000101

FINAL REPORT

OFFSHORE NAVIGATION (AUSTRALIA) PTY. LTD.

PROJECT 1357

(EPP 18 SNIFFER SURVEY)

FOR

ULTRAMAR AUSTRALIA LIMITED

SOUTH AUSTRALIA

MAY - JULY 1981

OFFSHORE NAVIGATION
(AUSTRALIA) PTY. LTD.

A B S T R A C T

Project 1357 was a Mini-Ranger controlled marine sidescan and sparker operation that was conducted off the coast of South Australia, in the Southern Ocean.

The principal and prime contractor was Ultramar Australia Limited (ULTRAMAR).

EG&G GES Pty. Ltd. (EG&G) was the geophysical operator.

Offshore Navigation (Australia) Pty. Ltd. (ONA) provided a Mini-Ranger III Position Determining System to this survey.

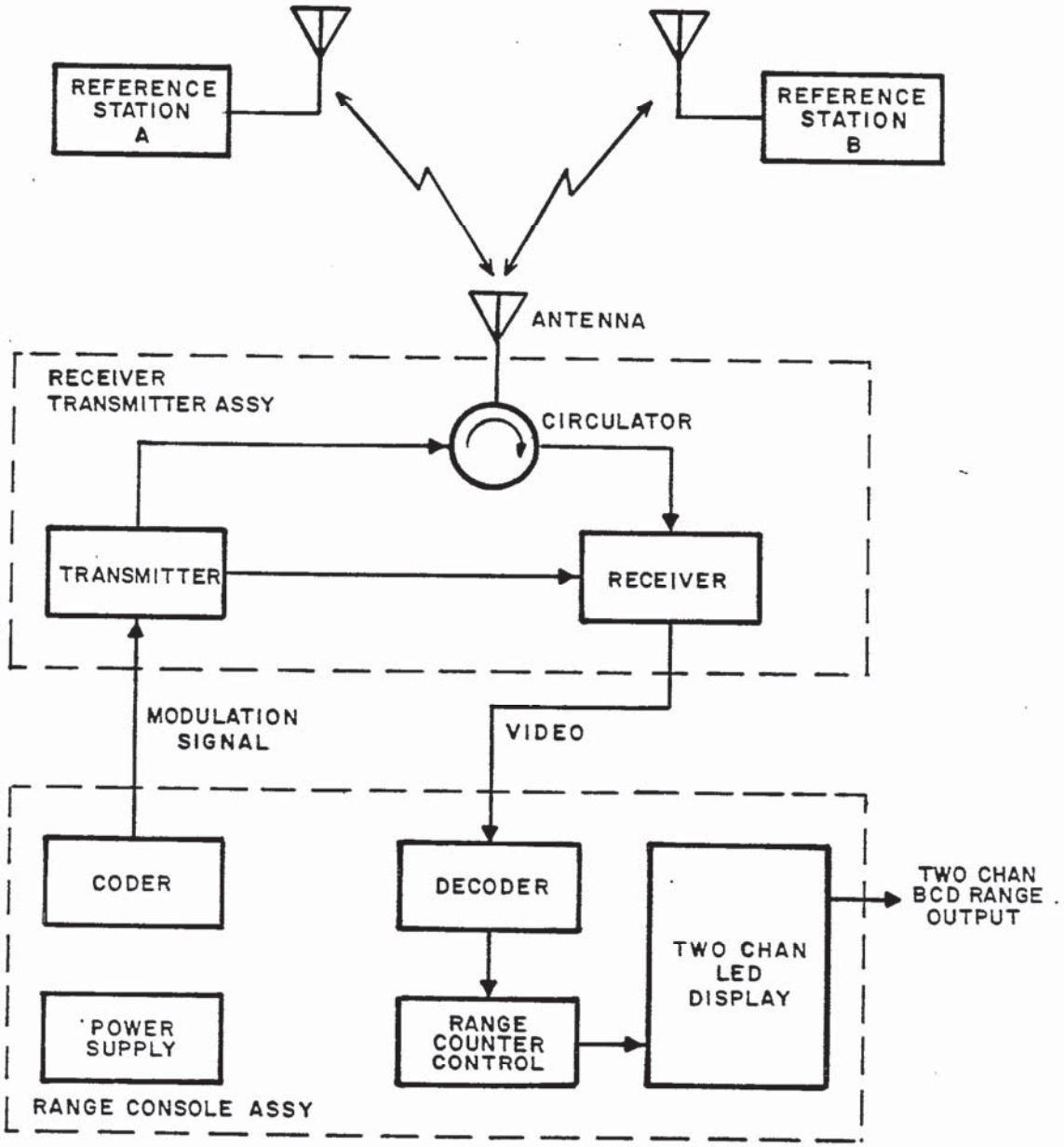
TABLE OF CONTENTS

I. THE MINI-RANGER III POSITION DETERMINING SYSTEM

The Mini-Ranger III System (MRS III) accurately locates the position of a vehicle or vessel with respect to two known geographical locations (reference points). It operates on the principle of pulse radar, with a radar interrogator located on the mobile unit, and a radar transponder (reference station) positioned at each reference point. The elapsed time between the transmitted pulse and the reference station reply pulse is used as the basis for determining the range to each reference station. This range information, together with the known locations of the reference station, can be trilaterated to obtain a fix on the position of the mobile unit.

A unique coding system is used in the MRS III. This system minimizes any false range readings that may be caused by radar interference. Selective reference station interrogation is provided by commutation of the interrogation codes.

The relationship of the units of the MRS III is shown in Figure 1. General operating principals of the individual units are described in the following paragraphs.



MRS III, OVERALL BLOCK DIAGRAM

Figure 1

I. THE MINI-RANGER III POSITION DETERMINING SYSTEM (cont'd.)

RECEIVER-TRANSMITTER ASSEMBLY OPERATION - The receiver-transmitter consists of a radar transmitter, a radar receiver, and a video processor assembly. As shown in Figure 1, the encoder modulation signal from the Range Console passes through the video processor to the transmitter. The resulting coded, rf transmitted, signal passes through the circulator to the antenna. At the same time, the transmitter control signal passes through the video processor to the Range Console where it is used as a start signal for the range counters. Meanwhile, the interrogation signal is received, processed, and a reply signal is received by the receiver-transmitter antenna, and then passed through the circulator to the receiver. The resulting video passes through the signal processor to the Range Console. Here, it is decoded and becomes the stop signal for the range counters.

RANGE CONSOLE OPERATION - The range console consists of a coder, a decoder, a range counter control, a numerical readout (range counter display), and a power supply. The power

I. THE MINI-RANGER III POSITION DETERMINING SYSTEM (cont'd.)

supply provides operating voltages for both the range console and the receiver-transmitter. The coder generates the transmitter modulation signal. When a start signal (sampled and processed interrogation) is received from the receiver-transmitter, the range counter starts to count. The transponder reply video is decoded by the decoder assembly and becomes the stop signal for the range counter. After five consecutive interrogations, and the receipt of five consecutive reference station replies, the range counter control commands the front panel range counter display to refresh the range readout. The range information, in parallel BCD format, is also available at a rear panel connector for use by peripheral equipment such as printers or computers.

REFERENCE STATION OPERATIONS - The reference stations, containing solid state radar transponders, are installed at known locations and serve as reference points in the Mini-Ranger III System. The reference stations receive pulse-coded interrogations from the receiver-transmitter. The interrogations are decoded by the applicable reference stations (depending on the pulse spacings of the

I. THE MINI-RANGER III POSITION DETERMINING SYSTEM (cont'd.)

interrogations), and produce a coded reference station reply.

The Mini-Ranger III System is usually calibrated to measure the distance between the antenna on the receiver-transmitter and the antenna on the reference station. The normal calibration procedure is to place the reference stations at a known distance (greater than 100 meters) from the receiver-transmitter antenna and to adjust the front panel control of the Mini-Ranger Range Console until the display range equals the known range. A separate calibration circuit and control is provided for each of the reference stations that can be used with the system. To minimize the residual effects on the pulse rise time, it is desirable, where possible, to calibrate the system at a range close to expected operational range and under the conditions expected during operation.

The Mini-Ranger III position Determining System measures ranges up to 37 kilometers (20 nautical miles) from each reference station to the Mini-Ranger mobile station, with a probable range error of less than 3 meters.

II. AREA OF OPERATIONS

Operations were conducted off the coast of South Australia, in the Southern Ocean. The survey extended along the coast from Cape Nelson to Beachport, South Australia, and up to approximately 46 kilometers off-shore.

The ONA base of operation was established in Mount Gambier, South Australia, on 9 May 1981.

III. FIELD OPERATIONS RECAP

Advance ONA personnel arrived in the operational area on 8 May 1981, and began scouting Mini-Ranger base station sites to be occupied to control this survey on 9 May. All ONA personnel necessary for this survey were in the operational area by 19 May 1981.

The Mini-Ranger system was airfreighted by ONA's parent company, Offshore Navigation, Inc. (ONI), from New Orleans, Louisiana, USA, to Melbourne, Victoria, arriving

III. FIELD OPERATIONS RECAP (continued)

in Melbourne on 16 May 1981. The equipment cleared Customs formalities on 18 May 1981, and was received by ONA personnel.

The Mini-Ranger was transported to Station Crows Hill on 20 May 1981, and calibrated over the calibration range at that site. See "Mini-Ranger Calibration" of this report for details.

The Mini-Ranger mobile equipment was transported to Portland on 20 May 1981, and loaded on board the recording vessel M/V HALCYON. Installation of the Mini-Ranger mobile equipment on board the vessel was accomplished on 20 May 1981.

Installation of the Mini-Ranger base equipment on the initial sites occupied to control this survey began 21 May 1981, and was completed 23 May 1981.

III. FIELD OPERATIONS RECAP (continued)

The M/V HALCYON departed Portland on 25 May 1981, and proceeded to the survey area. Geophysical operations began on 26 May and were completed 21 June 1981.

On completion of the geophysical operations, the M/V HALCYON was scheduled to pick up three current meters. However, this could not be done due to weather conditions. The vessel returned to Portland to await weather conditions favorable for picking up the current meters. The Mini-Ranger base stations that were not necessary for the pickup of the three current meters were secured on 21 June 1981, and dismantled. The stations required for the operation remained in operation. The current meters were picked up on 8 July 1981, using Mini-Ranger control. The Mini-Ranger system was secured on completion of this operation, and the ONA personnel were instructed to dismantle the system.

The Mini-Ranger stations used to control the current meter pickup were dismantled on 8 July 1981. The Mini-Ranger mobile equipment was removed from the M/V

III. FIELD OPERATIONS RECAP (continued)

HALCYON on 9 July. All Mini-Ranger equipment was packaged on 9 July, and shipped to the ONA office in Perth, Western Australia, on 10 July 1981. All electronics were returned to Perth by airfreight, and all the hardware was shipped to Perth by road transport.

All ONA personnel were released from this survey on 12 July 1981.

IV. GENERAL INFORMATION

A. Mini-Ranger frequencies used were:

Mobile Transmitter	9330 MHz
Base Transmitter	9420 MHz

B. Satisfactory radiotelephone communications between all Mini-Ranger installations were maintained on the frequencies of 4637.5 and 7840.0 (SSB) kilocycles.

C. The Mini-Ranger field data was turned over to the ONI office in New Orleans, Louisiana, for final mapping.

D. Five Mini-Ranger base station installations were provided by ONA for this survey.

E. Six Mini-Ranger base station sites were occupied during this operation. They were:

STATION BEACHPORT

STATION CAPE BANKS OFFSET

STATION CAPE BUFFON

IV. GENERAL INFORMATION (continued)

STATION C. NORTHUMBERLAND L/H OFF.
STATION MOUNT ELEPHANT OFFSET
STATION MOUNT RUSKIN OFFSET

F. The maximum range observed by the Mini-Ranger system during this survey was 50 kilometers.

H. ONA provided the following peripheral with the Mini-Ranger mobile equipment:

Digital Printer
Event Counter & Clock

V. MINI-RANGER CALIBRATION

The Mini-Ranger was calibrated over a calibrated range at Station Crows Hill on 20 May 1981. The Mini-Ranger mobile equipment was installed at the Station Crows Hill marker, and the Mini-Ranger base station equipment was installed at the offset marker, which was surveyed at a distance of 1,004.07 meters from the station marker.

The following pages consist of the field report of this calibration.

EXT. ANT.

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OFFSHORE NAVIGATION, INC.

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MINIRANGER III
~~MAXIRAN~~ CALIBRATION REPORT

DATE: 20 MAY 1981

MOBILE STATION			BASE STATION		
LOCATION: CROWS HILL BASE STATION			LOCATION: 1004.07 M. OFFSET		
OPERATOR: BERGSTROM/PYE			OPERATOR: RUSSEL / WELLS		
UNIT	MODEL	SERIAL No.	UNIT	MODEL	SERIAL No.
MONITOR	HMM-10	002	BEACON	HTL-04	008 CODE /
INTERROGATOR	HTM-04	003	CONTROL BOX	N/A	
AMPLIFIER	N/A		AMPLIFIER	N/A	
AMPLIFIER P/S	N/A		AMPLIFIER P/S	N/A	
PREAMP	N/A		PREAMP	N/A	
~~COAX~~ INTERCONNECT	TYPE	LENGTH	COAX	TYPE	LENGTH
		100 FT		N/A	
ANTENNA	TYPE	HEIGHT	ANTENNA	TYPE	HEIGHT
	HQM-10-005	10 FEET		HORN	10 FEET
INPUT VOLTAGE	24 V		INPUT VOLTAGE	24 V	
TX. FREQUENCY	5525 Mhz		TX. FREQUENCY	5425 Mhz	
RX. FREQUENCY	5425 Mhz		RX. FREQUENCY	5525 Mhz	
RX. GAIN SETTING	N/A		RX. GAIN SETTING	N/A	
WEATHER CONDITIONS	FAIR		WEATHER CONDITIONS	FAIR	

OBSERVED RANGE IN ~~CALIBRATE~~ UNADJ.: 1000 ~~KM~~ METERS

COMPUTED SLANT RANGE: 1004.07 ~~KM~~ METERS

∴ MOBILE ZERO SETTING IS: ADJ. + 4 ~~KM~~ METERS

OBSERVED RANGE IN OPERATE: 1004 ~~KM~~ TIME: 1352 Local
(ADJ.-)

SIGNED: Mike Bergstrom

NOTES REGARDING CALIBRATION PROCEDURES:

1. All equipment will be allowed to warm up for at least 30 minutes prior to calibrating.
2. All readings entered hereon will be final readings for the item in question, not preliminary or intermediate readings.
3. Each report will be complete in itself. Do not refer to other reports for information.
4. *Use the reverse side of this report for any additional comments deemed necessary or advisable for completeness and clarity.*

2CT. ANT

OFFSHORE NAVIGATION, INC.

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MINIRANGER ~~III~~
~~MAXIRAN~~ CALIBRATION REPORT

DATE: 20 MAY 1981

MOBILE STATION			BASE STATION		
LOCATION: CROWS HILL BASE STATION			LOCATION: 1004.07 M. OFFSET		
OPERATOR: BERGSTROM / PYE			OPERATOR: RUSSEL / WELLS		
UNIT	MODEL	SERIAL No.	UNIT	MODEL	SERIAL No.
MONITOR	HMM-10	002	BEACON	HTL-04	013 CODE 1
INTERROGATOR	HTM-04	003	CONTROL BOX	N/A	
AMPLIFIER	N/A		AMPLIFIER	N/A	
AMPLIFIER P/S	N/A		AMPLIFIER P/S	N/A	
PREAMP	N/A		PREAMP	N/A	
~~COAX~~	TYPE	LENGTH	COAX	TYPE	LENGTH
INTERCONNECT		100 FT.		N/A	
ANTENNA	TYPE	HEIGHT	ANTENNA	TYPE	HEIGHT
	HQM-10-005	10 FEET		HORN	10 FEET

INPUT VOLTAGE	24V	INPUT VOLTAGE	24V
TX. FREQUENCY	5525 MHz	TX. FREQUENCY	5425
RX. FREQUENCY	5425 MHz	RX. FREQUENCY	5525
RX. GAIN SETTING	N/A	RX. GAIN SETTING	N/A
WEATHER CONDITIONS	FAIR	WEATHER CONDITIONS	FAIR

OBSERVED RANGE IN ~~CALIBRATE~~ UN ADJ.: 1004 ~~KM~~ METERS

COMPUTED SLANT RANGE: 1004.07 ~~KM~~ -"-

∴ MOBILE ZERO SETTING IS: ± 0 ~~KM~~ -"-

OBSERVED RANGE IN OPERATE: 1004 ~~KM~~ TIME: 1359 Local
ADJ

SIGNED: M. le Bergstrom

NOTES REGARDING CALIBRATION PROCEDURES:

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ROT. ANT.

