.42 | FAIR | 0.50 | 37.33 | | 12.99 |
| 87 | 34 | SIRINUMU DAM | SD | 192.2 | 194.8 | 34.15 | GOOD | 0.10 | 33.67 | BMR | 9.65 |
| | | | | | | 39.20 | FAIR | 0.50 | 38.72 | | 14.70 |
| | | | | | | 42.01 | FAIR | 0.50 | 41.53 | | 17.51 |
| 88 | 34 | SIRINUMU DAM | SD | 193.3 | 205.3 | 34.53 | FAIR | 0.10 | 34.14 | BMR | 9.98 |
| | | | | | | 39.20 | FAIR | 0.50 | 38.81 | | 14.65 |
| 91 | 34 | SIRINUMU DAM | SD | 230.3 | 208.2 | 39.69 | FAIR | 0.50 | 38.75 | BMR | 9.96 |
| | | | | | | 40.14 | GOOD | 0.10 | 39.20 | | 10.41 |
| | | | | | | 41.96 | GOOD | 0.50 | 41.02 | | 12.23 |
| | | | | | | 45.44 | FAIR | 0.50 | 44.50 | | 15.71 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 51.13 | POOR | 0.50 | 50.19 | | 21.40 |
| 94 | 34 | SIRINUMU DAM | SD | 168.9 | 210.7 | 47.25 | GOOD | 0.10 | 44.79 | BMR | 11.18 |
| | | | | | | 48.92 | GOOD | 0.50 | 46.46 | | 12.85 |
| | | | | | | 57.76 | GOOD | 0.50 | 55.30 | | 21.69 |
| 103 | 34 | SIRINUMU DAM | SD | 149.0 | 232.5 | 29.20 | FAIR | 0.10 | 29.10 | BMR | 10.47 |
| 104 | 34 | SIRINUMU DAM | SD | 160.5 | 238.6 | 28.56 | FAIR | 0.50 | 28.46 | BMR | 8.40 |
| | | | | | | 29.36 | GOOD | 0.50 | 29.26 | | 9.20 |
| | | | | | | 30.80 | GOOD | 0.50 | 30.70 | | 10.64 |
| 105 | 34 | SIRINUMU DAM | SD | 165.6 | 243.7 | 30.40 | GOOD | 0.50 | 30.30 | BMR | 9.60 |
| | | | | | | 31.25 | FAIR | 0.50 | 31.15 | | 10.45 |
| 106 | 34 | SIRINUMU DAM | SD | 172.5 | 246.0 | 30.90 | FAIR | 0.50 | 30.80 | BMR | 9.24 |
| | | | | | | 31.59 | GOOD | 0.50 | 31.49 | | 9.93 |
| 107 | 34 | SIRINUMU DAM | SD | 173.2 | 250.3 | 30.67 | GOOD | 0.50 | 30.57 | BMR | 8.92 |
| | | | | | | 31.40 | FAIR | 0.50 | 31.30 | | 9.65 |
| | | | | | | 33.20 | GOOD | 0.50 | 33.10 | | 11.45 |
| 109 | 34 | SIRINUMU DAM | SD | 201.8 | 253.6 | 34.80 | GOOD | 0.50 | 34.70 | BMR | 9.48 |
| | | | | | | 36.10 | FAIR | 0.50 | 36.00 | | 10.78 |
| 110 | 34 | SIRINUMU DAM | SD | 230.8 | 253.5 | 39.00 | FAIR | 0.50 | 38.79 | BMR | 9.94 |
| | | | | | | 47.50 | POOR | 0.50 | 47.29 | | 18.44 |
| 111 | 34 | SIRINUMU DAM | SD | 243.8 | 244.6 | 45.24 | POOR | 0.50 | 45.15 | BMR | 14.68 |
| | | | | | | 52.54 | POOR | 0.50 | 52.45 | | 21.98 |
| 1 | 35 | SALAMAUA | SL | 291.3 | 3.8 | 46.65 | GOOD | 0.50 | 45.86 | ANU | 9.45 |
| 3 | 35 | SALAMAUA | SL | 273.9 | 3.0 | 43.66 | GOOD | 0.50 | 43.11 | ANU | 8.88 |
| | | | | | | 44.66 | FAIR | 0.50 | 44.11 | | 9.88 |
| | | | | | | 52.66 | FAIR | 0.50 | 52.11 | | 17.88 |
| 4 | 35 | SALAMAUA | SL | 279.3 | .3 | 42.98 | GOOD | 0.50 | 42.53 | ANU | 7.62 |
| | | | | | | 47.78 | GOOD | 0.50 | 47.33 | | 12.42 |
| 5 | 35 | SALAMAUA | SL | 268.0 | 5.1 | 45.38 | POOR | 0.50 | 45.10 | ANU | 11.60 |
| 7 | 35 | SALAMAUA | SL | 258.3 | 8.3 | 47.16 | FAIR | 0.50 | 46.84 | ANU | 14.56 |
| 8 | 35 | SALAMAUA | SL | 249.1 | 10.9 | 39.56 | GOOD | 0.50 | 39.30 | ANU | 8.16 |
| | | | | | | 45.16 | GOOD | 0.50 | 44.90 | | 13.76 |
| | | | | | | 55.36 | FAIR | 0.50 | 55.10 | | 23.96 |
| | | | | | | 68.76 | GOOD | 0.50 | 68.50 | | 37.36 |
| 9 | 35 | SALAMAUA | SL | 243.0 | 12.3 | 42.04 | FAIR | 0.50 | 41.90 | ANU | 11.52 |
| 10 | 35 | SALAMAUA | SL | 237.5 | 15.0 | 40.65 | POOR | 1.00 | 40.27 | ANU | 10.58 |
| | | | | | | 41.45 | FAIR | 0.50 | 41.07 | | 11.38 |
| | | | | | | 44.55 | GOOD | 0.50 | 44.17 | | 14.48 |
| 11 | 35 | SALAMAUA | SL | 227.9 | 17.1 | 38.59 | GOOD | 0.50 | 38.31 | ANU | 9.83 |
| | | | | | | 40.79 | FAIR | 0.50 | 40.51 | | 12.03 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 35 | SALAMAUA | SL | 223.3 | 20.1 | 37.35 | GOOD | 0.50 | 37.17 | ANU | 9.26 |
| | | | | | | 39.45 | GOOD | 0.50 | 39.27 | | 11.36 |
| | | | | | | 41.35 | FAIR | 0.50 | 41.17 | | 13.26 |
| 13 | 35 | SALAMAUA | SL | 217.4 | 22.8 | 36.10 | GOOD | 0.50 | 35.87 | ANU | 8.70 |
| | | | | | | 37.30 | GOOD | 0.50 | 37.07 | | 9.90 |
| | | | | | | 40.30 | FAIR | 0.50 | 40.07 | | 12.90 |
| | | | | | | 41.70 | FAIR | 0.50 | 41.47 | | 14.30 |
| 14 | 35 | SALAMAUA | SL | 212.3 | 25.6 | 35.55 | GOOD | 0.50 | 35.43 | ANU | 8.89 |
| | | | | | | 38.65 | FAIR | 0.50 | 38.53 | | 11.99 |
| | | | | | | 51.35 | FAIR | 0.50 | 51.23 | | 24.69 |
| 15 | 35 | SALAMAUA | SL | 207.7 | 28.9 | 35.08 | GOOD | 0.50 | 34.92 | ANU | 8.96 |
| | | | | | | 35.78 | GOOD | 0.50 | 35.62 | | 9.66 |
| | | | | | | 41.48 | FAIR | 0.50 | 41.32 | | 15.36 |
| 16 | 35 | SALAMAUA | SL | 204.1 | 32.2 | 35.43 | GOOD | 0.50 | 35.19 | ANU | 9.68 |
| | | | | | | 36.53 | GOOD | 0.50 | 36.29 | | 10.78 |
| | | | | | | 39.43 | FAIR | 0.50 | 39.19 | | 13.68 |
| | | | | | | 76.13 | GOOD | 1.00 | 75.89 | | 50.38 |
| 17 | 35 | SALAMAUA | SL | 201.5 | 35.6 | 33.80 | GOOD | 0.50 | 33.82 | ANU | 8.64 |
| | | | | | | 35.50 | GOOD | 0.50 | 35.52 | | 10.34 |
| | | | | | | 40.70 | GOOD | 0.50 | 40.72 | | 15.54 |
| 18 | 35 | SALAMAUA | SL | 194.6 | 44.3 | 33.12 | FAIR | 0.50 | 33.13 | ANU | 8.81 |
| | | | | | | 33.62 | GOOD | 0.50 | 33.63 | | 9.31 |
| | | | | | | 34.52 | FAIR | 0.50 | 34.53 | | 10.21 |
| | | | | | | 36.42 | FAIR | 0.50 | 36.43 | | 12.11 |
| 19 | 35 | SALAMAUA | SL | 233.6 | 53.8 | 38.41 | GOOD | 0.50 | 38.43 | ANU | 9.23 |
| | | | | | | 42.11 | FAIR | 0.50 | 42.13 | | 12.93 |
| | | | | | | 43.71 | FAIR | 0.50 | 43.73 | | 14.53 |
| | | | | | | 47.51 | FAIR | 0.50 | 47.53 | | 18.33 |
| 20 | 35 | SALAMAUA | SL | 229.2 | 21.9 | 37.84 | GOOD | 0.50 | 37.37 | ANU | 8.72 |
| | | | | | | 42.34 | GOOD | 0.50 | 41.87 | | 13.22 |
| | | | | | | 45.54 | FAIR | 0.50 | 45.07 | | 16.42 |
| | | | | | | 47.64 | FAIR | 0.50 | 47.17 | | 18.52 |
| | | | | | | 74.44 | FAIR | 0.50 | 73.97 | | 45.32 |
| 21 | 35 | SALAMAUA | SL | 238.8 | 22.1 | 39.24 | GOOD | 0.50 | 38.66 | ANU | 8.81 |
| | | | | | | 45.84 | FAIR | 0.50 | 45.26 | | 15.41 |
| | | | | | | 54.04 | FAIR | 0.50 | 53.46 | | 23.61 |
| 22 | 35 | SALAMAUA | SL | 249.6 | 22.3 | 40.77 | FAIR | 0.50 | 40.10 | ANU | 8.90 |
| | | | | | | 46.67 | FAIR | 0.50 | 46.00 | | 14.80 |
| | | | | | | 51.57 | FAIR | 0.50 | 50.90 | | 19.70 |
| 23 | 35 | SALAMAUA | SL | 263.2 | 23.6 | 41.82 | GOOD | 0.50 | 41.14 | ANU | 8.24 |
| | | | | | | 48.32 | GOOD | 0.50 | 47.64 | | 14.74 |
| 24 | 35 | SALAMAUA | SL | 269.9 | 23.7 | 42.85 | GOOD | 0.50 | 42.15 | ANU | 8.42 |
| | | | | | | 48.45 | FAIR | 0.50 | 47.75 | | 14.02 |
| 25 | 35 | SALAMAUA | SL | 306.3 | 26.5 | 47.11 | GOOD | 0.50 | 46.46 | ANU | 8.17 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 58.01 | GOOD | 0.50 | 57.36 | | 19.07 |
| 26 | 35 | SALAMAUA | SL | 350.1 | 26.7 | 53.08 | FAIR | 0.50 | 52.41 | ANU | 8.64 |
| | | | | | | 62.28 | FAIR | 0.50 | 61.61 | | 17.84 |
| 27 | 35 | SALAMAUA | SL | 396.8 | 27.0 | 57.77 | GOOD | 0.50 | 57.34 | ANU | 7.74 |
| | | | | | | 67.27 | FAIR | 0.50 | 66.84 | | 17.24 |
| | | | | | | 83.77 | FAIR | 0.50 | 83.34 | | 33.74 |
| 28 | 35 | SALAMAUA | SL | 449.4 | 27.9 | 62.87 | GOOD | 0.50 | 62.42 | ANU | 6.24 |
| 30 | 35 | SALAMAUA | SL | 463.4 | 26.4 | 65.37 | GOOD | 0.50 | 64.92 | ANU | 6.99 |
| 32 | 35 | SALAMAUA | SL | 392.9 | 19.8 | 56.75 | GOOD | 0.10 | 56.21 | ANU | 7.10 |
| 35 | 35 | SALAMAUA | SL | 327.5 | 10.4 | 49.48 | GOOD | 0.50 | 48.67 | ANU | 7.73 |
| | | | | | | 59.38 | GOOD | 0.50 | 58.57 | | 17.63 |
| | | | | | | 66.28 | FAIR | 0.50 | 65.47 | | 24.53 |
| 36 | 35 | SALAMAUA | SL | 316.0 | 8.6 | 49.29 | FAIR | 0.50 | 48.46 | ANU | 8.96 |
| 38 | 35 | SALAMAUA | SL | 297.5 | 5.2 | 46.50 | GOOD | 0.50 | 45.68 | ANU | 8.49 |
| | | | | | | 48.70 | FAIR | 0.50 | 47.88 | | 10.69 |
| | | | | | | 60.20 | FAIR | 1.00 | 59.38 | | 22.19 |
| 39 | 35 | SALAMAUA | SL | 302.6 | 355.1 | 47.13 | GOOD | 0.50 | 46.81 | ANU | 8.98 |
| | | | | | | 49.83 | FAIR | 1.00 | 49.51 | | 11.68 |
| | | | | | | 55.13 | FAIR | 0.50 | 54.81 | | 16.98 |
| 40 | 35 | SALAMAUA | SL | 295.6 | 356.9 | 46.97 | FAIR | 0.50 | 46.63 | ANU | 9.68 |
| | | | | | | 50.87 | FAIR | 0.50 | 50.53 | | 13.58 |
| 41 | 35 | SALAMAUA | SL | 286.2 | 358.7 | 45.48 | FAIR | 1.00 | 45.11 | ANU | 9.34 |
| | | | | | | 50.48 | FAIR | 0.50 | 50.11 | | 14.34 |
| 44 | 35 | SALAMAUA | SL | 337.8 | 351.4 | 51.91 | FAIR | 0.50 | 51.69 | ANU | 9.47 |
| | | | | | | 63.31 | FAIR | 1.00 | 63.09 | | 20.87 |
| | | | | | | 68.91 | FAIR | 0.50 | 68.69 | | 26.47 |
| 47 | 35 | SALAMAUA | SL | 356.9 | 345.4 | 54.72 | FAIR | 0.50 | 54.63 | ANU | 10.02 |
| | | | | | | 56.42 | FAIR | 0.50 | 56.33 | | 11.72 |
| | | | | | | 59.82 | GOOD | 0.50 | 59.73 | | 15.12 |
| | | | | | | 62.92 | FAIR | 0.50 | 62.83 | | 18.22 |
| 48 | 35 | SALAMAUA | SL | 392.8 | 337.6 | 59.51 | GOOD | 0.50 | 59.15 | ANU | 10.05 |
| | | | | | | 64.01 | FAIR | 0.50 | 63.65 | | 14.55 |
| | | | | | | 70.51 | FAIR | 0.50 | 70.15 | | 21.05 |
| 49 | 35 | SALAMAUA | SL | 427.1 | 330.7 | 61.22 | GOOD | 0.50 | 60.66 | ANU | 7.27 |
| | | | | | | 63.82 | FAIR | 0.50 | 63.26 | | 9.87 |
| | | | | | | 65.22 | FAIR | 0.50 | 64.66 | | 11.27 |
| 55 | 35 | SALAMAUA | SL | 357.3 | 311.5 | 51.56 | GOOD | 0.50 | 51.48 | ANU | 6.82 |
| 56 | 35 | SALAMAUA | SL | 224.5 | 311.5 | 32.47 | GOOD | 0.50 | 32.49 | ANU | 4.42 |
| | | | | | | 35.27 | GOOD | 0.50 | 35.29 | | 7.22 |
| 57 | 35 | SALAMAUA | SL | 224.7 | 308.6 | 32.14 | GOOD | 0.50 | 32.16 | ANU | 4.07 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 34.94 | GOOD | 0.50 | 34.96 | | 6.87 |
| 58 | 35 | SALAMAUA | SL | 227.0 | 307.6 | 34.54 | POOR | 0.50 | 34.56 | ANU | 6.18 |
| | | | | | | 37.54 | FAIR | 0.50 | 37.56 | | 9.18 |
| 59 | 35 | SALAMAUA | SL | 229.3 | 305.1 | 34.94 | GOOD | 0.50 | 34.68 | ANU | 6.01 |
| | | | | | | 38.84 | FAIR | 0.50 | 38.58 | | 9.91 |
| 60 | 35 | SALAMAUA | SL | 231.8 | 301.8 | 36.50 | GOOD | 1.00 | 35.71 | ANU | 6.73 |
| 61 | 35 | SALAMAUA | SL | 231.7 | 298.5 | 37.08 | GOOD | 0.50 | 35.80 | ANU | 6.84 |
| | | | | | | 37.98 | FAIR | 0.50 | 36.70 | | 7.74 |
| 62 | 35 | SALAMAUA | SL | 239.6 | 295.8 | 33.87 | GOOD | 0.50 | 32.14 | ANU | 2.19 |
| | | | | | | 43.07 | GOOD | 0.50 | 41.34 | | 11.39 |
| 63 | 35 | SALAMAUA | SL | 253.9 | 288.2 | 38.20 | FAIR | 0.50 | 36.17 | ANU | 4.43 |
| 69 | 35 | SALAMAUA | SL | 26.0 | 177.1 | 5.27 | GOOD | 0.10 | 5.20 | ANU | 1.95 |
| 70 | 35 | SALAMAUA | SL | 12.7 | 170.0 | 2.60 | GOOD | 0.50 | 2.55 | ANU | .96 |
| | | | | | | 4.20 | FAIR | 0.50 | 4.15 | | 2.56 |
| | | | | | | 7.20 | FAIR | 0.50 | 7.15 | | 5.56 |
| 71 | 35 | SALAMAUA | SL | 9.0 | 272.3 | 2.02 | GOOD | 0.10 | 1.90 | ANU | .78 |
| 73 | 35 | SALAMAUA | SL | 27.3 | 321.6 | 5.09 | GOOD | 0.10 | 5.02 | ANU | 1.61 |
| 74 | 35 | SALAMAUA | SL | 37.3 | 317.4 | 7.06 | GOOD | 0.10 | 6.81 | ANU | 2.15 |
| | | | | | | 11.86 | FAIR | 0.50 | 11.61 | | 6.95 |
| 75 | 35 | SALAMAUA | SL | 48.3 | 316.7 | 8.51 | GOOD | 0.10 | 8.46 | ANU | 2.42 |
| | | | | | | 12.01 | FAIR | 0.50 | 11.96 | | 5.92 |
| | | | | | | 14.11 | FAIR | 0.50 | 14.06 | | 8.02 |
| 76 | 35 | SALAMAUA | SL | 48.7 | 306.7 | 9.08 | GOOD | 0.10 | 8.81 | ANU | 2.72 |
| | | | | | | 10.08 | FAIR | 0.50 | 9.81 | | 3.72 |
| | | | | | | 15.88 | FAIR | 0.50 | 15.61 | | 9.52 |
| 77 | 35 | SALAMAUA | SL | 49.6 | 293.4 | 9.52 | GOOD | 0.10 | 9.02 | ANU | 2.82 |
| | | | | | | 11.92 | GOOD | 0.50 | 11.42 | | 5.22 |
| 78 | 35 | SALAMAUA | SL | 52.4 | 282.3 | 10.63 | GOOD | 0.10 | 9.93 | ANU | 3.38 |
| | | | | | | 13.23 | GOOD | 0.50 | 12.53 | | 5.98 |
| | | | | | | 15.63 | GOOD | 0.50 | 14.93 | | 8.38 |
| | | | | | | 18.33 | GOOD | 0.50 | 17.63 | | 11.08 |
| 79 | 35 | SALAMAUA | SL | 56.5 | 271.1 | 11.82 | GOOD | 0.10 | 10.86 | ANU | 3.80 |
| 80 | 35 | SALAMAUA | SL | 75.0 | 257.0 | 15.36 | GOOD | 0.10 | 14.77 | ANU | 5.40 |
| | | | | | | 16.46 | FAIR | 0.50 | 15.87 | | 6.50 |
| | | | | | | 17.86 | FAIR | 0.50 | 17.27 | | 7.90 |
| | | | | | | 31.26 | FAIR | 0.50 | 30.67 | | 21.30 |
| 81 | 35 | SALAMAUA | SL | 63.8 | 314.1 | 10.73 | GOOD | 0.10 | 10.68 | ANU | 2.70 |
| | | | | | | 14.13 | FAIR | 0.50 | 14.08 | | 6.10 |
| 82 | 35 | SALAMAUA | SL | 80.0 | 314.4 | 12.86 | GOOD | 0.10 | 12.82 | ANU | 2.82 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 14.76 | FAIR | 0.50 | 14.72 | | 4.72 |
| | | | | | | 18.46 | FAIR | 0.50 | 18.42 | | 8.42 |
| 83 | 35 | SALAMAUA | SL | 89.6 | 312.1 | 14.31 | GOOD | 0.10 | 14.27 | ANU | 3.07 |
| | | | | | | 16.41 | FAIR | 0.50 | 16.37 | | 5.17 |
| 84 | 35 | SALAMAUA | SL | 97.0 | 311.9 | 15.43 | GOOD | 0.10 | 15.26 | ANU | 3.13 |
| | | | | | | 23.03 | FAIR | 0.50 | 22.86 | | 10.73 |
| | | | | | | 27.23 | FAIR | 0.50 | 27.06 | | 14.93 |
| 85 | 35 | SALAMAUA | SL | 107.5 | 312.4 | 16.98 | GOOD | 0.50 | 16.71 | ANU | 3.28 |
| | | | | | | 19.08 | GOOD | 0.50 | 18.81 | | 5.38 |
| | | | | | | 21.68 | GOOD | 0.50 | 21.41 | | 7.98 |
| 86 | 35 | SALAMAUA | SL | 116.8 | 312.3 | 18.56 | GOOD | 0.50 | 18.58 | ANU | 3.98 |
| | | | | | | 21.56 | FAIR | 0.50 | 21.58 | | 6.98 |
| | | | | | | 23.36 | FAIR | 0.50 | 23.38 | | 8.78 |
| 87 | 35 | SALAMAUA | SL | 124.2 | 311.7 | 19.86 | GOOD | 0.50 | 19.50 | ANU | 3.97 |
| | | | | | | 22.16 | GOOD | 0.50 | 21.80 | | 6.27 |
| | | | | | | 23.66 | FAIR | 0.50 | 23.30 | | 7.77 |
| | | | | | | 24.86 | FAIR | 0.50 | 24.50 | | 8.97 |
| | | | | | | 27.16 | GOOD | 0.50 | 26.80 | | 11.27 |
| 88 | 35 | SALAMAUA | SL | 157.3 | 306.5 | 24.63 | GOOD | 0.50 | 24.35 | ANU | 4.69 |
| | | | | | | 29.53 | FAIR | 1.00 | 29.25 | | 9.59 |
| | | | | | | 36.23 | FAIR | 0.50 | 35.95 | | 16.29 |
| | | | | | | 38.33 | FAIR | 0.50 | 38.05 | | 18.39 |
| 89 | 35 | SALAMAUA | SL | 159.9 | 301.0 | 25.61 | GOOD | 0.50 | 25.13 | ANU | 5.15 |
| | | | | | | 28.91 | FAIR | 0.50 | 28.43 | | 8.45 |
| | | | | | | 31.01 | GOOD | 0.50 | 30.53 | | 10.55 |
| | | | | | | 34.61 | FAIR | 0.50 | 34.13 | | 14.15 |
| 90 | 35 | SALAMAUA | SL | 163.0 | 297.1 | 25.99 | GOOD | 0.50 | 25.06 | ANU | 4.68 |
| | | | | | | 30.29 | FAIR | 0.50 | 29.36 | | 8.98 |
| | | | | | | 32.89 | FAIR | 0.50 | 31.96 | | 11.58 |
| | | | | | | 39.09 | FAIR | 0.50 | 38.16 | | 17.78 |
| 91 | 35 | SALAMAUA | SL | 166.3 | 293.2 | 27.68 | GOOD | 0.50 | 26.85 | ANU | 6.07 |
| | | | | | | 28.28 | GOOD | 0.50 | 27.45 | | 6.67 |
| | | | | | | 32.98 | FAIR | 0.50 | 32.15 | | 11.37 |
| | | | | | | 37.18 | FAIR | 0.50 | 36.35 | | 15.57 |
| 92 | 35 | SALAMAUA | SL | 174.4 | 287.9 | 29.68 | GOOD | 0.50 | 28.17 | ANU | 6.37 |
| | | | | | | 31.88 | FAIR | 0.50 | 30.37 | | 8.57 |
| | | | | | | 35.38 | FAIR | 0.50 | 33.87 | | 12.07 |
| | | | | | | 42.18 | GOOD | 0.50 | 40.67 | | 18.87 |
| 93 | 35 | SALAMAUA | SL | 177.1 | 284.7 | 30.31 | GOOD | 1.00 | 28.39 | ANU | 6.26 |
| | | | | | | 33.11 | GOOD | 0.50 | 31.19 | | 9.06 |
| | | | | | | 38.01 | FAIR | 0.50 | 36.09 | | 13.96 |
| 94 | 35 | SALAMAUA | SL | 185.2 | 281.6 | 31.90 | GOOD | 0.50 | 29.55 | ANU | 6.40 |
| | | | | | | 34.70 | FAIR | 0.50 | 32.35 | | 9.20 |
| | | | | | | 39.20 | GOOD | 0.50 | 36.85 | | 13.70 |
| | | | | | | 42.00 | GOOD | 0.50 | 39.65 | | 16.50 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 44.10 | FAIR | 0.50 | 41.75 | | 18.60 |
| 96 | 35 | SALAMAUA | SL | 304.8 | 274.0 | 43.86 | FAIR | 1.00 | 42.09 | ANU | 3.99 |
| | | | | | | 46.16 | FAIR | 1.00 | 44.39 | | 6.29 |
| 97 | 35 | SALAMAUA | SL | 285.2 | 278.9 | 42.36 | GOOD | 0.50 | 40.17 | ANU | 4.52 |
| | | | | | | 58.56 | FAIR | 0.50 | 56.37 | | 20.72 |
| | | | | | | 70.06 | FAIR | 0.50 | 67.87 | | 32.22 |
| 98 | 35 | SALAMAUA | SL | 163.3 | 310.1 | 25.51 | GOOD | 0.50 | 25.34 | ANU | 4.93 |
| | | | | | | 32.11 | FAIR | 0.50 | 31.94 | | 11.53 |
| 99 | 35 | SALAMAUA | SL | 188.8 | 313.2 | 28.35 | GOOD | 0.50 | 28.37 | ANU | 4.77 |
| | | | | | | 29.15 | FAIR | 0.50 | 29.17 | | 5.57 |
| | | | | | | 30.35 | FAIR | 0.50 | 30.37 | | 6.77 |
| | | | | | | 34.45 | FAIR | 0.50 | 34.47 | | 10.87 |
| 100 | 35 | SALAMAUA | SL | 202.2 | 314.5 | 29.76 | GOOD | 0.50 | 29.77 | ANU | 4.49 |
| | | | | | | 30.16 | FAIR | 0.50 | 30.17 | | 4.89 |
| 101 | 35 | SALAMAUA | SL | 220.5 | 315.3 | 32.49 | FAIR | 0.50 | 32.50 | ANU | 4.94 |
| | | | | | | 33.99 | FAIR | 0.50 | 34.00 | | 6.44 |
| | | | | | | 56.69 | FAIR | 0.50 | 56.70 | | 29.14 |
| 102 | 35 | SALAMAUA | SL | 229.5 | 316.2 | 33.44 | FAIR | 0.50 | 33.45 | ANU | 4.76 |
| 103 | 35 | SALAMAUA | SL | 240.7 | 317.6 | 34.47 | GOOD | 0.50 | 34.48 | ANU | 4.39 |
| | | | | | | 36.07 | FAIR | 0.50 | 36.08 | | 5.99 |
| 104 | 35 | SALAMAUA | SL | 258.9 | 315.6 | 37.02 | GOOD | 0.50 | 37.04 | ANU | 4.67 |
| | | | | | | 39.22 | GOOD | 0.50 | 39.24 | | 6.87 |
| | | | | | | 40.12 | FAIR | 0.50 | 40.14 | | 7.77 |
| | | | | | | 41.72 | FAIR | 0.50 | 41.74 | | 9.37 |
| 105 | 35 | SALAMAUA | SL | 274.1 | 315.3 | 41.43 | FAIR | 1.00 | 41.45 | ANU | 7.18 |
| 106 | 35 | SALAMAUA | SL | 282.9 | 314.5 | 42.00 | POOR | 1.00 | 42.01 | ANU | 6.65 |
| | | | | | | 45.99 | POOR | 1.00 | 46.00 | | 10.64 |
| 107 | 35 | SALAMAUA | SL | 295.1 | 315.3 | 41.28 | GOOD | 0.50 | 41.29 | ANU | 4.40 |
| | | | | | | 44.38 | GOOD | 0.50 | 44.39 | | 7.50 |
| | | | | | | 47.38 | FAIR | 0.50 | 47.39 | | 10.50 |
| 108 | 35 | SALAMAUA | SL | 301.9 | 314.5 | 44.78 | POOR | 0.50 | 44.79 | ANU | 7.05 |
| 109 | 35 | SALAMAUA | SL | 318.5 | 311.6 | 46.31 | GOOD | 0.50 | 46.32 | ANU | 6.51 |
| | | | | | | 46.91 | GOOD | 0.50 | 46.92 | | 7.11 |
| | | | | | | 50.11 | FAIR | 0.50 | 50.12 | | 10.31 |
| | | | | | | 52.81 | FAIR | 0.50 | 52.82 | | 13.01 |
| 110 | 35 | SALAMAUA | SL | 334.4 | 307.3 | 48.00 | GOOD | 0.50 | 47.90 | ANU | 6.10 |
| | | | | | | 49.10 | GOOD | 0.50 | 49.00 | | 7.20 |
| | | | | | | 50.40 | FAIR | 0.50 | 50.30 | | 8.50 |
| | | | | | | 51.60 | FAIR | 0.50 | 51.50 | | 9.70 |
| | | | | | | 58.50 | GOOD | 0.50 | 58.40 | | 16.60 |
| 111 | 35 | SALAMAUA | SL | 311.3 | 301.7 | 45.93 | GOOD | 0.50 | 45.95 | ANU | 7.04 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 50.23 | FAIR | 0.50 | 50.25 | | 11.34 |
| 59 | 36 | FINSCHHAFEN | FF | 205.6 | 331.3 | 33.67 | POOR | 0.50 | 33.41 | MELB | 7.71 |
| | | | | | | 37.77 | FAIR | 0.50 | 37.51 | | 11.81 |
| 62 | 36 | FINSCHHAFEN | FF | 198.6 | 320.4 | 33.70 | FAIR | 0.50 | 31.96 | MELB | 7.14 |
| | | | | | | 41.15 | FAIR | 0.50 | 39.41 | | 14.59 |
| | | | | | | 53.85 | FAIR | 0.50 | 52.11 | | 27.29 |
| | | | | | | 57.05 | FAIR | 0.50 | 55.31 | | 30.49 |
| 63 | 36 | FINSCHHAFEN | FF | 198.8 | 310.0 | 34.10 | POOR | 0.50 | 32.07 | MELB | 7.22 |
| 69 | 36 | FINSCHHAFEN | FF | 93.2 | 76.2 | 17.77 | GOOD | 0.50 | 17.70 | MELB | 6.05 |
| | | | | | | 19.57 | FAIR | 0.50 | 19.50 | | 7.85 |
| 70 | 36 | FINSCHHAFEN | FF | 93.1 | 68.7 | 19.00 | FAIR | 0.50 | 18.95 | MELB | 7.31 |
| 71 | 36 | FINSCHHAFEN | FF | 93.8 | 58.8 | 18.57 | GOOD | 0.50 | 18.45 | MELB | 6.73 |
| 73 | 36 | FINSCHHAFEN | FF | 100.3 | 46.1 | 19.25 | GOOD | 0.50 | 19.18 | MELB | 6.64 |
| | | | | | | 23.95 | FAIR | 0.50 | 23.88 | | 11.34 |
| 74 | 36 | FINSCHHAFEN | FF | 99.1 | 40.2 | 19.68 | FAIR | 0.50 | 19.43 | MELB | 7.04 |
| | | | | | | 20.38 | FAIR | 0.50 | 20.13 | | 7.74 |
| | | | | | | 20.98 | FAIR | 0.50 | 20.73 | | 8.34 |
| 75 | 36 | FINSCHHAFEN | FF | 100.5 | 33.9 | 19.73 | FAIR | 0.50 | 19.68 | MELB | 7.12 |
| | | | | | | 21.23 | FAIR | 0.50 | 21.18 | | 8.62 |
| 77 | 36 | FINSCHHAFEN | FF | 80.8 | 32.7 | 17.69 | GOOD | 0.10 | 17.19 | MELB | 7.09 |
| | | | | | | 20.19 | FAIR | 0.50 | 19.69 | | 9.59 |
| | | | | | | 23.44 | FAIR | 0.50 | 22.94 | | 12.84 |
| | | | | | | 25.84 | FAIR | 0.50 | 25.34 | | 15.24 |
| | | | | | | 38.64 | FAIR | 0.50 | 38.14 | | 28.04 |
| 79 | 36 | FINSCHHAFEN | FF | 59.2 | 33.4 | 16.11 | POOR | 0.50 | 15.15 | MELB | 7.75 |
| | | | | | | 16.86 | FAIR | 0.50 | 15.90 | | 8.50 |
| | | | | | | 33.86 | FAIR | 0.50 | 32.90 | | 25.50 |
| 81 | 36 | FINSCHHAFEN | FF | 102.3 | 25.0 | 20.11 | FAIR | 0.50 | 20.05 | MELB | 7.27 |
| | | | | | | 22.61 | FAIR | 0.50 | 22.55 | | 9.77 |
| | | | | | | 23.61 | POOR | 0.50 | 23.55 | | 10.77 |
| 82 | 36 | FINSCHHAFEN | FF | 109.1 | 17.1 | 20.60 | GOOD | 0.50 | 20.56 | MELB | 6.93 |
| | | | | | | 21.90 | FAIR | 0.50 | 21.86 | | 8.23 |
| | | | | | | 25.85 | FAIR | 0.50 | 25.81 | | 12.18 |
| 83 | 36 | FINSCHHAFEN | FF | 110.7 | 11.8 | 21.80 | FAIR | 1.00 | 21.76 | MELB | 7.92 |
| 84 | 36 | FINSCHHAFEN | FF | 114.4 | 8.5 | 21.12 | FAIR | 0.50 | 20.95 | MELB | 6.65 |
| | | | | | | 23.09 | FAIR | 0.50 | 22.92 | | 8.62 |
| 86 | 36 | FINSCHHAFEN | FF | 127.0 | 1.2 | 21.71 | POOR | 1.00 | 21.73 | MELB | 5.85 |
| | | | | | | 24.41 | FAIR | 1.00 | 24.43 | | 8.55 |
| 87 | 36 | FINSCHHAFEN | FF | 131.1 | 358.5 | 27.80 | POOR | 0.50 | 27.43 | MELB | 11.05 |
| 88 | 36 | FINSCHHAFEN | FF | 146.9 | 345.3 | 28.03 | FAIR | 0.50 | 27.75 | MELB | 9.39 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 29.43 | POOR | 0.50 | 29.15 | | 10.79 |