OFFSHORE NAVIGATION, INC.

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MINIRANGER III
~~MAXIRAN~~ CALIBRATION REPORT

DATE: 20 MAY 1981

MOBILE STATION			BASE STATION		
LOCATION: CROWS HILL BASE STATION			LOCATION: 1004.07 M. OFFSET		
OPERATOR: BERGSTROM / PYE			OPERATOR: RUSSEL / WELLS		
UNIT	MODEL	SERIAL No.	UNIT	MODEL	SERIAL No.
MONITOR	HMM-10	002	BEACON	HTL-05	002 CODE 2
INTERROGATOR	HTM-04	003	CONTROL BOX	N/A	
AMPLIFIER	N/A		AMPLIFIER	N/A	
AMPLIFIER P/S	N/A		AMPLIFIER P/S	N/A	
PREAMP	N/A		PREAMP	N/A	
~~COAX~~ INTERCONNECT	TYPE	LENGTH	COAX	TYPE	LENGTH
		100 FT		N/A	
ANTENNA	TYPE	HEIGHT	ANTENNA	TYPE	HEIGHT
	HQM-10-005	10 FT.		HQL-9-008	10 FT
INPUT VOLTAGE	24 V		INPUT VOLTAGE	24 V	
TX. FREQUENCY	5525 Mhz		TX. FREQUENCY	5425 Mhz	
RX. FREQUENCY	5425 Mhz		RX. FREQUENCY	5525 Mhz	
RX. GAIN SETTING	N/A		RX. GAIN SETTING	N/A	
WEATHER CONDITIONS	FAIR		WEATHER CONDITIONS	FAIR	

OBSERVED RANGE IN ~~CALIBRATE~~ UNADJ: 999 ~~KM~~ METERS

COMPUTED SLANT RANGE: 1004.07 ~~KM~~ -"-

∴ MOBILE ZERO SETTING IS: +5 ~~KM~~ -"-

OBSERVED RANGE IN OPERATE (ADJ.): 1004 KM TIME: 1406 LOCAL

SIGNED: Mike Bergstrom

NOTES REGARDING CALIBRATION PROCEDURES:

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ROT. ANT.

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OFFSHORE NAVIGATION, INC.

MINIRANGER III ~~MAXIRAN~~ CALIBRATION REPORT

DATE: 20 MAY 1981

MOBILE STATION			BASE STATION		
LOCATION: CROWS HILL BASE STATION			LOCATION: 1004.07 M. OFFSET		
OPERATOR: BERGSTROM / PYE			OPERATOR: RUSSIEL / WELLS		
UNIT	MODEL	SERIAL No.	UNIT	MODEL	SERIAL No.
MONITOR	HMM-10	002	BEACON	HTL-04	007 CODE 3
INTERROGATOR	HTM-04	003	CONTROL BOX	N/A	
AMPLIFIER	N/A		AMPLIFIER	N/A	
AMPLIFIER P/S	N/A		AMPLIFIER P/S	N/A	
PREAMP	N/A		PREAMP	N/A	
~~COAX~~ INTERCONNECT	TYPE	LENGTH	COAX	TYPE	LENGTH
		100 FT		N/A	
ANTENNA	TYPE	HEIGHT	ANTENNA	TYPE	HEIGHT
	HQM-10-005	10 FT		HORN	10 FT
INPUT VOLTAGE	24 V		INPUT VOLTAGE	24 V	
TX. FREQUENCY	5525 Mhz		TX. FREQUENCY	5425 Mhz	
RX. FREQUENCY	5425 Mhz		RX. FREQUENCY	5525 Mhz	
RX. GAIN SETTING	N/A		RX. GAIN SETTING	N/A	
WEATHER CONDITIONS	FAIR		WEATHER CONDITIONS	FAIR	

OBSERVED RANGE IN ~~CALIBRATE~~ UN ADJ: 1000 ~~KM~~ METERS

COMPUTED SLANT RANGE: 1004.07 ~~KM~~ -"-

MOBILE ZERO SETTING IS: + 4 ~~KM~~ -"-

OBSERVED RANGE IN OPERATE (ADJ): 1004 ~~KM~~ TIME: 1410 Local

SIGNED: Mike Bergstrom

NOTES REGARDING CALIBRATION PROCEDURES:

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2. All readings entered hereon will be final readings for the item in question, not preliminary or intermediate readings.
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RT. ANT.

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OFFSHORE NAVIGATION, INC.

MINIRANGER III
~~MAXIRAN~~ CALIBRATION REPORT

DATE: 20 MAY 1981

MOBILE STATION			BASE STATION		
LOCATION: CROWS HILL BASE STATION			LOCATION: 1004.07M OFFSET		
OPERATOR: BERGSTROM / PYE			OPERATOR: RUSSEL / WELLS		
UNIT	MODEL	SERIAL No.	UNIT	MODEL	SERIAL No.
MONITOR	HMM-10	002	BEACON	HTL-04	001 CODE 3
INTERROGATOR	HTM-04	003	CONTROL BOX	N/A	
AMPLIFIER	N/A		AMPLIFIER	N/A	
AMPLIFIER P/S	N/A		AMPLIFIER P/S	N/A	
PREAMP	N/A		PREAMP	N/A	
COAX INTERCONNECT	TYPE	LENGTH	COAX	TYPE	LENGTH
		100 FT		N/A	
ANTENNA	TYPE	HEIGHT	ANTENNA	TYPE	HEIGHT
	HQM-10-005	10 FT		HORN	10 FT
INPUT VOLTAGE	24 V		INPUT VOLTAGE	24 V	
TX. FREQUENCY	5525 Mhz		TX. FREQUENCY	5425 Mhz	
RX. FREQUENCY	5425 Mhz		RX. FREQUENCY	5525 Mhz	
RX. GAIN SETTING	N/A		RX. GAIN SETTING	N/A	
WEATHER CONDITIONS	FAIR		WEATHER CONDITIONS	FAIR	

OBSERVED RANGE IN ~~CALIBRATE~~ UNADJ: 1004 ~~KM~~ METERS

COMPUTED SLANT RANGE: 1004.07 ~~KM~~ -"-

∴ MOBILE ZERO SETTING IS: ± 0 ~~KM~~ -"-

OBSERVED RANGE IN OPERATE: 1004 ~~KM~~ TIME: 1413 LOCAL

SIGNED: Mike Bergstrom

NOTES REGARDING CALIBRATION PROCEDURES:

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RT. ANT.

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OFFSHORE NAVIGATION, INC.

MINIRANGER III
~~MAXIRAN~~ CALIBRATION REPORT

DATE: 20 MAY 1981

MOBILE STATION			BASE STATION		
LOCATION: CROWS HILL BASE STATION			LOCATION: 1004.07 M. OFFSET		
OPERATOR: BERGSTROM/PYE			OPERATOR: RUSSEL/WELLS		
UNIT	MODEL	SERIAL No.	UNIT	MODEL	SERIAL No.
MONITOR	HMM-10	002	BEACON	HTL-04	004 CODE 4
INTERROGATOR	HTM-04	003	CONTROL BOX	N/A	
AMPLIFIER	N/A		AMPLIFIER	N/A	
AMPLIFIER P/S	N/A		AMPLIFIER P/S	N/A	
PREAMP	N/A		PREAMP	N/A	
COAX	TYPE	LENGTH	COAX	TYPE	LENGTH
INTERCONNECT		100 FT		N/A	
ANTENNA	TYPE	HEIGHT	ANTENNA	TYPE	HEIGHT
	HQM-10-005	10 FT		HORN	10 FT
INPUT VOLTAGE	24V		INPUT VOLTAGE	24V	
TX. FREQUENCY	5525 MHz		TX. FREQUENCY	5425 MHz	
RX. FREQUENCY	5425 MHz		RX. FREQUENCY	5525 MHz	
RX. GAIN SETTING	N/A		RX. GAIN SETTING	N/A	
WEATHER CONDITIONS	FAIR		WEATHER CONDITIONS	FAIR	

OBSERVED RANGE IN ~~CALIBRATE~~ UNADJ.: 1001 ~~KM~~ METERS

COMPUTED SLANT RANGE: 1004.07 ~~KM~~ -"-

∴ MOBILE ZERO SETTING IS: +3 ~~KM~~ -"-

OBSERVED RANGE IN OPERATE: (ADJ.) 1004 ~~KM~~ TIME: 1415 Local

SIGNED: Mike Bergstrom

NOTES REGARDING CALIBRATION PROCEDURES:

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OMNI ANT.

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OFFSHORE NAVIGATION, INC.

MINIRANGER III
~~MAXIRAN~~ CALIBRATION REPORT

DATE: 20 MAY 1981

MOBILE STATION			BASE STATION		
LOCATION: CROWS HILL BASE STATION			LOCATION: 1004.07 M. OFFSET		
OPERATOR: BERGSTROM/PYE			OPERATOR: RUSSEL/WELLS		
UNIT	MODEL	SERIAL No.	UNIT	MODEL	SERIAL No.
MONITOR	HMM-10	002	BEACON	HTL-04	004 CODE 4
INTERROGATOR	HQM-8	001	CONTROL BOX	N/A	
AMPLIFIER	N/A		AMPLIFIER	N/A	
AMPLIFIER P/S	N/A		AMPLIFIER P/S	N/A	
PREAMP	N/A		PREAMP	N/A	
~~COAX~~ INTERCONNECT	TYPE	LENGTH	COAX	TYPE	LENGTH
		100FT		N/A	
ANTENNA	TYPE	HEIGHT	ANTENNA	TYPE	HEIGHT
	OMNI	10 FT		HORN	10 FT
INPUT VOLTAGE	24V		INPUT VOLTAGE	24 V	
TX. FREQUENCY	5525 MHz		TX. FREQUENCY	5425 MHz	
RX. FREQUENCY	5425 MHz		RX. FREQUENCY	5525 MHz	
RX. GAIN SETTING	N/A		RX. GAIN SETTING	N/A	
WEATHER CONDITIONS	FAIR		WEATHER CONDITIONS	FAIR	

OBSERVED RANGE IN CALIBRATE: UNADJ. 1004 ~~KM~~ METERS

COMPUTED SLANT RANGE: 1004.07 ~~KM~~ -"-

∴ MOBILE ZERO SETTING IS: ± 0 ~~KM~~ -"-

OBSERVED RANGE IN OPERATE: 1004 ~~KM~~ TIME: 1430 LOCAL

SIGNED: Mike Bergstrom

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VI. MAPPING

Mini-Ranger preplots of the survey were provided to the field operations by WESTCOM, 514 Stirling Highway, Pepperment Grove 6011, Western Australia. The interval between shotpoint locations was constant at 50 meters.

Final mapping of the survey was accomplished by ONA's parent company, Offshore Navigation, Inc. (ONI), at their office in New Orleans, Louisiana. Three charts, at a scale of 1:50,000, were constructed by ONI to accomplish this final mapping. The first, last, and every tenth shotpoint location of each line surveyed was postplotted on these final maps. The postplotted position indicates the Mini-Ranger mobile antenna position.

ONI also provided the postplotted data on a 3-part final recompute listing and 9-track magnetic tape (on Standard ONI EBCDIC Format). The data of the first, last, and every fifth shotpoint location of each line surveyed was entered on the final recompute listing and 9-track magnetic tape. The positions indicate the Mini-Ranger mobile antenna position.

VI. MAPPING (continued)

Scale factor correction was applied to all postplotting computations accomplished by ONI on this survey.

The three original mylar film base maps, and 3-part final recompute listing, were transmitted on 12 August 1981 to:

American Ultramar Limited
90 S. Bedford Road
Mount Kisco, New York 10549

Attention: Mr. Robert Ducharme

Three blueline copies of the final maps, 9-track magnetic tape, and 2-part tape dump, were transmitted on 12 August 1981 to:

InterOcean Systems, Inc.
3540 Aero Court
San Diego, California 92123

Attention: Mr. Joel Sigalove

Final mapping of the survey was accomplished in the Universal Transverse Mercator Projection, Australian National Spheroid of Reference, Zone 54, Central Meridian 141° East, AUSTRALIAN GEODETIC DATUM.

VII. BASIC CONTROL

The initial coordinates of the station markers were obtained from the South Australian Department of Lands. Offset positions of Stations Mount Ruskin, Mount Elephant, and Cape Banks were derived by the ONI Computing Department in New Orleans, Louisiana. Coordinates of the offset position at Cape Northumberland Lighthouse were obtained from the field.

Universal Transverse Mercator Projection
Australian National Spheroid
Zone 54
Central Meridian 141° East
AUSTRALIAN GEODETIC DATUM

STATION BEACHPORT:

Latitude	37°29'12".54 S	N = 5,850,640 meters
Longitude	140°00'11".28 E	E = 411,870 meters
Elevation	30 meters	

STATION CAPE BANKS OFFSET:

Latitude	37°53'58".43 S	N = 5,805,130 meters
Longitude	140°22'31".04 E	E = 445,077 meters
Elevation	30 meters	

STATION CAPE BUFFON:

Latitude	37°34'03".37 S	N = 5,841,769 meters
Longitude	140°06'23".92 E	E = 421,106 meters
Elevation	30 meters	

VII. BASIC CONTROL (continued)

STATION CAPE NORTHUMBERLAND L/H OFFSET:

Latitude	38°03'28"12 S	N = 5,787,703 meters
Longitude	140°39'58"06 E	E = 470,710 meters
Elevation	33 meters	

STATION MOUNT ELEPHANT OFFSET:

Latitude	37°40'02"70 S	N = 5,830,859 meters
Longitude	140°19'46"96 E	E = 440,885 meters
Elevation	53 meters	

STATION MOUNT RUSKIN OFFSET:

Latitude	38°02'54"59 S	N = 5,788,789 meters
Longitude	140°57'49"61 E	E = 496,822 meters
Elevation	38 meters	

VIII. PERSONNEL

NAME	POSITION
Russell, D.	Party Chief
Bergstrom, M.	Mobile Operator
Hoggart, A.	Mobile Operator
Pye, M.	Mobile Operator
Wells, G.	Base Operator

IX. DISTRIBUTION

American Ultramar Limited
90 South Bedford Road
Mount Kisco, New York 10549

Attention: Mr. Robert Ducharme — Five copies

Offshore Navigation, Inc.
Post Office Box 23504
Harahan, Louisiana 70183
U.S.A. — Two copies

Offshore Navigation (Australia) Pty. Ltd.
Post Office Box 291
Cloverdale, W.A. 6105
AUSTRALIA — One copy

STATION: BEACHPORT

LOCATED: Station Beachport is located approximately 50 meters from Durants Lookout, on the highest feature in the Council Reserve, approximately 1 kilometer southwest of the town of Beachport, on the coast of South Australia. The surrounding area is undulating sand hills, covered with low salt scrub. Rivoli Bay is to the east of the station, with the Southern Ocean to the south.

ACCESS: From Mount Gambier, follow the Princess Highway (Highway 1) to Millicent, a distance of approximately 50 kilometers. Turn left at the road junction at the Ampol Service Station (signposted "Beachport"), and follow this road (Alternate Highway 1). This road bypasses Millicent. Follow this road for approximately 3 kilometers, to its end, and turn left at the "Y" junction. Follow this road for approximately 36 kilometers past the "Y" junction to Beachport, passing the town of Rendalshem, then the Southend turnoff approximately 15 kilometers before reaching Beachport.

At Beachport, turn right at the "T" junction, pass the hotel, and turn left onto McCourt Street. This turnoff will be just past the Beachport District Council Office, which will be located on the lefthand side. McCourt Street becomes gravel. Follow this road past a salt lake, and turn left at a "T" junction. Follow this road 30 meters, and turn left at the track leading to Durants Lookout. During very wet weather, a four-wheel drive may be necessary to negotiate this track. The surface is very soft loose sand in places. From the lookout, a track leads to the highest point, where the station marker is located. The last 30 meters to the station is a "walking" track.

MARKER: The station marker consists of a 12mm-diameter pipe driven approximately one-half meter below natural ground level. This pipe is located in the center of two star stakes, 1.3 meters apart

STATION: BEACHPORT (continued)

that is driven into the ground, with 0.6 meter protruding above ground level. These two stakes are aligned approximately north-south.

Cape Martin Lighthouse is located approximately 1200 meters, at a bearing of 100° Magnetic, from the station marker.

GENERAL: Labor is available locally. All necessary supplies of food, fuel, oil, and camping can be purchased in either Mount Gambier or Millicent. Both towns have well-stocked stores, supermarkets, etc. Beachport has several general stores. Food supplies, and possibly some camping items, could be purchased there. Fuel and oil are also available in Beachport. The Beachport Hotel, and adjacent Beach Motor Inn (telephone 087-358070) have accommodations.

The station site is exposed, and quite windy. Heaters must be used on this station during the winter months, April through October.

A 30-foot Mini-Ranger tower was erected at this station during the P-1357 survey. A minimum height of 10 feet of tower is required to give 360° clear vista. Steel star stakes were used to secure the tower.

The station site property is owned by the Beachport District Council, P.O. Box 19 (McCourt Street), Beachport 5280, South Australia. The office phone is 087-358029. Permission to occupy the station was obtained from Mr. Eldridge, the District Clerk, in May 1981.

ELEVATION: 30 meters

SKETCH: See next page.

AUSTRALIAN GEODETIC DATUM

GEOGRAPHICAL COORDINATES		UTM PROJ., AUST. NATIONAL SPHEROID ZONE 54, C.M. 141° EAST	
Latitude	Longitude	North	East
37°29'12".54 S	140°00'11".28 E	5,850,640 meters	411,870 meters

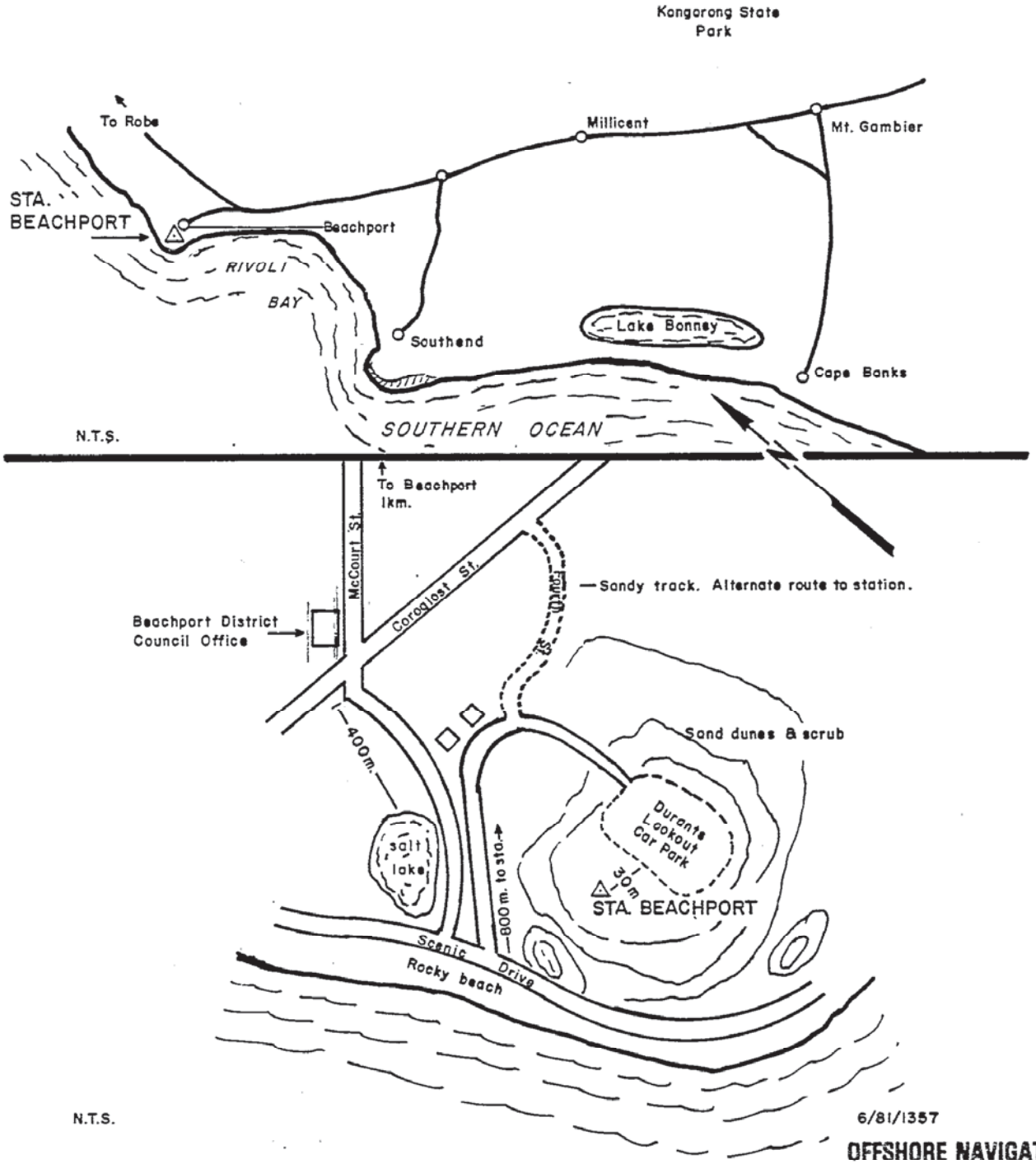
000130

STA. BEACHPORT——————————AUSTRALIA

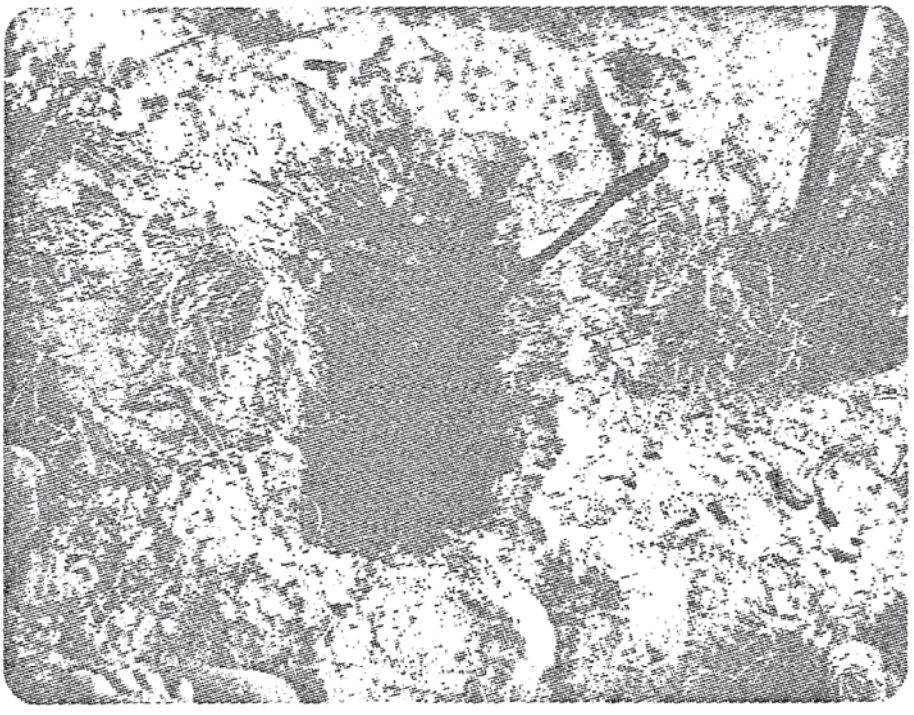
LAT. 37°29' 12".54 S
LONG. 140°00' 11".28 E
ELEV. 30 meters

N 5,850,640 meters
E 411,870 meters

UTM PROJECTION, AUST. NATIONAL SPHEROID
ZONE 54 C.M. 141° E
AUSTRALIAN GEODETIC DATUM



OFFSHORE NAVIGATION (AUSTRALIA) PTY. LTD.



STATION BEACHPORT MARKER

STATION: CAPE BANKS OFFSET

LOCATED: Station Cape Banks Offset is located approximately 4 kilometers north of the town of Carpenters Rocks, South Australia. The station marker is adjacent to the Cape Banks Lighthouse. The surrounding area to the north, east, and west of the station is undulating sand hills, with low salt bush scrub. The ground to the south of the station drops sharply to the beach, approximately 70 meters from the station. A bay, some 200 meters west of the station, extends to the north and west.

ACCESS: In Mount Gambier, turn off of Commercial Street onto Whyte Avenue. Follow this bitumen sealed road for approximately 39 kilometers to the small fishing town of Carpenters Rocks. At Carpenters Rocks, follow the dirt track straight ahead for approximately 4 kilometers to Cape Banks Lighthouse. A four-wheel drive vehicle will be required during the wet season (May through September) on this dirt track.

MARKER: The unmanned lighthouse is the actual trig marker. The Mini-Ranger tower was OFFSET 12 meters, at a bearing of 270° Magnetic, from the lighthouse. Coordinates listed in this description are for the OFFSET position. The tower position was outside of the wire fence surrounding the lighthouse. The location was marked by a star stake, painted white, driven into the ground with 0.3 meter protruding above ground level.

GENERAL: All station supplies should be purchased in Mount Gambier. There is a small general store in Carpenters Rocks, which has a reasonable supplementry food supply.

Labor should be obtained in Mount Gambier, although labor may be available in Carpenters Rocks during the winter months.

Heaters must be provided on this station during the winter months, April through October.

STATION: CAPE BANKS OFFSET (continued)

A 30-foot Mini-Ranger tower was erected at this station during the P-1357 survey. A minimum height of 10 feet is required to give a clear vista of 110° to 360°. Steel star stakes were used to secure the tower.

The station site property is owned by the Department of Transport. Permission to occupy the station was obtained from the Administrator of the Department of Transport, Victoria Square, Adelaide, South Australia 5000. No rent was paid for its use.

ELEVATION: 30 meters

SKETCH: See next page.

AUSTRALIAN GEODETIC DATUM

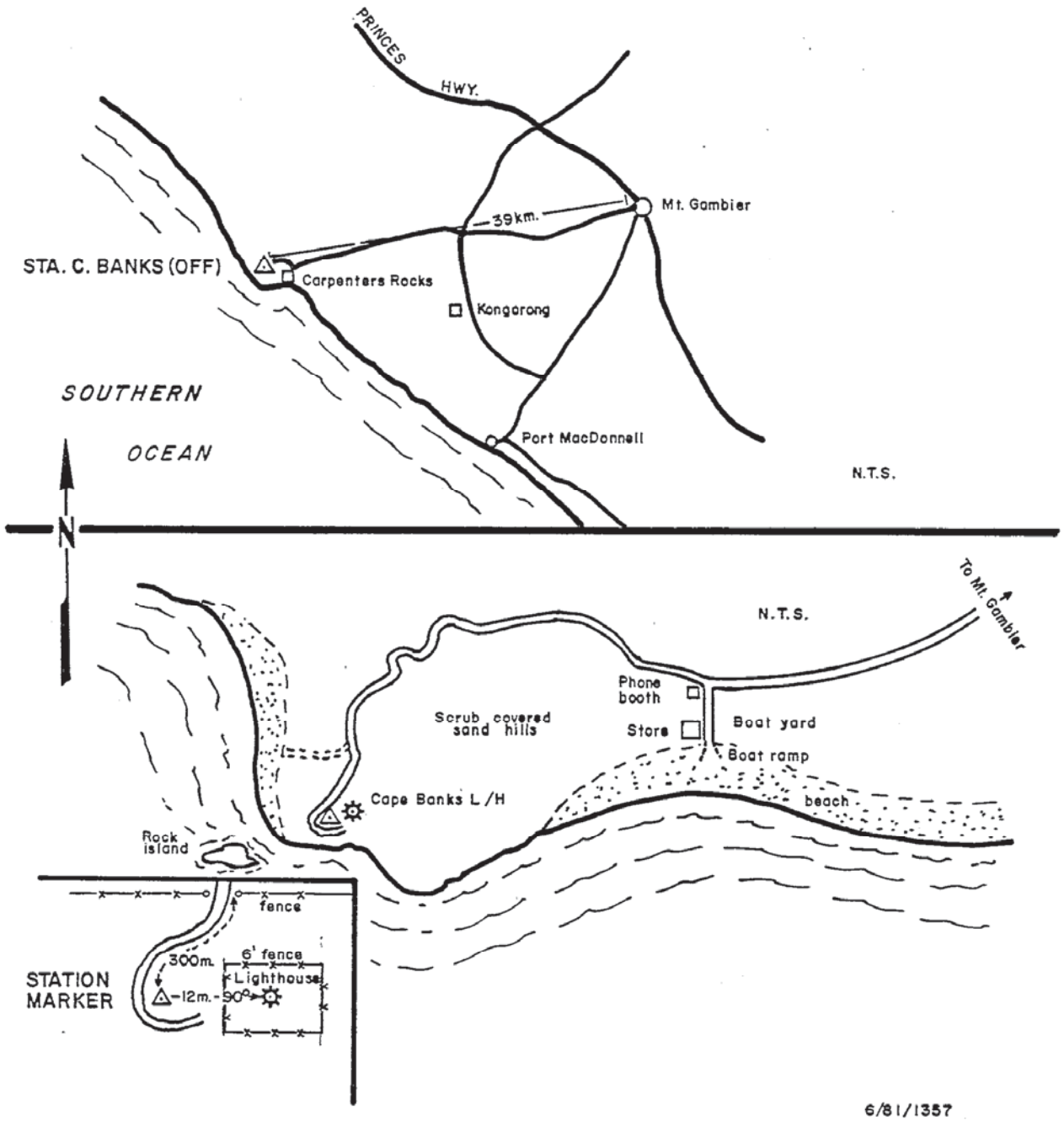
GEOGRAPHICAL COORDINATES		UTM PROJ., AUST. NATIONAL SPHEROID ZONE 54, C.M. 141° EAST	
Latitude	Longitude	North	East
37°53'58".43 S	140°22'31".04 E	5,805,130 meters	445,077 meters

STA. CAPE BANKS (OFFSET)———AUSTRALIA

LAT. 37°53' 58".43 S
LONG. 140°22' 31".04 E
ELEV. 30 meters

N 5,805,130 meters
E 445,077 meters

UTM PROJECTION, AUST. NATIONAL SPHEROID
ZONE 54 C.M. 141° E
AUSTRALIAN GEODETIC DATUM



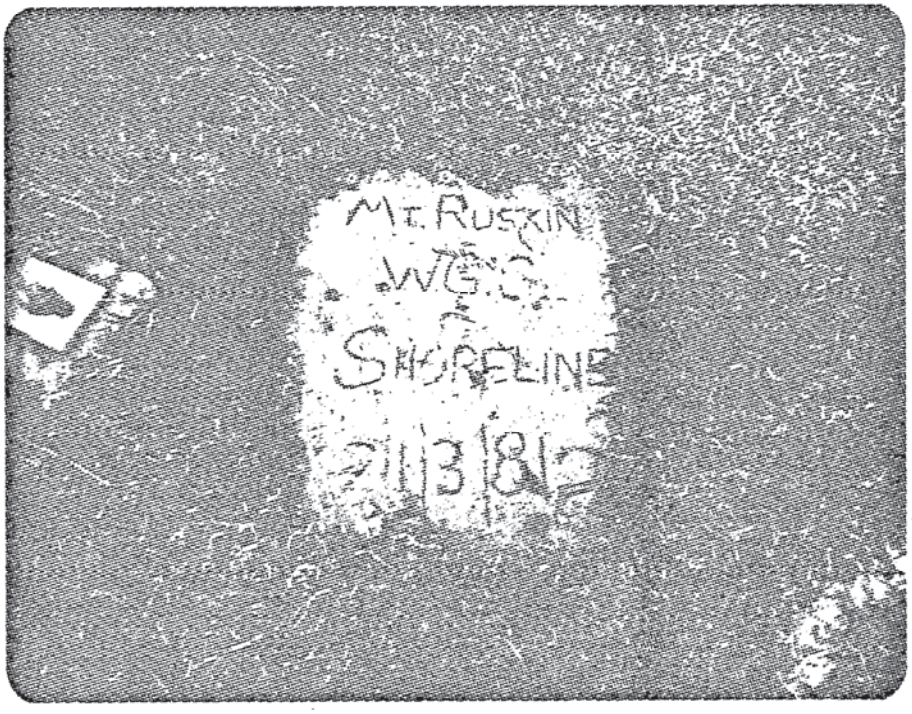
6/81/1357

OFFSHORE NAVIGATION (AUSTRALIA) PTY. LTD.