| 90 | 36 | FINSCHHAFEN | FF | 134.9 | 335.4 | 25.80 | POOR | 0.50 | 24.87 | MELB | 8.00 |
| 91 | 36 | FINSCHHAFEN | FF | 130.7 | 330.8 | 26.29 | FAIR | 0.50 | 25.46 | MELB | 9.13 |
| | | | | | | 29.04 | FAIR | 0.50 | 28.21 | | 11.88 |
| | | | | | | 30.84 | FAIR | 0.50 | 30.01 | | 13.68 |
| | | | | | | 42.09 | FAIR | 0.50 | 41.26 | | 24.93 |
| 92 | 36 | FINSCHHAFEN | FF | 127.9 | 323.0 | 34.05 | POOR | 1.00 | 32.54 | MELB | 16.55 |
| 94 | 36 | FINSCHHAFEN | FF | 126.1 | 312.9 | 26.83 | POOR | 0.50 | 24.48 | MELB | 8.72 |
| | | | | | | 37.18 | POOR | 0.50 | 34.83 | | 19.07 |
| 97 | 36 | FINSCHHAFEN | FF | 214.1 | 295.8 | 35.70 | POOR | 1.00 | 33.51 | MELB | 6.74 |
| | | | | | | 38.00 | POOR | 1.00 | 35.81 | | 9.04 |
| 63 | 37 | LINDENHAFEN | LF | 216.2 | 38.7 | 34.15 | POOR | 0.50 | 32.12 | QLD | 5.09 |
| | | | | | | 59.94 | POOR | 0.10 | 57.91 | | 30.88 |
| 71 | 37 | LINDENHAFEN | LF | 378.1 | 76.5 | 61.23 | POOR | 0.50 | 61.11 | QLD | 13.85 |
| 77 | 37 | LINDENHAFEN | LF | 348.2 | 71.9 | 50.82 | FAIR | 0.10 | 50.32 | QLD | 6.79 |
| | | | | | | 53.38 | FAIR | 0.10 | 52.88 | | 9.35 |
| | | | | | | 56.01 | FAIR | 0.10 | 55.51 | | 11.98 |
| 95 | 37 | LINDENHAFEN | LF | 104.2 | 29.6 | 20.66 | POOR | 0.50 | 18.13 | QLD | 5.11 |
| | | | | | | 30.55 | FAIR | 0.50 | 28.02 | | 15.00 |
| | | | | | | 32.82 | FAIR | 0.50 | 30.29 | | 17.27 |
| | | | | | | 35.48 | POOR | 0.50 | 32.95 | | 19.93 |
| 96 | 37 | LINDENHAFEN | LF | 132.6 | 32.9 | 23.00 | FAIR | 0.50 | 21.23 | QLD | 4.66 |
| | | | | | | 39.07 | POOR | 0.50 | 37.30 | | 20.73 |
| | | | | | | 39.94 | FAIR | 0.50 | 38.17 | | 21.60 |
| | | | | | | 45.86 | FAIR | 0.50 | 44.09 | | 27.52 |
| | | | | | | 74.80 | FAIR | 0.50 | 73.03 | | 56.46 |
| 97 | 37 | LINDENHAFEN | LF | 164.2 | 35.1 | 27.98 | FAIR | 0.50 | 25.79 | QLD | 5.26 |
| | | | | | | 35.15 | FAIR | 0.50 | 32.96 | | 12.43 |
| | | | | | | 41.30 | POOR | 0.50 | 39.11 | | 18.58 |
| | | | | | | 45.82 | GOOD | 0.50 | 43.63 | | 23.10 |
| 8 | 38 | LAE | LAT | 291.8 | 8.2 | 50.60 | GOOD | 0.50 | 50.32 | BMR | 13.85 |
| 14 | 38 | LAE | LAT | 250.9 | 20.1 | 42.00 | GOOD | 1.00 | 41.86 | BMR | 10.50 |
| | | | | | | 51.40 | GOOD | 0.50 | 51.26 | | 19.90 |
| | | | | | | 53.80 | GOOD | 0.50 | 53.66 | | 22.30 |
| | | | | | | 63.30 | GOOD | 0.50 | 63.16 | | 31.80 |
| 17 | 38 | LAE | LAT | 236.1 | 28.2 | 37.50 | GOOD | 1.00 | 37.51 | BMR | 7.99 |
| | | | | | | 41.80 | GOOD | 0.50 | 41.81 | | 12.29 |
| | | | | | | 46.50 | GOOD | 0.50 | 46.51 | | 16.99 |
| | | | | | | 47.80 | GOOD | 0.50 | 47.81 | | 18.29 |
| | | | | | | 52.40 | GOOD | 0.50 | 52.41 | | 22.89 |
| 18 | 38 | LAE | LAT | 225.1 | 35.4 | 37.80 | FAIR | 0.50 | 37.80 | BMR | 9.66 |
| 19 | 38 | LAE | LAT | 258.2 | 45.1 | 51.40 | POOR | 1.00 | 51.41 | BMR | 19.13 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 38 | LAE | LAT | 269.0 | 17.3 | 47.70 | GOOD | 0.50 | 47.21 | BMR | 13.59 |
| | | | | | | 52.70 | GOOD | 0.50 | 52.21 | | 18.59 |
| | | | | | | 57.00 | GOOD | 0.50 | 56.51 | | 22.89 |
| 23 | 38 | LAE | LAT | 302.3 | 19.3 | 53.20 | FAIR | 1.00 | 52.50 | BMR | 14.71 |
| 35 | 38 | LAE | LAT | 370.3 | 8.3 | 63.30 | POOR | 1.00 | 62.47 | BMR | 16.18 |
| 38 | 38 | LAE | LAT | 341.1 | 3.6 | 75.20 | POOR | 1.00 | 74.36 | BMR | 31.72 |
| 39 | 38 | LAE | LAT | 347.2 | 354.8 | 56.30 | FAIR | 1.00 | 55.96 | BMR | 12.56 |
| | | | | | | 74.10 | FAIR | 0.50 | 73.76 | | 30.36 |
| 69 | 38 | LAE | LAT | 18.8 | 346.4 | 4.80 | GOOD | 0.50 | 4.71 | BMR | 2.36 |
| 70 | 38 | LAE | LAT | 31.9 | 353.7 | 6.60 | GOOD | 0.50 | 6.53 | BMR | 2.55 |
| 71 | 38 | LAE | LAT | 47.0 | 341.7 | 9.10 | GOOD | 0.50 | 8.97 | BMR | 3.09 |
| | | | | | | 45.80 | FAIR | 0.50 | 45.67 | | 39.79 |
| 72 | 38 | LAE | LAT | 56.2 | 340.8 | 10.10 | GOOD | 0.50 | 9.89 | BMR | 2.86 |
| | | | | | | 26.70 | FAIR | 0.50 | 26.49 | | 19.46 |
| 73 | 38 | LAE | LAT | 69.4 | 340.9 | 11.80 | GOOD | 0.50 | 11.72 | BMR | 3.04 |
| | | | | | | 12.90 | GOOD | 0.50 | 12.82 | | 4.14 |
| | | | | | | 34.10 | FAIR | 1.00 | 34.02 | | 25.34 |
| 74 | 38 | LAE | LAT | 78.9 | 336.6 | 13.60 | GOOD | 0.50 | 13.34 | BMR | 3.47 |
| 75 | 38 | LAE | LAT | 88.4 | 333.9 | 15.00 | GOOD | 0.50 | 14.93 | BMR | 3.88 |
| | | | | | | 17.80 | FAIR | 0.50 | 17.73 | | 6.68 |
| | | | | | | 21.80 | FAIR | 0.50 | 21.73 | | 10.68 |
| | | | | | | 57.00 | FAIR | 1.00 | 56.93 | | 45.88 |
| 76 | 38 | LAE | LAT | 85.9 | 328.6 | 15.70 | FAIR | 0.50 | 15.41 | BMR | 4.67 |
| | | | | | | 54.50 | FAIR | 0.50 | 54.21 | | 43.47 |
| 77 | 38 | LAE | LAT | 88.9 | 321.3 | 15.30 | GOOD | 0.50 | 14.78 | BMR | 3.67 |
| | | | | | | 16.70 | FAIR | 0.50 | 16.18 | | 5.07 |
| | | | | | | 40.80 | FAIR | 0.50 | 40.28 | | 29.17 |
| 78 | 38 | LAE | LAT | 79.5 | 314.2 | 15.40 | POOR | 1.00 | 14.68 | BMR | 4.74 |
| 79 | 38 | LAE | LAT | 77.0 | 306.0 | 15.50 | GOOD | 0.50 | 14.53 | BMR | 4.90 |
| | | | | | | 51.20 | FAIR | 0.50 | 50.23 | | 40.60 |
| 80 | 38 | LAE | LAT | 83.5 | 289.1 | 17.00 | GOOD | 0.50 | 16.40 | BMR | 5.96 |
| | | | | | | 18.60 | GOOD | 0.50 | 18.00 | | 7.56 |
| | | | | | | 24.80 | FAIR | 0.50 | 24.20 | | 13.76 |
| | | | | | | 39.70 | GOOD | 0.50 | 39.10 | | 28.66 |
| | | | | | | 46.20 | FAIR | 0.50 | 45.60 | | 35.16 |
| 81 | 38 | LAE | LAT | 106.6 | 329.8 | 16.90 | POOR | 1.00 | 16.83 | BMR | 3.50 |
| | | | | | | 65.70 | FAIR | 1.00 | 65.63 | | 52.30 |
| 82 | 38 | LAE | LAT | 118.3 | 327.9 | 19.10 | GOOD | 0.50 | 19.05 | BMR | 4.26 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 77.00 | FAIR | 1.00 | 76.95 | | 62.16 |
| 83 | 38 | LAE | LAT | 126.9 | 325.3 | 83.30 | POOR | 1.00 | 83.24 | BMR | 67.38 |
| 85 | 38 | LAE | LAT | 144.5 | 323.9 | 22.90 | POOR | 1.00 | 22.62 | BMR | 4.55 |
| 88 | 38 | LAE | LAT | 191.0 | 316.2 | 31.10 | FAIR | 0.50 | 30.81 | BMR | 6.93 |
| | | | | | | 123.70 | FAIR | 0.50 | 123.41 | | 99.53 |
| 89 | 38 | LAE | LAT | 190.9 | 311.5 | 123.80 | FAIR | 1.00 | 123.31 | BMR | 99.44 |
| 90 | 38 | LAE | LAT | 191.9 | 308.1 | 126.30 | FAIR | 1.00 | 125.35 | BMR | 101.36 |
| 91 | 38 | LAE | LAT | 193.0 | 304.7 | 33.00 | GOOD | 0.50 | 32.16 | BMR | 8.03 |
| | | | | | | 97.20 | FAIR | 0.50 | 96.36 | | 72.23 |
| | | | | | | 129.70 | FAIR | 0.50 | 128.86 | | 104.73 |
| 39 | 39 | ESA ALA | ESA | 387.2 | 89.6 | 55.36 | POOR | 1.00 | 55.03 | RAB | 6.63 |
| | | | | | | 66.06 | FAIR | 1.00 | 65.73 | | 17.33 |
| | | | | | | 73.56 | FAIR | 1.00 | 73.23 | | 24.83 |
| 44 | 39 | ESA ALA | ESA | 364.2 | 84.5 | 62.02 | POOR | 1.00 | 61.79 | AB | 16.27 |
| 47 | 39 | ESA ALA | ESA | 326.5 | 81.8 | 47.60 | FAIR | 1.00 | 47.50 | RAB | 6.69 |
| | | | | | | 55.60 | FAIR | 1.00 | 55.50 | | 14.69 |
| 48 | 39 | ESA ALA | ESA | 272.2 | 76.1 | 40.30 | GOOD | 0.50 | 39.93 | RAB | 5.90 |
| | | | | | | 46.80 | GOOD | 0.50 | 46.43 | | 12.40 |
| | | | | | | 51.20 | FAIR | 1.00 | 50.83 | | 16.80 |
| | | | | | | 61.20 | FAIR | 0.50 | 60.83 | | 26.80 |
| 49 | 39 | ESA ALA | ESA | 218.6 | 69.8 | 33.76 | GOOD | 0.50 | 33.19 | RAB | 5.86 |
| | | | | | | 38.76 | GOOD | 0.50 | 38.19 | | 10.86 |
| | | | | | | 41.36 | FAIR | 0.50 | 40.79 | | 13.46 |
| | | | | | | 50.36 | GOOD | 0.50 | 49.79 | | 22.46 |
| 50 | 39 | ESA ALA | ESA | 162.9 | 57.0 | 26.62 | GOOD | 0.50 | 26.46 | RAB | 6.10 |
| | | | | | | 33.32 | GOOD | 0.50 | 33.16 | | 12.80 |
| | | | | | | 40.42 | GOOD | 0.50 | 40.26 | | 19.90 |
| | | | | | | 48.42 | GOOD | 0.50 | 48.26 | | 27.90 |
| 51 | 39 | ESA ALA | ESA | 76.8 | 12.8 | 13.99 | GOOD | 0.50 | 13.79 | RAB | 4.19 |
| | | | | | | 16.79 | FAIR | 1.00 | 16.59 | | 6.99 |
| 52 | 39 | ESA ALA | ESA | 21.6 | 106.9 | 4.55 | GOOD | 0.50 | 4.34 | RAB | 1.64 |
| 62 | 39 | ESA ALA | ESA | 276.6 | 134.2 | 43.45 | GOOD | 0.50 | 41.71 | RAB | 7.13 |
| | | | | | | 46.55 | GOOD | 0.50 | 44.81 | | 10.23 |
| | | | | | | 54.55 | FAIR | 0.50 | 52.81 | | 18.23 |
| | | | | | | 58.35 | FAIR | 0.50 | 56.61 | | 22.03 |
| 63 | 39 | ESA ALA | ESA | 278.1 | 141.5 | 44.79 | GOOD | 0.50 | 42.75 | RAB | 7.99 |
| | | | | | | 46.89 | GOOD | 0.50 | 44.85 | | 10.09 |
| | | | | | | 56.49 | GOOD | 0.50 | 54.45 | | 19.69 |
| 91 | 39 | ESA ALA | ESA | 349.2 | 131.7 | 52.84 | GOOD | 0.50 | 52.00 | RAB | 8.35 |
| | | | | | | 55.64 | FAIR | 0.50 | 54.80 | | 11.15 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 62.84 | FAIR | 1.00 | 62.00 | | 18.35 |
| 94 | 39 | ESA ALA | ESA | 348.9 | 138.2 | 53.68 | FAIR | 0.50 | 51.32 | RAB | 7.71 |
| | | | | | | 55.88 | GOOD | 1.00 | 53.52 | | 9.91 |
| 95 | 39 | ESA ALA | ESA | 309.2 | 163.0 | 46.99 | GOOD | 1.00 | 44.45 | RAB | 5.80 |
| | | | | | | 52.39 | FAIR | 1.00 | 49.85 | | 11.20 |
| | | | | | | 57.19 | GOOD | 0.50 | 54.65 | | 16.00 |
| 96 | 39 | ESA ALA | ESA | 296.6 | 158.1 | 44.30 | GOOD | 0.50 | 42.52 | RAB | 5.45 |
| | | | | | | 45.80 | FAIR | 0.50 | 44.02 | | 6.95 |
| | | | | | | 46.80 | FAIR | 0.50 | 45.02 | | 7.95 |
| 97 | 39 | ESA ALA | ESA | 285.0 | 152.2 | 43.80 | GOOD | 0.50 | 41.60 | RAB | 5.97 |
| | | | | | | 46.40 | FAIR | 0.50 | 44.20 | | 8.57 |
| | | | | | | 50.80 | GOOD | 1.00 | 48.60 | | 12.97 |
| 99 | 39 | ESA ALA | ESA | 323.4 | 121.4 | 47.25 | POOR | 1.00 | 47.26 | RAB | 6.83 |
| | | | | | | 48.75 | FAIR | 0.50 | 48.76 | | 8.33 |
| 110 | 39 | ESA ALA | ESA | 175.7 | 122.3 | 29.13 | GOOD | 0.50 | 29.02 | RAB | 7.06 |
| | | | | | | 31.53 | GOOD | 0.50 | 31.42 | | 9.46 |
| | | | | | | 35.33 | GOOD | 0.50 | 35.22 | | 13.26 |
| | | | | | | 47.33 | GOOD | 0.50 | 47.22 | | 25.26 |
| 111 | 39 | ESA ALA | ESA | 200.2 | 131.6 | 32.57 | GOOD | 0.50 | 32.58 | RAB | 7.56 |
| | | | | | | 40.07 | FAIR | 1.00 | 40.08 | | 15.06 |
| 4 | 40 | LAKE TRIST | LT | 232.1 | 357.7 | 41.60 | POOR | 1.00 | 40.79 | ANU | 11.78 |
| 5 | 40 | LAKE TRIST | LT | 219.9 | 3.5 | 38.20 | FAIR | 0.50 | 37.56 | ANU | 10.07 |
| 8 | 40 | LAKE TRIST | LT | 200.6 | 10.5 | 34.57 | GOOD | 0.50 | 33.95 | ANU | 8.87 |
| 11 | 40 | LAKE TRIST | LT | 179.5 | 18.2 | 32.13 | GOOD | 0.50 | 31.49 | ANU | 9.05 |
| 14 | 40 | LAKE TRIST | LT | 165.2 | 29.3 | 29.64 | GOOD | 0.50 | 29.16 | ANU | 8.51 |
| 16 | 40 | LAKE TRIST | LT | 159.1 | 38.0 | 30.53 | GOOD | 0.50 | 29.93 | ANU | 10.04 |
| | | | | | | 34.43 | FAIR | 0.50 | 33.83 | | 13.94 |
| 17 | 40 | LAKE TRIST | LT | 157.8 | 42.4 | 29.00 | GOOD | 0.50 | 28.66 | ANU | 8.94 |
| 18 | 40 | LAKE TRIST | LT | 155.3 | 53.7 | 29.13 | GOOD | 0.50 | 28.78 | ANU | 9.37 |
| | | | | | | 34.13 | FAIR | 0.50 | 33.78 | | 14.37 |
| 20 | 40 | LAKE TRIST | LT | 181.4 | 24.3 | 32.15 | GOOD | 0.50 | 31.32 | ANU | 8.64 |
| 21 | 40 | LAKE TRIST | LT | 191.1 | 24.5 | 33.66 | GOOD | 0.50 | 32.72 | ANU | 8.83 |
| 22 | 40 | LAKE TRIST | LT | 201.9 | 24.6 | 34.82 | GOOD | 0.50 | 33.79 | ANU | 8.55 |
| | | | | | | 37.22 | FAIR | 0.50 | 36.19 | | 10.95 |
| | | | | | | 41.92 | FAIR | 0.50 | 40.89 | | 15.65 |
| 23 | 40 | LAKE TRIST | LT | 215.7 | 26.0 | 36.17 | GOOD | 0.50 | 35.13 | ANU | 8.16 |
| | | | | | | 40.57 | FAIR | 0.50 | 39.53 | | 12.56 |
| | | | | | | 45.27 | FAIR | 0.50 | 44.23 | | 17.26 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 40 | LAKE TRIST | LT | 259.3 | 29.0 | 41.48 | GOOD | 0.50 | 40.47 | ANU | 8.06 |
| | | | | | | 46.78 | GOOD | 0.50 | 45.77 | | 13.36 |
| | | | | | | 51.88 | GOOD | 0.50 | 50.87 | | 18.46 |
| 26 | 40 | LAKE TRIST | LT | 303.2 | 28.9 | 46.10 | GOOD | 0.50 | 45.07 | ANU | 7.17 |
| | | | | | | 55.60 | FAIR | 1.00 | 54.57 | | 16.67 |
| 27 | 40 | LAKE TRIST | LT | 349.9 | 28.9 | 52.29 | GOOD | 0.50 | 51.50 | ANU | 7.76 |
| | | | | | | 56.59 | FAIR | 0.50 | 55.80 | | 12.06 |
| | | | | | | 63.39 | FAIR | 0.50 | 62.60 | | 18.86 |
| 30 | 40 | LAKE TRIST | LT | 416.3 | 27.9 | 59.54 | FAIR | 0.50 | 58.72 | ANU | 6.69 |
| 38 | 40 | LAKE TRIST | LT | 249.4 | 3.8 | 41.02 | GOOD | 0.50 | 39.83 | ANU | 8.66 |
| | | | | | | 45.22 | GOOD | 0.50 | 44.03 | | 12.86 |
| 39 | 40 | LAKE TRIST | LT | 256.8 | 351.9 | 41.56 | GOOD | 0.50 | 40.88 | ANU | 8.78 |
| | | | | | | 43.86 | FAIR | 0.50 | 43.18 | | 11.08 |
| 42 | 40 | LAKE TRIST | LT | 268.3 | 350.7 | 44.08 | FAIR | 0.50 | 43.41 | ANU | 9.88 |
| | | | | | | 47.38 | GOOD | 0.50 | 46.71 | | 13.18 |
| | | | | | | 52.78 | FAIR | 0.50 | 52.11 | | 18.58 |
| 43 | 40 | LAKE TRIST | LT | 280.8 | 349.9 | 44.90 | FAIR | 0.50 | 44.14 | ANU | 9.04 |
| | | | | | | 49.90 | GOOD | 0.50 | 49.14 | | 14.04 |
| 46 | 40 | LAKE TRIST | LT | 309.5 | 343.4 | 48.02 | GOOD | 0.50 | 47.28 | ANU | 8.60 |
| | | | | | | 52.82 | GOOD | 0.50 | 52.08 | | 13.40 |
| 47 | 40 | LAKE TRIST | LT | 314.5 | 341.3 | 49.10 | GOOD | 0.50 | 48.65 | ANU | 9.34 |
| 48 | 40 | LAKE TRIST | LT | 354.0 | 333.1 | 54.90 | GOOD | 0.50 | 54.18 | ANU | 9.92 |
| | | | | | | 59.80 | GOOD | 0.50 | 59.07 | | 14.83 |
| 49 | 40 | LAKE TRIST | LT | 392.2 | 326.0 | 60.56 | GOOD | 0.50 | 59.64 | ANU | 10.61 |
| | | | | | | 66.26 | FAIR | 1.00 | 65.34 | | 16.31 |
| 50 | 40 | LAKE TRIST | LT | 444.1 | 319.5 | 68.52 | FAIR | 0.50 | 68.01 | ANU | 12.50 |
| | | | | | | 73.32 | GOOD | 0.50 | 72.81 | | 17.30 |
| | | | | | | 77.82 | GOOD | 0.50 | 77.31 | | 21.80 |
| 52 | 40 | LAKE TRIST | LT | 471.5 | 300.8 | 69.85 | POOR | 0.50 | 69.29 | ANU | 10.35 |
| | | | | | | 70.65 | FAIR | 0.50 | 70.09 | | 11.15 |
| 56 | 40 | LAKE TRIST | LT | 205.4 | 299.6 | 30.58 | GOOD | 0.50 | 30.23 | ANU | 4.56 |
| | | | | | | 31.98 | FAIR | 0.50 | 31.63 | | 5.96 |
| | | | | | | 33.78 | GOOD | 0.50 | 33.43 | | 7.76 |
| 57 | 40 | LAKE TRIST | LT | 208.0 | 296.5 | 31.45 | GOOD | 0.50 | 31.11 | ANU | 5.11 |
| | | | | | | 33.35 | FAIR | 0.50 | 33.01 | | 7.01 |
| 59 | 40 | LAKE TRIST | LT | 215.4 | 293.0 | 33.37 | FAIR | 0.50 | 32.74 | ANU | 5.82 |
| | | | | | | 36.07 | FAIR | 0.50 | 35.44 | | 8.52 |
| | | | | | | 37.47 | GOOD | 0.50 | 36.84 | | 9.92 |
| 60 | 40 | LAKE TRIST | LT | 220.6 | 289.8 | 38.93 | FAIR | 0.50 | 37.78 | ANU | 10.20 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 40.13 | FAIR | 0.50 | 38.98 | | 11.40 |
| | | | | | | 41.63 | GOOD | 0.50 | 40.48 | | 12.90 |
| | | | | | | 44.13 | GOOD | 0.50 | 42.98 | | 15.40 |
| 61 | 40 | LAKE TRIST | LT | 223.1 | 286.5 | 38.75 | GOOD | 0.50 | 37.11 | ANU | 9.22 |
| | | | | | | 39.95 | GOOD | 0.50 | 38.31 | | 10.42 |
| 62 | 40 | LAKE TRIST | LT | 233.2 | 284.1 | 39.75 | FAIR | 0.50 | 37.65 | ANU | 8.50 |
| | | | | | | 41.35 | GOOD | 0.50 | 39.25 | | 10.10 |
| 69 | 40 | LAKE TRIST | LT | 74.0 | 187.3 | 13.27 | GOOD | 0.50 | 12.84 | ANU | 3.59 |
| 70 | 40 | LAKE TRIST | LT | 60.5 | 188.0 | 10.95 | GOOD | 0.50 | 10.54 | ANU | 2.98 |
| | | | | | | 16.25 | FAIR | 0.50 | 15.84 | | 8.28 |
| | | | | | | 18.85 | FAIR | 0.50 | 18.44 | | 10.88 |
| 71 | 40 | LAKE TRIST | LT | 51.0 | 202.7 | 9.27 | GOOD | 0.50 | 8.79 | ANU | 2.42 |
| 72 | 40 | LAKE TRIST | LT | 45.1 | 221.2 | 8.68 | GOOD | 0.50 | 8.12 | ANU | 2.48 |
| 73 | 40 | LAKE TRIST | LT | 37.9 | 226.7 | 7.35 | GOOD | 0.50 | 6.92 | ANU | 2.18 |
| 74 | 40 | LAKE TRIST | LT | 41.0 | 240.9 | 8.43 | GOOD | 0.50 | 7.82 | ANU | 2.70 |
| 75 | 40 | LAKE TRIST | LT | 45.5 | 254.4 | 8.68 | GOOD | 0.50 | 8.27 | ANU | 2.58 |
| 76 | 40 | LAKE TRIST | LT | 52.9 | 249.8 | 10.09 | GOOD | 0.50 | 9.46 | ANU | 2.84 |
| | | | | | | 13.59 | FAIR | 0.50 | 12.96 | | 6.34 |
| 77 | 40 | LAKE TRIST | LT | 62.6 | 243.7 | 11.94 | GOOD | 0.50 | 11.08 | ANU | 3.25 |
| | | | | | | 15.74 | FAIR | 0.50 | 14.88 | | 7.05 |
| 78 | 40 | LAKE TRIST | LT | 71.6 | 239.7 | 13.95 | GOOD | 0.50 | 12.89 | ANU | 3.94 |
| | | | | | | 16.65 | FAIR | 0.50 | 15.59 | | 6.64 |
| | | | | | | 21.75 | FAIR | 0.50 | 20.69 | | 11.74 |
| 79 | 40 | LAKE TRIST | LT | 81.6 | 235.4 | 16.06 | GOOD | 0.50 | 14.74 | ANU | 4.54 |
| | | | | | | 19.96 | FAIR | 0.50 | 18.64 | | 8.44 |
| 80 | 40 | LAKE TRIST | LT | 105.5 | 232.5 | 21.70 | GOOD | 0.50 | 20.75 | ANU | 7.57 |
| 81 | 40 | LAKE TRIST | LT | 56.6 | 262.0 | 10.31 | GOOD | 0.50 | 9.89 | ANU | 2.82 |
| 82 | 40 | LAKE TRIST | LT | 68.2 | 277.2 | 12.05 | GOOD | 0.50 | 11.65 | ANU | 3.13 |
| 83 | 40 | LAKE TRIST | LT | 78.1 | 279.3 | 13.80 | GOOD | 0.50 | 13.40 | ANU | 3.63 |
| 84 | 40 | LAKE TRIST | LT | 84.6 | 281.9 | 15.02 | GOOD | 0.50 | 14.49 | ANU | 3.91 |
| | | | | | | 19.02 | FAIR | 0.50 | 18.49 | | 7.91 |
| 85 | 40 | LAKE TRIST | LT | 93.4 | 285.6 | 15.98 | GOOD | 0.50 | 15.35 | ANU | 3.68 |
| 86 | 40 | LAKE TRIST | LT | 101.9 | 287.8 | 17.66 | GOOD | 0.50 | 17.32 | ANU | 4.58 |
| 87 | 40 | LAKE TRIST | LT | 109.1 | 288.9 | 19.27 | FAIR | 0.50 | 18.54 | ANU | 4.91 |
| 88 | 40 | LAKE TRIST | LT | 144.5 | 288.7 | 24.18 | GOOD | 0.50 | 23.54 | ANU | 5.48 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 27.88 | GOOD | 0.50 | 27.24 | | 9.18 |
| | | | | | | 46.88 | FAIR | 1.00 | 46.24 | | 28.18 |
| 89 | 40 | LAKE TRIST | LT | 151.6 | 283.3 | 25.37 | GOOD | 0.50 | 24.53 | ANU | 5.58 |
| | | | | | | 27.97 | GOOD | 0.50 | 27.13 | | 8.18 |
| 91 | 40 | LAKE TRIST | LT | 164.4 | 276.3 | 28.04 | GOOD | 0.50 | 26.85 | ANU | 6.30 |
| | | | | | | 31.74 | GOOD | 0.50 | 30.55 | | 10.00 |
| | | | | | | 35.54 | FAIR | 0.50 | 34.35 | | 13.80 |
| | | | | | | 42.04 | GOOD | 0.50 | 40.85 | | 20.30 |
| 92 | 40 | LAKE TRIST | LT | 176.5 | 272.0 | 31.35 | GOOD | 0.50 | 29.48 | ANU | 7.41 |
| | | | | | | 33.55 | GOOD | 0.50 | 31.68 | | 9.61 |
| 93 | 40 | LAKE TRIST | LT | 181.8 | 269.2 | 34.18 | FAIR | 0.50 | 31.90 | ANU | 9.18 |
| | | | | | | 37.18 | GOOD | 0.50 | 34.90 | | 12.18 |
| 94 | 40 | LAKE TRIST | LT | 192.1 | 267.0 | 33.58 | FAIR | 0.50 | 30.87 | ANU | 6.86 |
| | | | | | | 36.68 | GOOD | 0.50 | 33.97 | | 9.96 |
| | | | | | | 47.28 | GOOD | 0.50 | 44.57 | | 20.56 |
| 98 | 40 | LAKE TRIST | LT | 147.3 | 293.1 | 24.90 | FAIR | 0.50 | 24.37 | ANU | 5.96 |
| | | | | | | 27.50 | FAIR | 0.50 | 26.97 | | 8.56 |
| 99 | 40 | LAKE TRIST | LT | 169.3 | 298.9 | 27.45 | FAIR | 1.00 | 27.11 | ANU | 5.94 |
| | | | | | | 30.25 | FAIR | 0.50 | 29.91 | | 8.74 |
| 102 | 40 | LAKE TRIST | LT | 206.6 | 305.0 | 35.05 | FAIR | 0.50 | 34.70 | ANU | 8.88 |
| | | | | | | 39.35 | GOOD | 0.50 | 39.00 | | 13.18 |
| 104 | 40 | LAKE TRIST | LT | 235.9 | 305.6 | 38.38 | GOOD | 0.50 | 38.03 | ANU | 8.55 |
| | | | | | | 40.98 | FAIR | 0.50 | 40.63 | | 11.15 |
| 107 | 40 | LAKE TRIST | LT | 271.8 | 306.7 | 43.56 | POOR | 0.50 | 43.21 | ANU | 9.24 |
| 109 | 40 | LAKE TRIST | LT | 297.8 | 303.4 | 46.73 | FAIR | 0.50 | 46.38 | ANU | 9.16 |
| | | | | | | 48.63 | GOOD | 0.50 | 48.28 | | 11.06 |
| 110 | 40 | LAKE TRIST | LT | 327.0 | 299.3 | 53.63 | FAIR | 0.50 | 53.17 | ANU | 12.29 |
| | | | | | | 57.03 | FAIR | 0.50 | 56.57 | | 15.69 |
| 111 | 40 | LAKE TRIST | LT | 298.8 | 292.9 | 47.17 | FAIR | 0.50 | 46.83 | ANU | 9.48 |
| 1 | 41 | MUSA DAM | MD | 198.9 | 85.7 | 33.45 | GOOD | 0.50 | 32.62 | ANU | 7.76 |
| | | | | | | 35.55 | GOOD | 0.50 | 34.72 | | 9.86 |
| | | | | | | 38.55 | GOOD | 0.50 | 37.72 | | 12.86 |
| | | | | | | 46.45 | FAIR | 0.50 | 45.62 | | 20.76 |
| 2 | 41 | MUSA DAM | MD | 187.0 | 87.3 | 31.95 | GOOD | 0.50 | 31.19 | ANU | 7.82 |
| | | | | | | 33.65 | FAIR | 0.50 | 32.89 | | 9.52 |
| | | | | | | 37.55 | GOOD | 0.10 | 36.79 | | 13.42 |
| | | | | | | 40.35 | FAIR | 0.50 | 39.59 | | 16.22 |
| 3 | 41 | MUSA DAM | MD | 193.4 | 90.7 | 32.69 | GOOD | 0.50 | 32.11 | ANU | 7.93 |
| | | | | | | 34.49 | GOOD | 0.50 | 33.91 | | 9.73 |
| | | | | | | 37.89 | FAIR | 0.50 | 37.31 | | 13.13 |
| 4 | 41 | MUSA DAM | MD | 180.5 | 88.9 | 29.78 | GOOD | 0.50 | 29.30 | ANU | 6.74 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 34.88 | FAIR | 0.50 | 34.40 | | 11.84 |
| | | | | | | 39.68 | FAIR | 0.50 | 39.20 | | 16.64 |
| 5 | 41 | MUSA DAM | MD | 203.1 | 92.5 | 33.17 | GOOD | 0.50 | 32.85 | ANU | 7.46 |
| | | | | | | 35.37 | FAIR | 0.50 | 35.05 | | 9.66 |
| | | | | | | 37.67 | FAIR | 0.50 | 37.35 | | 11.96 |
| | | | | | | 41.67 | FAIR | 0.50 | 41.35 | | 15.96 |
| 6 | 41 | MUSA DAM | MD | 210.5 | 93.8 | 35.22 | GOOD | 0.50 | 34.92 | ANU | 8.61 |
| | | | | | | 40.32 | FAIR | 0.50 | 40.02 | | 13.71 |
| | | | | | | 46.92 | FAIR | 0.50 | 46.62 | | 20.31 |
| 7 | 41 | MUSA DAM | MD | 217.1 | 95.4 | 35.42 | GOOD | 1.00 | 35.07 | ANU | 7.93 |
| | | | | | | 38.52 | GOOD | 0.50 | 38.17 | | 11.03 |
| | | | | | | 42.72 | FAIR | 0.50 | 42.37 | | 15.23 |
| | | | | | | 46.02 | FAIR | 0.50 | 45.67 | | 18.53 |
| 8 | 41 | MUSA DAM | MD | 228.2 | 97.9 | 37.02 | GOOD | 0.50 | 36.72 | ANU | 8.20 |
| | | | | | | 37.42 | GOOD | 0.10 | 37.12 | | 8.60 |
| | | | | | | 38.92 | FAIR | 0.50 | 38.62 | | 10.10 |
| | | | | | | 46.02 | GOOD | 0.50 | 45.72 | | 17.20 |
| | | | | | | 49.42 | FAIR | 0.50 | 49.12 | | 20.60 |
| 9 | 41 | MUSA DAM | MD | 234.0 | 99.5 | 37.90 | FAIR | 0.50 | 37.72 | ANU | 8.47 |
| | | | | | | 40.21 | FAIR | 0.50 | 40.03 | | 10.78 |