000135

STATION CAPE BANKS

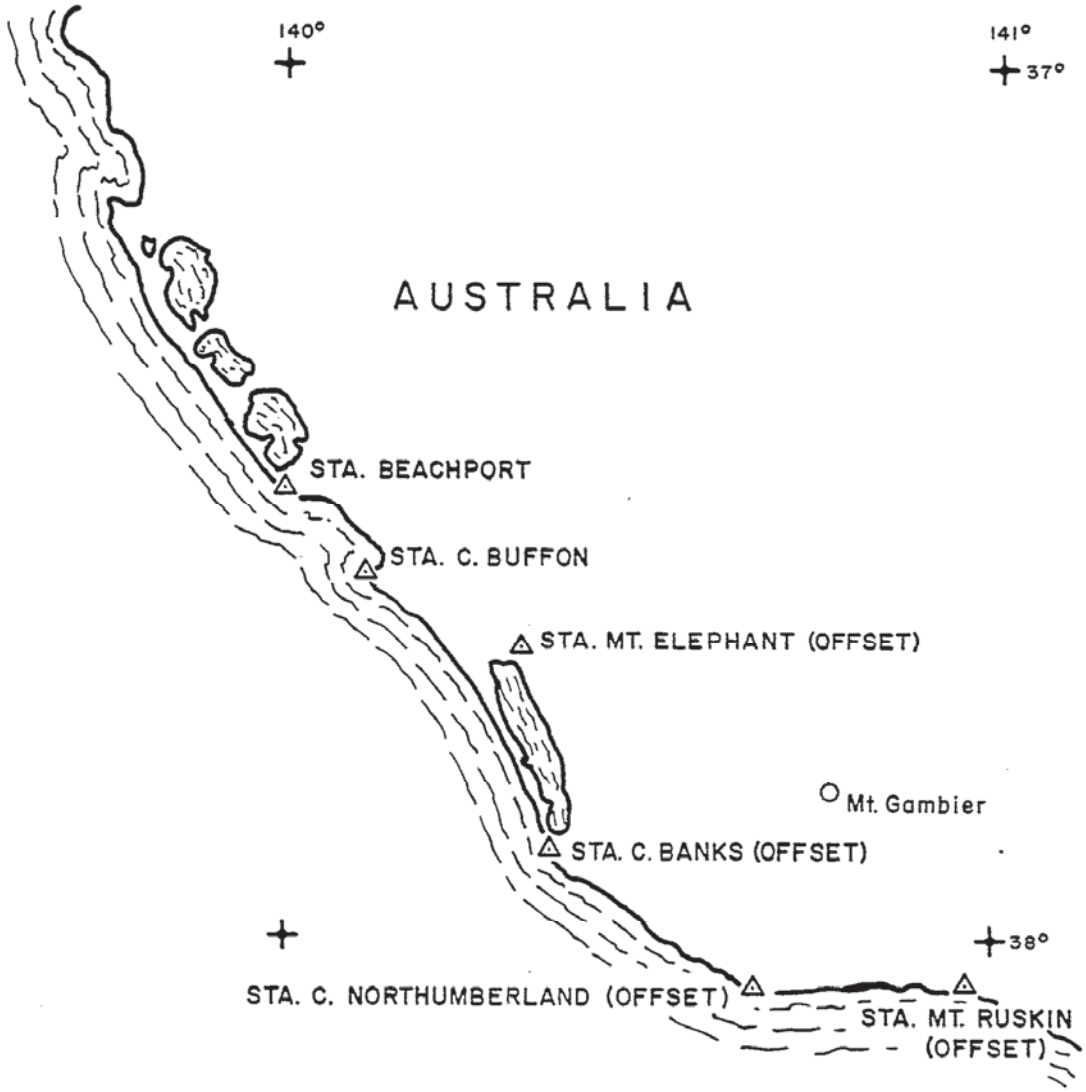
000136



STATION MOUNT RUSKIN OFFSET MARKER

000137

AREA OF OPERATIONS



6/81/1357

OFFSHORE NAVIGATION
(AUSTRALIA) PTY. LTD.

STATION: CAPE BUFFON

LOCATED: Station Cape Buffon is located on a very rocky point, near an automatic light beacon in Canunda National Park. This park is near the small town of Southend, on the south coast of South Australia. The station marker is 20 meters east of the light beacon, which is at the edge of a 30-meter cliff that drops to the sea. The area is undulating sand dunes, covered with scrub.

ACCESS: From Mount Gambier, follow the Princess Highway (Highway 1) to Millicent, a distance of approximately 50 kilometers. Turn left at the road junction at the Ampol Service Station (signposted "Beachport"), and follow this road (Alternate Highway 1). This road bypasses Millicent. Follow this road for approximately 3 kilometers, to its end, and turn left at the "Y" junction. Follow this road for approximately 21 kilometers to the well-marked Southend turnoff to the left. Turn onto this road, and drive 5.4 kilometers to the small village of Southend. From the village, the road swings sharply left, and goes over a narrow bridge. Follow this sealed road, past the National Parks and Wildlife Office and Ranger House, for approximately 1.4 to the Fish Cold Stores on the right. At this store, the road turns right and proceeds about 300 meters to the Safcol Jetty. A gravel road, which goes straight ahead, is located opposite the Fish Cold Stores. Take this road to its end, and a parking area. The marker will be found just west of the parking area.

GENERAL: Labor is available locally. However, during peak fishing, labor may be hard to find. The park rangers and local fishermen are very helpful. All necessary supplies of food, fuel, oil, and camping can be purchased in either Mount Gambier or Millicent. Both towns have well-stocked stores, supermarkets, etc. There are two small general stores opposite the caravan

STATION: CAPE BUFFON (continued)

park in Southend, where a reasonable variety of food is available. Both stores sell gasoline and oil.

The station site is exposed, and quite windy. Heaters must be provided on this station during the winter months, April through October.

A 20-foot Mini-Ranger tower was erected at this station during the P-1357 survey. A minimum height of 10 feet is required to give 360° clear vista. Steel star stakes were used to secure the tower.

The station site property is owned by the Canunda National Park. Permission to occupy the station was obtained from the National Park and Wildlife Service, G.P.O. Box 1782, Adelaide, South Australia 5000. The Regional Senior Ranger, 3 Helen Street, Mount Gambier (telephone 087-241578) should also be contacted.

ELEVATION: 30 meters

SKETCH: See next page.

AUSTRALIAN GEODETIC DATUM

GEOGRAPHICAL COORDINATES		UTM PROJ., AUST. NATIONAL SPHEROID ZONE 54, C.M. 141° EAST	
Latitude	Longitude	North	East
37°34'03".37 S	140°06'23".92 E	5,841,769 meters	421,106 meters

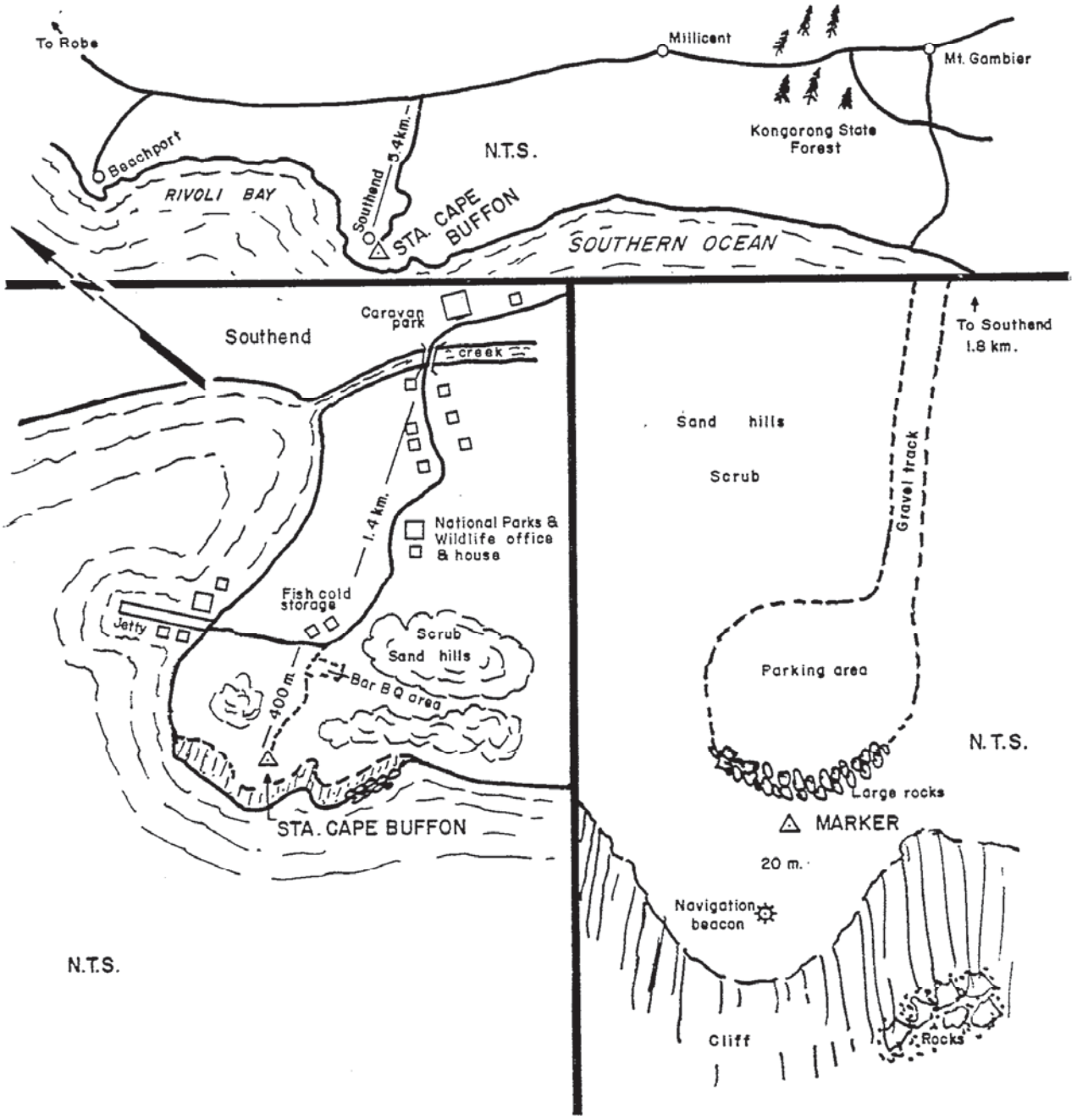
000140

STA. CAPE BUFFON——————————AUSTRALIA

LAT. 37° 34' 03".37 S
LONG. 140° 06' 23".92 E
ELEV. 30 meters

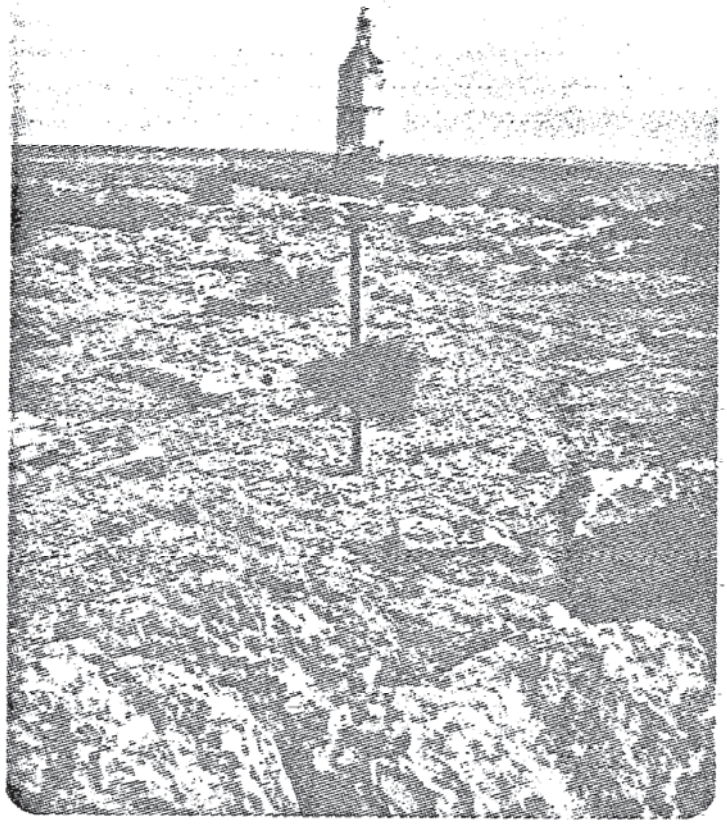
N 5,841,769 meters
E 421,106 meters

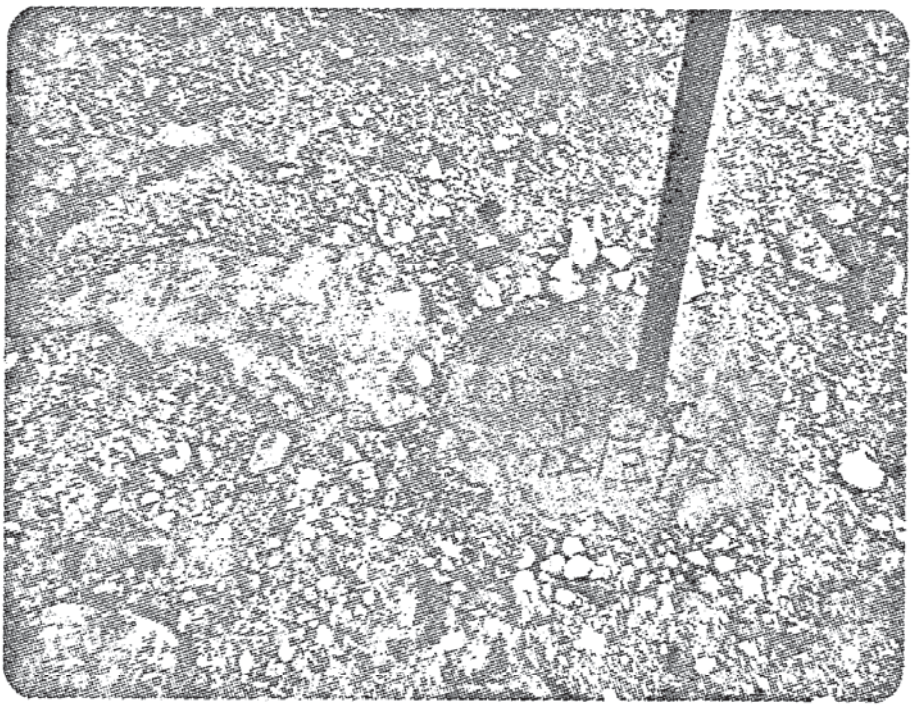
UTM PROJECTION, AUST. NATIONAL SPHEROID
ZONE 54 C.M. 141° E
AUSTRALIAN GEODETIC DATUM



6/81/1357

OFFSHORE NAVIGATION (AUSTRALIA) PTY. LTD.





STATION CAPE BUFFON

STATION: CAPE NORTHUMBERLAND L/H OFFSET

LOCATED: This station is located at the Cape Northumberland Lighthouse, approximately 2 kilometers from the town of Port MacDonnel, South Australia. The lighthouse is located on high ground, approximately 500 meters from 25-meter steep cliffs, which falls away to the Southern Ocean. The main vegetation in this area are high stunted shrub, from 2 to 3 meters tall.

ACCESS: From Mount Gambier, South Australia, proceed on the Port MacDonnel Road, past Blue Lake, to Port MacDonnel, a distance of approximately 29 kilometers. Turn right on Seafront Road, and drive approximately 2 kilometers to the lighthouse gate on the right. The gate is kept locked, and the key is held by the caretaker, Mr. John Jordon, whose house is approximately 500 meters before reaching the gate. It is the only house in the vicinity with a flagpole, and is the last house before starting up the hill and gate.

MARKER: The center of the lighthouse is the survey point. The OFFSET position is a point on the lower catwalk rail, 180° True from the center of the lighthouse. The offset is approximately 2.5 meters from the center of the lighthouse.

This offset position is for unmanned operations only. The T1/7021 marker should be used for manned station operations. The South Australia Department of Lands Station Summary Sheet lists the T1/7021 coordinates as:

Latitude 38°03'26".71 S
Longitude 140°39'58".23 E
AUSTRALIAN GEODETIC DATUM 1966

Coordinates published in this description are for the OFFSET position.

STATION: CAPE NORTHUMBERLAND L/H OFFSET (continued)

GENERAL: Food, fuel, oil, and camping supplies, as well as any necessary labor, can be obtained at either Mount Gambier or Port MacDonnel.

Heaters must be used on this station during the winter months, April through October.

An 8-foot Mini-Ranger tower was erected at the 37-foot elevation of the lighthouse during the P-1357 survey, giving the Mini-Ranger tower height 45 feet. A minimum height of 10 feet of tower is recommended to give clear vista from 060° to 300°. The tower was secured to the existing lighthouse structure.

The station site property is owned by the Department of Transport. Permission to occupy the station was obtained from the Administrator at the Department of Transport, Victoria Square, Adelaide, South Australia 5000. No rent was paid for its use.

ELEVATION: 33 meters

SKETCH: See next page.

AUSTRALIAN GEODETIC DATUM

GEOGRAPHICAL COORDINATES		UTM PROJ., AUST. NATIONAL SPHEROID ZONE 54, C.M. 141° EAST	
Latitude	Longitude	North	East
38°03'28".12 S	140°39'58".06 E	5,787,703 meters	470,710 meters

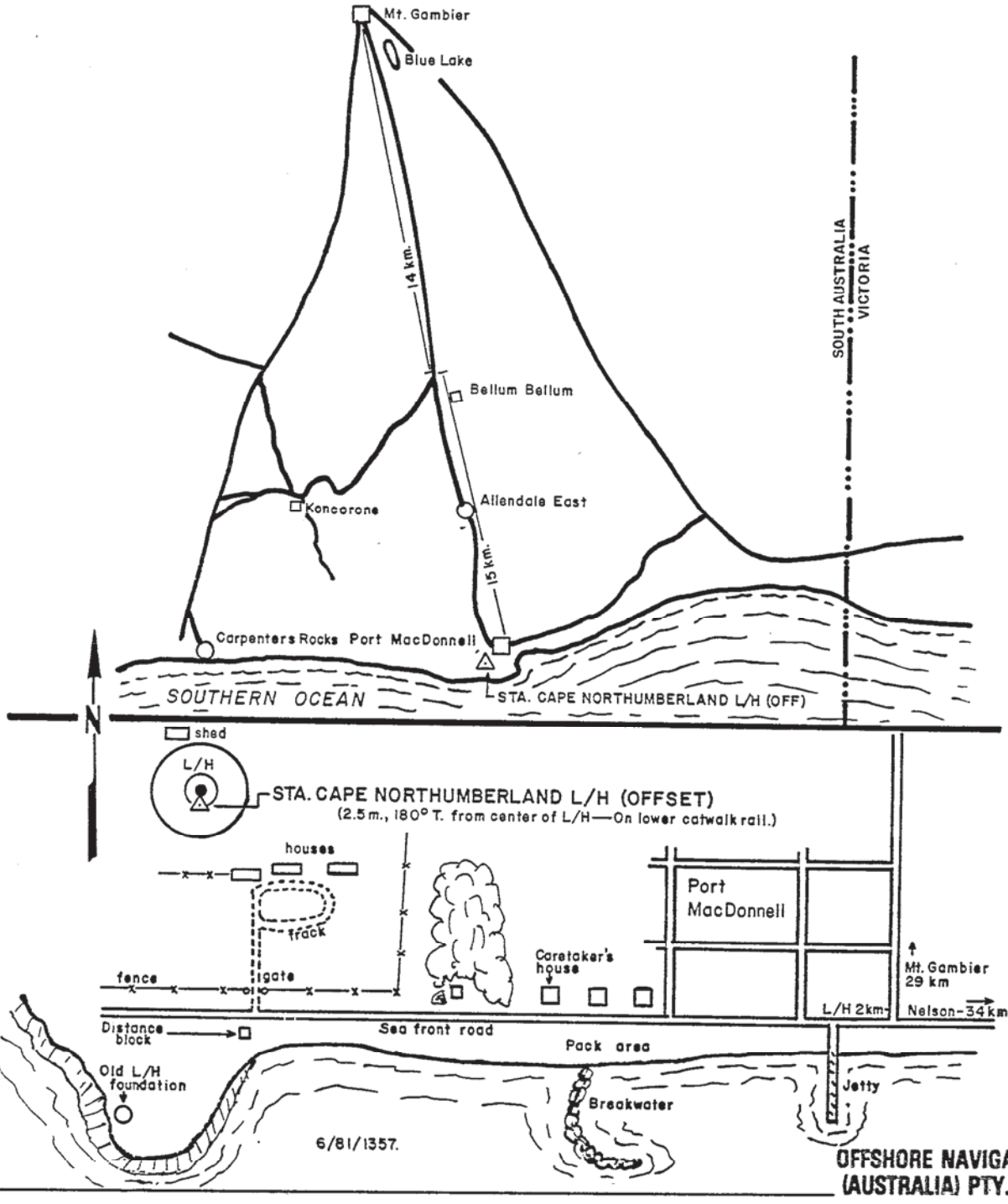
000144

STA. C. NORTHUMBERLAND L/H (OFF)—AUSTRALIA

LAT. 38°03' 28".12 S
LONG. 140° 39' 58".06 E
ELEV. 33 meters

N 5,787,703 meters
E 470,710 meters

UTM PROJECTION, AUST. NATIONAL SPHEROID
ZONE 54 C. M. 141° E
AUSTRALIAN GEODETIC DATUM



OFFSHORE NAVIGATION (AUSTRALIA) PTY. LTD.

000145

STATION CAPE NORTHUMBERLAND LIGHTHOUSE

STATION: MOUNT ELEPHANT OFFSET

LOCATED: Station Mount Elephant Offset is located on the summit of a 51-meter bare stony hill, which is south of Millicent, South Australia, overlooking Lake Bonney. The station is approximately 100 meters above the peat moss processing plant of Mayurra Products. The general area is undulating farm lands, with sparse timber areas to seaward. Canunda National Park bounds the coastline on the southwestern shores of Lake Bonney.

ACCESS: From Mount Gambier, South Australia, follow the Princess Highway (Highway 1) toward Millicent, passing through S.A. Tantanoola State Forests, and Tantanoola Caves. About 40 kilometers from Mount Gambier, a railway line will be crossed, just before reaching the Cellulose Australia factory, which will be on the righthand side. Snuggery Sub-Station, will be seen on the left, just past the factory. Approximately 3 kilometers from the sub-station, the terrain breaks into cleared farmland on the left. A new chocolate colored brick house (May 1981) will be on the lefthand side, 200 meters from the road, and just before a blue parking bay sign. Turn left onto a narrow sealed road at a point approximately 400 meters past the parking bay sign. Follow this road for 4.7 kilometers to a "T" junction with Mayurra Road, a gravel road. Turn right at this junction, and drive 1.5 kilometers to the first turnoff on the left. Turn left, and follow this winding road 2.5 kilometers to its end at another "T" junction, and turn left. Approximately 1 kilometer after this last junction, a gate will be on the right. This gate is usually locked, except during working house, Monday through Friday. From this point, the peat moss plant can be seen. Follow the track through the gate, pass the plant, and turn left. Follow the track for another 100 meters to the station marker. During extremely wet conditins, a four-wheel drive vehicle may be required to reach the station marker.

STATION: MOUNT ELEPHANT OFFSET (continued)

MARKER: This is a first order trig station. The ground marker consists of a section of galvanized pipe set in a limestone block 1.5 feet below ground level. A wooden quadripod, with 2-1/2 foot vanes, has been constructed over the marker. The height to the top of the vanes is 15.4 feet.

The Mini-Ranger tower was erected 1.5 meters, at a bearing of 190° Magnetic, from the ground marker. Coordinates listed in this description represent the Mini-Ranger tower location.

GENERAL: Food, fuel, oil, and camping supplies, as well as any necessary labor, can be obtained at either Mount Gambier or Millicent.

Heaters must be used on this station during the winter months, April through October.

A 30-foot Mini-Ranger tower was erected at this station during the P-1357 survey. A minimum height of 10 feet of tower is required to give a clear vista of 360°. Steel star stakes were used to secure the tower.

The station site property is owned by Mayurra Products, 11 fourth St., Millicent, South Australia. Permission to occupy the station was obtained from Mr. Jim Vanschaik of Mayurra Products, and can be contacted at the Millicent office, phone 332742. No rent was paid for its use. Arrangements can be made with Mr. Vanschaik to provide a lock with a number of keys (ONI provided lock and keys).

ELEVATION: 53 meters

SKETCH: See next page.

AUSTRALIAN GEODETIC DATUM

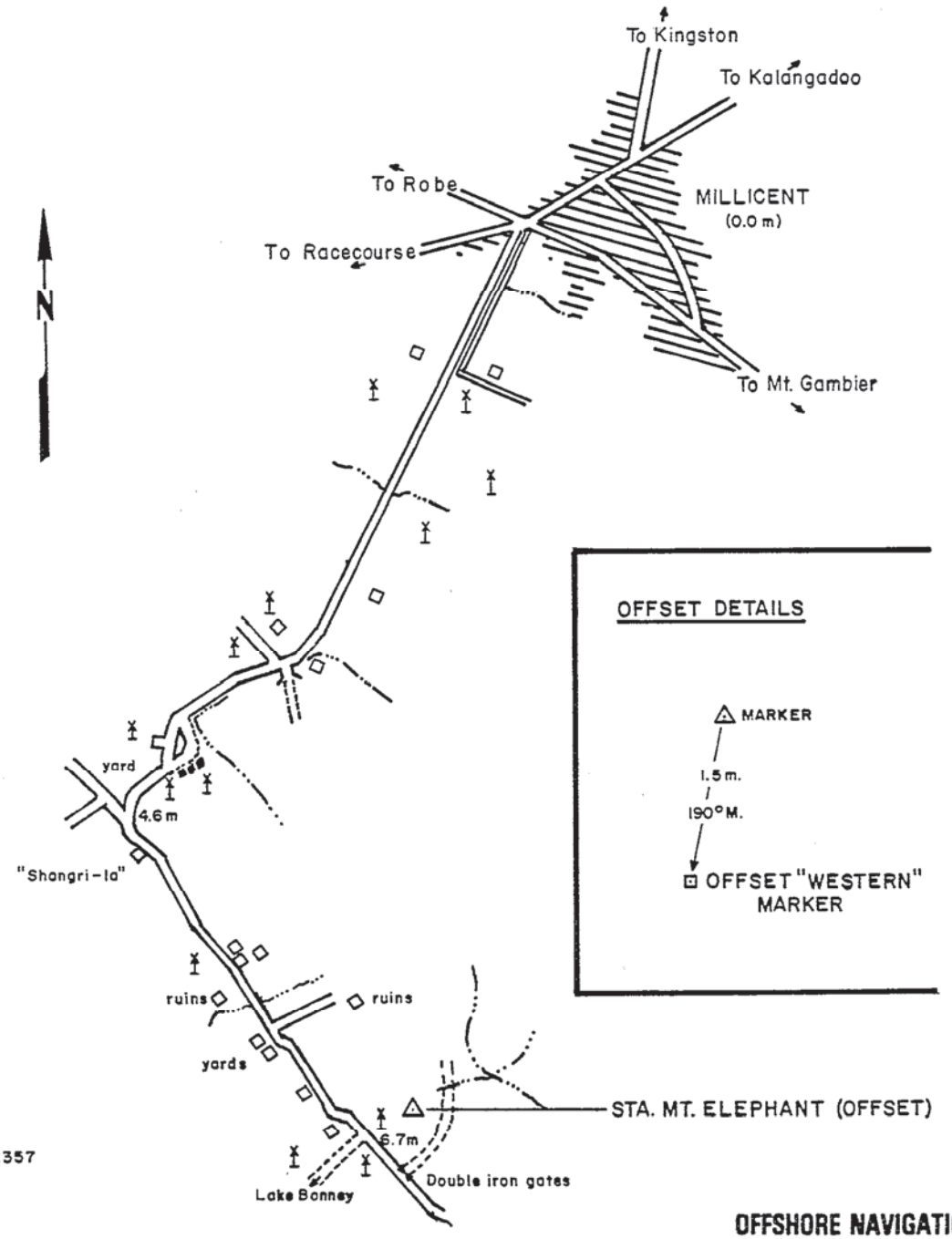
GEOGRAPHICAL COORDINATES		UTM PROJ., AUST. NATIONAL SPHEROID ZONE 54, C.M. 141° EAST	
Latitude	Longitude	North	East
37°40'02".70 S	140°19'46".96 E	5,830,859 meters	440,885 meters

000148

STA. MT. ELEPHANT (OFFSET)——AUSTRALIA

LAT. 37°40' 02".70 S N 5,830,859 meters
LONG. 140° 19' 46".96 E E 440,885 meters
ELEV. 53 meters

UTM PROJECTION, AUST. NATIONAL SPHEROID
ZONE 54 C. M. 141° E
AUSTRALIAN GEODETIC DATUM



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000140

STATION MOUNT ELEPHANT

STATION: MOUNT RUSKIN OFFSET

LOCATED: Station Mount Ruskin Offset is located on the Victoria-South Australia border, about 4 miles west of the township of Cape Nelson, Victoria. The station is on a prominent hill. This hill can be seen from the Port Nelson - Mount Gambier Highway at the border sign. The station is in a large paddock on the farm of Mr. Max Holaway.

ACCESS: From the General Post Office building in Portland, set the vehicle's odometer at 0.00 kilometers, and travel on the North Princess Highway for 2.7 kilometers to a SHELL garage. Turn left at this point, remaining on the Princess Highway, and drive to Cape Nelson. At 65.2 kilometers, and in the township of Cape Nelson, a MOBIL garage will be passed. Continue on the Princess Highway, crossing a bridge that is over the Elenee River at 65.5 kilometers, pass the entrance to Mr. Holaway's house at 68.5 kilometers, and drive to a gate on the lefthand side of the road at 69.3 kilometers, just past the Victoria - South Australia border. Turn left and go through the gate. Follow the track from the gate to the station, a distance of 1.4 kilometers. A four-wheel drive vehicle is required to negotiate the track during periods of wet weather.

Access can also be made from Mount Gambier, South Australia. From Commercial Street in Mount Gambier, turn right at the Ampol Service Station onto the road to Cape Nelson. Follow this sealed road for about 35 kilometers to the South Victoria-Australia border. From this point, turn into the gate as detailed in the first access paragraph.

MARKER: The station marker consists of a standard Victorian Department of Lands survey marker, a circular concrete wheel with a metal pin in its center. A 12-foot steel quadruped sets over the marker.

STATION: MOUNT RUSKIN OFFSET (continued)

The Mini-Ranger tower, during the P-1357 survey, was OFFSET 1.2 meters, at a bearing of 140° Magnetic, from the trig station. The tower was located on the "Western Offset Marker". NOTE: The magnetic variation exceeds 09° in this area. Coordinates listed in this description are for the OFFSET MINI-RANGER position.

Mr. Holaway's house is located approximately 1 kilometer, at a bearing of 080°, from the marker. A windmill and tank are approximately one-half kilometer away from the marker, at a bearing of 180°.

GENERAL: All food, fuel, oil, and water supplies can be purchased in Cape Nelson or Portland. Water from the bores in the station area is suitable for drinking. Labor is available in Portland at approximately $40.00 per day.

Food, camping supplies, fuel, oil, and labor can also be obtained in Mount Gambier.

Heaters must be utilized on manned stations during the winter months, April through October.

The station property owner, Mr. Max Holaway, must be notified when this station is to be occupied, and permission obtained. No rent was paid for the use of the site.

A 20-foot tower was erected at this station during the P-1357 survey, with the Mini-Ranger tower erected at the "Western Offset Marker". A minimum of 10 feet of tower is required to give a clear vista of 360°. Double star stakes are sometimes required to secure the tower, due

STATION: MOUNT RUSKIN OFFSET (continued)

to strong winds that can be experienced at this site. Difficulty can be experienced in trying to keep a tent up in these winds. A caravan, to house the equipment and operator, is required.

ELEVATION: 38 meters

SKETCH: See next page.