| | | | | | | 45.71 | FAIR | 0.50 | 45.53 | | 16.28 |
| 10 | 41 | MUSA DAM | MD | 244.6 | 101.0 | 39.72 | GOOD | 0.50 | 39.30 | ANU | 8.72 |
| 11 | 41 | MUSA DAM | MD | 252.4 | 103.3 | 40.46 | GOOD | 0.50 | 40.15 | ANU | 8.60 |
| | | | | | | 42.16 | GOOD | 0.50 | 41.85 | | 10.30 |
| | | | | | | 50.46 | FAIR | 0.50 | 50.15 | | 18.60 |
| | | | | | | 53.36 | FAIR | 0.50 | 53.05 | | 21.50 |
| 14 | 41 | MUSA DAM | MD | 283.3 | 107.4 | 44.28 | GOOD | 0.50 | 44.12 | ANU | 8.71 |
| | | | | | | 52.18 | FAIR | 0.50 | 52.02 | | 16.61 |
| | | | | | | 55.78 | FAIR | 0.50 | 55.62 | | 20.21 |
| 15 | 41 | MUSA DAM | MD | 294.4 | 108.7 | 45.82 | FAIR | 0.50 | 45.63 | ANU | 8.83 |
| 16 | 41 | MUSA DAM | MD | 305.2 | 109.8 | 47.47 | GOOD | 0.50 | 47.20 | ANU | 9.05 |
| 17 | 41 | MUSA DAM | MD | 316.2 | 110.8 | 48.05 | GOOD | 0.50 | 48.04 | ANU | 8.51 |
| | | | | | | 58.75 | FAIR | 0.50 | 58.74 | | 19.21 |
| 18 | 41 | MUSA DAM | MD | 342.8 | 113.5 | 60.68 | POOR | 1.00 | 60.66 | ANU | 17.81 |
| 19 | 41 | MUSA DAM | MD | 391.7 | 110.7 | 57.96 | POOR | 0.50 | 57.95 | ANU | 8.98 |
| 20 | 41 | MUSA DAM | MD | 271.6 | 103.5 | 42.78 | GOOD | 0.50 | 42.27 | ANU | 8.32 |
| | | | | | | 49.78 | FAIR | 0.50 | 49.27 | | 15.32 |
| | | | | | | 57.58 | FAIR | 0.50 | 57.07 | | 23.12 |
| 21 | 41 | MUSA DAM | MD | 274.0 | 101.5 | 43.46 | POOR | 1.00 | 42.84 | ANU | 8.59 |
| | | | | | | 45.99 | POOR | 1.00 | 45.37 | | 11.12 |
| 22 | 41 | MUSA DAM | MD | 277.1 | 99.4 | 43.88 | POOR | 0.50 | 43.17 | ANU | 8.54 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 41 | MUSA DAM | MD | 286.0 | 97.0 | 44.63 | GOOD | 0.50 | 43.91 | ANU | 8.16 |
| | | | | | | 52.13 | GOOD | 1.00 | 51.41 | | 15.66 |
| | | | | | | 58.23 | FAIR | 0.50 | 57.51 | | 21.76 |
| | | | | | | 62.33 | FAIR | 0.50 | 61.61 | | 25.86 |
| 25 | 41 | MUSA DAM | MD | 314.9 | 90.4 | 47.16 | GOOD | 0.50 | 46.48 | ANU | 7.11 |
| | | | | | | 57.06 | GOOD | 0.50 | 56.38 | | 17.01 |
| | | | | | | 65.46 | FAIR | 0.50 | 64.78 | | 25.41 |
| 26 | 41 | MUSA DAM | MD | 337.2 | 83.8 | 49.19 | GOOD | 0.50 | 48.48 | ANU | 6.33 |
| | | | | | | 66.69 | GOOD | 0.50 | 65.98 | | 23.83 |
| 27 | 41 | MUSA DAM | MD | 366.2 | 77.9 | 52.80 | FAIR | 0.50 | 52.33 | ANU | 6.56 |
| | | | | | | 54.60 | GOOD | 0.50 | 54.13 | | 8.36 |
| | | | | | | 73.80 | GOOD | 0.50 | 73.33 | | 27.56 |
| 28 | 41 | MUSA DAM | MD | 406.3 | 72.8 | 57.82 | GOOD | 0.50 | 57.33 | ANU | 6.54 |
| 29 | 41 | MUSA DAM | MD | 438.9 | 69.7 | 62.60 | FAIR | 0.50 | 62.06 | ANU | 7.20 |
| 30 | 41 | MUSA DAM | MD | 407.7 | 70.2 | 56.89 | FAIR | 0.50 | 56.40 | ANU | 5.44 |
| 31 | 41 | MUSA DAM | MD | 368.4 | 71.4 | 52.83 | FAIR | 0.50 | 52.39 | ANU | 6.34 |
| | | | | | | 73.43 | GOOD | 0.50 | 72.99 | | 26.94 |
| 32 | 41 | MUSA DAM | MD | 324.9 | 73.3 | 47.86 | FAIR | 0.50 | 47.28 | ANU | 6.67 |
| | | | | | | 60.96 | FAIR | 0.50 | 60.38 | | 19.77 |
| 33 | 41 | MUSA DAM | MD | 278.6 | 75.8 | 42.54 | FAIR | 0.50 | 41.72 | ANU | 6.89 |
| | | | | | | 49.34 | GOOD | 0.50 | 48.52 | | 13.69 |
| | | | | | | 52.64 | GOOD | 0.50 | 51.82 | | 16.99 |
| 34 | 41 | MUSA DAM | MD | 252.8 | 78.1 | 39.54 | FAIR | 0.50 | 38.66 | ANU | 7.06 |
| 35 | 41 | MUSA DAM | MD | 242.1 | 79.0 | 38.09 | GOOD | 0.50 | 37.24 | ANU | 6.98 |
| | | | | | | 45.09 | FAIR | 0.50 | 44.24 | | 13.98 |
| 36 | 41 | MUSA DAM | MD | 229.3 | 80.9 | 36.91 | FAIR | 1.00 | 36.04 | ANU | 7.38 |
| | | | | | | 40.71 | GOOD | 0.50 | 39.84 | | 11.18 |
| 37 | 41 | MUSA DAM | MD | 216.8 | 82.6 | 35.38 | GOOD | 0.50 | 34.51 | ANU | 7.41 |
| | | | | | | 38.98 | FAIR | 0.50 | 38.11 | | 11.01 |
| | | | | | | 41.88 | FAIR | 0.50 | 41.01 | | 13.91 |
| 38 | 41 | MUSA DAM | MD | 207.0 | 84.4 | 34.28 | GOOD | 0.50 | 33.42 | ANU | 7.54 |
| | | | | | | 37.88 | GOOD | 0.50 | 37.02 | | 11.14 |
| | | | | | | 41.28 | GOOD | 0.50 | 40.42 | | 14.54 |
| | | | | | | 54.08 | FAIR | 0.50 | 53.22 | | 27.34 |
| 39 | 41 | MUSA DAM | MD | 155.9 | 80.4 | 27.63 | GOOD | 0.50 | 27.27 | ANU | 7.78 |
| | | | | | | 28.73 | GOOD | 0.50 | 28.37 | | 8.88 |
| | | | | | | 32.53 | FAIR | 0.50 | 32.17 | | 12.68 |
| | | | | | | 39.83 | FAIR | 0.50 | 39.47 | | 19.98 |
| | | | | | | 49.13 | GOOD | 0.50 | 48.77 | | 29.28 |
| | | | | | | 54.43 | FAIR | 0.50 | 54.07 | | 34.58 |
| 40 | 41 | MUSA DAM | MD | 164.4 | 83.2 | 28.88 | GOOD | 0.50 | 28.50 | ANU | 7.95 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 32.08 | FAIR | 0.50 | 31.70 | | 11.15 |
| 41 | 41 | MUSA DAM | MD | 172.9 | 86.6 | 30.10 | GOOD | 0.50 | 29.70 | ANU | 8.09 |
| | | | | | | 31.70 | GOOD | 0.50 | 31.30 | | 9.69 |
| | | | | | | 35.40 | FAIR | 0.50 | 35.00 | | 13.39 |
| 42 | 41 | MUSA DAM | MD | 151.4 | 76.0 | 26.74 | GOOD | 0.50 | 26.40 | ANU | 7.47 |
| | | | | | | 28.34 | FAIR | 0.50 | 28.00 | | 9.07 |
| | | | | | | 30.24 | GOOD | 0.50 | 29.90 | | 10.97 |
| | | | | | | 34.14 | GOOD | 0.50 | 33.80 | | 14.87 |
| 43 | 41 | MUSA DAM | MD | 149.1 | 71.1 | 26.66 | GOOD | 0.50 | 26.22 | ANU | 7.59 |
| | | | | | | 27.86 | GOOD | 0.50 | 27.42 | | 8.79 |
| | | | | | | 35.26 | FAIR | 0.50 | 34.82 | | 16.19 |
| 44 | 41 | MUSA DAM | MD | 141.6 | 65.6 | 25.28 | GOOD | 0.50 | 25.03 | ANU | 7.33 |
| | | | | | | 26.18 | GOOD | 0.50 | 25.93 | | 8.23 |
| | | | | | | 33.48 | FAIR | 0.50 | 33.23 | | 15.53 |
| | | | | | | 45.58 | GOOD | 0.50 | 45.33 | | 27.63 |
| 45 | 41 | MUSA DAM | MD | 133.4 | 60.3 | 24.45 | GOOD | 0.50 | 24.01 | ANU | 7.34 |
| | | | | | | 25.15 | GOOD | 0.50 | 24.71 | | 8.04 |
| | | | | | | 27.85 | FAIR | 0.50 | 27.41 | | 10.74 |
| | | | | | | 37.45 | FAIR | 0.50 | 37.01 | | 20.34 |
| 46 | 41 | MUSA DAM | MD | 123.0 | 56.1 | 23.28 | GOOD | 0.50 | 22.87 | ANU | 7.49 |
| | | | | | | 25.98 | FAIR | 0.50 | 25.57 | | 10.19 |
| | | | | | | 29.08 | GOOD | 0.50 | 28.67 | | 13.29 |
| | | | | | | 34.88 | FAIR | 0.50 | 34.47 | | 19.09 |
| 47 | 41 | MUSA DAM | MD | 113.7 | 52.0 | 21.26 | GOOD | 0.50 | 21.13 | ANU | 6.92 |
| | | | | | | 36.06 | FAIR | 0.50 | 35.93 | | 21.72 |
| 48 | 41 | MUSA DAM | MD | 93.3 | 19.2 | 17.86 | GOOD | 0.50 | 17.46 | ANU | 5.80 |
| | | | | | | 27.96 | FAIR | 0.50 | 27.56 | | 15.90 |
| 49 | 41 | MUSA DAM | MD | 101.7 | 343.8 | 19.03 | GOOD | 0.50 | 18.43 | ANU | 5.72 |
| | | | | | | 20.43 | GOOD | 0.50 | 19.83 | | 7.12 |
| 50 | 41 | MUSA DAM | MD | 147.2 | 318.8 | 25.29 | GOOD | 0.50 | 25.10 | ANU | 6.70 |
| | | | | | | 27.49 | FAIR | 0.50 | 27.30 | | 8.90 |
| 51 | 41 | MUSA DAM | MD | 237.0 | 293.9 | 39.76 | GOOD | 0.50 | 39.54 | ANU | 9.91 |
| | | | | | | 42.66 | FAIR | 0.50 | 42.44 | | 12.81 |
| | | | | | | 45.56 | FAIR | 0.50 | 45.34 | | 15.71 |
| | | | | | | 50.76 | FAIR | 0.50 | 50.54 | | 20.91 |
| 52 | 41 | MUSA DAM | MD | 213.5 | 274.0 | 37.03 | GOOD | 0.50 | 36.79 | ANU | 10.10 |
| | | | | | | 40.23 | GOOD | 0.50 | 39.99 | | 13.30 |
| 53 | 41 | MUSA DAM | MD | 157.1 | 274.3 | 26.22 | GOOD | 0.50 | 26.12 | ANU | 6.49 |
| | | | | | | 30.72 | GOOD | 0.50 | 30.62 | | 10.99 |
| | | | | | | 35.02 | FAIR | 0.50 | 34.92 | | 15.29 |
| | | | | | | 60.82 | GOOD | 0.50 | 60.72 | | 41.09 |
| 54 | 41 | MUSA DAM | MD | 107.4 | 267.1 | 18.75 | GOOD | 0.50 | 18.60 | ANU | 5.18 |
| | | | | | | 21.25 | GOOD | 0.50 | 21.10 | | 7.68 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 37.05 | FAIR | 0.50 | 36.90 | | 23.48 |
| 55 | 41 | MUSA DAM | MD | 94.7 | 246.4 | 14.03 | GOOD | 0.50 | 13.92 | ANU | 2.08 |
| | | | | | | 17.43 | GOOD | 0.50 | 17.32 | | 5.48 |
| | | | | | | 20.33 | GOOD | 0.50 | 20.22 | | 8.38 |
| | | | | | | 28.33 | FAIR | 0.50 | 28.22 | | 16.38 |
| | | | | | | 37.83 | FAIR | 0.50 | 37.72 | | 25.88 |
| 56 | 41 | MUSA DAM | MD | 126.9 | 174.5 | 20.37 | GOOD | 0.50 | 20.35 | ANU | 4.49 |
| | | | | | | 21.67 | FAIR | 0.50 | 21.65 | | 5.79 |
| | | | | | | 27.97 | GOOD | 0.50 | 27.95 | | 12.09 |
| 57 | 41 | MUSA DAM | MD | 135.0 | 178.1 | 20.74 | GOOD | 0.50 | 20.72 | ANU | 3.85 |
| | | | | | | 22.24 | FAIR | 0.50 | 22.22 | | 5.35 |
| | | | | | | 24.94 | GOOD | 0.50 | 24.92 | | 8.05 |
| | | | | | | 27.14 | GOOD | 0.50 | 27.12 | | 10.25 |
| | | | | | | 28.74 | GOOD | 0.50 | 28.72 | | 11.85 |
| 58 | 41 | MUSA DAM | MD | 136.4 | 179.8 | 20.85 | GOOD | 0.50 | 20.83 | ANU | 3.78 |
| | | | | | | 24.95 | GOOD | 0.50 | 24.93 | | 7.88 |
| | | | | | | 38.75 | FAIR | 0.50 | 38.73 | | 21.68 |
| 59 | 41 | MUSA DAM | MD | 143.4 | 182.9 | 21.86 | GOOD | 0.50 | 21.56 | ANU | 3.63 |
| | | | | | | 22.46 | GOOD | 0.50 | 22.16 | | 4.23 |
| | | | | | | 23.86 | FAIR | 0.50 | 23.56 | | 5.63 |
| | | | | | | 39.56 | GOOD | 0.50 | 39.26 | | 21.33 |
| 60 | 41 | MUSA DAM | MD | 153.7 | 186.2 | 24.52 | GOOD | 0.50 | 23.69 | ANU | 4.48 |
| | | | | | | 27.32 | GOOD | 0.50 | 26.49 | | 7.28 |
| | | | | | | 32.52 | FAIR | 0.50 | 31.69 | | 12.48 |
| 61 | 41 | MUSA DAM | MD | 165.9 | 188.0 | 27.05 | GOOD | 0.50 | 25.73 | ANU | 4.99 |
| | | | | | | 30.95 | FAIR | 0.50 | 29.63 | | 8.89 |
| | | | | | | 35.65 | GOOD | 0.50 | 34.33 | | 13.59 |
| 62 | 41 | MUSA DAM | MD | 174.1 | 191.6 | 28.95 | GOOD | 0.50 | 27.18 | ANU | 5.42 |
| | | | | | | 33.75 | GOOD | 0.50 | 31.98 | | 10.22 |
| | | | | | | 35.95 | FAIR | 0.50 | 34.18 | | 12.42 |
| | | | | | | 40.35 | GOOD | 0.50 | 38.58 | | 16.82 |
| | | | | | | 43.15 | GOOD | 0.50 | 41.38 | | 19.62 |
| | | | | | | 45.85 | FAIR | 0.50 | 44.08 | | 22.32 |
| 63 | 41 | MUSA DAM | MD | 204.8 | 197.2 | 34.69 | GOOD | 0.50 | 32.62 | ANU | 7.02 |
| | | | | | | 43.59 | GOOD | 0.50 | 41.52 | | 15.92 |
| 69 | 41 | MUSA DAM | MD | 351.6 | 149.1 | 53.29 | FAIR | 0.50 | 53.18 | ANU | 9.23 |
| 71 | 41 | MUSA DAM | MD | 323.7 | 148.3 | 49.19 | POOR | 1.00 | 49.04 | ANU | 8.57 |
| | | | | | | 51.19 | FAIR | 0.50 | 51.04 | | 10.57 |
| 73 | 41 | MUSA DAM | MD | 301.7 | 147.4 | 45.17 | POOR | 1.00 | 45.07 | ANU | 7.35 |
| | | | | | | 48.87 | FAIR | 0.50 | 48.77 | | 11.05 |
| 74 | 41 | MUSA DAM | MD | 292.1 | 148.2 | 46.15 | GOOD | 0.50 | 45.87 | ANU | 9.35 |
| | | | | | | 49.45 | GOOD | 0.50 | 49.17 | | 12.65 |
| | | | | | | 50.95 | FAIR | 0.50 | 50.67 | | 14.15 |
| 75 | 41 | MUSA DAM | MD | 281.4 | 148.7 | 44.60 | FAIR | 0.50 | 44.51 | ANU | 9.34 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 52.20 | GOOD | 0.50 | 52.11 | | 16.94 |
| 77 | 41 | MUSA DAM | MD | 288.8 | 152.4 | 44.77 | GOOD | 0.50 | 44.23 | ANU | 8.13 |
| | | | | | | 48.27 | FAIR | 0.50 | 47.73 | | 11.63 |
| 79 | 41 | MUSA DAM | MD | 300.8 | 155.9 | 46.79 | FAIR | 0.50 | 45.80 | ANU | 8.20 |
| | | | | | | 51.69 | FAIR | 0.50 | 50.70 | | 13.10 |
| 80 | 41 | MUSA DAM | MD | 311.1 | 160.0 | 47.56 | FAIR | 1.00 | 46.94 | ANU | 8.05 |
| 81 | 41 | MUSA DAM | MD | 267.0 | 150.0 | 43.74 | FAIR | 0.50 | 43.65 | ANU | 10.27 |
| 82 | 41 | MUSA DAM | MD | 251.4 | 150.8 | 40.28 | GOOD | 0.50 | 40.21 | ANU | 8.78 |
| | | | | | | 43.08 | FAIR | 0.50 | 43.01 | | 11.58 |
| 85 | 41 | MUSA DAM | MD | 226.3 | 153.7 | 37.62 | GOOD | 0.50 | 37.32 | ANU | 9.03 |
| | | | | | | 44.62 | GOOD | 0.50 | 44.32 | | 16.03 |
| 86 | 41 | MUSA DAM | MD | 217.8 | 154.6 | 36.50 | FAIR | 0.50 | 36.48 | ANU | 9.26 |
| 87 | 41 | MUSA DAM | MD | 211.5 | 155.7 | 36.61 | FAIR | 1.00 | 36.21 | ANU | 9.77 |
| 88 | 41 | MUSA DAM | MD | 189.4 | 163.5 | 32.32 | GOOD | 0.50 | 32.01 | ANU | 8.33 |
| | | | | | | 43.82 | FAIR | 0.50 | 43.51 | | 19.83 |
| 89 | 41 | MUSA DAM | MD | 197.6 | 167.4 | 35.41 | POOR | 1.00 | 34.90 | ANU | 10.20 |
| 91 | 41 | MUSA DAM | MD | 211.4 | 172.6 | 33.68 | GOOD | 0.50 | 32.82 | ANU | 6.39 |
| | | | | | | 39.48 | GOOD | 0.50 | 38.62 | | 12.19 |
| 92 | 41 | MUSA DAM | MD | 221.8 | 176.3 | 40.29 | GOOD | 0.50 | 38.74 | ANU | 11.02 |
| 94 | 41 | MUSA DAM | MD | 237.8 | 180.3 | 37.72 | POOR | 1.00 | 35.34 | ANU | 5.61 |
| | | | | | | 54.42 | FAIR | 0.50 | 52.04 | | 22.31 |
| 95 | 41 | MUSA DAM | MD | 309.4 | 207.6 | 46.94 | POOR | 1.00 | 44.38 | ANU | 5.70 |
| | | | | | | 57.04 | FAIR | 0.50 | 54.48 | | 15.80 |
| 96 | 41 | MUSA DAM | MD | 281.7 | 205.9 | 42.05 | GOOD | 0.50 | 40.25 | ANU | 5.03 |
| | | | | | | 48.65 | GOOD | 0.50 | 46.85 | | 11.63 |
| 97 | 41 | MUSA DAM | MD | 251.5 | 203.6 | 40.55 | POOR | 1.00 | 38.32 | ANU | 6.88 |
| 99 | 41 | MUSA DAM | MD | 151.9 | 163.8 | 23.50 | GOOD | 0.50 | 23.48 | ANU | 4.49 |
| | | | | | | 30.90 | GOOD | 0.50 | 30.88 | | 11.89 |
| | | | | | | 37.40 | FAIR | 0.50 | 37.38 | | 18.39 |
| 100 | 41 | MUSA DAM | MD | 138.2 | 165.0 | 21.61 | FAIR | 0.50 | 21.58 | ANU | 4.31 |
| 101 | 41 | MUSA DAM | MD | 121.0 | 168.0 | 19.55 | FAIR | 0.50 | 19.52 | ANU | 4.40 |
| | | | | | | 24.35 | GOOD | 0.50 | 24.32 | | 9.20 |
| 102 | 41 | MUSA DAM | MD | 111.4 | 168.9 | 18.70 | GOOD | 0.50 | 18.68 | ANU | 4.75 |
| 103 | 41 | MUSA DAM | MD | 99.0 | 169.6 | 17.88 | FAIR | 0.50 | 17.86 | ANU | 5.48 |
| 104 | 41 | MUSA DAM | MD | 90.2 | 180.6 | 15.64 | GOOD | 0.50 | 15.62 | ANU | 4.34 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 19.14 | FAIR | 0.50 | 19.12 | | 7.84 |
| | | | | | | 34.54 | FAIR | 0.50 | 34.52 | | 23.24 |
| 105 | 41 | MUSA DAM | MD | 80.9 | 188.7 | 13.95 | GOOD | 0.50 | 13.93 | ANU | 3.82 |
| | | | | | | 18.15 | FAIR | 0.50 | 18.13 | | 8.02 |
| | | | | | | 30.95 | GOOD | 0.50 | 30.93 | | 20.82 |
| 106 | 41 | MUSA DAM | MD | 79.6 | 195.6 | 12.92 | GOOD | 0.50 | 12.90 | ANU | 2.95 |
| | | | | | | 15.42 | GOOD | 0.50 | 15.40 | | 5.45 |
| | | | | | | 20.42 | FAIR | 0.50 | 20.40 | | 10.45 |
| | | | | | | 25.52 | GOOD | 0.50 | 25.50 | | 15.55 |
| 107 | 41 | MUSA DAM | MD | 70.3 | 202.5 | 12.22 | GOOD | 0.50 | 12.20 | ANU | 3.41 |
| | | | | | | 18.82 | FAIR | 0.50 | 18.80 | | 10.01 |
| | | | | | | 24.62 | FAIR | 0.50 | 24.60 | | 15.81 |
| | | | | | | 32.62 | GOOD | 0.50 | 32.60 | | 23.81 |
| 108 | 41 | MUSA DAM | MD | 71.9 | 208.7 | 12.02 | GOOD | 0.50 | 12.00 | ANU | 3.01 |
| | | | | | | 21.82 | GOOD | 0.50 | 21.80 | | 12.81 |
| 109 | 41 | MUSA DAM | MD | 85.5 | 222.2 | 14.09 | GOOD | 0.50 | 14.07 | ANU | 3.38 |
| | | | | | | 15.79 | FAIR | 0.50 | 15.77 | | 5.08 |
| | | | | | | 20.49 | GOOD | 0.50 | 20.47 | | 9.78 |
| | | | | | | 27.49 | GOOD | 0.50 | 27.47 | | 16.78 |
| 110 | 41 | MUSA DAM | MD | 111.5 | 229.8 | 19.10 | GOOD | 0.50 | 18.96 | ANU | 5.03 |
| | | | | | | 21.80 | GOOD | 0.50 | 21.66 | | 7.73 |
| | | | | | | 33.90 | FAIR | 0.50 | 33.76 | | 19.83 |
| 111 | 41 | MUSA DAM | MD | 139.2 | 217.1 | 21.94 | GOOD | 0.50 | 21.93 | ANU | 4.53 |
| | | | | | | 39.54 | FAIR | 0.50 | 39.53 | | 22.13 |
| 1 | 42 | CAPE WARD HUNT | CW | 225.2 | 37.5 | 38.30 | GOOD | 0.50 | 37.51 | ANU | 9.36 |
| | | | | | | 52.81 | FAIR | 0.50 | 52.02 | | 23.87 |
| 3 | 42 | CAPE WARD HUNT | CW | 208.7 | 39.3 | 37.80 | GOOD | 0.50 | 37.25 | ANU | 11.17 |
| | | | | | | 41.92 | FAIR | 0.50 | 41.37 | | 15.29 |
| | | | | | | 43.05 | FAIR | 0.50 | 42.50 | | 16.42 |
| | | | | | | 43.94 | | 0.50 | 43.39 | | 17.31 |
| 4 | 42 | CAPE WARD HUNT | CW | 205.4 | 35.5 | 35.10 | GOOD | 0.50 | 34.65 | ANU | 8.98 |
| | | | | | | 35.94 | GOOD | 0.50 | 35.49 | | 9.82 |
| 6 | 42 | CAPE WARD HUNT | CW | 211.3 | 44.9 | 36.56 | GOOD | 1.00 | 36.30 | ANU | 9.88 |
| 7 | 42 | CAPE WARD HUNT | CW | 211.3 | 47.2 | 36.70 | GOOD | 0.50 | 36.38 | ANU | 9.97 |
| | | | | | | 39.70 | GOOD | 0.50 | 39.38 | | 12.97 |
| | | | | | | 49.83 | FAIR | 0.50 | 49.51 | | 23.10 |
| 8 | 42 | CAPE WARD HUNT | CW | 211.5 | 51.3 | 36.18 | GOOD | 1.00 | 35.92 | ANU | 9.48 |
| | | | | | | 36.90 | GOOD | 0.50 | 36.64 | | 10.20 |
| 9 | 42 | CAPE WARD HUNT | CW | 210.9 | 53.6 | 36.27 | GOOD | 1.00 | 36.13 | ANU | 9.77 |
| | | | | | | 37.73 | FAIR | 0.50 | 37.59 | | 11.23 |
| 10 | 42 | CAPE WARD HUNT | CW | 214.1 | 56.8 | 37.40 | FAIR | 0.50 | 37.02 | ANU | 10.25 |
| | | | | | | 38.60 | GOOD | 1.00 | 38.22 | | 11.45 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 42 | CAPE WARD HUNT | CW | 212.7 | 60.2 | 36.83 | GOOD | 1.00 | 36.55 | ANU | 9.97 |
| | | | | | | 38.09 | GOOD | 0.50 | 37.81 | | 11.23 |
| 13 | 42 | CAPE WARD HUNT | CW | 220.3 | 66.4 | 38.17 | GOOD | 0.50 | 37.94 | ANU | 10.41 |
| 14 | 42 | CAPE WARD HUNT | CW | 223.9 | 69.3 | 38.20 | GOOD | 0.50 | 38.08 | ANU | 10.09 |
| | | | | | | 40.87 | GOOD | 1.00 | 40.75 | | 12.76 |
| 15 | 42 | CAPE WARD HUNT | CW | 228.9 | 72.3 | 39.00 | GOOD | 0.50 | 38.84 | ANU | 10.23 |
| 16 | 42 | CAPE WARD HUNT | CW | 234.3 | 75.1 | 39.90 | FAIR | 0.50 | 39.66 | ANU | 10.38 |
| | | | | | | 48.75 | FAIR | 1.00 | 48.51 | | 19.23 |
| 17 | 42 | CAPE WARD HUNT | CW | 240.4 | 77.6 | 39.90 | GOOD | 0.50 | 39.92 | ANU | 9.87 |
| | | | | | | 40.48 | GOOD | 0.50 | 40.50 | | 10.45 |
| | | | | | | 42.79 | GOOD | 1.00 | 42.81 | | 12.76 |
| | | | | | | 47.81 | FAIR | 0.50 | 47.83 | | 17.78 |
| 19 | 42 | CAPE WARD HUNT | CW | 306.9 | 85.2 | 49.07 | GOOD | 0.50 | 49.09 | ANU | 10.73 |
| | | | | | | 70.98 | FAIR | 0.50 | 71.00 | | 32.64 |
| 20 | 42 | CAPE WARD HUNT | CW | 226.6 | 63.7 | 39.05 | GOOD | 0.50 | 38.58 | ANU | 10.26 |
| | | | | | | 44.79 | FAIR | 0.50 | 44.32 | | 16.00 |
| | | | | | | 50.06 | GOOD | 0.50 | 49.59 | | 21.27 |
| 21 | 42 | CAPE WARD HUNT | CW | 234.5 | 62.3 | 40.26 | GOOD | 1.00 | 39.68 | ANU | 10.37 |
| | | | | | | 45.11 | GOOD | 1.00 | 44.53 | | 15.22 |
| | | | | | | 47.90 | FAIR | 0.50 | 47.32 | | 18.01 |
| 22 | 42 | CAPE WARD HUNT | CW | 243.4 | 60.9 | 41.40 | GOOD | 0.50 | 40.73 | ANU | 10.31 |
| | | | | | | 43.91 | FAIR | 0.50 | 43.24 | | 12.82 |
| | | | | | | 46.46 | FAIR | 0.50 | 45.79 | | 15.37 |
| 23 | 42 | CAPE WARD HUNT | CW | 257.6 | 60.0 | 42.47 | GOOD | 0.50 | 41.79 | ANU | 9.59 |
| | | | | | | 46.65 | GOOD | 1.00 | 45.97 | | 13.77 |
| | | | | | | 51.20 | GOOD | 0.50 | 50.52 | | 18.32 |
| 24 | 42 | CAPE WARD HUNT | CW | 263.4 | 59.2 | 43.91 | FAIR | 0.50 | 43.21 | ANU | 10.29 |
| 25 | 42 | CAPE WARD HUNT | CW | 301.3 | 57.6 | 47.18 | GOOD | 1.00 | 46.53 | ANU | 8.87 |
| 26 | 42 | CAPE WARD HUNT | CW | 340.0 | 53.9 | 51.39 | GOOD | 0.50 | 50.72 | ANU | 8.22 |
| | | | | | | 53.85 | FAIR | 1.00 | 53.18 | | 10.68 |
| 27 | 42 | CAPE WARD HUNT | CW | 382.9 | 51.0 | 57.79 | GOOD | 0.50 | 57.36 | ANU | 9.49 |
| | | | | | | 58.77 | GOOD | 0.50 | 58.34 | | 10.47 |
| 28 | 42 | CAPE WARD HUNT | CW | 433.9 | 49.1 | 63.20 | GOOD | 0.50 | 62.75 | ANU | 8.51 |
| | | | | | | 67.02 | GOOD | 1.00 | 66.57 | | 12.33 |
| 29 | 42 | CAPE WARD HUNT | CW | 472.9 | 48.0 | 68.46 | GOOD | 1.00 | 67.96 | ANU | 8.85 |
| | | | | | | 69.91 | GOOD | 0.50 | 69.41 | | 10.30 |
| 30 | 42 | CAPE WARD HUNT | CW | 442.6 | 46.9 | 64.24 | GOOD | 0.50 | 63.79 | ANU | 8.46 |
| 31 | 42 | CAPE WARD HUNT | CW | 403.3 | 45.7 | 59.25 | GOOD | 0.50 | 58.84 | ANU | 8.43 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 42 | CAPE WARD HUNT | CW | 359.2 | 44.3 | 54.27 | GOOD | 0.50 | 53.73 | ANU | 8.83 |
| | | | | | | 57.56 | FAIR | 0.50 | 57.02 | | 12.12 |
| 35 | 42 | CAPE WARD HUNT | CW | 274.4 | 40.1 | 44.76 | GOOD | 0.50 | 43.95 | ANU | 9.65 |
| | | | | | | 48.22 | POOR | 0.50 | 47.41 | | 13.11 |
| | | | | | | 49.64 | GOOD | 0.50 | 48.83 | | 14.53 |
| 36 | 42 | CAPE WARD HUNT | CW | 259.7 | 39.6 | 43.76 | FAIR | 0.50 | 42.93 | ANU | 10.47 |
| 37 | 42 | CAPE WARD HUNT | CW | 245.8 | 38.8 | 41.24 | FAIR | 0.50 | 40.41 | ANU | 9.68 |
| | | | | | | 44.59 | GOOD | 0.50 | 43.76 | | 13.03 |
| 38 | 42 | CAPE WARD HUNT | CW | 234.3 | 38.2 | 39.92 | GOOD | 0.50 | 39.10 | ANU | 9.81 |
| 39 | 42 | CAPE WARD HUNT | CW | 210.9 | 26.0 | 36.36 | GOOD | 1.00 | 36.04 | ANU | 9.68 |
| | | | | | | 37.79 | GOOD | 0.50 | 37.47 | | 11.11 |
| | | | | | | 40.19 | FAIR | 0.50 | 39.87 | | 13.51 |
| 40 | 42 | CAPE WARD HUNT | CW | 209.6 | 29.1 | 37.00 | GOOD | 0.50 | 36.66 | ANU | 10.46 |
| 42 | 42 | CAPE WARD HUNT | CW | 217.8 | 23.1 | 37.28 | GOOD | 0.50 | 36.98 | ANU | 9.75 |
| 43 | 42 | CAPE WARD HUNT | CW | 226.4 | 20.6 | 38.00 | GOOD | 0.50 | 37.60 | ANU | 9.30 |
| | | | | | | 37.19 | GOOD | 0.50 | 36.79 | | 8.49 |
| 44 | 42 | CAPE WARD HUNT | CW | 232.1 | 16.9 | 38.72 | GOOD | 0.50 | 38.50 | ANU | 9.49 |
| | | | | | | 40.08 | GOOD | 0.50 | 39.86 | | 10.85 |
| 45 | 42 | CAPE WARD HUNT | CW | 236.2 | 13.3 | 40.59 | FAIR | 0.50 | 40.19 | ANU | 10.66 |
| 46 | 42 | CAPE WARD HUNT | CW | 235.8 | 9.9 | 40.42 | GOOD | 0.50 | 40.05 | ANU | 10.57 |
| 47 | 42 | CAPE WARD HUNT | CW | 235.2 | 6.9 | 39.40 | GOOD | 0.50 | 39.31 | ANU | 9.91 |
| | | | | | | 40.57 | GOOD | 0.50 | 40.48 | | 11.08 |
| 48 | 42 | CAPE WARD HUNT | CW | 253.5 | 352.9 | 41.60 | GOOD | 0.50 | 41.24 | ANU | 9.55 |
| | | | | | | 42.55 | GOOD | 0.50 | 42.19 | | 10.50 |
| 49 | 42 | CAPE WARD HUNT | CW | 276.3 | 340.9 | 44.66 | GOOD | 0.50 | 44.10 | ANU | 9.56 |
| | | | | | | 45.46 | FAIR | 0.50 | 44.90 | | 10.36 |