AUSTRALIAN GEODETIC DATUM

GEOGRAPHICAL COORDINATES		UTM PROJ., AUST. NATIONAL SPHEROID ZONE 54, C.M. 141 ° EAST	
Latitude	Longitude	North	East
38°02'54".59 S	140°57'49".61 E	5,788,789 meters	496,822 meters

000153

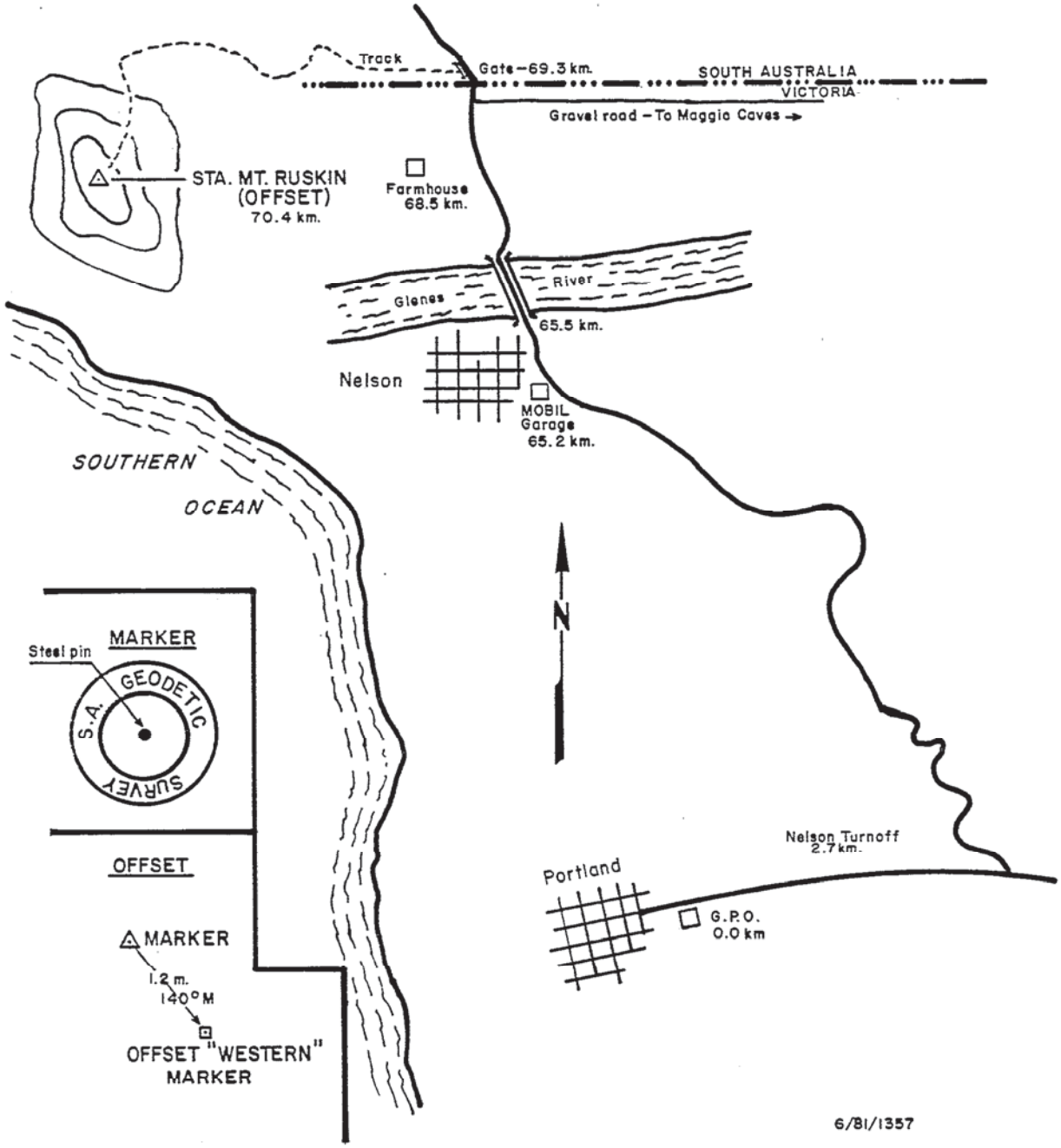
STA. MOUNT RUSKIN (OFFSET)——AUSTRALIA

LAT. 38°02' 54".59 S N 5, 788, 789 meters

LONG. 140° 57' 49".61 E E 496, 822 meters

ELEV. 38 meters

UTM PROJECTION, AUST. NATIONAL SPHEROID
ZONE 54 C. M. 141° E
AUSTRALIAN GEODETIC DATUM



6/81/1357

OFFSHORE NAVIGATION
(AUSTRALIA) PTY. LTD.

APPENDIX A

DAILY OPERATIONS LOGS

OFFSHORE NAVIGATION INC.

MAXIRAN DAILY OPERATIONS LOG

000155

Project Number: P-1357 Date: 1 JUNE 81 Vessel: HALCYON Client Party Number: N/A

Geophysical Company: EGG/INTEROCEAN Oil Company: ULTRAMAR Radio Frequency: 7841.9 KHz

Country: AUSTRALIA Area/Prospect: SOUTH Stepback: SEE DRAWING Shot Point Interval: 50 M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	5525 MHz	HTM-04/003	HMM-10/002	-	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	Control Box	Amplifier	Code	Ant. Type(s)
NONE USED							

OPERATING TIME

Time On	Time Off	Requested By	System Used For
NIL			

O/T Requested By: | Total System - Hours Operation For Client:

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks: ALL TIMES IN LOCAL TIME (VIC)

0001: MOORED IN PORTLAND HAVING NEW GENERATOR FOR SNIFFER INSTALLED

2400: IN PORTLAND STANDING BY FOR WEATHER

Mobile Operator(s): M. BERGSTROM, M. RYE

Project Supervisor: D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

000156

OFFSHORE NAVIGATION INC.

MINIRANGER III ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number D-1357 Date 2 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EG-G/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.9 Khz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50 M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 MHz	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~ #	Amplifier	Code	Ant. Type(s)
BEACHPORT	RUSSEL/WELLS	9420	HTL-04	008	—	1	HORN
C. BUFFON	-"-	-"-	HTL-04	005	—	4	HORN
MT. ELEPHANT	-"-	-"-	HTL-05	008	—	2	HQL-9
C. BANKS	-"-	-"-	HTL-04	007	—	3	HQRN

OPERATING TIME

Time On	Time Off	Requested By	System Used For
1500	2400	P. KRONFIELD	SNIFFER/SPARKER/SIDESCAN
		CLIENT REP	SURVEY

O/T Requested By | Total System - Hours Operation For Client: 9 Hrs.

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)

0001: MOORED IN PORTLAND STANDING BY FOR WEATHER

1310: LEFT PORTLAND HEADING FOR PROSPECT AREA NORTH PART

1500: MINIRANGER ON

2200: RECEIVING SIGNALS FROM C. BANKS AND C. BUFFON HEADING FOR LINE U81-20 SOUTH END.

2400: HEADING FOR LINE U81-20 SOUTH END.

Mobile Operator(s) M. BERGSTROM, M. PYE

Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

000157

OFFSHORE NAVIGATION INC.

MINIRANGER III ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number D-1357 Date 3 JUNE 1981 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.4 Khz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 Mhz	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~ #	Amplifier	Code	Ant. Type(s)
BEACHPORT	RUSSEL/WELLS	9220	HTL-04	008	✓	1	HORN
C. BUFFON	-"-	-"-	HTL-04	005	✓	4	HORN
MT. ELEPHANT	-"-	-"-	HTL-05	008	✓	2	HQL-9
C. BANKS	-"-	-"-	HTL-04	007	✓	3	HORN

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0001	1500	P. KRONFIELD	SNIFFER/SPARKER/SIDESCAN
2000	2400	CLIENT REP	

O/T Requested By | Total System - Hours Operation For Client 19 Hrs

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)

0001 HEADING FOR LINE U81-20 SOUTH END

0007: SOL U81-20 FSP 1 → 000° USING C.BANKS/C.BUFFON

0140: ABORT LINE U81-20 SP 312 LOST SIGNALS DUE HEAVY RAIN SQUALLS - SIDESCAN HITS BOTTOM - GENERATOR TROUBLE LAST GOOD SP 280 - CIRCLE STBY FOR WEATHER IMPROVEMENT

0700: WEATHER CLEARED SOME - HEADING FOR LINE U81-20

0831: 500 METERS TO SP 270 LINE U81-20 SNIFFER DOWN - CIRCLE

0915: SNIFFER REPAIRED HEADING FOR LINE U81-20 SP 270A

0952: RESTART LINE U81-20 → 000° FSP 270A (270-280 IS "A" SHOTS)

1118: ABORT LINE U81-20 SP 549 SNIFFER FAULTY. LAST GOOD SP #500 WILL SHOT REST OF LINE LATER

1230: HEADING FOR CURRENT METER #1 TO CHECK IF STILL IN PLACE

1400: ARRIVED ON LOCATION CM #1 BUOYS SIGHTED ON POSITION

1415: HEADING FOR C.BUFFON TO REPAIR SNIFFER

1545: DROPPED ANCHOR AT C. BUFFON

1955: ANCHOR UP - SNIFFER REPAIRED HEADING FOR N. PART L U81-22

Mobile Operator(s) M. BERGSTROM, M. PYE Project Supervisor D. RUSSEL

000158

OFFSHORE NAVIGATION INC.

MINIRANGER III ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number D-1357 Date 4 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841,9 Khz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50 M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 Mhz	HTM-04/003	HMM-10/002	/	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~	Amplifier	Code	Ant. Type(s)
BEACHPORT	RUSSIEL/WELLS	9220	HTL-04	008	/	1	HORN
C. BUFFON	-"-	-"-	HTL-04	005	/	4	HORN
MT. ELEPHANT	-"-	-"-	HTL-05	008	/	2	HQL-9
C. BANKS	-"-	-"-	HTL-04	007	/	3	HORN

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0001	2400	P. KRONFIELD	SNIFFER/SPARKER/SIDESCAN

O/T Requested By | Total System - Hours Operation For Client 24 HRS

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)

0001: SHOOTING ON LINE U81-3 → 270°

0056: ABORT LINE U81-3 SP 450 LOST SIGNALS DUE TO HEAVY RAIN SQUALLS - CIRCLE

0515: RESTART LINE U81-3 → 270° FSP 440A (440-450 IS "A" SHOTS)

0600: ABORT LINE U81-3 SP 590 LOST SIGNAL DUE TO HEAVY RAIN SQUALLS

0635: RESTART LINE U81-3 → 270° FSP 580A (580-590 IS "A" SHOTS)

0830: EOL U81-3 LSP # 900

0945: SOL U81-5 FSP # 1 → 090° USING MT ELEPHANT/BEACHPORT TO EOL

1517: EOL U81-5 LSP # 1020 SHALLOW WATER - CUT SHORT

1616: SOL 7X FSP 1001 FOLLOWING SHORELINE APPROX 0.5 MILE OFF BETWEEN LINES U81-5 AND U81-7 1 MINUTE PRINTOUT INTERVALS

1835: EOL 7X LSP 1140

1907: SOL U81-7 FSP 30 → 270° USING BEACHPORT/C. BANKS TO EOL

2400: SHOOTING ON LINE U81-7 → 270°

Mobile Operator(s) M. BERGSTROM, M. PYE Project Supervisor D. RUSSEL

REF INSTRUCTIONS ON REVERSE

OFFSHORE NAVIGATION INC.

MINIRANGER III ~~MAXIRAN~~ DAILY OPERATIONS LOG

000159

Project Number P-1357 Date 5 JUNE 1981 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.9 KHz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50 M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 MHz	HTM-04/003	HMM-10/002	-	HQM 10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~	Amplifier	Code	Ant. Type(s)
BEACHPORT	RUSSEL/WELLS	9420	HTL-04	# 008	-	1	HORN
C. BUFFON	- " -	- " -	HTL-04	005	/	4	HORN
MT. ELEPHANT	- " -	- " -	HTL-05	008	/	2	HQL-9
C. BANKS	- " -	- " -	HTL-04	007	/	3	HORN

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0001	2400	P. KRONFIELD	SNIFFER/SPARKER/SIDESCAN
		CLIENT REP.	SURVEY

O/T Requested By | Total System - Hours Operation For Client | 24 HRS

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)

0001: SHOOTING ON LINE U81-7 → 270°

0045: EOL U81-7 LSP # 983

0100: WORKING ON SNIFFER - CIRCLING - GOING FAIR SEAS

0700: SNIFFER REPAIRED - HEADING FOR WEST END LINE U81-9

0950: SOL U81-9 FSP # 1 → 090° USING C. BANKS/C. BUFFON TO SP 177 THEN MT. ELEPHANT/C. BUFFON TO SP 290 THEN C. BANKS/C. BUFFON TO SP 730 THEN C. BANKS/MT. ELEPHANT TO EOL

1055: ABORT SP 208 SNIFFER TROUBLE - CIRCLE LAST GOOD SP 200

1315: RESTART LINE U81-9 → 090° FSP 190A (190 TO 200 IS "A" SHOTS)

1620: EOL U81-9 LSP 836 OFF LINE IN END DUE STRONG CURRENT

1726: SOL U81-11 FSP # 200 → 270° USING C BANKS/MT. ELEPHANT

2010: EOL U81-11 LSP # 697

2048: SOL U81-16 FSP 1 → 000° USING MT. ELEPHANT/C BUFFON TO SP. 610 THEN MT. ELEPHANT/BEACHPORT TO SP 898 THEN C. BUFFON/BEACHPORT TO EOL

2400 - SHOOTING ON LINE U81-16 → 000°

Mobile Operator(s) M. BERGSTROM, M. PYE Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

OFFSHORE NAVIGATION INC.

MINIRANGER III ~~MAXIRAN~~ DAILY OPERATIONS LOG

000160

Project Number P-1357 Date 6 JUNE 81. Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841,9 KHz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50 M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9.330 MHz	HTM-04/003	HMM-10/002	-	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~ #	Amplifier	Code	Ant. Type(s)
BEACHPORT	RUSSEL/WELLS	9420	HTL-04	008	/	1	HORN
C. BUFFON	-"-	-"-	HTL-04	005	/	4	HORN
MT. ELEPHANT	-"-	-"-	HTL-05	008	/	2	HQL-9
C. BANKS	-"-	-"-	HTL-04	007	/	3	HORN

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0001	2400	P. KRONFIELD	SNIFFER/SPARKER/SIDESCAN
		CLIENT REP.	SURVEY

O/T Requested By | Total System - Hours Operation For Client 24 HRS.

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIMES (VIC.)

0001: SHOOTING ON LINE U81-16 → 000°

0115: EOL U81-16 LSP 950

0130: CALIBRATING SNIEFFER

0310: CALIBRATION COMPLETED HEADING FOR LINE U81-2

0415: SOL U81-2 FSP#1 → 180° USING MT. ELEPHANT/BEACHPORT TO EOL

0726: EOL U81-2 LSP# 541

0826 SOL U81-4 FSP#1 → 000° USING MT. ELEPHANT/BEACHPORT TO EOL

1110 EOL U81-4 LSP#556

1200 SOL U81-6 FSP#1 → 180° USING C BUFFON/BEACHPORT TO SP 6
THEN MT ELEPHANT/BEACHPORT TO EOL

1400 ABORT LINE U81-6 SP 421 SNIFFER TROUBLE LAST GOOD
SP#400 CIRCLE

1441: RESTART LINE U81-6 → 180° FSP 390A (390-400 IS "A" SHOTS)

1633: EOL U81-6 LSP#720

1721: SOL U81-8 FSP#1 → 000° USING MT ELEPHANT/BEACHPORT TO EOL

2102: EOL U81-8 LSP# 741

Mobile Operator(s) M. BERGSTROM
M. DYE

Project Supervisor D. RUSSELL

SEE INSTRUCTIONS ON REVERSE

000161

Operations Log & Remarks (cont'd.) ALL TIMES IN LOCAL TIME (VIC.)

2144: SOL V81-10 FSP 1 → 180° USING MT ELEPHANT/C BUFFON TO SP 610 THEN MT. ELEPHANT/BEACHPORT TO SP 898 THEN C. BUFFON/BEACHPORT TO EOL

2400: SHOOTING ON LINE V81-10

INSTRUCTIONS

1. This form is to be filled out completely for each day that the crew, or any member thereof, is in a work status.
2. It is intended to provide a concise but complete log of one day's activity on an operating radiopositioning crew. Completeness is more important than brevity.
3. If more space is needed in order to make a complete report, use supplemental sheets.
4. In addition to providing an operational log, it also provides information required for billing purposes, particularly as it lists operating days, lost time, overtime, etc.
5. It has been specifically modified from previous forms to provide (under Operating Time) for a notation as to what the system is being used for during a specific period. This is particularly important (1) in case of overtime operations; (2) when the system is being used for other than the client's normal, day to day, operations; and (3) when the system is kept on the air but no production is being realized.
6. Under "Operating Time", the name of the client's representative requesting that the system be turned on or off or requesting overtime (O/T) operations should be noted. Notations such as "Client" or "Client Rep." are not sufficient.
7. Mobile operations should ascertain from their Party Chief if overtime charges are applicable on a particular operation (Party Chiefs are normally furnished with a copy of the applicable contract). If overtime is applicable to the operation, it should not be incurred without the client representative being fully aware of it and specifically authorizing it. In brief, if the system is not required, it should be turned off. If the client will not permit its being turned off to eliminate unnecessary overtime, that should be noted on this form, including all pertinent particulars.

[illegible] a final decision as to whether the system should be turned on or off.

OFFSHORE NAVIGATION INC.

MINIRANGER II ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number P-1357 Date 7 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.4 khz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 Mhz	HTM-04/003	HMM-10/002	-	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~	Amplifier	Code	Ant. Type(s)
BEACHPORT	RUSSEL/WELLS	9220	HTL-04	008	-	1	HORN
C. BUFFON	-"-	-"-	HTL-04	005	-	4	HORN
MT. ELEPHANT	-"-	-"-	HTL-05	008	-	2	HQL-9
C. BANKS	-"-	-"-	HTL-04	007	-	3	HORN

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0001	2400	P. KRONFIELD	SNIFFER/SPARKER/SIDESCAN SURVEY

O/T Requested By | Total System - Hours Operation For Client 24 Hrs

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (UIC)

0001: SHOOTING ON LINE U81-10 → 180°

0214: EOL U81-10 LSP 834

0215: CALIBRATING SNIFFER

0450: CALIBRATION COMPLETED HEADING FOR S. END LINE U81-12

0612: SOL U81-12 FSP#1 → 000° USING MT. ELEPHANT/C. BUFFON

0845 ABORT SP 864 LAST GOOD SP 420 NAVIGATION ERROR

0910: RESTART LINE U81-12 → 000° FSP 410A/410 TO 420 IS "A" SHOT
USING MT. ELEPHANT/BEACHPORT TO SP 807 THEN C BUFFON/BEACHPORT TO EOL

1140: EOL U81-12 LSP 817

1220: SOL U81-14 FSP#6 → 180° USING C BUFFON/BEACHPORT TO SP 390 THEN MT ELEPHANT/BEACHPORT TO SP 500 THEN MT ELEPHANT/C. BUFFON TO EOL

1718: EOL U81-14 LSP 940

1812: SOL U81-18 FSP #1 → 000° USING MT ELEPHANT/C. BUFFON TO SP 523 THEN MT ELEPHANT/BEACHPORT TO EOL

Mobile Operator(s) M. BERGSTROM, M. PYE Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

Operations Log & Remarks (cont'd.) ALL TIMES IN LOCAL TIME (VIC) 090163

2342: SOL V81-20 FSP 880 → 180° COUNTING-DOWN USING MT. ELEPHANT / L. BUFFON

2400: SHOOTING ON LINE V81-20 → 180°

2255: EOL V81-18 LSP 910 SHALLOW WATER CUT SHORT

INSTRUCTIONS

1. This form is to be filled out completely for each day that the crew, or any member thereof, is in a work status.
2. It is intended to provide a concise but complete log of one day's activity on an operating radiopositioning crew. Completeness is more important than brevity.
3. If more space is needed in order to make a complete report, use supplemental sheets.
4. In addition to providing an operational log, it also provides information required for billing purposes, particularly as it lists operating days, lost time, overtime, etc.
5. It has been specifically modified from previous forms to provide (under Operating Time) for a notation as to what the system is being used for during a specific period. This is particularly important (1) in case of overtime operations; (2) when the system is being used for other than the client's normal, day to day, operations; and (3) when the system is kept on the air but no production is being realized.
6. Under "Operating Time", the name of the client's representative requesting that the system be turned on or off or requesting overtime (O/T) operations should be noted. Notations such as "Client" or "Client Rep." are not sufficient.
7. Mobile operations should ascertain from their Party Chief if overtime charges are applicable on a particular operation (Party Chiefs are normally furnished with a copy of the applicable contract). If overtime is applicable to the operation, it should not be incurred without the client representative being fully aware of it and specifically authorizing it. In brief, if the system is not required, it should be turned off. If the client will not permit its being turned off to eliminate unnecessary overtime, that should be noted on this form, including all pertinent particulars.
8. The client representative should be consulted for decision as to whether the system should be turned on or off

000164

OFFSHORE NAVIGATION INC.

MINIRANGER III ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number P-1357 Date 8 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841,9 Khz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 Mhz	HTM-04/003	HMM-10/002	-	HOM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~ #	Amplifier	Code	Ant. Type(s)
C. BUFFON	RUSSEL/WELLS	9420	HTL-04	005	-	4	HORN
MT. ELEPHANT	-"-	-"-	HTL-05	008	-	2	HQL-9
C. BANKS	-"-	-"-	HTL-04	007		3	HORN

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0001	1400	P. KRONFIELD	SNIFFER/SPARKER/SIDESCAN
		CLIENT. REP.	SURVEY

O/T Requested By | Total System - Hours Operation For Client | 14 Hrs.

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC)

0001: SHOOTING ON LINE U81-20 → 180°

0237: EOL U81-20 LSP 390A (SP 500 TO SP 390 IS "A" SHOTS. SEGMENT RESHOT DUE SUSPECT GAS-SIP)

0326 TO 0519 SHOOTING A CROSS OVER LINE 7 BUT DUE TO A MISSUNDERSTANDING OVER THE PREPLOTS MADE ON BOARD BY P. KRONFIELD ONI OP. USING VRONG BASE STATIONS. ALL DATA SCRATCHED WILL RETURN AND SHOT THIS CROSS ON A LATER DATE AS IT COVERS AN AREA OF ANOMALITIES.

0520: CALIBRATING SNIFFER HEADING FOR NORTH END OF LINE U81-24

1102: SOL U81-24 FSP 60 → 180° USING C. BUFFON/MT ELEPHANT

1150: ABORT LINE TOO FAR OFF LINE LAST GOOD SP 200

1235: RESTART LINE U81-24 → 180° FSP 190A BUT CAN NOT HOLD ON LINE DUE ERRATIC SIGNALS CAUSED BY HEAVY RAIN SQUALLS TIDE, CURRENT AND WEATHER FROM

Mobile Operator(s) M. BERGSTROM, M. PYE Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

Operations Log & Remarks (cont'd.) ALL TIMES IN LOCAL TIME (UTC).
CONT: NORTH PUSHING VESSEL MAKING IT IMOSSIBLE
TO STEER PROPERLY.
1330: ABORT LINE U81-24 GIVING UP TRYING
WEATHER WORSENING ALL DATA SCRATCHED
1400: HEADING FOR PORTLAND DUE ROUGH WEATHER
2300: ARRIVED PORTLAND
2400: MOORED IN PORTLAND STANDING BY DUE
TO BAD WEATHER

INSTRUCTIONS

1. This form is to be filled out completely for each day that the crew, or any member thereof, is in a work status.
2. It is intended to provide a concise but complete log of one day's activity on an operating radiopositioning crew. Completeness is more important than brevity.
3. If more space is needed in order to make a complete report, use supplemental sheets.
4. In addition to providing an operational log, it also provides information required for billing purposes, particularly as it lists operating days, lost time, overtime, etc.
5. It has been specifically modified from previous forms to provide (under Operating Time) for a notation as to what the system is being used for during a specific period. This is particularly important (1) in case of overtime operations; (2) when the system is being used for other than the client's normal, day to day, operations; and (3) when the system is kept on the air but no production is being realized.
6. Under "Operating Time", the name of the client's representative requesting that the system be turned on or off or requesting overtime (O/T) operations should be noted. Notations such as "Client" or "Client Rep." are not sufficient.
7. Mobile operations should ascertain from their Party Chief if overtime charges are applicable on a particular operation (Party Chiefs are normally furnished with a copy of the applicable contract). If overtime is applicable to the operation, it should not be incurred without the client representative being fully aware of it and specifically authorizing it. In brief, if the system is not required, it should be turned off. If the client will not permit its being turned off to eliminate unnecessary overtime, that should be noted on this form, including all pertinent particulars.
8. The client, or his representative, always has the final decision as to whether the system should be turned on or off.

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OFFSHORE NAVIGATION INC.

MINIRANGER ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number P-1357 Date 9 JUNE Vessel HALCYON Client Party Number N/A

Geophysical Company EGG / INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841,9 Khz

Country _____ Area/Prospect _____ Stepback _____ Shot Point Interval _____

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9.330 Mhz	HTM 04/003	HMM-10/002	-	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	Control Box	Amplifier	Code	Ant. Type(s)
NONE USED							

OPERATING TIME

Time On	Time Off	Requested By	System Used For
NIL			

O/T Requested By _____ Total System - Hours Operation For Client NIL

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)

0001: M/V HALCYON MOORED IN PORTLAND - STANDING BY DUE ROUGH WEATHER ONS. OPERATORS STAYS IN SIESTA MOTEL PORTLAND.

0800: DOING ROUTINE MAINTAINANCE ON EQUIPMENT

1800: IN SIESTA MOTEL PORTLAND STANDING BY AWAITING WEATHER TO IMPROVE

2400. STANDING BY AS BEFORE

Mobile Operator(s) MIKE BERGSTROM
MILES PYE

Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

000167

OFFSHORE NAVIGATION INC.

MINIRANGER III ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number P-1357 Date 10 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841,9 KHz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 MHz	HTM04/003	HMM-10/002	-	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	Control Box	Amplifier	Code	Ant. Type(s)
NONE USED							

OPERATING TIME

Time On	Time Off	Requested By	System Used For
NIL			

O/T Requested By | Total System - Hours Operation For Client: NIL

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)

0001: M/V HALCYON MOORED IN PORTLAND - STANDING BY DUE TO ROUGH WEATHER - STAYING IN SIESTA MOTEL

0800: DOING ROUTINE MAINTAINANCE ON EQUIPMENT

1800: IN SIESTA MOTEL PORTLAND STANDING BY AWAITING WEATHER TO IMPROVE

2400: STANDING BY AS BEFORE

Mobile Operator(s) M. BERGSTROM, M. PYE

Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

OFFSHORE NAVIGATION INC.

~~MAXIRANGER~~ ~~MAXIRAN~~ DAILY OPERATIONS LOG

000168

Project Number D-1357 Date 11 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.9

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 MHz	HTM-04/003	HMM-10/002	-	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	Control Box	Amplifier	Code	Ant. Type(s)
NONE USED							

OPERATING TIME

Time On	Time Off	Requested By	System Used For
NIL			

O/T Requested By | Total System - Hours Operation For Client: NIL

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)

0001: MOORED IN PORTLAND DUE ROUGH WEATHER

0800: START MOUNTING OMNI ANTENNA ONBOARD "HALCYON"

1200. ANTENNA MOUNTED SAILED PORTLAND HEADING FOR WORK AREA

1300: WEATHER ROUGH HEADING FOR SHELTER IN FISHERMANS COVE

1410: DROPPED ANCHOR IN FISHERMANS COVE

2400: AT ANCHOR, FISHERMANS COVE STANDING BY FOR WEATHER TO IMPROVE.

Mobile Operator(s) M. BERGSTROM

M. PYE

Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

000169

OFFSHORE NAVIGATION INC.

MINIRANGER III ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number P-1357 Date 12 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7541.9 KHz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50 M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9.330 MHz	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~	Amplifier	Code	Ant. Type(s)
MT. ELEPHANT	RUSSEL/WELLS	9420	HTL-05	#008	/	2	HQL-9
C. BANKS	-"-	-"-	HTL-04	007	/	3	HORN
7021 OFFS.	-"-	-"-	HTL-04	005	/	4	-"-
MT. RUSKIN	-"-	-"-	HTL-04	013	/	1	-"-

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0500	2400	P. KRONFIELD	SNIFFER/SPARKER/SIDESCAN
		CLIENT REP.	SURVEY

O/T Requested By | Total System - Hours Operation For Client 17 hrs

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)

0001: ANCHORED IN FISHERMANS COVE DUE TO ROUGH WEATHER

0500: ANCHOR UP HEADING FOR LINE U81-21 W. END MINIRANGER ON.

0930: CHANGE OF PLANS, NOW HEADING FOR SOUTH END OF LINE U81-50 TO SHOT TOWARDS PORT MACDONNEL WHERE TO PICK UP SPARES FOR GENERATOR

1051: SOL U81-50 FSP 1 → 000° USING MT. RUSKIN / 7021 TO EOL

1415: EOL U81-50 LSP 612 SHALLOW WATER - CUT SHORT

1420: SOL 50X GOING ALONG COASTLINE EASTWARDS FSP 1 APPROX LENGHT 6.3 NM FIX TAKEN EVERY MINUTE

1517: EOL 50X LSP 70

1520: HEADING FOR PORT MAC DONNEL

1625: DROPPED ANCHOR IN PORT MACDONNEL

1650: LEFT PORT MACDONNEL HEADING FOR LINE U81-13

1822: SOL U81-13 FSP #100 → 270° USING 7021 / C. BANKS TO EOL

2210: EOL U81-13 LSP #710 DEEP WATER - CUT SHORT

2220: GOING FAIR SEAS TO CALIBRATE SNIFFER

Mobile Operator(s) M. BERGSTROM, M. PYE Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

000170

Operations Log & Remarks (cont'd.) ALL TIMES IN LOCAL TIME (VIC.)
2400: CIRCLE NEAR START OF LINE V81-24 SOUTH
END - WORKING ON SNIFFER

INSTRUCTIONS

1. This form is to be filled out completely for each day that the crew, or any member thereof, is in a work status.
2. It is intended to provide a concise but complete log of one day's activity on an operating radiopositioning crew. Completeness is more important than brevity.
3. If more space is needed in order to make a complete report, use supplemental sheets.
4. In addition to providing an operational log, it also provides information required for billing purposes, particularly as it lists operating days, lost time, overtime, etc.
5. It has been specifically modified from previous forms to provide (under Operating Time) for a notation as to what the system is being used for during a specific period. This is particularly important (1) in case of over-time operations; (2) when the system is being used for other than the client's normal, day to day, operations; and (3) when the system is kept on the air but no production is being realized.
6. Under "Operating Time", the name of the client's representative requesting that the system be turned on or off or requesting overtime (O/T) operations should be noted. Notations such as "Client" or "Client Rep." are not sufficient.
7. Mobile operations should ascertain from their Party Chief if overtime charges are applicable on a particular operation (Party Chiefs are normally furnished with a copy of the applicable contract). If overtime is applicable to the operation, it should not be incurred without the client representative being fully aware of it and specifically authorizing it. In brief, if the system is not required, it should be turned off. If the client will not permit its being turned off to eliminate unnecessary overtime, that should be noted on this form, including all pertinent particulars.
8. The client, or his representative, always has the final decision as to whether the system should be turned on or off

000171

OFFSHORE NAVIGATION INC.

MINIRANGER ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number D-1357 Date 13 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.9KHz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50 M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 MHz	HIM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~ #	Amplifier	Code	Ant. Type(s)
MT. ELEPHANT	RUSSEL/WELLS	9420	HTL-05	008	—	2	HQL-9
C. BANKS	-"-	-"-	HTL-04	007	—	3	HORN
7021 OFFS.	-"-	-"-	HTL-04	005	—	4	-"-
MT. RUSKIN	-"-	-"-	HTL-04	013	—	1	-"-

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0001	2400	P. KRONFIELD	SNIFFER/SPARKER/SIDESCAN
		CLIENT REP	SURVEY

O/T Requested By | Total System - Hours Operation For Client 24 HRS

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)

0001: CIRCLING S. END OF LINE U81-24 WORKING ON SNIFFER

0124: SNIFFER OK HEADING FOR SOL U81-24 SOUTH END

0150: SOL U81-24 FSP #1 → 000° USING MT ELEPHANT / C. BANKS

0400: ABORT LINE U81-24 SP #333 SNIFFER FAULT ALL DATA SCRATCH

0543: NOW DECIDED TO SHOT LINE U81-28 FROM SOUTH END

0642: SOL U81-28 FSP #1 → 000° USING 7021 / MT. ELEPHANT TO SP 370

0916: ABORT SP 370 SNIFFER FAULT CIRCLE

1030: RESTART LINE U81-28 FSP 300A → 000° USING 7021 AN MT ELEPHANT TO SP 420 THEN 7021 / C BUFFON TO SP 431 THEN C. BANKS / MT. ELEPHANT TO EOL

1255: SP 696 LOST SIGNAL FM MT ELEPHANT - SP 708 BACK ON TRACK

1359: EOL U81-28 LSP #910 SHALLOW WATER - CUT SHORT

1441: SOL U81-30 FSP #20 → 180° USING C. BANKS / MT. ELEPHANT TO SP 182 THEN 7021 / MT ELEPHANT TO EOL

1843: EOL U81-30 LSP 832

Mobile Operator(s) M. BERGSTROM / M. PYE Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

Operations Log & Remarks (cont'd.) ALL TIMES IN LOCAL TIME (VIC).