| | | | | | | 47.13 | GOOD | 0.50 | 46.57 | | 12.03 |
| 50 | 42 | CAPE WARD HUNT | CW | 316.9 | 329.8 | 50.62 | GOOD | 0.50 | 50.47 | ANU | 10.86 |
| 53 | 42 | CAPE WARD HUNT | CW | 280.5 | 308.6 | 46.64 | FAIR | 0.50 | 46.58 | ANU | 11.52 |
| 54 | 42 | CAPE WARD HUNT | CW | 231.6 | 312.9 | 35.57 | FAIR | 0.50 | 35.46 | ANU | 6.51 |
| 56 | 42 | CAPE WARD HUNT | CW | 62.2 | 306.8 | 12.18 | GOOD | 0.50 | 12.20 | ANU | 4.42 |
| | | | | | | 12.78 | GOOD | 0.50 | 12.80 | | 5.02 |
| 57 | 42 | CAPE WARD HUNT | CW | 64.0 | 296.4 | 12.05 | GOOD | 0.50 | 12.07 | ANU | 4.07 |
| 58 | 42 | CAPE WARD HUNT | CW | 67.1 | 293.8 | 12.46 | GOOD | 0.50 | 12.48 | ANU | 4.09 |
| 59 | 42 | CAPE WARD HUNT | CW | 72.2 | 286.3 | 13.07 | GOOD | 0.50 | 12.81 | ANU | 3.78 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 | 42 | CAPE WARD HUNT | CW | 79.3 | 277.7 | 15.33 | GOOD | 1.00 | 14.54 | ANU | 4.63 |
| 61 | 42 | CAPE WARD HUNT | CW | 85.1 | 269.4 | 17.45 | GOOD | 0.50 | 16.17 | ANU | 5.53 |
| | | | | | | 18.47 | GOOD | 0.50 | 17.19 | | 6.55 |
| 62 | 42 | CAPE WARD HUNT | CW | 97.4 | 265.8 | 20.25 | GOOD | 0.50 | 18.52 | ANU | 6.34 |
| | | | | | | 20.40 | GOOD | 0.50 | 18.67 | | 6.49 |
| | | | | | | 23.02 | GOOD | 0.50 | 21.29 | | 9.11 |
| 63 | 42 | CAPE WARD HUNT | CW | 126.9 | 255.3 | 25.19 | GOOD | 0.50 | 23.16 | ANU | 7.30 |
| | | | | | | 25.40 | GOOD | 0.50 | 23.37 | | 7.51 |
| 69 | 42 | CAPE WARD HUNT | CW | 182.4 | 139.2 | 28.17 | GOOD | 0.50 | 28.10 | ANU | 5.30 |
| | | | | | | 28.15 | GOOD | 0.50 | 28.08 | | 5.28 |
| | | | | | | 28.73 | FAIR | 0.50 | 28.66 | | 5.86 |
| 70 | 42 | CAPE WARD HUNT | CW | 173.1 | 136.0 | 27.15 | GOOD | 0.50 | 27.10 | ANU | 5.46 |
| 71 | 42 | CAPE WARD HUNT | CW | 156.0 | 135.7 | 25.13 | GOOD | 0.50 | 25.01 | ANU | 5.51 |
| | | | | | | 31.66 | FAIR | 0.50 | 31.54 | | 12.04 |
| 72 | 42 | CAPE WARD HUNT | CW | 147.4 | 134.4 | 23.88 | FAIR | 0.50 | 23.68 | ANU | 5.26 |
| | | | | | | 24.88 | GOOD | 0.50 | 24.68 | | 6.26 |
| | | | | | | 26.55 | FAIR | 0.50 | 26.35 | | 7.93 |
| 73 | 42 | CAPE WARD HUNT | CW | 135.7 | 131.9 | 22.25 | GOOD | 0.50 | 22.18 | ANU | 5.22 |
| 74 | 42 | CAPE WARD HUNT | CW | 125.5 | 132.3 | 21.83 | GOOD | 0.50 | 21.58 | ANU | 5.89 |
| | | | | | | 23.32 | FAIR | 0.50 | 23.07 | | 7.38 |
| 75 | 42 | CAPE WARD HUNT | CW | 114.4 | 132.1 | 19.68 | GOOD | 0.50 | 19.63 | ANU | 5.33 |
| | | | | | | 21.86 | GOOD | 0.50 | 21.81 | | 7.51 |
| 76 | 42 | CAPE WARD HUNT | CW | 114.5 | 136.4 | 20.59 | GOOD | 0.50 | 20.32 | ANU | 6.01 |
| | | | | | | 24.51 | GOOD | 0.50 | 24.24 | | 9.93 |
| 77 | 42 | CAPE WARD HUNT | CW | 117.4 | 141.8 | 21.35 | GOOD | 0.50 | 20.85 | ANU | 6.17 |
| | | | | | | 22.57 | GOOD | 0.50 | 22.07 | | 7.39 |
| | | | | | | 26.02 | FAIR | 0.50 | 25.52 | | 10.84 |
| | | | | | | 28.08 | FAIR | 0.50 | 27.58 | | 12.90 |
| | | | | | | 30.82 | GOOD | 0.50 | 30.32 | | 15.64 |
| 78 | 42 | CAPE WARD HUNT | CW | 120.9 | 146.4 | 22.55 | GOOD | 1.00 | 21.85 | ANU | 6.74 |
| | | | | | | 25.60 | FAIR | 0.50 | 24.90 | | 9.79 |
| 79 | 42 | CAPE WARD HUNT | CW | 126.8 | 151.0 | 24.06 | GOOD | 0.50 | 23.10 | ANU | 7.25 |
| 80 | 42 | CAPE WARD HUNT | CW | 136.3 | 160.7 | 25.90 | GOOD | 0.50 | 25.31 | ANU | 8.28 |
| 81 | 42 | CAPE WARD HUNT | CW | 98.8 | 133.1 | 17.71 | GOOD | 0.50 | 17.66 | ANU | 5.31 |
| | | | | | | 19.57 | GOOD | 0.50 | 19.52 | | 7.17 |
| 82 | 42 | CAPE WARD HUNT | CW | 82.7 | 132.5 | 15.25 | GOOD | 0.50 | 15.21 | ANU | 4.88 |
| 83 | 42 | CAPE WARD HUNT | CW | 73.2 | 135.1 | 14.20 | GOOD | 0.50 | 14.16 | ANU | 5.01 |
| | | | | | | 19.57 | FAIR | 0.50 | 19.53 | | 10.38 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 84 | 42 | CAPE WARD HUNT | CW | 65.7 | 135.7 | 13.22 | GOOD | 0.50 | 13.05 | ANU | 4.84 |
| | | | | | | 17.77 | GOOD | 1.00 | 17.60 | | 9.39 |
| 85 | 42 | CAPE WARD HUNT | CW | 55.2 | 135.4 | 12.08 | GOOD | 0.50 | 11.81 | ANU | 4.91 |
| 86 | 42 | CAPE WARD HUNT | CW | 46.0 | 136.2 | 10.86 | GOOD | 0.50 | 10.88 | ANU | 5.13 |
| 87 | 42 | CAPE WARD HUNT | CW | 38.7 | 138.8 | 9.97 | GOOD | 0.50 | 9.61 | ANU | 4.77 |
| 88 | 42 | CAPE WARD HUNT | CW | 19.8 | 204.1 | 5.88 | GOOD | 0.50 | 5.60 | ANU | 3.13 |
| 89 | 42 | CAPE WARD HUNT | CW | 34.8 | 212.6 | 9.37 | GOOD | 0.50 | 8.89 | ANU | 4.54 |
| 90 | 42 | CAPE WARD HUNT | CW | 46.0 | 215.6 | 11.15 | GOOD | 0.50 | 10.22 | ANU | 4.47 |
| | | | | | | 15.69 | GOOD | 0.50 | 14.76 | | 9.01 |
| 91 | 42 | CAPE WARD HUNT | CW | 57.6 | 216.8 | 13.34 | GOOD | 0.50 | 12.51 | ANU | 5.31 |
| 92 | 42 | CAPE WARD HUNT | CW | 74.9 | 219.4 | 17.35 | GOOD | 0.50 | 15.84 | ANU | 6.48 |
| | | | | | | 18.50 | FAIR | 0.50 | 16.99 | | 7.63 |
| 93 | 42 | CAPE WARD HUNT | CW | 85.0 | 218.5 | 19.98 | GOOD | 0.50 | 18.06 | ANU | 7.44 |
| | | | | | | 25.48 | FAIR | 0.50 | 23.56 | | 12.94 |
| 94 | 42 | CAPE WARD HUNT | CW | 97.4 | 220.3 | 22.18 | GOOD | 0.50 | 19.83 | ANU | 7.66 |
| 95 | 42 | CAPE WARD HUNT | CW | 233.9 | 241.7 | 38.49 | GOOD | 0.50 | 35.96 | ANU | 6.73 |
| | | | | | | 47.18 | FAIR | 0.50 | 44.65 | | 15.42 |
| 97 | 42 | CAPE WARD HUNT | CW | 176.4 | 247.4 | 30.40 | GOOD | 1.00 | 28.21 | ANU | 6.16 |
| 98 | 42 | CAPE WARD HUNT | CW | 9.2 | 225.7 | 2.80 | GOOD | 0.50 | 2.63 | ANU | 1.48 |
| 99 | 42 | CAPE WARD HUNT | CW | 26.2 | 312.5 | 6.70 | GOOD | 0.50 | 6.72 | ANU | 3.44 |
| 100 | 42 | CAPE WARD HUNT | CW | 39.7 | 319.2 | 9.30 | GOOD | 0.50 | 9.31 | ANU | 4.35 |
| | | | | | | 9.91 | FAIR | 0.50 | 9.92 | | 4.96 |
| 101 | 42 | CAPE WARD HUNT | CW | 58.2 | 320.8 | 12.40 | GOOD | 0.50 | 12.41 | ANU | 5.14 |
| 102 | 42 | CAPE WARD HUNT | CW | 67.6 | 323.3 | 13.80 | GOOD | 0.50 | 13.81 | ANU | 5.36 |
| | | | | | | 14.30 | GOOD | 0.50 | 14.31 | | 5.86 |
| 103 | 42 | CAPE WARD HUNT | CW | 79.4 | 216.4 | 15.10 | GOOD | 0.50 | 15.11 | ANU | 5.19 |
| | | | | | | 18.66 | GOOD | 0.50 | 18.67 | | 8.75 |
| 104 | 42 | CAPE WARD HUNT | CW | 96.6 | 319.4 | 17.90 | GOOD | 0.50 | 17.92 | ANU | 5.84 |
| | | | | | | 18.66 | GOOD | 0.50 | 18.68 | | 6.60 |
| 105 | 42 | CAPE WARD HUNT | CW | 111.7 | 318.3 | 20.20 | GOOD | 0.50 | 20.22 | ANU | 6.25 |
| | | | | | | 21.35 | GOOD | 0.50 | 21.37 | | 7.40 |
| | | | | | | 25.30 | GOOD | 0.50 | 25.32 | | 11.35 |
| | | | | | | 30.42 | FAIR | 0.50 | 30.44 | | 16.47 |
| 106 | 42 | CAPE WARD HUNT | CW | 120.3 | 316.1 | 21.30 | GOOD | 1.00 | 21.31 | ANU | 6.28 |
| | | | | | | 22.66 | GOOD | 0.50 | 22.67 | | 7.64 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 31.86 | GOOD | 0.50 | 31.87 | | 16.84 |
| 107 | 42 | CAPE WARD HUNT | CW | 132.7 | 317.9 | 22.40 | GOOD | 0.50 | 22.41 | ANU | 5.82 |
| | | | | | | 23.20 | GOOD | 0.50 | 23.21 | | 6.62 |
| 108 | 42 | CAPE WARD HUNT | CW | 139.3 | 316.1 | 24.10 | GOOD | 0.50 | 24.11 | ANU | 6.70 |
| | | | | | | 27.52 | FAIR | 0.50 | 27.53 | | 10.12 |
| 109 | 42 | CAPE WARD HUNT | CW | 156.0 | 309.9 | 25.30 | GOOD | 0.50 | 25.31 | ANU | 5.81 |
| | | | | | | 26.30 | GOOD | 0.50 | 26.31 | | 6.81 |
| | | | | | | 32.90 | GOOD | 1.00 | 32.91 | | 13.41 |
| 110 | 42 | CAPE WARD HUNT | CW | 173.4 | 301.8 | 28.70 | GOOD | 0.50 | 28.60 | ANU | 6.92 |
| | | | | | | 33.08 | GOOD | 0.50 | 32.98 | | 11.30 |
| 111 | 42 | CAPE WARD HUNT | CW | 155.3 | 289.7 | 25.80 | GOOD | 1.00 | 25.82 | ANU | 6.41 |
| | | | | | | 33.99 | FAIR | 0.50 | 34.01 | | 14.60 |
| 1 | 43 | KWIKILA | KW | 88.2 | 99.3 | 17.96 | GOOD | 0.10 | 17.15 | QDBM | 6.17 |
| | | | | | | 18.47 | FAIR | 0.10 | 17.66 | | 6.64 |
| | | | | | | 23.48 | FAIR | 0.10 | 22.67 | | 11.65 |
| 2 | 43 | KWIKILA | KW | 78.2 | 105.1 | 16.54 | GOOD | 0.10 | 15.80 | QDBM | 6.03 |
| | | | | | | 16.98 | FAIR | 0.10 | 16.24 | | 6.47 |
| | | | | | | 17.75 | FAIR | 0.10 | 17.01 | | 7.24 |
| 3 | 43 | KWIKILA | KW | 87.9 | 110.9 | 17.77 | GOOD | 0.10 | 17.21 | QDBM | 6.22 |
| | | | | | | 18.40 | FAIR | 0.10 | 17.84 | | 6.85 |
| | | | | | | 18.66 | FAIR | 0.10 | 18.10 | | 7.11 |
| 4 | 43 | KWIKILA | KW | 73.7 | 110.4 | 15.22 | GOOD | 0.10 | 14.76 | QDBM | 5.55 |
| | | | | | | 15.42 | FAIR | 0.10 | 14.96 | | 5.75 |
| | | | | | | 16.17 | FAIR | 0.10 | 15.71 | | 6.50 |
| 5 | 43 | KWIKILA | KW | 99.2 | 112.6 | 18.85 | GOOD | 0.10 | 18.55 | QDBM | 6.15 |
| | | | | | | 19.82 | FAIR | 0.10 | 19.52 | | 7.12 |
| | | | | | | 22.36 | FAIR | 0.10 | 22.06 | | 9.66 |
| 6 | 43 | KWIKILA | KW | 107.7 | 113.6 | 20.84 | GOOD | 0.10 | 20.56 | QDBM | 7.10 |
| | | | | | | 21.46 | FAIR | 0.10 | 21.18 | | 7.72 |
| 7 | 43 | KWIKILA | KW | 115.8 | 115.2 | 22.03 | GOOD | 0.10 | 21.70 | QDBM | 7.22 |
| | | | | | | 22.40 | FAIR | 0.10 | 22.07 | | 7.59 |
| | | | | | | 22.84 | FAIR | 0.50 | 22.51 | | 8.03 |
| | | | | | | 25.01 | FAIR | 0.10 | 24.68 | | 10.20 |
| 8 | 43 | KWIKILA | KW | 129.6 | 117.8 | 23.91 | GOOD | 0.10 | 23.63 | QDBM | 7.43 |
| | | | | | | 25.06 | FAIR | 0.10 | 24.78 | | 8.58 |
| | | | | | | 28.46 | FAIR | 0.10 | 28.18 | | 11.98 |
| 9 | 43 | KWIKILA | KW | 137.2 | 119.5 | 24.82 | GOOD | 0.10 | 24.66 | QDBM | 7.51 |
| | | | | | | 25.47 | FAIR | 0.50 | 25.31 | | 8.16 |
| | | | | | | 25.76 | FAIR | 0.10 | 25.60 | | 8.45 |
| | | | | | | 27.56 | FAIR | 0.10 | 27.40 | | 10.25 |
| 10 | 43 | KWIKILA | KW | 149.3 | 120.4 | 26.73 | GOOD | 0.10 | 26.33 | QDBM | 7.67 |
| | | | | | | 27.64 | FAIR | 0.10 | 27.24 | | 8.58 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 29.02 | FAIR | 0.10 | 28.62 | | 9.96 |
| 11 | 43 | KWIKILA | KW | 160.1 | 123.0 | 27.90 | GOOD | 0.10 | 27.61 | QDBM | 7.59 |
| | | | | | | 29.96 | FAIR | 0.10 | 29.67 | | 9.65 |
| | | | | | | 30.97 | FAIR | 0.10 | 30.68 | | 10.66 |
| 12 | 43 | KWIKILA | KW | 172.6 | 123.5 | 29.29 | GOOD | 0.10 | 29.09 | QDBM | 7.52 |
| | | | | | | 30.93 | FAIR | 0.10 | 30.73 | | 9.16 |
| | | | | | | 33.84 | FAIR | 0.10 | 33.64 | | 12.07 |
| 13 | 43 | KWIKILA | KW | 184.0 | 124.6 | 30.57 | GOOD | 0.10 | 30.33 | QDBM | 7.33 |
| | | | | | | 32.93 | FAIR | 0.10 | 32.69 | | 9.69 |
| | | | | | | 33.83 | FAIR | 0.10 | 33.59 | | 10.59 |
| | | | | | | 34.71 | FAIR | 0.50 | 34.47 | | 11.47 |
| 14 | 43 | KWIKILA | KW | 195.4 | 125.6 | 32.13 | GOOD | 0.10 | 31.99 | QDBM | 7.57 |
| | | | | | | 35.39 | FAIR | 0.10 | 35.25 | | 10.83 |
| | | | | | | 36.80 | FAIR | 0.10 | 36.66 | | 12.24 |
| 15 | 43 | KWIKILA | KW | 208.0 | 126.3 | 33.64 | GOOD | 0.10 | 33.47 | QDBM | 7.47 |
| | | | | | | 35.21 | FAIR | 0.10 | 35.04 | | 9.04 |
| | | | | | | 37.50 | FAIR | 0.10 | 37.33 | | 11.33 |
| | | | | | | 38.46 | GOOD | 0.10 | 38.29 | | 12.29 |
| 16 | 43 | KWIKILA | KW | 220.0 | 127.0 | 35.50 | FAIR | 0.10 | 35.25 | QDBM | 7.75 |
| | | | | | | 36.82 | FAIR | 0.10 | 36.57 | | 9.07 |
| | | | | | | 38.85 | FAIR | 0.10 | 38.60 | | 11.10 |
| | | | | | | 40.55 | FAIR | 0.10 | 40.30 | | 12.80 |
| | | | | | | 44.49 | FAIR | 0.10 | 44.24 | | 16.74 |
| 17 | 43 | KWIKILA | KW | 232.1 | 127.5 | 36.27 | GOOD | 0.10 | 36.28 | QDBM | 7.26 |
| | | | | | | 37.51 | FAIR | 0.10 | 37.52 | | 8.50 |
| | | | | | | 39.92 | FAIR | 0.10 | 39.93 | | 10.91 |
| | | | | | | 41.94 | FAIR | 0.10 | 41.95 | | 12.93 |
| | | | | | | 42.92 | FAIR | 0.10 | 42.93 | | 13.91 |
| 18 | 43 | KWIKILA | KW | 262.0 | 129.3 | 45.25 | POOR | 0.10 | 45.25 | QDBM | 12.50 |
| | | | | | | 49.26 | POOR | 0.10 | 49.26 | | 16.51 |
| 19 | 43 | KWIKILA | KW | 304.9 | 123.3 | 45.96 | FAIR | 0.10 | 45.97 | QDBM | 7.85 |
| 20 | 43 | KWIKILA | KW | 178.5 | 121.2 | 30.35 | GOOD | 0.10 | 29.86 | QDBM | 7.55 |
| | | | | | | 30.85 | POOR | 0.10 | 30.36 | | 8.05 |
| | | | | | | 31.73 | POOR | 0.10 | 31.24 | | 8.93 |
| | | | | | | 34.39 | FAIR | 0.10 | 33.90 | | 11.59 |
| 21 | 43 | KWIKILA | KW | 178.0 | 118.1 | 30.41 | GOOD | 0.10 | 29.81 | QDBM | 7.56 |
| | | | | | | 32.44 | FAIR | 0.10 | 31.84 | | 9.59 |
| | | | | | | 33.53 | FAIR | 0.10 | 32.93 | | 10.68 |
| 22 | 43 | KWIKILA | KW | 178.2 | 114.6 | 30.48 | GOOD | 0.10 | 29.79 | QDBM | 7.52 |
| | | | | | | 31.55 | FAIR | 0.10 | 30.86 | | 8.59 |
| | | | | | | 34.88 | FAIR | 0.10 | 34.19 | | 11.92 |
| 23 | 43 | KWIKILA | KW | 183.9 | 110.3 | 30.89 | GOOD | 0.10 | 30.19 | QDBM | 7.20 |
| | | | | | | 31.31 | FAIR | 0.10 | 30.61 | | 7.62 |
| | | | | | | 35.13 | FAIR | 0.10 | 34.43 | | 11.44 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 36.40 | FAIR | 0.10 | 35.70 | | 12.71 |
| 24 | 43 | KWIKILA | KW | 185.1 | 108.3 | 31.35 | FAIR | 0.10 | 30.64 | QDBM | 7.50 |
| | | | | | | 33.25 | FAIR | 0.10 | 32.54 | | 9.40 |
| | | | | | | 34.88 | FAIR | 0.10 | 34.17 | | 11.03 |
| | | | | | | 39.64 | FAIR | 0.10 | 38.93 | | 15.79 |
| 25 | 43 | KWIKILA | KW | 205.9 | 98.7 | 33.07 | GOOD | 0.10 | 32.41 | QDBM | 6.67 |
| | | | | | | 38.98 | FAIR | 0.10 | 38.32 | | 12.58 |
| | | | | | | 43.16 | FAIR | 0.10 | 42.50 | | 16.76 |
| 26 | 43 | KWIKILA | KW | 223.9 | 88.0 | 34.41 | GOOD | 0.10 | 33.72 | QDBM | 5.73 |
| | | | | | | 36.32 | GOOD | 0.10 | 35.63 | | 7.64 |
| | | | | | | 39.07 | GOOD | 0.10 | 38.38 | | 10.39 |
| | | | | | | 39.59 | FAIR | 0.10 | 38.90 | | 10.91 |
| 27 | 43 | KWIKILA | KW | 251.3 | 78.9 | 37.40 | GOOD | 0.10 | 36.95 | QDBM | 5.54 |
| | | | | | | 39.18 | FAIR | 0.10 | 38.73 | | 7.32 |
| | | | | | | 40.85 | FAIR | 0.10 | 40.40 | | 8.99 |
| | | | | | | 45.09 | FAIR | 0.10 | 44.64 | | 13.23 |
| | | | | | | 48.82 | GOOD | 0.10 | 48.37 | | 16.96 |
| 28 | 43 | KWIKILA | KW | 291.4 | 71.7 | 42.44 | GOOD | 0.10 | 41.97 | QDBM | 5.55 |
| | | | | | | 43.98 | FAIR | 0.10 | 43.51 | | 7.09 |
| | | | | | | 46.29 | POOR | 0.10 | 45.82 | | 9.40 |
| | | | | | | 51.98 | FAIR | 0.10 | 51.51 | | 15.09 |
| | | | | | | 53.66 | FAIR | 0.10 | 53.19 | | 16.77 |
| 29 | 43 | KWIKILA | KW | 324.7 | 67.6 | 46.52 | POOR | 0.10 | 46.00 | QDBM | 5.41 |
| | | | | | | 50.42 | FAIR | 0.10 | 49.90 | | 9.31 |
| | | | | | | 52.54 | FAIR | 0.10 | 52.02 | | 11.43 |
| | | | | | | 55.45 | FAIR | 0.10 | 54.93 | | 14.34 |
| | | | | | | 60.20 | FAIR | 0.10 | 59.68 | | 19.09 |
| 30 | 43 | KWIKILA | KW | 293.4 | 68.0 | 42.57 | FAIR | 0.10 | 42.10 | QDBM | 5.42 |
| | | | | | | 43.11 | POOR | 0.10 | 42.64 | | 5.96 |
| | | | | | | 51.14 | POOR | 0.10 | 50.67 | | 13.99 |
| | | | | | | 51.74 | POOR | 0.10 | 51.27 | | 14.59 |
| 31 | 43 | KWIKILA | KW | 253.8 | 69.5 | 37.77 | GOOD | 0.10 | 37.35 | QDBM | 5.62 |
| | | | | | | 39.68 | FAIR | 0.10 | 39.26 | | 7.53 |
| | | | | | | 43.98 | POOR | 0.10 | 43.56 | | 11.83 |
| | | | | | | 46.00 | FAIR | 0.10 | 45.58 | | 13.85 |
| | | | | | | 48.28 | FAIR | 0.10 | 47.86 | | 16.13 |
| 32 | 43 | KWIKILA | KW | 210.0 | 72.1 | 32.57 | GOOD | 0.10 | 32.01 | QDBM | 5.76 |
| | | | | | | 35.23 | FAIR | 0.10 | 34.67 | | 8.42 |
| | | | | | | 36.84 | FAIR | 0.10 | 36.28 | | 10.03 |
| | | | | | | 38.53 | FAIR | 0.10 | 37.97 | | 11.72 |
| | | | | | | 40.39 | FAIR | 0.10 | 39.83 | | 13.58 |
| 33 | 43 | KWIKILA | KW | 163.6 | 76.0 | 26.78 | POOR | 0.10 | 25.98 | QDBM | 5.53 |
| | | | | | | 27.20 | FAIR | 0.10 | 26.40 | | 5.95 |
| | | | | | | 29.22 | FAIR | 0.10 | 28.42 | | 7.97 |
| 34 | 43 | KWIKILA | KW | 138.0 | 80.3 | 24.26 | GOOD | 0.10 | 23.40 | QDBM | 6.15 |
| | | | | | | 25.81 | GOOD | 0.10 | 24.95 | | 7.70 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 26.13 | FAIR | 0.10 | 25.27 | | 8.02 |
| 35 | 43 | KWIKILA | KW | 127.5 | 82.3 | 23.26 | GOOD | 0.10 | 22.43 | QDBM | 6.49 |
| | | | | | | 24.52 | FAIR | 0.10 | 23.69 | | 7.75 |
| 36 | 43 | KWIKILA | KW | 115.2 | 86.3 | 21.80 | GOOD | 0.10 | 20.95 | QDBM | 6.55 |
| | | | | | | 22.48 | GOOD | 0.10 | 21.63 | | 7.23 |
| | | | | | | 25.33 | FAIR | 0.10 | 24.48 | | 10.08 |
| | | | | | | 27.15 | FAIR | 0.10 | 26.30 | | 11.90 |
| 37 | 43 | KWIKILA | KW | 103.7 | 90.7 | 20.38 | GOOD | 0.10 | 19.53 | QDBM | 6.57 |
| | | | | | | 20.94 | FAIR | 0.10 | 20.09 | | 7.13 |
| | | | | | | 26.62 | GOOD | 0.10 | 25.77 | | 12.81 |
| 38 | 43 | KWIKILA | KW | 95.1 | 95.3 | 19.42 | GOOD | 0.10 | 18.58 | QDBM | 6.69 |
| 39 | 43 | KWIKILA | KW | 42.6 | 94.5 | 9.95 | GOOD | 0.10 | 9.61 | QDBM | 4.29 |
| 40 | 43 | KWIKILA | KW | 52.8 | 100.7 | 11.81 | GOOD | 0.10 | 11.45 | QDBM | 4.85 |
| | | | | | | 13.17 | FAIR | 0.10 | 12.81 | | 6.21 |
| | | | | | | 13.59 | GOOD | 0.10 | 13.23 | | 6.63 |
| 41 | 43 | KWIKILA | KW | 64.1 | 107.1 | 13.78 | FAIR | 0.10 | 13.40 | QDBM | 5.38 |
| | | | | | | 14.97 | FAIR | 0.10 | 14.59 | | 6.57 |
| | | | | | | 15.98 | POOR | 0.10 | 15.60 | | 7.58 |
| 42 | 43 | KWIKILA | KW | 36.4 | 78.3 | 8.96 | GOOD | 0.10 | 8.64 | QDBM | 4.09 |
| | | | | | | 9.67 | POOR | 0.10 | 9.35 | | 4.80 |
| 43 | 43 | KWIKILA | KW | 35.3 | 57.5 | 8.67 | GOOD | 0.10 | 8.25 | QDBM | 3.84 |
| | | | | | | 8.82 | GOOD | 0.10 | 8.40 | | 3.99 |
| | | | | | | 9.74 | FAIR | 0.10 | 9.32 | | 4.91 |
| 44 | 43 | KWIKILA | KW | 34.1 | 31.3 | 8.30 | GOOD | 0.10 | 8.07 | QDBM | 3.80 |
| | | | | | | 8.88 | FAIR | 0.10 | 8.65 | | 4.38 |
| | | | | | | 9.04 | FAIR | 0.10 | 8.81 | | 4.54 |
| 45 | 43 | KWIKILA | KW | 37.2 | 7.1 | 9.01 | GOOD | 0.10 | 8.59 | QDBM | 3.94 |
| | | | | | | 9.17 | FAIR | 0.10 | 8.75 | | 4.10 |
| | | | | | | 10.67 | FAIR | 0.10 | 10.25 | | 5.60 |
| 46 | 43 | KWIKILA | KW | 40.3 | 346.9 | 9.73 | FAIR | 0.10 | 9.34 | QDBM | 4.30 |
| 47 | 43 | KWIKILA | KW | 45.9 | 332.0 | 10.37 | GOOD | 0.10 | 10.26 | QDBM | 4.53 |
| 48 | 43 | KWIKILA | KW | 99.5 | 306.0 | 18.89 | GOOD | 0.10 | 18.51 | QDBM | 6.07 |
| | | | | | | 19.32 | FAIR | 0.10 | 18.94 | | 6.50 |
| | | | | | | 19.59 | FAIR | 0.10 | 19.21 | | 6.77 |
| 49 | 43 | KWIKILA | KW | 155.2 | 296.0 | 26.68 | GOOD | 0.10 | 26.10 | QDBM | 6.70 |
| | | | | | | 26.98 | FAIR | 0.10 | 26.40 | | 7.00 |
| | | | | | | 27.61 | FAIR | 0.10 | 27.03 | | 7.63 |
| 50 | 43 | KWIKILA | KW | 223.2 | 291.2 | 34.17 | GOOD | 0.10 | 34.00 | QDBM | 6.10 |
| | | | | | | 38.18 | FAIR | 0.10 | 38.01 | | 10.11 |
| | | | | | | 41.36 | POOR | 0.10 | 41.19 | | 13.29 |
| 51 | 43 | KWIKILA | KW | 334.2 | 281.3 | 49.17 | GOOD | 0.10 | 48.97 | QDBM | 7.19 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 52.51 | FAIR | 0.10 | 52.31 | | 10.53 |
| | | | | | | 57.08 | POOR | 0.10 | 56.88 | | 15.10 |
| 75 | 43 | KWIKILA | KW | 272.0 | 172.6 | 43.28 | GOOD | 0.50 | 43.21 | QDBM | 9.21 |
| | | | | | | 48.28 | FAIR | 1.00 | 48.21 | | 14.21 |
| 77 | 43 | KWIKILA | KW | 286.1 | 175.4 | 46.33 | GOOD | 0.50 | 45.81 | QDBM | 10.05 |
| 79 | 43 | KWIKILA | KW | 304.0 | 177.8 | 49.06 | GOOD | 0.50 | 48.09 | QDBM | 10.09 |
| | | | | | | 52.68 | FAIR | 0.50 | 51.71 | | 13.71 |
| 80 | 43 | KWIKILA | KW | 321.7 | 180.8 | 52.23 | GOOD | 0.50 | 51.63 | QDBM | 11.41 |
| | | | | | | 55.82 | FAIR | 0.50 | 55.22 | | 15.00 |
| 81 | 43 | KWIKILA | KW | 261.4 | 175.1 | 42.23 | GOOD | 0.50 | 42.16 | QDBM | 9.48 |
| | | | | | | 43.83 | FAIR | 0.50 | 43.76 | | 11.08 |
| | | | | | | 45.13 | FAIR | 0.50 | 45.06 | | 12.38 |
| 82 | 43 | KWIKILA | KW | 249.1 | 177.4 | 39.51 | GOOD | 0.50 | 39.46 | QDBM | 8.32 |
| | | | | | | 40.99 | FAIR | 0.50 | 40.94 | | 9.80 |
| 83 | 43 | KWIKILA | KW | 244.8 | 179.6 | 39.21 | GOOD | 0.50 | 39.15 | QDBM | 8.55 |
| 84 | 43 | KWIKILA | KW | 240.0 | 180.9 | 39.16 | GOOD | 0.50 | 38.97 | QDBM | 8.97 |
| | | | | | | 40.91 | FAIR | 0.50 | 40.72 | | 10.72 |
| 85 | 43 | KWIKILA | KW | 232.5 | 182.7 | 37.90 | FAIR | 1.00 | 37.62 | QDBM | 8.55 |
| 86 | 43 | KWIKILA | KW | 226.9 | 184.5 | 37.65 | FAIR | 1.00 | 37.65 | QDBM | 9.29 |
| 87 | 43 | KWIKILA | KW | 223.4 | 186.2 | 37.99 | GOOD | 0.10 | 37.61 | QDBM | 9.68 |
| | | | | | | 38.87 | GOOD | 0.10 | 38.49 | | 10.56 |
| | | | | | | 39.65 | GOOD | 0.50 | 39.27 | | 11.34 |
| | | | | | | 40.83 | FAIR | 0.50 | 40.45 | | 12.52 |
| | | | | | | 42.09 | FAIR | 0.50 | 41.71 | | 13.78 |
| | | | | | | 47.57 | GOOD | 0.50 | 47.19 | | 19.26 |
| 88 | 43 | KWIKILA | KW | 213.8 | 195.3 | 37.16 | GOOD | 0.10 | 36.87 | QDBM | 9.52 |
| 89 | 43 | KWIKILA | KW | 232.6 | 197.1 | 39.37 | GOOD | 0.50 | 38.88 | QDBM | 9.80 |
| | | | | | | 44.24 | FAIR | 0.50 | 43.75 | | 14.67 |
| 90 | 43 | KWIKILA | KW | 242.8 | 198.3 | 40.85 | GOOD | 0.10 | 39.90 | QDBM | 9.55 |
| | | | | | | 41.73 | GOOD | 0.50 | 40.78 | | 10.43 |
| | | | | | | 44.97 | FAIR | 0.50 | 44.02 | | 13.67 |
| | | | | | | 53.36 | FAIR | 0.50 | 52.41 | | 22.06 |
| 91 | 43 | KWIKILA | KW | 253.5 | 199.3 | 42.40 | GOOD | 0.50 | 41.56 | QDBM | 9.87 |
| | | | | | | 43.21 | FAIR | 0.50 | 42.37 | | 10.68 |
| | | | | | | 45.50 | GOOD | 0.50 | 44.66 | | 12.97 |
| 92 | 43 | KWIKILA | KW | 269.0 | 201.1 | 45.24 | FAIR | 0.50 | 43.71 | QDBM | 10.09 |
| | | | | | | 46.87 | GOOD | 0.50 | 45.34 | | 11.72 |
| | | | | | | 49.20 | GOOD | 1.00 | 47.67 | | 14.05 |
| 94 | 43 | KWIKILA | KW | 290.0 | 202.8 | 49.40 | GOOD | 0.10 | 47.04 | QDBM | 10.79 |
| | | | | | | 59.50 | FAIR | 1.00 | 57.14 | | 20.89 |

| SHOT | RECORDER | LOCATION | ABREV | DISTANCE | AZIMUTH | TRAVEL TIME (SEC) | REMARKS QUAL | ACC(SECS) | TT MSL (SEC) | INST | TT-D/ 8.00 (SEC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 66.10 | FAIR | 0.50 | 63.74 | | 27.49 |
| 95 | 43 | KWIKILA | KW | 396.6 | 219.9 | 61.73 | GOOD | 0.50 | 59.19 | QDBM | 9.61 |
| | | | | | | 62.85 | GOOD | 0.50 | 60.31 | | 10.73 |
| | | | | | | 71.61 | GOOD | 0.50 | 69.07 | | 19.49 |
| 96 | 43 | KWIKILA | KW | 367.6 | 219.6 | 56.34 | GOOD | 0.50 | 54.56 | QDBM | 8.61 |
| | | | | | | 59.49 | FAIR | 0.50 | 57.71 | | 11.76 |
| 97 | 43 | KWIKILA | KW | 335.6 | 219.2 | 54.02 | GOOD | 0.50 | 51.81 | QDBM | 9.86 |
| | | | | | | 66.55 | FAIR | 0.50 | 64.34 | | 22.39 |
| 98 | 43 | KWIKILA | KW | 207.2 | 195.7 | 35.47 | GOOD | 0.50 | 35.28 | QDBM | 9.38 |
| | | | | | | 38.58 | FAIR | 0.50 | 38.39 | | 12.49 |
| 99 | 43 | KWIKILA | KW | 188.4 | 201.4 | 31.69 | GOOD | 0.50 | 31.69 | QDBM | 8.14 |
| | | | | | | 32.77 | GOOD | 0.10 | 32.77 | | 9.22 |
| 100 | 43 | KWIKILA | KW | 179.6 | 204.8 | 30.96 | GOOD | 0.50 | 30.95 | QDBM | 8.50 |
| 101 | 43 | KWIKILA | KW | 171.2 | 210.2 | 29.97 | GOOD | 0.50 | 29.96 | QDBM | 8.56 |
| | | | | | | 31.20 | FAIR | 0.50 | 31.19 | | 9.79 |
| | | | | | | 31.87 | FAIR | 0.50 | 31.86 | | 10.46 |
| 102 | 43 | KWIKILA | KW | 165.4 | 212.9 | 29.42 | GOOD | 0.50 | 29.42 | QDBM | 8.74 |
| 103 | 43 | KWIKILA | KW | 157.5 | 216.3 | 29.12 | GOOD | 0.50 | 29.12 | QDBM | 9.43 |
| | | | | | | 29.75 | GOOD | 0.50 | 29.75 | | 10.06 |
| 104 | 43 | KWIKILA | KW | 164.0 | 223.1 | 28.71 | FAIR | 1.00 | 28.71 | QDBM | 8.21 |
| | | | | | | 33.51 | FAIR | 0.50 | 33.51 | | 13.01 |
| 105 | 43 | KWIKILA | KW | 165.1 | 228.4 | 29.84 | GOOD | 0.50 | 29.84 | QDBM | 9.20 |
| | | | | | | 32.47 | FAIR | 0.50 | 32.47 | | 11.83 |
| 106 | 43 | KWIKILA | KW | 170.0 | 231.2 | 29.19 | GOOD | 0.50 | 29.19 | QDBM | 7.94 |
| | | | | | | 31.09 | GOOD | 0.50 | 31.09 | | 9.84 |
| 107 | 43 | KWIKILA | KW | 167.4 | 235.6 | 28.79 | GOOD | 0.50 | 28.79 | QDBM | 7.86 |
| 108 | 43 | KWIKILA | KW | 172.8 | 237.5 | 28.93 | GOOD | 0.50 | 28.93 | QDBM | 7.33 |
| | | | | | | 30.07 | FAIR | 0.50 | 30.07 | | 8.47 |

PRINTOUT OF TAPE

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*****************************************************************************************************
*                                                                                                   *
*  BMR GRAVITY PRINCIPAL FACTS TAPE - PAPUA NEW GUINEA    FILE P1.                        1976/07/29  *
*                                                                                                   *
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* 1976/08/10 *

* DESCRIPTION OF THIS TAPE *

RECORD TYPE - BUFFERED BINARY WITH 512 60-BIT WORDS/RECORD

DATUM USED -

| | | | |
|---|---|---|---|
| 1. | STATION NUMBER | - 8 DIGIT FLOATING POINT | = |
| 2. | POSITION UNITS | - DECIMAL DEGREES | D |
| 3. | ELEVATION UNITS | - METRES ABOVE M.S.L. | M |
| 4. | ELEVATION DATUM | - DATUM UNDEFINED | |
| 5. | GRAVITY UNITS | - MILLIGALS | M |
| 6. | GRAVITY DATUM | - OLD POTSDAM DATUM | O |

SELECTIVE LISTING OF BLOCKS 24 TO 24

BMR GRAVITY PRINCIPAL FACTS TAPE - PAPUA NEW GUINEA FILE P1. 1976/07/29

7310.001 EAST PAPUA HELICOPTER SURVEY - COUTTS (C55.2-7) DATUM = =DM MO 1975/09/03

| BMR STATION NUMBER. | LATITUDE SOUTH. (DEGREES) | LONGITUDE EAST. (DEGREES) | METER ELEVATION (METRES) | OBSERVED GRAVITY. (MGAL) | GROUND ELEVATION (METRES) | TERRAIN CORRECTION FOR 2.67 | FREE AIR ANOMALY. (MGAL) | BOUGUER ANOMALY. FOR 2.67 | INFORMAL STATION NAME, NUMBER,BENCHMARK,ETC. | * LAST DATE STATION UPDATED |
|---|---|---|---|---|---|---|---|---|---|---|
| 6791.9020 | 8.8833 | 147.7367 | 375.33 | 978078.13 | 375.33 | ******** | 22.15 | -19.84 | | 1975/03/20 |
| 6791.9041 | 8.5533 | 147.2500 | 1623.32 | 977821.76 | 1623.32 | ******** | 159.80 | -21.80 | | .. |
| 7310.0002 | 9.0600 | 147.1900 | 29.31 | 978186.40 | 29.31 | ******** | 18.74 | 15.46 | | .. |
| 7310.0005 | 9.1200 | 147.5017 | 269.11 | 978105.32 | 269.11 | ******** | 9.99 | -20.11 | | .. |
| 7310.0006 | 9.0767 | 147.5650 | 559.14 | 978041.25 | 559.14 | ******** | 36.64 | -25.91 | | .. |
| 7310.0007 | 9.1550 | 147.6583 | 1194.55 | 977926.69 | 1194.55 | ******** | 115.96 | -17.68 | | .. |
| 7310.0008 | 9.1400 | 147.7417 | 1961.67 | 977773.75 | 1961.67 | ******** | 200.18 | -19.27 | | .. |
| 7310.0009 | 9.0933 | 147.9100 | 2761.96 | 977540.33 | 2761.96 | ******** | 215.04 | -93.95 | | .. |
| 7310.0010 | 9.0500 | 148.0067 | 952.58 | 977990.98 | 952.58 | ******** | 108.53 | 1.96 | | .. |
| 7310.0016 | 9.1917 | 147.0617 | 1.63 | 978186.94 | 1.63 | ******** | 7.04 | 6.86 | | .. |
| 7310.0017 | 9.1800 | 147.1750 | 21.26 | 978218.30 | 21.26 | ******** | 44.70 | 42.41 | | .. |
| 7310.0018 | 9.1933 | 147.3067 | 38.32 | 978191.17 | 38.32 | ******** | 22.54 | 18.26 | | .. |
| 7310.0019 | 9.1767 | 147.3867 | 75.40 | 978171.35 | 75.40 | ******** | 14.64 | 6.20 | | .. |
| 7310.0020 | 9.1733 | 147.5083 | 753.67 | 978027.64 | 753.67 | ******** | 80.34 | -3.97 | | .. |
| 7310.0021 | 9.1833 | 147.5983 | 701.05 | 978031.99 | 701.05 | ******** | 68.17 | -10.26 | | .. |
| 7310.0023 | 9.2333 | 147.8167 | 2422.91 | 977688.09 | 2422.91 | ******** | 254.21 | -16.84 | | .. |
| 7310.0031 | 9.2583 | 147.1050 | 4.95 | 978198.61 | 4.95 | ******** | 17.84 | 17.28 | | .. |
| 7310.0032 | 9.2633 | 147.2217 | 26.81 | 978220.99 | 26.81 | ******** | 46.42 | 43.82 | | .. |
| 7310.0033 | 9.3267 | 147.3017 | 40.95 | 978219.57 | 40.95 | ******** | 47.95 | 43.37 | | .. |
| 7310.0035 | 9.2800 | 147.5100 | 467.18 | 978095.37 | 467.18 | ******** | 56.63 | 4.36 | | .. |
| 7310.0037 | 9.3933 | 147.6450 | 731.43 | 978033.18 | 731.43 | ******** | 72.72 | -9.11 | | .. |
| 7310.0039 | 9.2950 | 147.8967 | 2771.52 | 977611.54 | 2771.52 | ******** | 283.49 | -26.57 | | .. |
| 7310.0046 | 9.3933 | 147.1283 | 379.70 | 978135.48 | 379.70 | ******** | 66.47 | 24.00 | | .. |
| 7310.0047 | 9.3683 | 147.2183 | 26.60 | 978223.24 | 26.60 | ******** | 46.00 | 43.02 | | .. |
| 7310.0048 | 9.3983 | 147.2883 | 43.90 | 978220.20 | 43.90 | ******** | 47.42 | 42.51 | | .. |
| 7310.0049 | 9.4217 | 147.4133 | 461.93 | 978127.73 | 461.93 | ******** | 83.28 | 31.60 | | .. |
| 7310.0050 | 9.4117 | 147.5000 | 477.59 | 978108.01 | 477.59 | ******** | 68.68 | 15.25 | | .. |
| 7310.0051 | 9.4150 | 147.6033 | 286.98 | 978139.16 | 286.98 | ******** | 40.91 | 8.81 | | .. |
| 7310.0053 | 9.4733 | 147.8667 | 878.73 | 978008.61 | 878.73 | ******** | 91.28 | -7.02 | | .. |
| 7310.0054 | 9.4633 | 147.9200 | 564.14 | 978064.34 | 564.14 | ******** | 50.22 | -12.89 | | .. |
| 7310.0055 | 9.4267 | 147.9717 | 1450.34 | 977880.44 | 1450.34 | ******** | 140.87 | -21.39 | | .. |
| 7310.0068 | 9.4717 | 147.8083 | 878.09 | 978008.94 | 878.09 | ******** | 91.46 | -6.77 | | .. |
| 7310.0093 | 9.5883 | 147.7900 | 130.14 | 978176.04 | 130.14 | ******** | 24.32 | 9.76 | | .. |
| 7310.0095 | 9.6483 | 148.0550 | 612.76 | 978070.52 | 612.76 | ******** | 65.95 | -2.60 | | .. |
| 7310.0107 | 9.7017 | 147.7233 | 40.13 | 978243.63 | 40.13 | ******** | 60.76 | 56.28 | | .. |
| 7310.0108 | 9.7017 | 147.8050 | 403.96 | 978152.38 | 403.96 | ******** | 81.79 | 36.60 | | .. |
| 7310.0109 | 9.7200 | 147.9317 | 140.67 | 978188.62 | 140.67 | ******** | 36.24 | 20.50 | | .. |
| 7310.0123 | 9.7633 | 147.7817 | 40.37 | 978246.46 | 40.37 | ******** | 61.82 | 57.30 | | .. |
| 7310.0124 | 9.8400 | 147.8633 | 375.68 | 978173.87 | 375.68 | ******** | 90.40 | 48.37 | | .. |
| 7310.0125 | 9.8383 | 148.0083 | 64.77 | 978237.42 | 64.77 | ******** | 58.05 | 50.81 | | .. |
| 7310.0137 | 9.9067 | 147.7383 | 12.65 | 978254.42 | 12.65 | ******** | 56.89 | 55.48 | | .. |
| 7310.0138 | 9.9167 | 147.8717 | 169.14 | 978218.67 | 169.14 | ******** | 69.13 | 50.21 | | .. |
| 7310.0139 | 9.8967 | 147.9167 | 69.66 | 978238.34 | 69.66 | ******** | 58.71 | 50.92 | | .. |
| 7310.0140 | 9.9083 | 147.9917 | 31.10 | 978242.16 | 31.10 | ******** | 50.27 | 46.79 | | .. |
| 7310.0153 | 9.9867 | 147.7817 | 1.23 | 978269.59 | 1.23 | ******** | 66.09 | 65.95 | | .. |
| 7310.0154 | 9.9733 | 147.8550 | 299.60 | 978204.74 | 299.60 | ******** | 93.73 | 60.21 | | .. |
| 7310.1014 | 9.0417 | 146.8867 | 9.69 | 978177.57 | 9.69 | ******** | 4.38 | 3.29 | | .. |
| 7310.1015 | 9.0683 | 147.0217 | 7.14 | 978193.94 | 7.14 | ******** | 19.21 | 18.41 | | .. |
| 7310.1030 | 9.1633 | 146.9967 | .11 | 978192.49 | .11 | ******** | 12.92 | 12.91 | | .. |
| 7310.1044 | 9.2717 | 146.8983 | 111.10 | 978172.86 | 111.10 | ******** | 24.47 | 12.04 | | .. |

BMR GRAVITY PRINCIPAL FACTS TAPE - PAPUA NEW GUINEA FILE P1. 1976/07/29

7310.001 EAST PAPUA HELICOPTER SURVEY - COUTTS (C55.2-7) DATUM = =DM MO 1975/09/03

| BMR STATION NUMBER. | LATITUDE SOUTH. (DEGREES) | LONGITUDE EAST. (DEGREES) | METER ELEVATION (METRES) | OBSERVED GRAVITY. (MGAL) | GROUND ELEVATION (METRES) | TERRAIN CORRECTION FOR 2.67 | FREE AIR ANOMALY. (MGAL) | BOUGUER ANOMALY. FOR 2.67 | INFORMAL STATION NAME, NUMBER,BENCHMARK,ETC. | * LAST DATE STATION UPDATED |
|---|---|---|---|---|---|---|---|---|---|---|
| 7310.1045 | 9.2867 | 146.9700 | 2.17 | 978204.24 | 2.17 | ******** | 21.80 | 21.56 | | 1975/03/20 |
| 7310.1060 | 9.3917 | 147.0183 | -.65 | 978226.86 | -.65 | ******** | 40.53 | 40.60 | | .. |
| 7310.2021 | 8.2183 | 146.1533 | 9.86 | 978137.44 | 9.86 | ******** | -13.74 | -14.84 | | .. |
| 7310.2022 | 8.1750 | 146.2783 | 13.52 | 978124.08 | 13.52 | ******** | -24.88 | -26.39 | | .. |
| 7310.2026 | 8.2583 | 146.6133 | 131.85 | 978122.04 | 131.85 | ******** | 7.49 | -7.26 | | .. |
| 7310.2028 | 8.2350 | 146.8200 | 1481.73 | 977845.83 | 1481.73 | ******** | 148.44 | -17.32 | | .. |
| 7310.2029 | 8.2200 | 146.9167 | 1704.32 | 977790.50 | 1704.32 | ******** | 162.19 | -28.48 | | .. |
| 7310.2037 | 8.2967 | 146.2383 | 8.01 | 978131.96 | 8.01 | ******** | -21.79 | -22.69 | | .. |
| 7310.2041 | 8.3450 | 146.[illegible]433 | 34.17 | 978138.34 | 34.17 | ******** | -8.59 | -12.41 | | .. |
| 7310.2044 | 8.2950 | 146.[illegible]050 | 1790.42 | 977790.00 | 1790.42 | ******** | 186.34 | -13.96 | | .. |
| 7310.2045 | 8.3083 | 146.9550 | 1054.40 | 977909.88 | 1054.40 | ******** | 78.74 | -39.22 | | .. |
| 7310.2054 | 8.4067 | 146.4650 | 21.65 | 978140.10 | 21.65 | ******** | -12.29 | -14.71 | | .. |
| 7310.2068 | 8.4967 | 146.3183 | 11.62 | 978147.51 | 11.62 | ******** | -10.33 | -11.63 | | .. |
| 7310.2069 | 8.4933 | 146.4550 | 16.72 | 978144.83 | 16.72 | ******** | -11.35 | -13.22 | | .. |
| 7310.2070 | 8.4883 | 146.5467 | 28.26 | 978143.35 | 28.26 | ******** | -9.13 | -12.30 | | .. |
| 7310.2072 | 8.4967 | 146.6850 | 55.32 | 978156.34 | 55.32 | ******** | 11.99 | 5.80 | | .. |
| 7310.2074 | 8.5000 | 146.8583 | 516.92 | 978077.56 | 516.92 | ******** | 75.57 | 17.74 | | .. |
| 7310.2075 | 8.4950 | 147.0000 | 432.70 | 978029.78 | 432.70 | ******** | 1.93 | -46.48 | | .. |
| 7310.2084 | 8.5933 | 146.3900 | 11.84 | 978149.41 | 11.84 | ******** | -10.91 | -12.24 | | .. |
| 7310.2085 | 8.5700 | 146.5000 | 24.65 | 978152.34 | 24.65 | ******** | -3.41 | -6.17 | | .. |
| 7310.2086 | 8.5317 | 146.6200 | 45.39 | 978155.78 | 45.39 | ******** | 7.44 | 2.36 | | .. |
| 7310.2087 | 8.5683 | 146.7683 | 78.75 | 978152.43 | 78.75 | ******** | 13.42 | 4.61 | | .. |
| 7310.2088 | 8.5850 | 146.8350 | 157.68 | 978138.16 | 157.68 | ******** | 23.07 | 5.43 | | .. |
| 7310.2089 | 8.5533 | 146.9033 | 211.39 | 978124.87 | 211.39 | ******** | 27.19 | 3.54 | | .. |
| 7310.2098 | 8.5733 | 146.9883 | 1035.41 | 977952.42 | 1035.41 | ******** | 108.50 | -7.33 | | .. |
| 7310.2100 | 8.6367 | 146.4917 | 12.13 | 978148.17 | 12.13 | ******** | -13.21 | -14.57 | | .. |
| 7310.2101 | 8.6700 | 146.6050 | 15.82 | 978156.81 | 15.82 | ******** | -4.33 | -6.10 | | .. |
| 7310.2103 | 8.6450 | 146.8333 | 168.54 | 978135.79 | 168.54 | ******** | 22.45 | 3.60 | | .. |
| 7310.2104 | 8.6617 | 146.9600 | 326.57 | 978116.28 | 326.57 | ******** | 51.26 | 14.73 | | .. |
| 7310.2115 | 8.7433 | 146.5267 | 5.23 | 978145.06 | 5.23 | ******** | -21.32 | -21.90 | | .. |
| 7310.2116 | 8.7733 | 146.6117 | 54.21 | 978146.89 | 54.21 | ******** | -5.18 | -11.25 | | .. |
| 7310.2117 | 8.7533 | 146.7150 | 212.42 | 978108.31 | 212.42 | ******** | 5.60 | -18.16 | | .. |
| 7310.2118 | 8.7333 | 146.8333 | 93.04 | 978153.52 | 93.04 | ******** | 14.51 | 4.10 | | .. |
| 7310.2119 | 8.7183 | 146.9217 | 425.55 | 978097.18 | 425.55 | ******** | 61.19 | 13.58 | | .. |
| 7310.2131 | 8.8567 | 146.6133 | 27.46 | 978161.40 | 27.46 | ******** | -1.20 | -4.27 | | .. |
| 7310.2133 | 8.8400 | 146.8283 | 22.32 | 978165.07 | 22.32 | ******** | 1.34 | -1.16 | | .. |
| 7310.2146 | 8.9283 | 146.5683 | .09 | 978169.23 | .09 | ******** | -3.79 | -3.80 | | .. |
| 7310.2147 | 8.9400 | 146.7250 | 88.41 | 978159.31 | 88.41 | ******** | 13.23 | 3.34 | | .. |
| 7310.2148 | 8.9633 | 146.8217 | 4.36 | 978174.24 | 4.36 | ******** | 1.58 | 1.09 | | .. |
| 7310.2149 | 8.9567 | 146.9533 | 35.63 | 978177.37 | 35.63 | ******** | 14.54 | 10.55 | | .. |
| 7310.3016 | 8.1700 | 147.0983 | 1913.02 | 977727.75 | 1913.02 | ******** | 165.11 | -48.91 | | .. |
| 7310.3031 | 8.2983 | 147.1183 | 1128.47 | 977866.36 | 1128.47 | ******** | 58.34 | -67.91 | | .. |
| 7310.3032 | 8.2883 | 147.2683 | 2668.75 | 977598.29 | 2668.75 | ******** | 265.85 | -32.71 | | .. |
| 7310.3046 | 8.4083 | 147.1167 | 1475.11 | 977818.54 | 1475.11 | ******** | 114.64 | -50.38 | | .. |
| 7310.3047 | 8.4200 | 147.2467 | 2104.00 | 977716.49 | 2104.00 | ******** | 206.37 | -29.01 | | .. |
| 7310.3048 | 8.3883 | 147.3150 | 2825.50 | 977569.99 | 2825.50 | ******** | 283.35 | -32.75 | | 1975/07/07 |
| 7310.3061 | 8.4783 | 147.1217 | 1797.50 | 977779.07 | 1797.50 | ******** | 172.84 | -28.25 | | 1975/03/20 |
| 7310.3063 | 8.4800 | 147.3083 | 2889.73 | 977558.90 | 2889.73 | ******** | 289.69 | -33.59 | | .. |
| 7310.3076 | 8.5617 | 147.0850 | 1404.54 | 977866.97 | 1404.54 | ******** | 137.28 | -19.85 | | .. |
| 7310.3091 | 8.6417 | 147.1067 | 1237.62 | 977914.90 | 1237.62 | ******** | 131.57 | -6.88 | | .. |

BMR GRAVITY PRINCIPAL FACTS TAPE - PAPUA NEW GUINEA FILE P1. 1976/07/29

7310.001 EAST PAPUA HELICOPTER SURVEY - COUTTS (C55.2-7) DATUM = =DM MO 1975/09/03

| BMR STATION NUMBER. | LATITUDE SOUTH. (DEGREES) | LONGITUDE EAST. (DEGREES) | METER ELEVATION (METRES) | OBSERVED GRAVITY. (MGAL) | GROUND ELEVATION (METRES) | TERRAIN CORRECTION FOR 2.67 | FREE AIR ANOMALY. (MGAL) | BOUGUER ANOMALY. FOR 2.67 | INFORMAL STATION NAME, NUMBER,BENCHMARK,ETC. | * LAST DATE STATION UPDATED |
|---|---|---|---|---|---|---|---|---|---|---|
| 7310.3092 | 8.7067 | 147.1433 | 1181.04 | 977925.91 | 1181.04 | ******** | 123.38 | -8.75 | | 1975/03/20 |
| 7310.3093 | 8.6733 | 147.2783 | 1497.37 | 977851.82 | 1497.37 | ******** | 147.79 | -19.72 | | .. |
| 7310.3095 | 8.6667 | 147.4333 | 2737.37 | 977533.84 | 2737.37 | ******** | 212.66 | -93.58 | | .. |
| 7310.3108 | 8.8083 | 147.2733 | 943.92 | 977993.42 | 943.92 | ******** | 114.96 | 9.36 | | .. |
| 7310.3109 | 8.7433 | 147.4283 | 3138.06 | 977419.63 | 3138.06 | ******** | 220.04 | -131.02 | | .. |
| 7310.3110 | 8.7450 | 147.4817 | 3238.61 | 977397.10 | 3238.61 | ******** | 228.50 | -133.82 | | .. |
| 7310.3121 | 8.8883 | 147.1217 | 212.26 | 978129.86 | 212.26 | ******** | 23.42 | -.32 | | .. |
| 7310.3123 | 8.8350 | 147.2967 | 585.10 | 978028.32 | 585.10 | ******** | 38.40 | -27.06 | | .. |
| 7310.3124 | 8.8883 | 147.3850 | 927.03 | 977960.33 | 927.03 | ******** | 74.47 | -29.24 | | .. |
| 7310.3125 | 8.8850 | 147.5017 | 3226.88 | 977378.35 | 3226.88 | ******** | 202.31 | -158.69 | | .. |
| 7310.3128 | 8.9350 | 147.3200 | 253.80 | 978112.63 | 253.80 | ******** | 17.73 | -10.66 | | .. |
| 7310.3129 | 9.0233 | 147.4417 | 906.96 | 977996.98 | 906.96 | ******** | 101.19 | -.27 | | .. |
| 7310.3136 | 8.9867 | 147.0783 | 106.88 | 978171.25 | 106.88 | ******** | 29.58 | 17.62 | | .. |
| 7310.9001 | 9.1067 | 147.0967 | 12.40 | 978207.98 | 12.40 | ******** | 33.81 | 32.42 | | .. |
| 7310.9006 | 8.0783 | 146.1633 | 14.21 | 978124.69 | 14.21 | ******** | -21.62 | -23.21 | | .. |
| 7310.9007 | 9.1400 | 147.6617 | 1280.20 | 977905.67 | 1280.20 | ******** | 121.80 | -21.42 | | .. |
| 7310.9012 | 9.0350 | 146.7867 | 5.39 | 978177.92 | 5.39 | ******** | 3.59 | 2.98 | | .. |
| 7310.9013 | 8.1317 | 146.8633 | 1976.47 | 977717.98 | 1976.47 | ******** | 175.88 | -45.23 | | .. |
| 7310.9024 | 9.2183 | 147.8950 | 2256.84 | 977711.33 | 2256.84 | ******** | 226.63 | -25.85 | | .. |
| 7310.9029 | 9.1817 | 146.9000 | .30 | 978187.64 | .30 | ******** | 7.61 | 7.58 | | .. |
| 7310.9034 | 9.3033 | 147.4017 | 91.15 | 978181.43 | 91.15 | ******** | 25.97 | 15.77 | | .. |
| 7310.9053 | 8.4200 | 146.2717 | 14.19 | 978144.39 | 14.19 | ******** | -10.65 | -12.24 | | .. |
| 7310.9060 | 8.3617 | 146.9850 | 1004.83 | 977917.23 | 1004.83 | ******** | 69.42 | -43.00 | | .. |
| 7310.9067 | 9.4750 | 147.6817 | 292.44 | 978138.05 | 292.44 | ******** | 39.74 | 7.03 | | .. |
| 7310.9094 | 9.5983 | 147.9217 | 445.30 | 978111.72 | 445.30 | ******** | 56.96 | 7.14 | | .. |
| 7310.9102 | 8.6950 | 146.7500 | 59.04 | 978149.58 | 59.04 | ******** | 1.11 | -5.50 | | .. |
| 7310.9106 | 8.8083 | 147.0950 | 373.41 | 978090.43 | 373.41 | ******** | 35.91 | -5.86 | | .. |
| 7310.9122 | 9.8183 | 147.6517 | 71.00 | 978238.91 | 71.00 | ******** | 62.07 | 54.13 | | .. |
| 7310.9130 | 8.8217 | 146.5217 | 13.15 | 978154.46 | 13.15 | ******** | -11.60 | -13.08 | | .. |
| 7310.9155 | 10.0000 | 148.0167 | 13.36 | 978253.52 | 13.36 | ******** | 53.35 | 51.86 | | .. |
| 7310.9160 | 8.3600 | 146.9883 | 984.32 | 977918.39 | 984.32 | ******** | 64.29 | -45.83 | | .. |
| 7390.0176 | 9.4433 | 147.2067 | 44.20 | 978212.99 | 44.20 | ******** | 39.00 | 34.05 | | .. |

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BMR GRAVITY PRINCIPAL FACTS TAPE - PAPUA NEW GUINEA FILE P1. DATUM = =DM MO 1976/07/29

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5401.001 | GREAT BARRIER REEF SURVEY - DOOLEY | | (D+E/55) | 49 | STATIONS. | =DM MO | 1975/04/16 |
| 7309.001 | CHRISTMAS ISLAND SURVEY | | | 52 | STATIONS. | =DM MO | 1975/09/03 |
| 3830.001 | WESTERN PAPUA SURVEY - R.L.BULLOCK FOR IEC | | (B+C/54) | 1129 | STATIONS. | =DM MO | 1976/07/27 |
| 4731.001 | KIKORI - KEREMA SURVEY - RAY FOR APC | | (B55.1314) | 1669 | STATIONS. | =DM MO | 1976/07/27 |
| 5036.001 | KIKORI SURVEY - ANGLO-IRANIAN FOR APC | | (B55.13) | 686 | STATIONS. | =DM MO | 1975/10/10 |
| 5161.001 | WEST PAPUA SURVEY - ANGLO-IRANIAN FOR IEC | | (B+C/5J-5) | 1122 | STATIONS. | =DM MO | 1975/09/18 |
| 5530.001 | MOREHEAD SURVEY - GEOPROSCO FOR APC | | (C54.3+7) | 1235 | STATIONS. | =DM MO | 1976/07/27 |
| 5741.001 | KOMEWU - TURAMA SURVEY - GEOPROSCO FOR IEC | | (B54.16) | 197 | STATIONS. | =DM MO | 1975/09/18 |
| 5861.001 | EAST PAPUA SURVEY - PAPUAN APINAIPI | | (B+C/55) | 29 | STATIONS. | =DM MO | 1975/09/18 |
| 6351.001 | NEW GUINEA REGIONAL SURVEY - ST. JOHN | | (B+C/54-5) | 488 | STATIONS. | =DM MO | 1976/07/21 |
| 6810.001 | SEPIK RIVER AREA SEGMENT A | | (B55.1-6) | 518 | STATIONS. | =DM MO | 1976/07/27 |
| 6810.002 | SEPIK RIVER AREA SEGMENT B | | (A+B/54) | 208 | STATIONS. | =DM MO | 1975/01/15 |
| 6810.003 | SEPIK RIVER AREA SEGMENT C | | (A+B/54-5) | 622 | STATIONS. | =DM MO | 1976/07/27 |
| 6901.001 | NEW BRITAIN - CENTRAL | | (B/55-6) | 162 | STATIONS. | =DM MO | 1975/01/15 |
| 6901.002 | NEW BRITAIN - WEST | | (B/55-6) | 132 | STATIONS. | =DM MO | 1975/01/15 |
| 6901.003 | NEW BRITAIN - GAZELLE PENINSULAR | | (B56.2) | 107 | STATIONS. | =DM MO | 1975/09/12 |
| 6902.001 | NEW IRELAND AND ISLANDS | | (A+B/56) | 103 | STATIONS. | =DM MO | 1975/01/15 |
| 6903.001 | RABAUL DETAILED SURVEY | | (B56.2) | 45 | STATIONS. | =DM MO | 1975/08/28 |
| 6934.001 | MADANG GRAVITY SURVEY - CONTINENTAL OIL | | (A+B/55) | 52 | STATIONS. | =DM MO | 1975/07/07 |
| 7025.001 | NEW GUINEA HIGHLANDS SEGMENT A | | (B55.5+9) | 99 | STATIONS. | =DM MO | 1975/01/15 |
| 7043.001 | CECILIA GRAVITY SURVEY - CGG | | (B54.7-12) | 329 | STATIONS. | =DM MO | 1976/07/27 |
| 7047.001 | KAIM-STRICKLAND SURVEY - DIGICON FOR UOD | 70/1018 | (B54.M-16) | 170 | STATIONS. | =DM MO | 1976/07/27 |
| 7231.001 | TOMU RIVER SURVEY - DIGICON FOR UOD | 71/924 | (B54.1112) | 100 | STATIONS. | =DM MO | 1976/07/27 |
| 7310.001 | EAST PAPUA HELICOPTER SURVEY - COUTTS | | (C55.2-7) | 132 | STATIONS. | =DM MO | 1975/09/03 |
| 7510.001 | RABAUL DETAILED SURVEY - WELLMAN | | (B56.2) | 58 | STATIONS. | =DM MO | 1976/07/27 |
| 6701.001 | EASTERN PAPUA SURVEYS | | (B+C/55-6) | 1008 | STATIONS. | =DM MO | 1976/07/29 |
| 6824.001 | MARINE TRAVERSES SURVEY 04 NORTHWEST SHELF | | (D-F/4951) | 129 | STATIONS. | =DM MO | 1975/05/28 |
| 7018.001 | MARINE TRAVERSES SURVEY 05 GULF OF PAPUA AND BISMARCK SEA | | (A-C/54-6) | 1661 | STATIONS. | =DM MO | 1975/05/28 |
| 7019.001 | MARINE TRAVERSES SURVEY 10 NORTHERN CORAL SEA | | (C+D/55) | 167 | STATIONS. | =DM MO | 1975/05/20 |
| 5801.001 | UNDERWATER SURVEY, NORTHERN AUSTRALIAN COAST | | (C-F/52-6) | 476 | STATIONS. | =DM MO | 1975/10/22 |
| 7080.0010 | HIG DATA 1970 AND 1971 | | | 2360 | STATIONS. | =DM MO | 1976/02/11 |
| 6703.001 | MARINE TRAVERSES SURVEY 03 TIMOR SEA | | (C+D/51-2) | 42 | STATIONS. | =DM MO | 1975/05/28 |
| 7114.001 | MARINE TRAVERSES SURVEY 14 CENTRAL CORAL SEA | | (C-J/55-8) | 1132 | STATIONS. | =DM MO | 1975/05/22 |
| 6610.001 | NORTHERN QUEENSLAND SEGMENT A - GEOSURVEYS | | (C+D/54) | 598 | STATIONS. | =DM MO | 1974/10/16 |
| 6610.002 | NORTHERN QUEENSLAND SEGMENT B - GEOSURVEYS | | (D54) | 354 | STATIONS. | =DM MO | 1974/10/16 |
| 6610.003 | NORTHERN QUEENSLAND SEGMENT C - GEOSURVEYS | | (D+E/54-5) | 446 | STATIONS. | =DM MO | 1974/10/16 |
| 6610.004 | NORTHERN QUEENSLAND SEGMENT D - GEOSURVEYS | | (D/54-5) | 266 | STATIONS. | =DM MO | 1974/10/16 |
| 6610.005 | NORTHERN QUEENSLAND SEGMENT E - GEOSURVEYS | | (D+E/54) | 189 | STATIONS. | =DM MO | 1974/10/09 |
| 6610.006 | NORTHERN QUEENSLAND SEGMENT F - GEOSURVEYS | | (D+E/55) | 234 | STATIONS. | =DM MO | 1974/10/16 |
| 6611.001 | NORTHERN QUEENSLAND SEGMENT R - GEOSURVEYS | | (D+E/55) | 75 | STATIONS. | =DM MO | 1974/10/16 |
| 6611.002 | NORTHERN QUEENSLAND SEGMENT S - GEOSURVEYS | | (E/54-5) | 114 | STATIONS. | =DM MO | 1974/10/16 |
| 6612.001 | NORTHERN QUEENSLAND SEGMENT T - GEOSURVEYS | | (D+E/54-5) | 418 | STATIONS. | =DM MO | 1974/10/09 |
| 7590.001 | MARKHAM VALLEY CRUSTAL MOVEMENT | | (B55.10) | 25 | STATIONS. | =DM MO | 1975/10/22 |
| 7471.001 | MILSOMS DATA NEAR MADANG | | | 59 | STATIONS. | =DM MO | 1976/07/29 |
| 7117.001 | WEST SEPIK HELICOPTER SURVEY - COUTTS | | (B 25/06/7 | 194 | STATIONS. | =DM MO | 1976/07/13 |
| 1440.001 | LAMONT CORAL SEA DATA (VIA FALVEY) DO NOT RELEASE THIS DATA | | | 1531 | STATIONS. | =DM MO | 1976/07/27 |
| 1440.001 | LAMONT CORAL SEA DATA (VIA FALVEY) DO NOT RELEASE THIS DATA | | | 1444 | STATIONS. | =DM MO | 1976/07/27 |
| 7186.001 | HIG DATA IN THE CORAL SEA | | | 50 | STATIONS. | =DM MO | 1976/07/15 |

ENDFILE TAPE CONTAINS 22465 STATIONS.

TABLE 7

## List of Survey Personnel

### Bureau of Mineral Resources Geology and Geophysics

J.C. Dooley (Supervisory visits)
W.A. Wiebanga (Supervisory visits)
D.M. Finlayson, Party Leader
J.B. Connelly Geophysicist
B.J. Drummond "
C.D.N. Collins "
J. Petkovic "
A.G. Spence "
P.E. Mann O.I.C. Marine Operations
D.A. Coutts S.T.O. 1 Gravity
P.M. Ryan T.O. 2 Seismic
J. Vout T.O.2 Seismic
I.D. Ripper O.I.C. Popondetta
J.A. Sommerville Party Clerk
N. Parker T.A.
R. Cherry Shooter
B. Carr Field Hand

### Australian National University

J.R. Cleary
K.J. Muirhead

### University of Queensland

J.P. Webb
J. Rynn

### Warrnambool Institute of Advanced Education

A.J. Russell

### Preston Institute of Technology

G. Gibson

### Hawaii Institute of Geophysics

A.S. Furumoto
M. Broyles
R. Mitiguy
E. Murphy

Table 7 contd.

PNG Geological Survey

V. Dent

W. Hutton

Survey Branch, Dept of Services and Property

J. Hyslop

V. Ingham

Navigation Australia Pty Ltd

J. Skates SHORAN Supervisor

R. Mason

W. Gray

J. Vermeulen

G. Wallis

PNG District Administration

A. Gumasa

Seafreight Pty Ltd

P. Eardley, Captain, L/V "Sir Alan"

F. Dawson, Engineer

4 crew

Helitrans PNG Pty Ltd

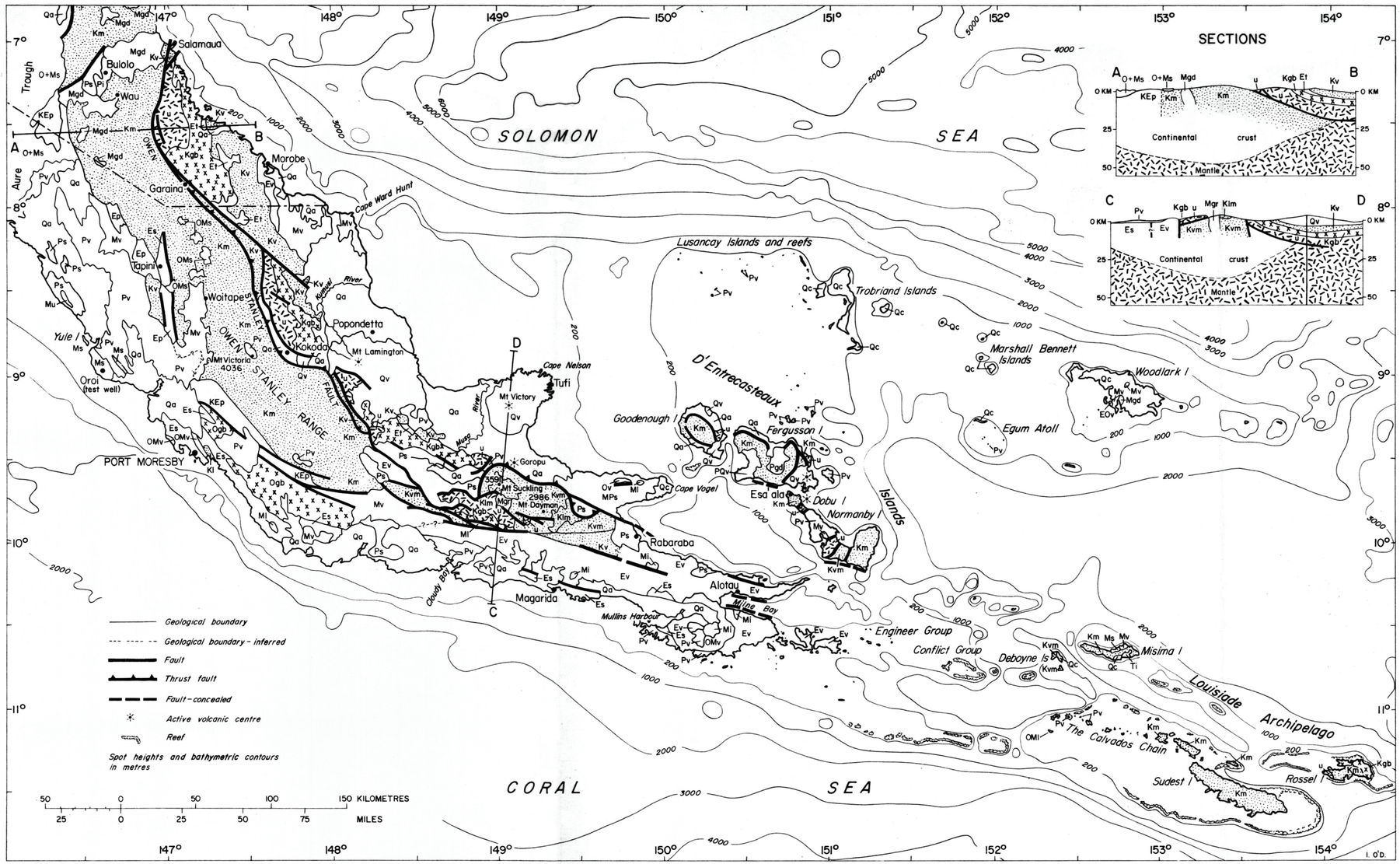
A. Perry, pilot

K. Peacock "

B. Hanson "

S. Urqhart, engineer

PLATE 1




(Based on P/A 334)

Record No. 1975/177

I. O'D.

*LEGEND*

| | |
|---|---|
| K | *Cretaceous, some probable Jurassic, some possibly older* |
| KE | *Cretaceous or Eocene* |
| T | *Tertiary* |
| E | *Eocene* |
| O | *Upper Oligocene* |
| OM | *Upper Oligocene–lower Miocene (Te stage)* |
| O+M | *Oligocene and Miocene* |
| M | *Middle Miocene (lower Tf stage)* |
| MP | *Upper Miocene and Pliocene* |
| P | *Pliocene* |
| Q | *Quaternary* |
| u | *Ultramafic rocks, Cretaceous and older* |
| gb | *Gabbro* |
| t | *Tonalite* |
| gd | *Granodiorite* |
| gr | *Granite* |
| i | *Intrusives (Mi includes gabbro, monzonite, syenite; Pi includes andesitic porphyry)* |
| m | *Metamorphics* |
| p | *Phyllite and low-grade metamorphics* |
| v | *Volcanics* |
| s | *Sediments* |
| l | *Limestone* |
| c | *Raised coral reef* |
| a | *Alluvium* |

*After Davies & Smith, 1971 Figure 1*
*Geological Society of America Bulletin,*
*Volume 82, No. 12*

# GEOLOGY OF EASTERN PAPUA

PNG/B10-306

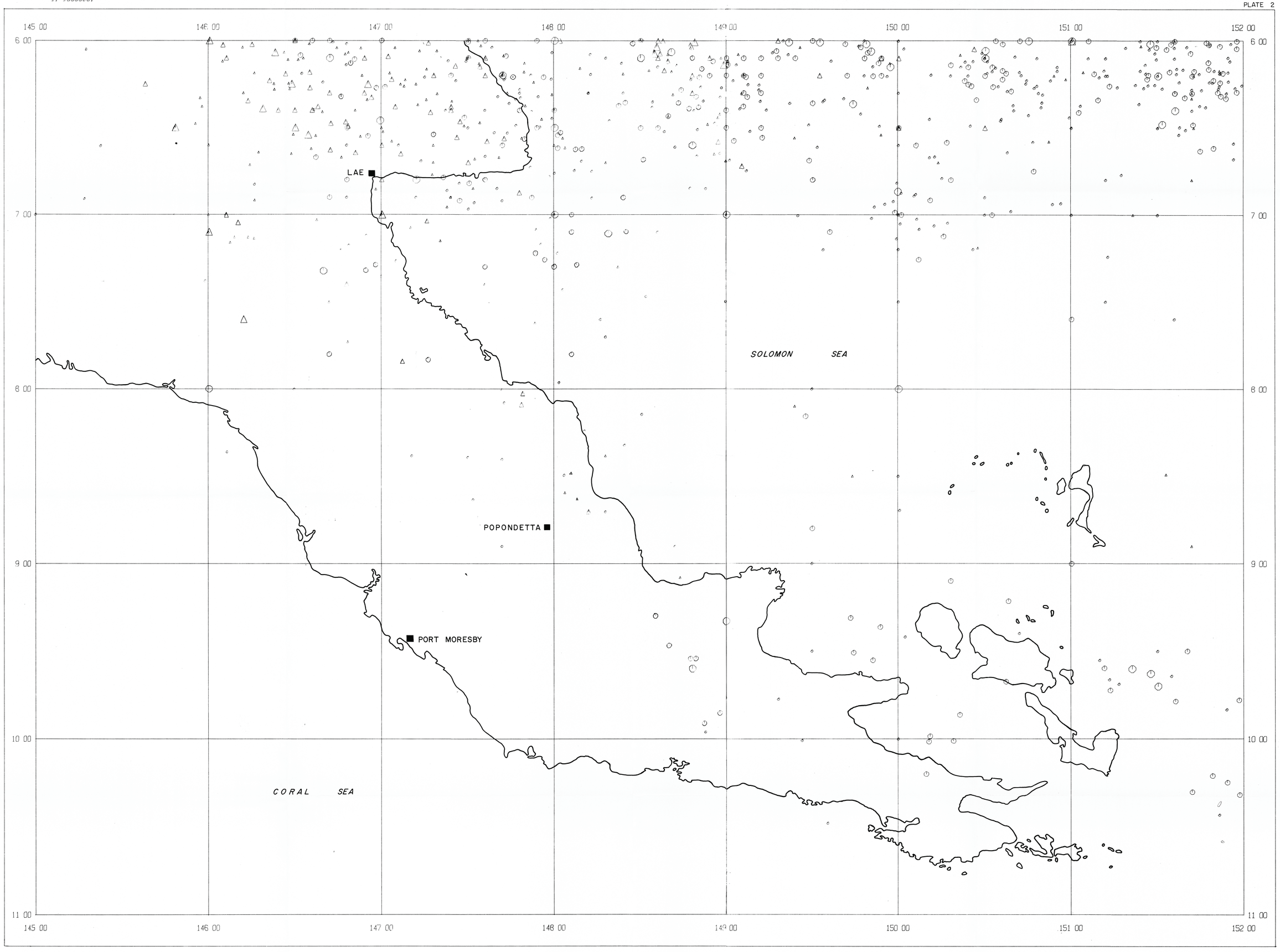
PLØTTED 06/03/75

# EARTHQUAKE DATA FILE

## BUREAU MINERAL RESØURCES

1. 1000000.

PLATE 2




AUSTRALIAN NATIØNAL SPHERØID
STANDARD MERCATØR PRØJECTIØN
WITH SCALE DEFINED AT 0 0'S

EARTHQUAKE MAGNITUDE

| | | <5.00 | 5.00-5.99 | >5.00 |
|---|---|---|---|---|
| DEPTH | 0 - 69 km | ◦ | ⦶ | ⦶ |
| | 70 - 299 km | △ | △ | △ |
| | > 299 km | • | * | ✳ |

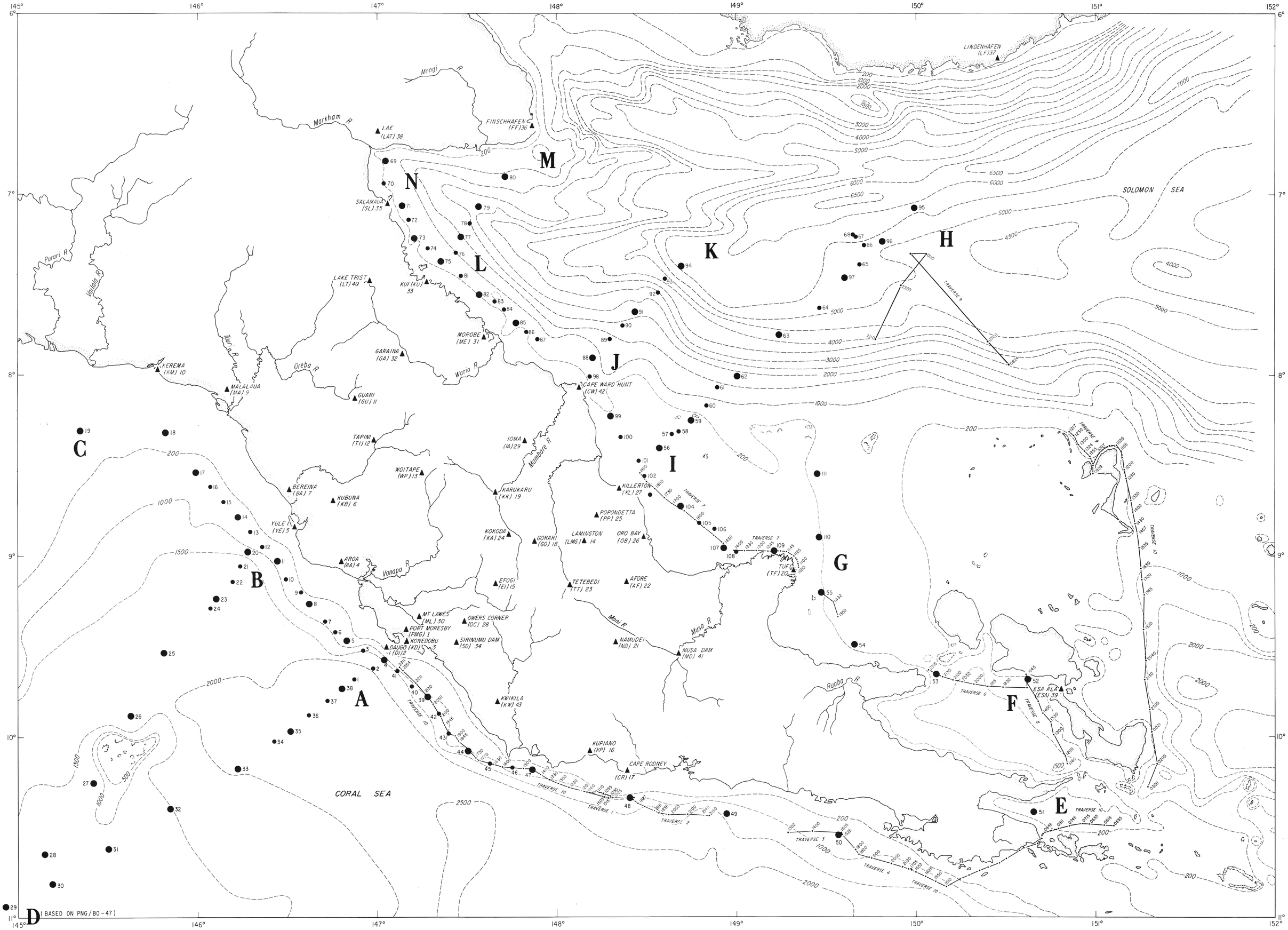
KILOMETRES
10 0 10 20 30 40 50 60 70 80 90 100

DATA PLOTTED —
ALL LOCATED EARTHQUAKES
UP TO 6 MARCH 1975

SEISMICITY OF THE PAPUAN PENINSULA REGION

*Record No. 1975/177*

PNG/BIO—307




LEGEND

▲ RECORDING STATION

● SHOT (180 kg)

● SHOT (1020 kg)

—•— L/V "SIR ALAN" SPARKER TRAVERSES

--1000-- BATHYMETRIC CONTOURS IN METRES

KILOMETRES

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

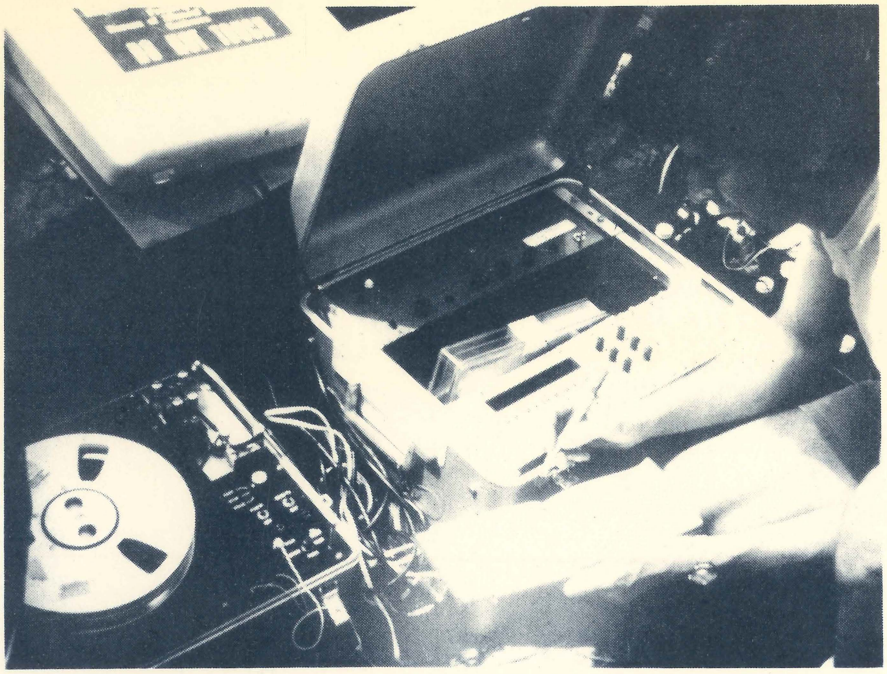
EAST PAPUA CRUSTAL SURVEY

SHOT & RECORDING STATION LOCATIONS

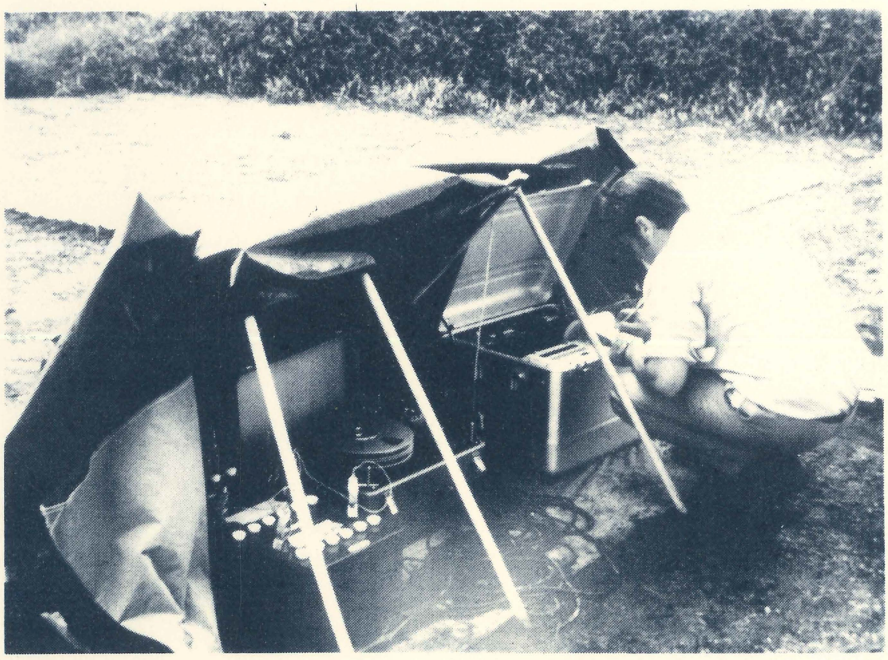
Record No. 1975/177

PNG/BIO — 266

(a)

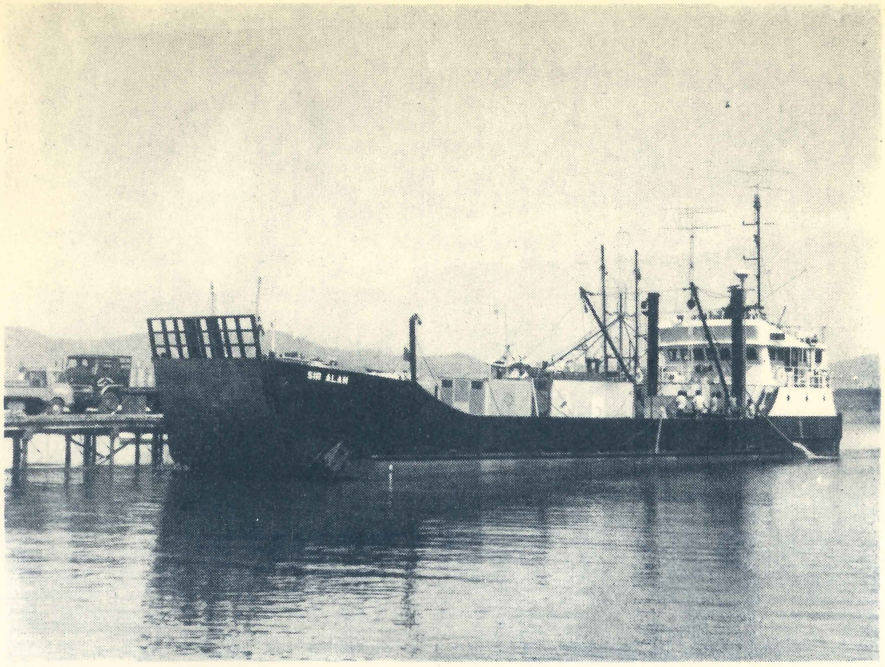


(b)

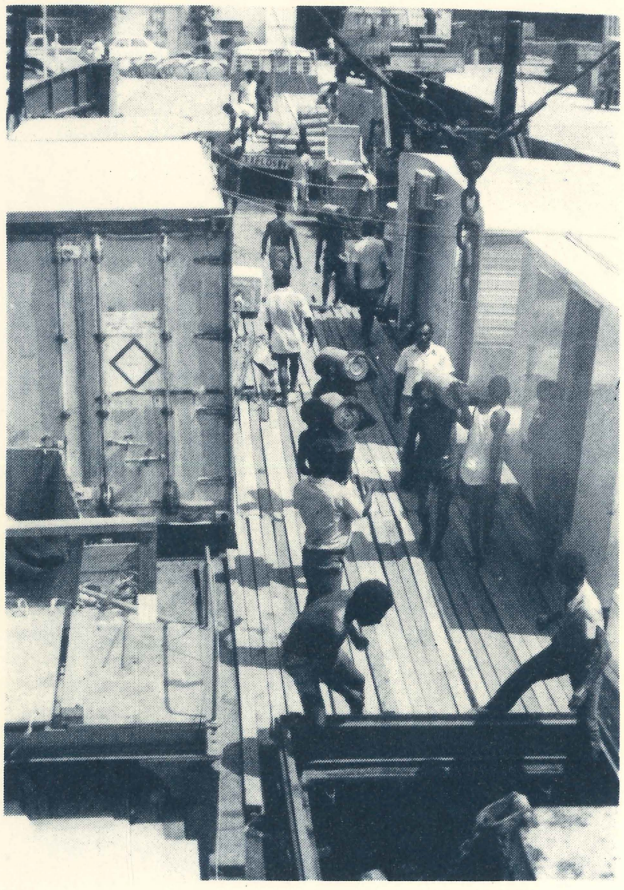


BMR automatic recording systems at (a) Mount Lawes, and
(b) Popondetta

(a)



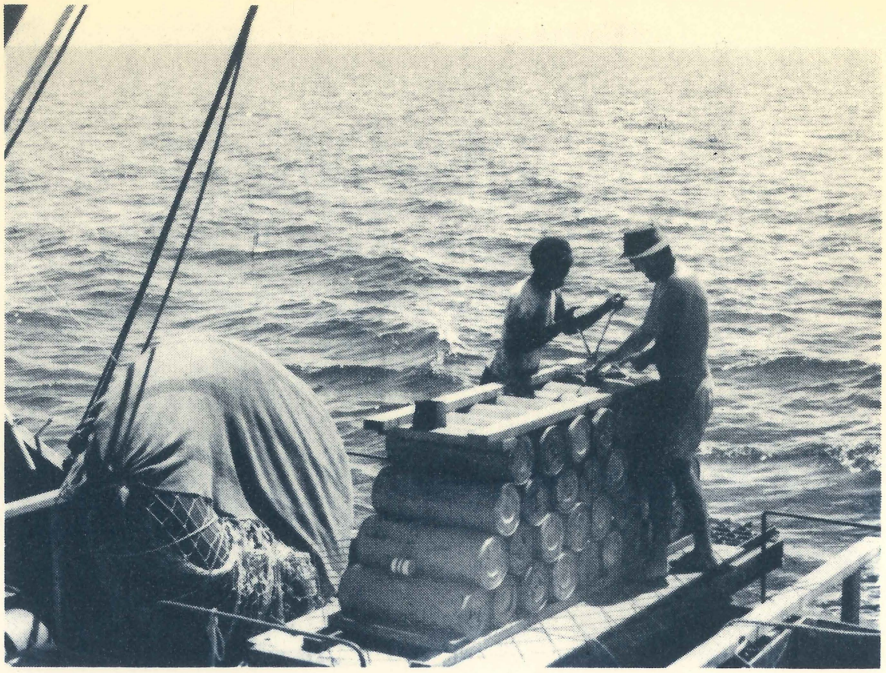

(b)



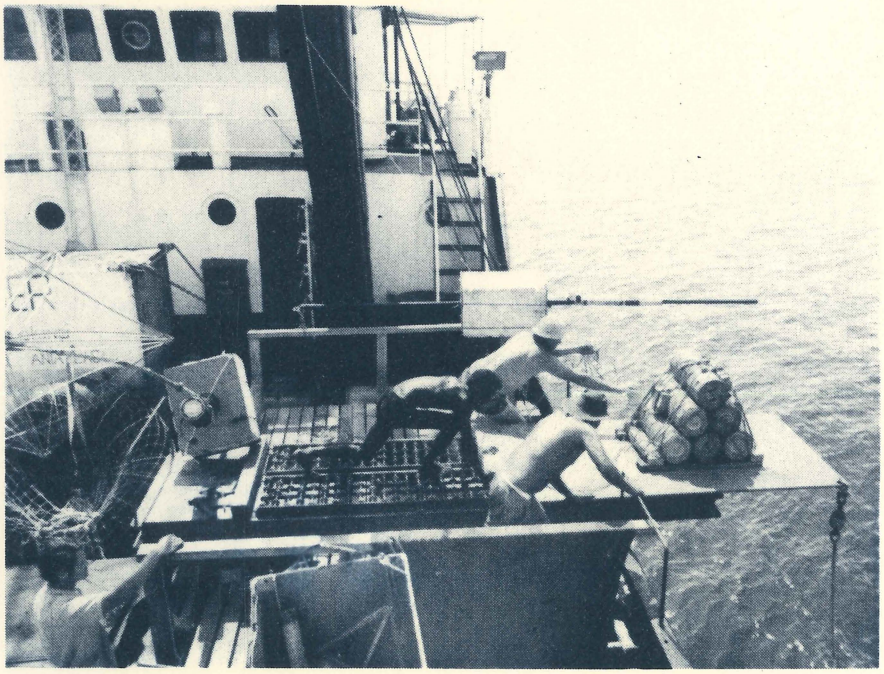
(a) L/V "Sir Alan"

(b) Loading explosives at Port Moresby

(a)



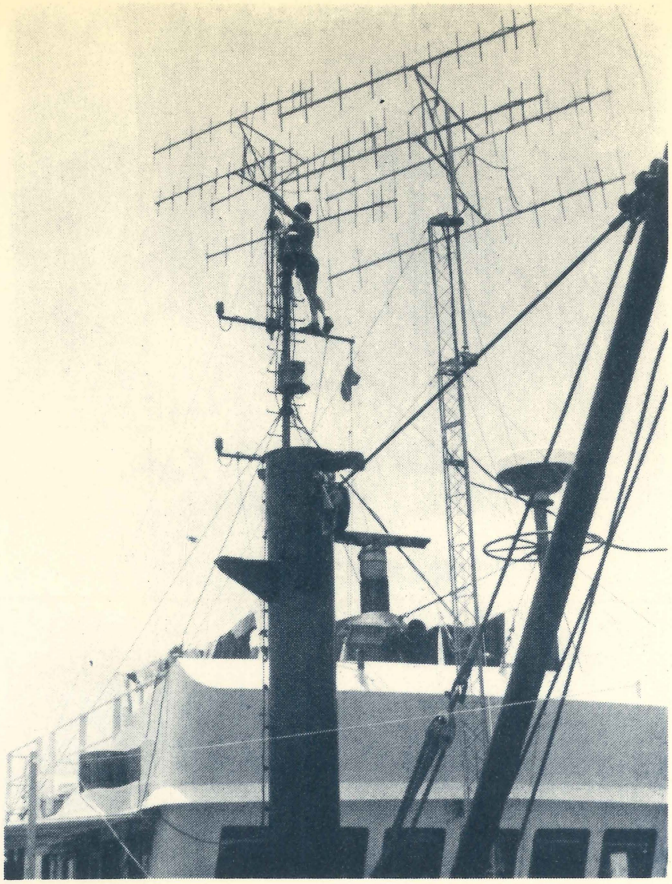
(b)



(a) Assembling a 1020 kg shot; floatation buoy on left (tractor tyre tubes in net).

(b) 180 kg shot going over the side; polystyrene floatation buoy in background, hydrophone transmitter buoy and radar target on left.

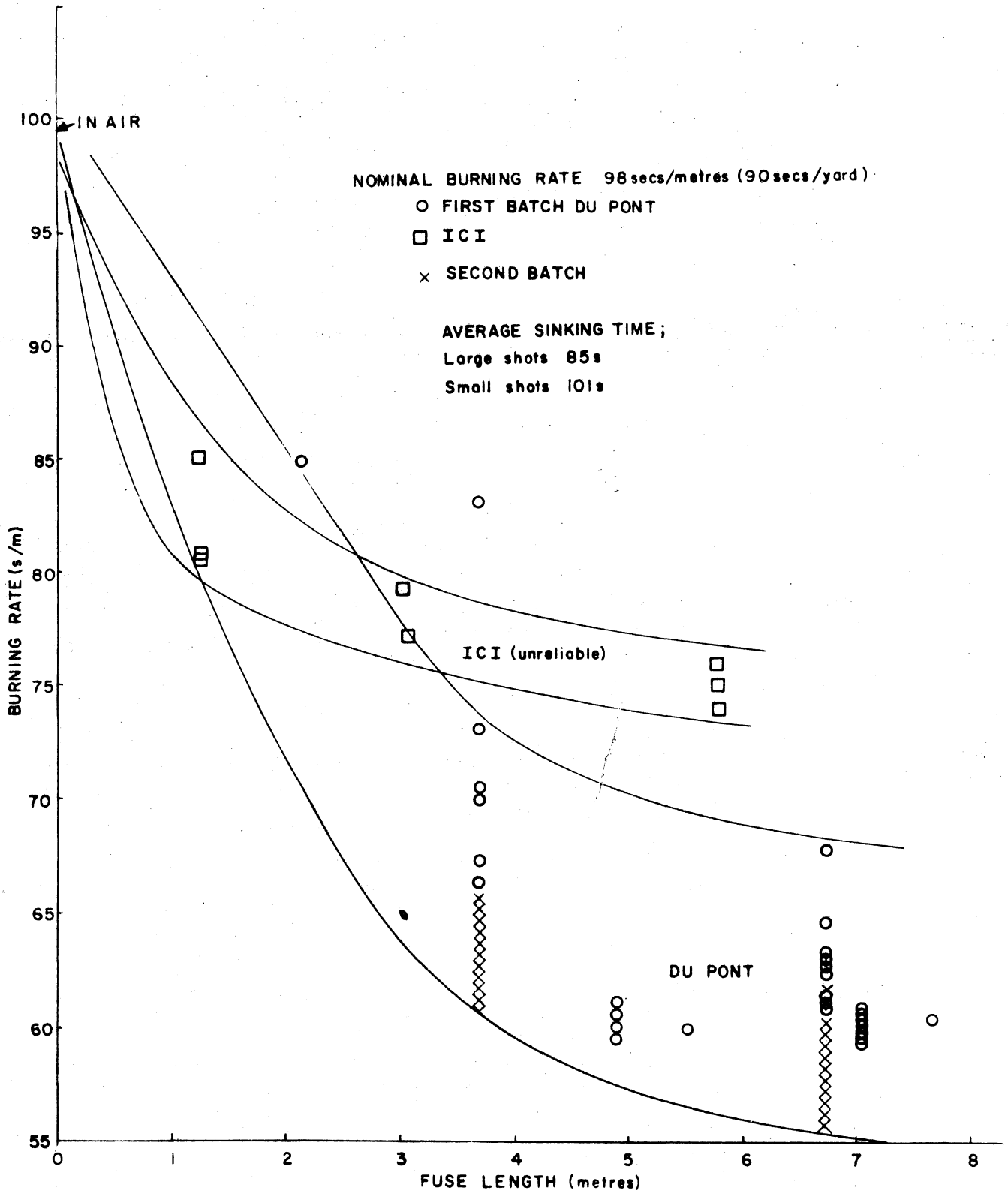
(a)



(b)

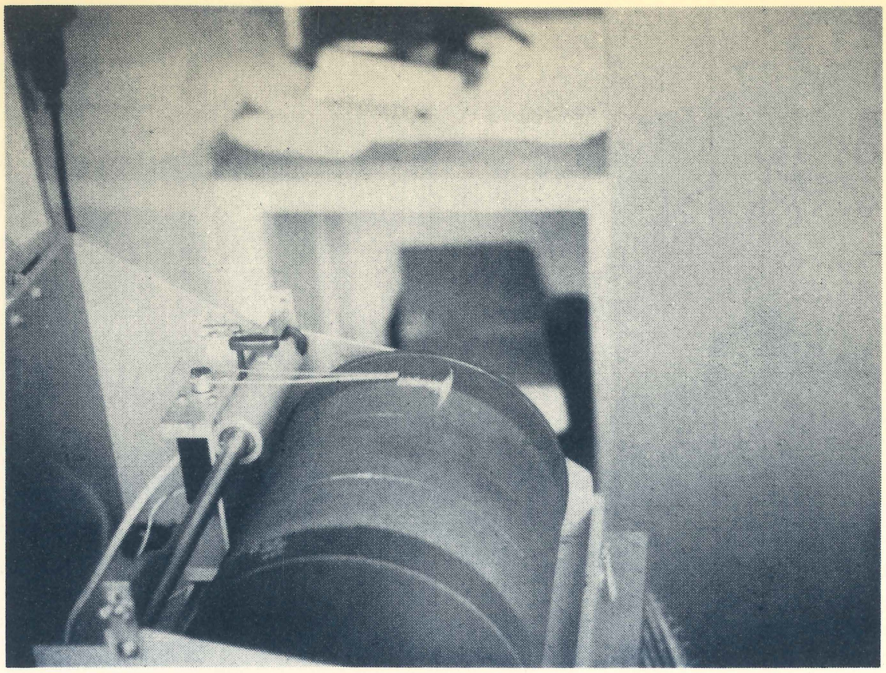
(a) SHORAN masts on L/V "Sir Alan", and

(b) SHORAN land based station at Varol.

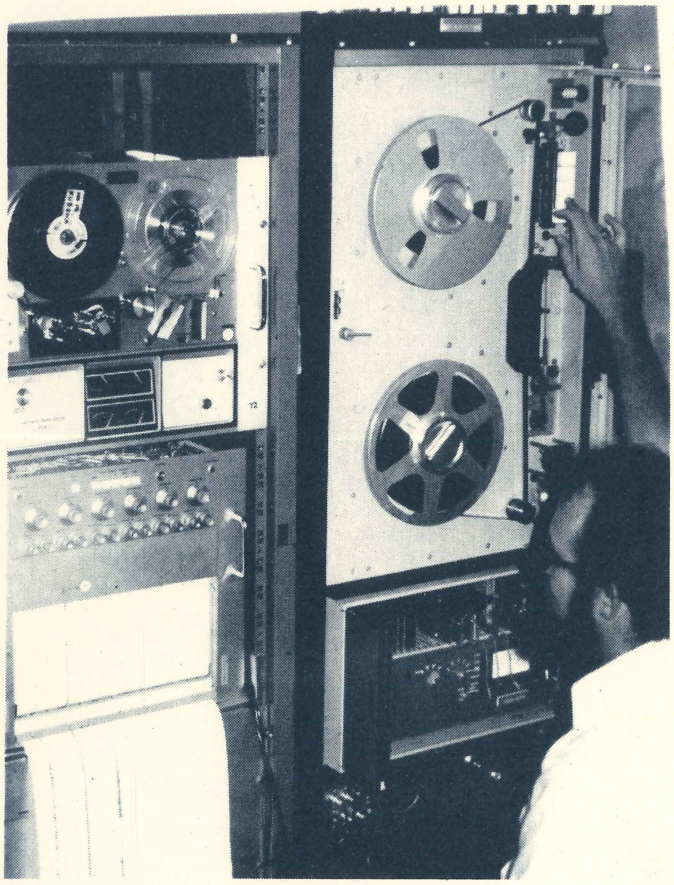



GRAPH OF FUSE LENGTH AGAINST BURNING TIME AT 100m DEPTH

(a)



(b)



(a) Mount Lamington station recording shot 56

(b) BMR seismic tape playback equipment.

PLOTTED 28/01/75

# AROA - PORT MORESBY

## PAPUA NEW GUINEA

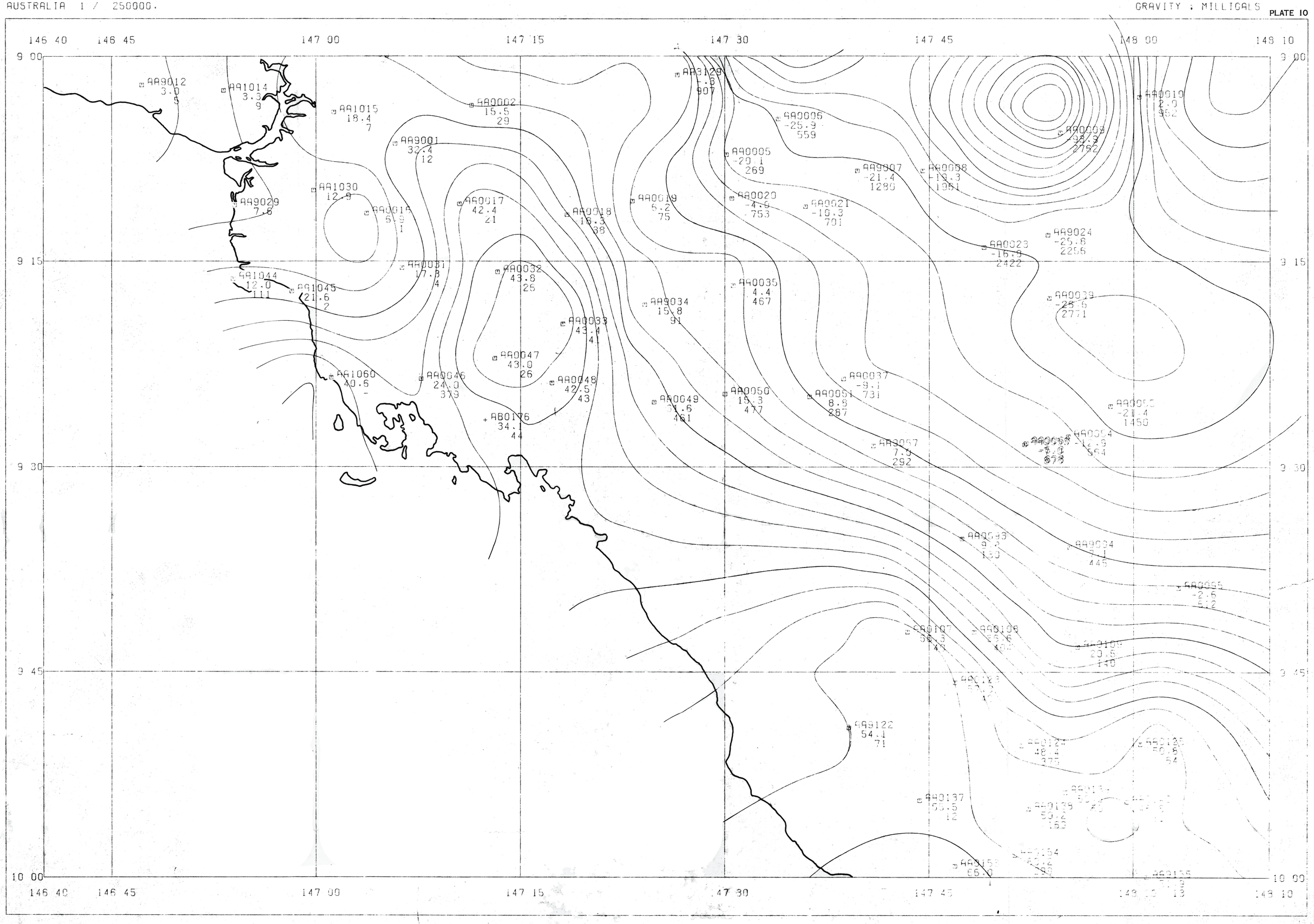
UNITS

HEIGHT : METRES

GRAVITY : MILLIGALS

AUSTRALIA 1 / 250000.

PLATE 10




CLARKE 1858 SPHEROID

TRANSVERSE MERCATOR PROJECTION

ZONE 7 (AUSTRALIA SERIES)

AA = 7310

AB = 7390

LEGEND

A1234 ; STATION NUMBER
56.7 ; GRAVITY ANOMALY
455 ; GROUND ELEVATION

**SIMPLE BOUGUER ANOMALIES**

**IN THE AROA-PORT MORESBY AREA**

FOR OBSERVATIONS MADE DURING 1973 (DENSITY 2·67 t/m$^3$)

*Record No. 1975/177*

PNG/B10-313

PLOTTED 28/01/75

# YULE BUNA

## PAPUA NEW GUINEA

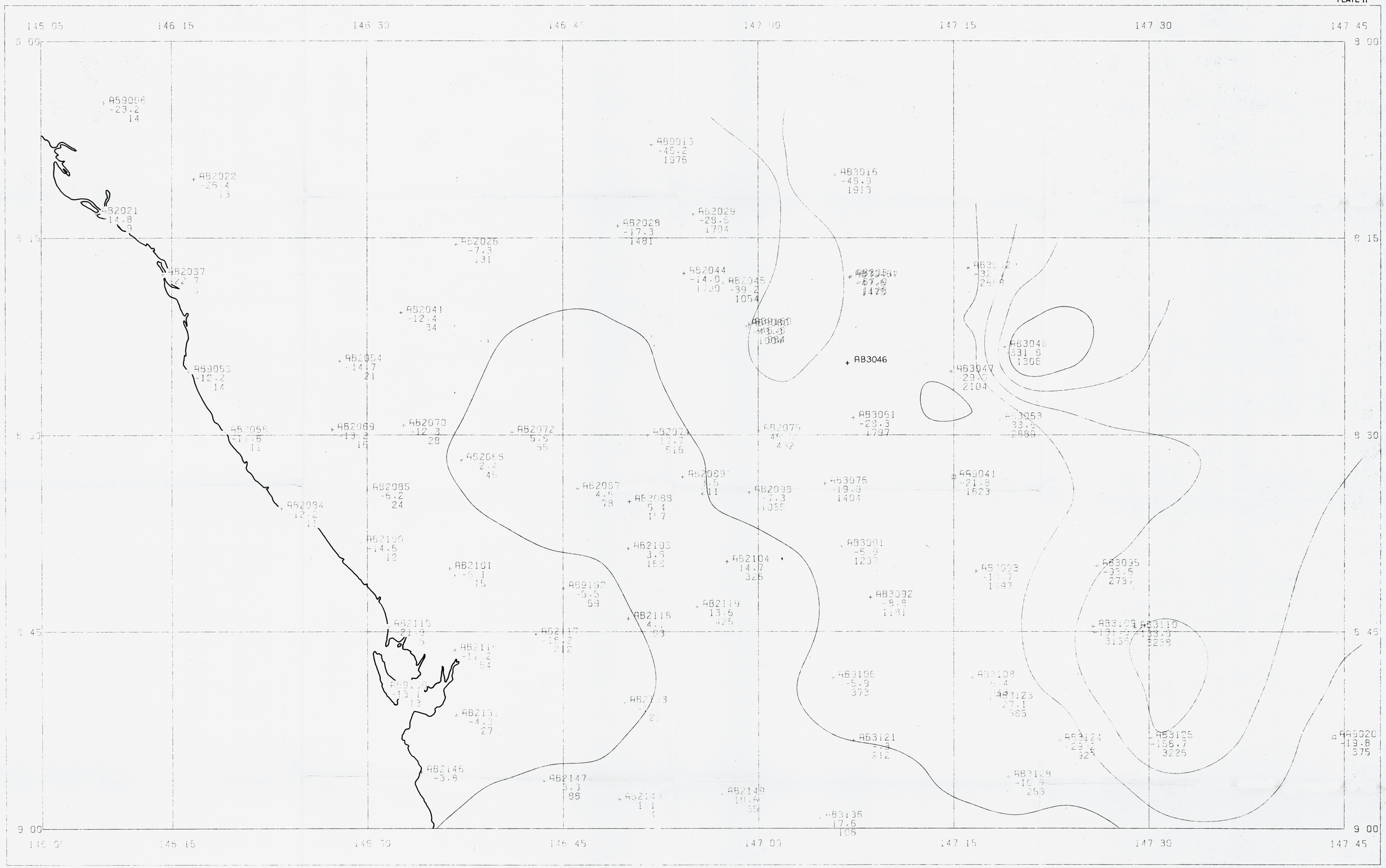
AUSTRALIA 1 / 250000.

UNITS

HEIGHT : METRES

GRAVITY : MILLIGALS

PLATE II




CLARKE 1858 SPHEROID

TRANSVERSE MERCATOR PROJECTION

ZONE 7 (AUSTRALIA SERIES)

⊡ AA = 6791

+ AB = 7310

DENSITY = 2.67 GMS/CC.

**LEGEND**

A1234 : STATION NUMBER
56.7 : GRAVITY ANOMALY
456 : GROUND ELEVATION

**SIMPLE BOUGUER ANOMALIES**

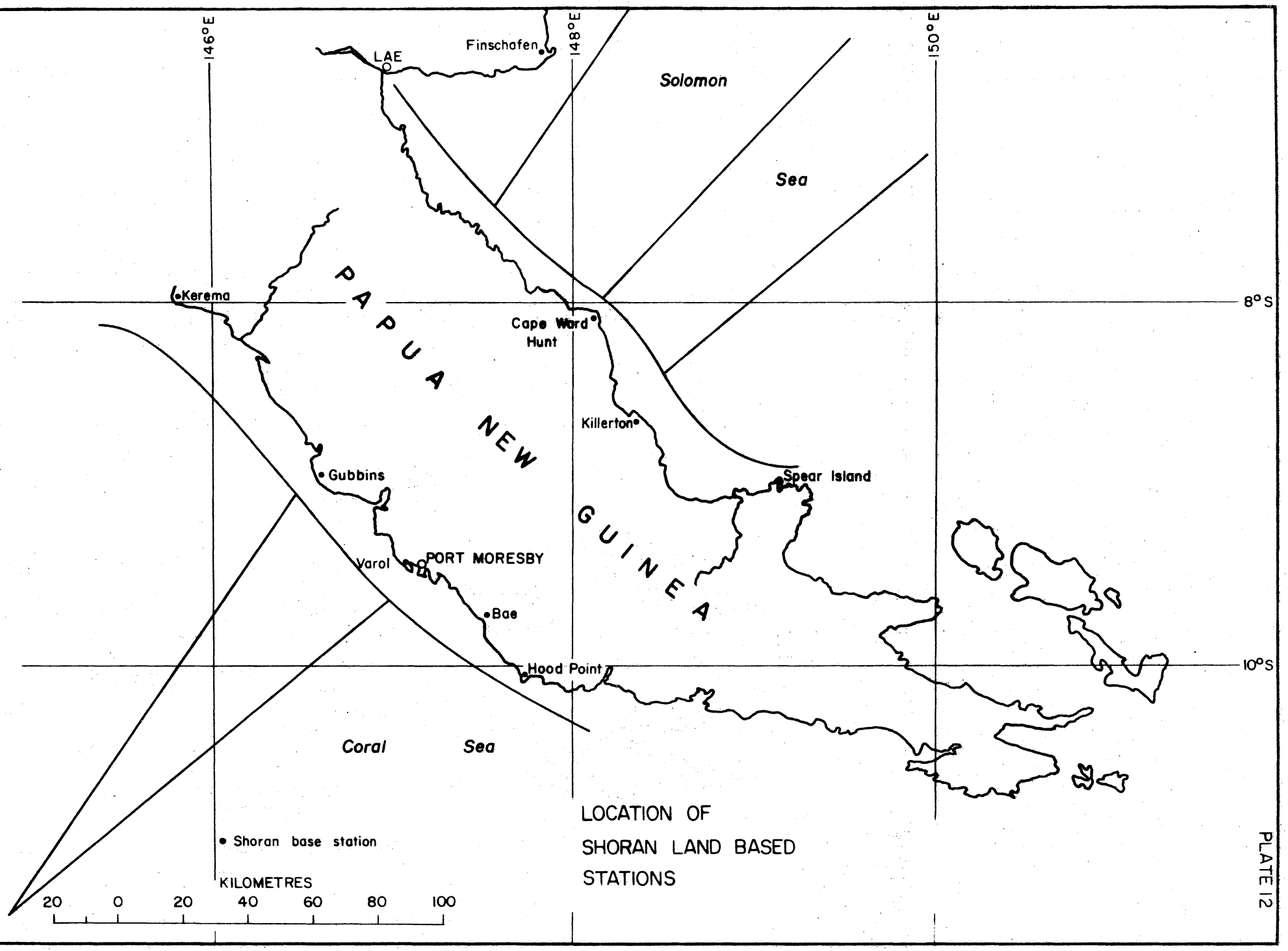
**IN THE YULE-BUNA**

**AREA**

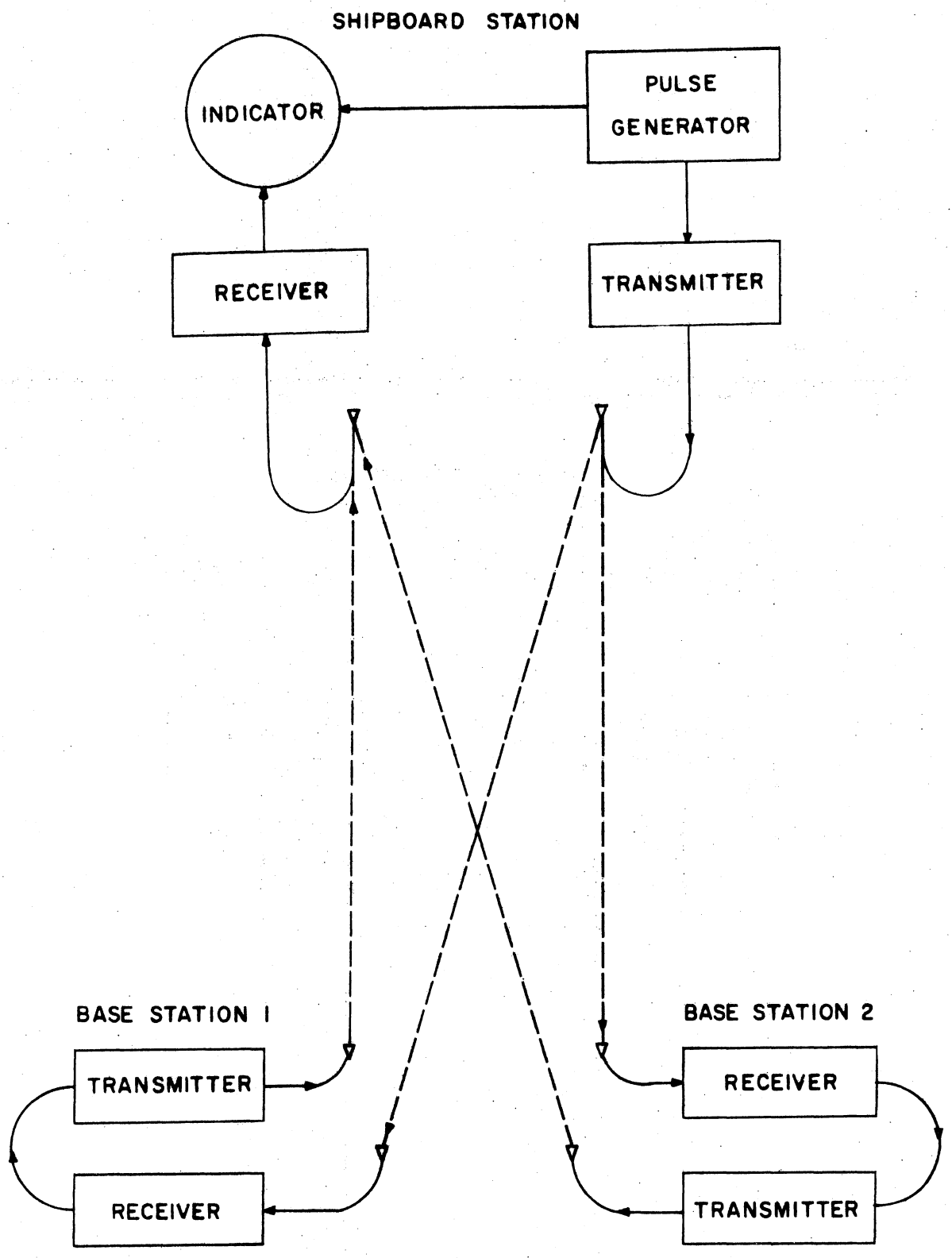
FOR OBSERVATIONS MADE DURING 1973

*Record No. 1975/177*

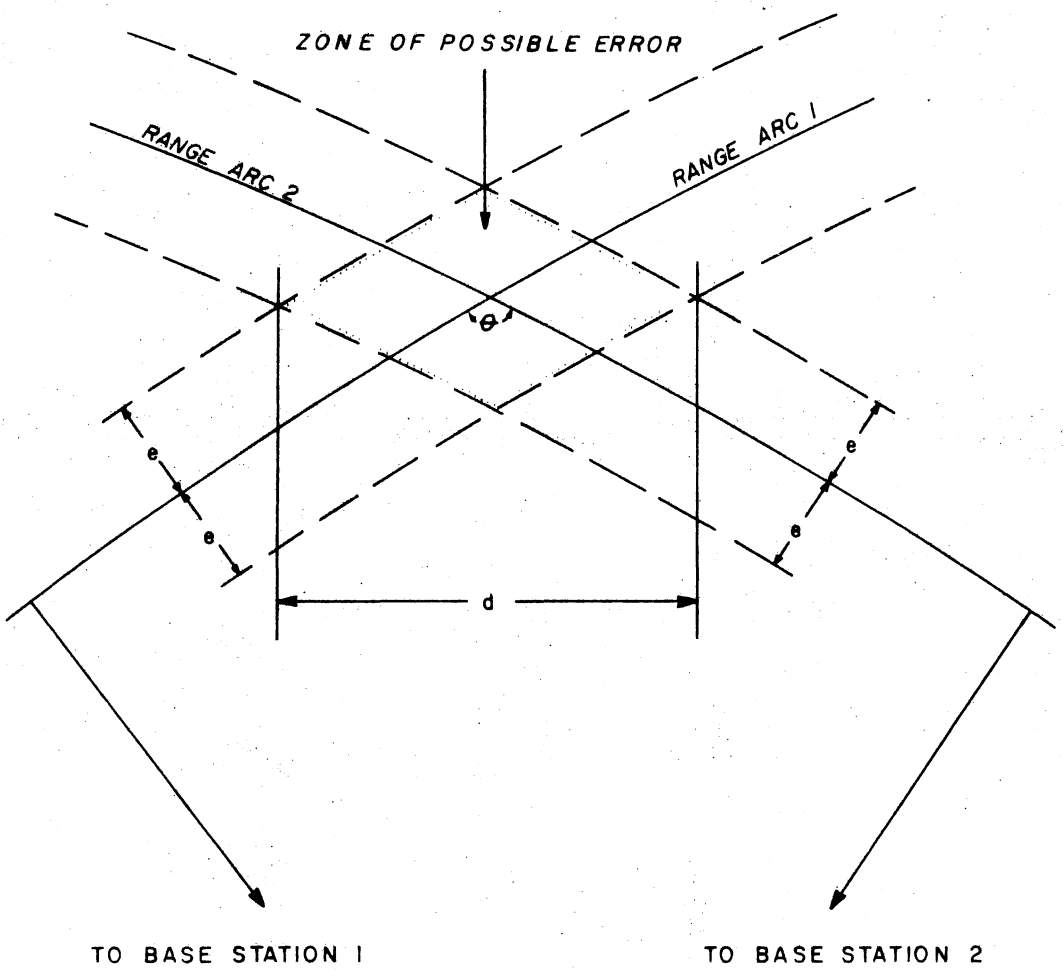
PNG/BIO—314




LOCATION OF SHORAN LAND BASED STATIONS




SCHEMATIC DIAGRAM OF
SHORAN SYSTEM

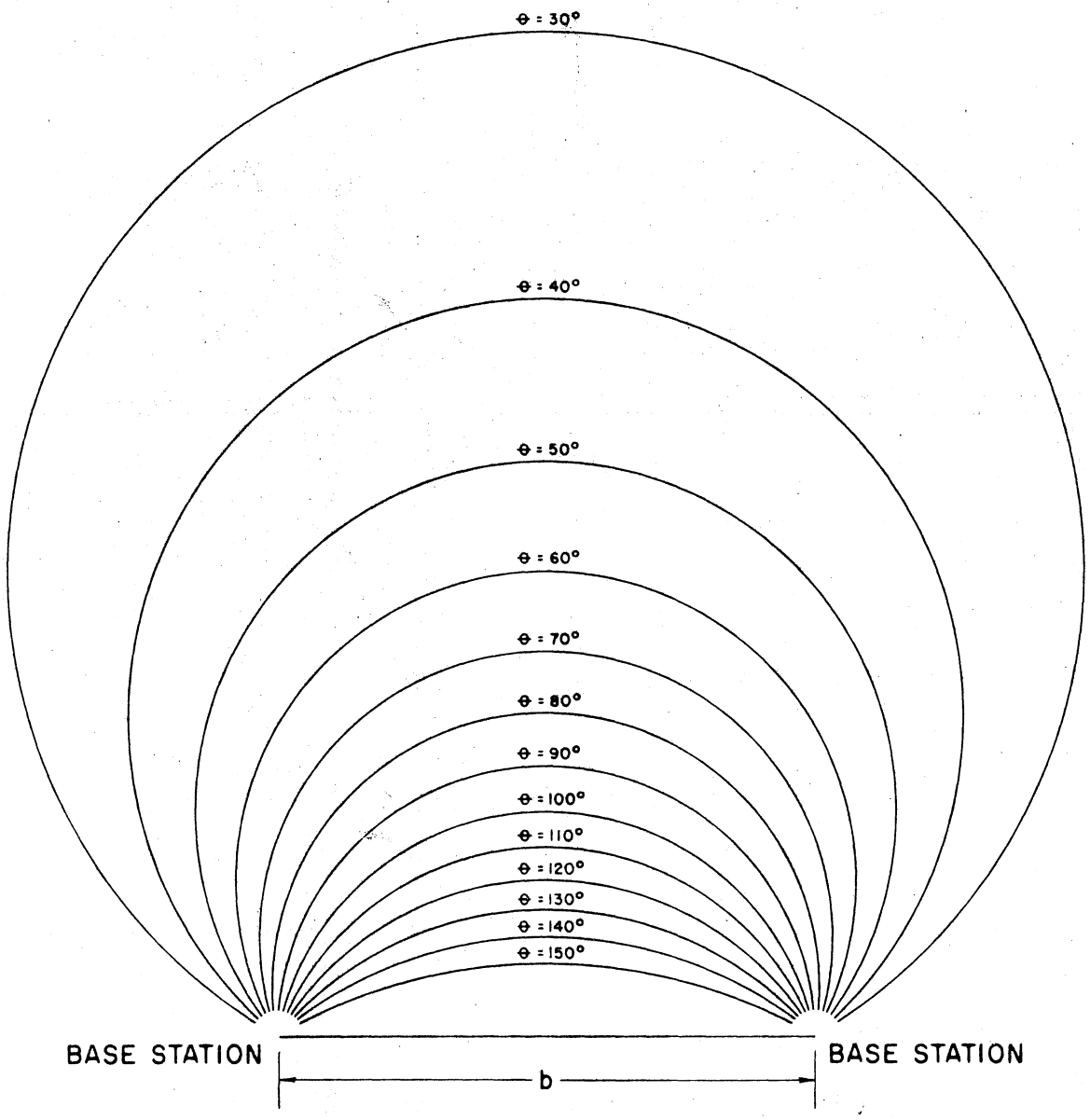



$$d = \frac{2e}{\sin \theta/2}$$

e = range error

θ = intersection angle of range circles

# ZONE OF POSSIBLE ERROR DUE TO RANGE MEASUREMENT VARIATIONS




ALL ARCS ARE PORTIONS OF CIRCLES THROUGH BASE STATION POSITIONS OF RADIUS GIVEN BY:

$$r = \frac{b}{2 \sin\theta}$$

WHERE $\theta$ IS ANGLE BETWEEN INTERSECTING RANGE CIRCLES

AREA OF COVERAGE FOR INTERSECTING ANGLES 30°–150°