1900 - 2130 CALIBRATING SNIFFER - FAIR SEAS

2200: SOL U81-17 FSP#1 → 090° USING MT.RUSKIN/C.BANKS TO SP 370 THEN MT RUSKIN/721 TO EOL

2400: SHOOTING ON LINE U81-17 → 090

INSTRUCTIONS

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3. If more space is needed in order to make a complete report, use supplemental sheets.
4. In addition to providing an operational log, it also provides information required for billing purposes, particularly as it lists operating days, lost time, overtime, etc.
5. It has been specifically modified from previous forms to provide (under Operating Time) for a notation as to what the system is being used for during a specific period. This is particularly important (1) in case of overtime operations; (2) when the system is being used for other than the client's normal, day to day, operations; and (3) when the system is kept on the air but no production is being realized.
6. Under "Operating Time", the name of the client's representative requesting that the system be turned on or off or requesting overtime (O/T) operations should be noted. Notations such as "Client" or "Client Rep." are not sufficient.
7. Mobile operations should ascertain from their Party Chief if overtime charges are applicable on a particular operation (Party Chiefs are normally furnished with a copy of the applicable contract). If overtime is applicable to the operation, it should not be incurred without the client representative being fully aware of it and specifically authorizing it. In brief, if the system is not required, it should be turned off. If the client will not permit its being turned off to eliminate unnecessary overtime, that should be noted on this form, including all pertinent particulars.
8. [illegible] the system should be turned on or off

OFFSHORE NAVIGATION INC.

MINIRANGER III ~~MAXIRAN~~ DAILY OPERATIONS LOG

000173

Project Number P-1357 Date 14 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.9 KHz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 MHz	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~	Amplifier	Code	Ant. Type(s)
MT. ELEPHANT	RUSSEL/WELLS	9420	HTL-05	# 008	✓	2	HQL-9
C. BANKS	-"-	-"-	HTL-04	007	✓	3	HORN
7021 OFFS	-"-	-"-	HTL-04	005	✓	4	-"-
MT. RUSKIN	-"-	-"-	HTL-04	013	✓	1	-"-

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0000	2000	P. KRONFIELD	SNIFFER/SPARKER/SIDESCAN
		CLIENT REP	SURVEY

O/T Requested By | Total System - Hours Operation For Client 20 HRS.

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)

0001: SHOOTING ON LINE V81-17 → 090°

0140: ABORT LINE 17 AT SP # 760 STRONG CURRENT WILL NOW SHOT PART OF LINE V81-52 SUSPECT GAS-SIP RREA

0304: SOL V81-52 CASSIP FSP 240 → 000° USING MT RUSKIN/7021

0418: EOL V81-52 CASSIP LSP 450

0458: SOL 17A FSP # 1 → 225° USING 7021/MT RUSKIN

0531: EOL 17A LSP # 91

0604: SOL 17B FSP # 80 COUNTING DOWN → 315° USING 7021/MT RUSKIN

0636: EOL 17B LSP # 1

0655: RESTART LINE V81-17 FSP 570A → 090° (570 TO 760 IS "A" SHOTS)

0903: EOL V81-17 LSP # 998

0930. HEAVY RAIN SQUALLS - SIGNALS VERY ERRATIC

1020: TRYING START LINE V81-60 FSP # 1 → 000° MT RUSKIN/7021

1055: ABORT LINE V81-60 AT SP 62 RAIN SQUALLS SIGNALS TO ERRATIC

1140: RESTART LINE V81-60 FSP # 1 → 000° USING MT. RUSKIN/7021

1410: EOL V81-60 LSP 560 SHALLOW WATER CUT SHORT

Mobile Operator(s) M. BERGSTROM

M. PYE

Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

Operations Log & Remarks (cont'd.) ALL TIMES IN LOCAL TIME (VIC.)

1514: SOL U81-S8 FSP#60 → 180° USING MT. RUSKIN / 7021

SP 447 TO 451 POWER FAILURE

SP 513 TO 526 CHANGE PAPER IN PRINTER

1927: EOL U81-S8 LSP#807

2000: HEADING FOR PORTLAND MINIRANGER OFF

2400: ARRIVED PORTLAND

INSTRUCTIONS

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8. The client, or his representative, always has the final decision as to whether the system should be turned on or off.

000175

OFFSHORE NAVIGATION INC.

MINIRANGER III ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number P-1357 Date 15 JUNE 81 Vessel HALCYON Client Party Number N/A
Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.9Khz
Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50 M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9.330 MHz	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~	Amplifier	Code	Ant. Type(s)
MT. ELEPHANT	RUSSEL/WELLS	9420	HTL-05	#008	—	2	HQL-9
C. BANKS	-"-	-"-	HTL-04	007	—	3	HORN
7021 OFFS.	-"-	-"-	HTL-04	005	—	4	-"-
MT. RUSKIN	-"-	-"-	HTL-04	013	—	1	-"-

OPERATING TIME

Time On	Time Off	Requested By	System Used For
1500	2400	P. KRONFIELD	
		CLIENT REP.	

O/T Requested By | Total System - Hours Operation For Client: 9 HRS

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)
0001: IN PORTLAND STBY FOR SPARES
1120: SAILED PORTLAND UNDERWAY WORKING AREA
1630: CALIBRATING SNIFFER
1719: SOL U81-S6 FSP 1 → 000° USING MT RUSKIN / 7021
1754: ABORT LINE SNIFFER NOT READY CIRCLE BACK TO ISOH WAVE
1834: SOL (RESTART) U81-S6 FSP 90 → 000° USING
2152: EOL U81-S6 LSP 740 SHALLOW WATER CUT SHORT
2317: SOL U81-15 FSP 1 → 270 USING MT. RUSKIN / 7021 TO SP 652 THEN 7021 / C. BANKS TO EOL
2400: SHOOTING ON LINE U81-15

Mobile Operator(s) M. BERGSTROM
M. PYE
Project Supervisor D RUSSEL

SEE INSTRUCTIONS ON REVERSE

OFFSHORE NAVIGATION INC.

MINIRANGER ~~MAXIRAN~~ DAILY OPERATIONS LOG

000176

Project Number P-1357 Date 16 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841,9KHz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50 M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330MHz	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~	Amplifier	Code	Ant. Type(s)
C. BUFFON MT. RUSKIN	RUSSEL/WELLS	9420	HTL-04	#013 008	/	1	HORN
MT. ELEPHANT	- " -	- " -	HTL-05	#008	/	2	HQL-9
C. BANKS	- " -	- " -	HTL-04	007	/	3	HORN
7021 OFFS.	- " -	- " -	HTL-04	005	/	4	HORN

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0001	2400	P. KRONFIELD	SNIFFER/SPARKER/SIDESCAN
		CLIENT REP.	SURVEY

O/T Requested By | Total System - Hours Operation For Client 24 Hrs.

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC)

0001: SHOOTING ON LINE U81-15 → 270°

0545: EOL U81-15 LSP 1195 DEEP WATER CUT SHORT

0635: SOL U81-26 FSP#50 → 000° USING 7021/MT ELEPHANT TO SP 415 THEN C.BANKS/C.BUFFON TO SP 741 THEN MT.ELEPHAND/C.BUFFON TO SP 809 THEN MT.ELEPHANT/C.BANKS TO EOL

0741: SP 260 ABORT LINE TO CROSS WELLHEAD

0812: SOL WELLHEADCROSSING → NNE FSP#1 USING MT.ELEPHANT/7021 (STARTPOINT 37°-54'-11" 713S 140°-15'-03"513E ENDPOINT 37°54'05" 856S 140°-16'-36" 986E)

0841: EOL WELLHEADCROSSING SP#90

1000: RESTART LINE U81-26 FSP 250A (250-260 IS "A" SHOTS)

1334: EOL U81-26 LSP 960 SHALLOW WATER - CUT SHORT

1554: SOL U81-24 FSP#50 → 180° USING C.BANKS/MT ELEPHANT TO SP117 THEN MT.ELPHANT/C.BUFFON TO SP 370 THEN C.BANKS/C.BUFFON TO EOL

1730: SP 370 LINE U81-24 ABORT TO CROSS ANOMALY LINES 7A/B

1814: SOL 7B FSP1 → 315° USING MT ELEPHANT/C.BANKS

Mobile Operator(s) M BERGSTROM, M. PYE Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

000177

Operations Log & Remarks (cont'd.) ALL TIMES IN LOCAL TIME (VIC)

1842: EOL 7B LSP #85

1913: SOL 7A FSP #1 → 7A USING MT. ELEPHANT/C. BANKS

1938: EOL 7A LSP 75

2015: RESTART LINE U81-24 → 180° FSP 360A (360-370 15"A" SHOTS)

2256: EOL U81-24 LSP 880

2400: LINE CHANGE U81-24 TO U81-32

INSTRUCTIONS

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8. The client or his representative always has the final decision as to whether the system should be turned on or off.

MINIRANGER III

OFFSHORE NAVIGATION INC.
~~MAXIRAN~~ DAILY OPERATIONS LOG

000178

Project Number D-1357 Date 17 JUNE 81 Vessel HALCYON Client Party Number N/A
Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.4 Khz
Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 Mhz	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~	Amplifier	Code	Ant. Type(s)
MT. ELEPHANT	RUSSEL/WELLS	9420	HTL-05	008	/	2	HQL-9
C. BANKS	-"-	-"-	HTL-04	007	/	3	HORN
7021 OFFS.	-"-	-"-	HTL-04	005	/	4	-"-
MT. RUSKIN	-"-	-"-	HTL-04	013	/	1	-"-

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0001	2400	P. KRONFIELD	SNIFFER/SPARKER/SIDESCAN
		D. POWELL	SURVEY
		CLIENT REP'S	

O/T Requested By | Total System - Hours Operation For Client 24 HRS

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)
0001: LINE CHANGE U81-24 TO U81-32
0117: SOL U81-32 FSP#1 → 000° USING 7021/MT ELEPHANT TO SP 216 THEN 7021/C. BANKS TO SP 450 THEN 7021/MT. ELEPHANT TO SP 570 THEN C. BANKS/MT. ELEPHANT TO EOL
0515: EOL U81-32 LSP 690 SHALLOW WATER CUT SHORT
0620: SOL U81-11A FSP 210A → 090° COUNTING DOWN, USING 7021/C BANKS TO EOL
0701: EOL U81-11A LSP #80 SHALLOW WATER CUT SHORT
0751: SOL U81-34 FSP#20 → 180° USING 7021/C. BANKS TO EOL
0925: SP#353 CIRCLE TO AVOID FREIGHTER ON COURSE
1003: RESTART LINE U81-34 FSP 340A (340 TO 353 IS "A" SHOTS)
1108: EOL U81-34 LSP#580
1140: SOL U81-36 FSP 60 → 000° USING 7021/C BANKS TO EOL
1450: EOL U81-36 LSP 632 SHALLOW WATER - CUT SHORT
1455: HEADING FOR PORT MAC DONNEL
1650: ANCHORED AT PORT MAC DONNEL

Mobile Operator(s) M. BERGSTROM, M. PYE, T. HOGGART
Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

Operations Log & Remarks (cont'd.) ALL TIMES IN LOCAL TIME-ZONE 000179

1900: CLIENT REP P. KROUFIELD LEFT, D. POWELL REPLACE HIM - ONI NAVIGATOR M. PYE REPLACED BY A. HOGGART.

2000: LEFT PORTMACDONNEL HEADING FOR LINE U81-52

2119: SOL U81-52 FSP# 70 → 180 USING 7021/MT. RUSKIN GOING ALONG LINE SUSPECT STEERING TROUBLE AS VESSEL DOES NOT RESPOND PROPERY TO HELM

2249: SP#372 ABORTED LINE TO EXAMINE STEERING ALL DATA SCRATCHED

2400: EXAMINING STEERING - TRIAL RUNS

INSTRUCTIONS

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3. If more space is needed in order to make a complete report, use supplemental sheets.
4. In addition to providing an operational log, it also provides information required for billing purposes, particularly as it lists operating days, lost time, overtime, etc.
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8. The client, or his representative, always has the final decision as to whether the system should be turned on or off.

000180

OFFSHORE NAVIGATION INC.

MINIRANGER ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number P-1357 Date 18 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841,9 Khz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50 M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9.330 Mhz	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~	Amplifier	Code	Ant. Type(s)
MT. ELEPHANT	RUSSEL/WELLS	9420	HTL-05	# 008	—	2	HQL-9
C. BANKS	-11-	-11-	HTL-04	007	—	3	HORN
7021 OFFS.	-11-	-11-	HTL-04	005	—	4	-11-
MT. RUSKIN	-11-	-11-	HTL-04	013	—	1	-11-

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0001	0120	D. POWELL	SNIFFER/SPARKER/SIDESCAN
2000	2400	CLIENT REP	SURVEY

O/T Requested By | Total System - Hours Operation For Client: 5 Hrs 20 min

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC)

0001: EXAMINING SHIPS STEERING AS IT DOES NOT RESPOND PROPERLY

0048: FOUND STEERING OK AFTER TRIALS BUT VERY STRONG AND CONFUSING CURRENTS IN AREA DECIDE TO START LINE U81-52 IN SOUTH END

0120: WEATHER ROUGH HEADING FOR SHELTER IN FISHERMANS COVE

0505: DROPPED ANCHOR IN FISHERMANS COVE

1230: ANCHOR UP HEADING FOR PORTLAND

1330: MOORED PORTLAND

1800: LEFT PORTLAND HEADING FOR LINE U81-19 E. END

2200: START LINE U81-19 BUT IMPOSSIBLE TO HOLD SHIP ON LINE DUE VERY STRONG CURRENTS. HEADING FOR LINE U81-42 SOUTH END

2400: LINE CHANGE

Mobile Operator(s) M. BERGSTROM, T. HOGGART Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

000181

MINIRANGER ~~MAXIRAN~~

OFFSHORE NAVIGATION INC.
DAILY OPERATIONS LOG

Project Number P-1357 Date 19 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.9 KHz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 MHz	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~	Amplifier	Code	Ant. Type(s)
MT-ELEPHANT	RUSSEL/WELLS	9420 MHz	HTL-05	008	—	2	HQL-9
C. BANKS	-"-	-"-	HTL-04	007	—	3	HORN
7021 OFFS.	-"-	-"-	HTL-04	005	—	4	-"-
MT. RUSKIN	-"-	-"-	HTL-04	013	—	1	-"-

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0001	2400	D. POWELL	SNIFFER/SPARKER/SIDESCAN
		CLIENT REP.	SURVEY

O/T Requested By | Total System - Hours Operation For Client: 24 HRS.

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)

0001: HEADING FOR SOUTH END OF LINE U81-42

0625: SOL U81-42 FSP#1 → 000° USING 7021/C.BANKS TO EOL

0930: EOL U81-42 LSP#570 SHALLOW WATER CUT SHORT

1002: SOL U81-40 FSP#77 → 180° USING 7021/C.BANKS TO EOL

1106: SP#300 ABORT - SNIFFER TROUBLE LAST GOOD SP#280 - CIRCLE

1133: SP 270A RESTART LINE U81-40 → 180° (270 - 280 IS "A" SHOTS)

1307: EOL U81-40 LSP#570 DEEP WATER CUT SHORT

1351: SOL U81-38 FSP#1 → 000° USING 7021/C.BANKS TO EOL

1436: SP#130 LOST SIGNALS FROM C.BANKS DUE TO HEAVY RAINSQUALLS CIRCLE LAST GOOD SP#130

1745: SP 120A RESTART LINE U81-38 → 000° (120 - 130 IS "A" SHOTS)

2020: EOL U81-38 LSP#590 SHALLOW WATER CUT SHORT

2030: CALIBRATING SNIFFER - 2ND RUN AREPLOTS FOR LINE 13A

2325: SOL 13A FSP#1 → 090° USING 7021/CBANKS TO EOL

2400: SHOOTING ON LINE 13A → 090°

Mobile Operator(s) M. BERGSTROM, T. HOGGART Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

OFFSHORE NAVIGATION INC.

MINIRANGER ~~MAXIRAN~~ DAILY OPERATIONS LOG

000182

Project Number D-1357 Date 20 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGC/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.9 KHz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 Mhz	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~	Amplifier	Code	Ant. Type(s)
MT. ELEPHANT	RUSSEL/WELLS	9420	HTL-05	*008	—	2	HQL-9
C. BANKS	-"-	-"-	HTL-04	007	—	3	HORN
7021 OFFS.	-"-	-"-	HTL-04	005	—	4	-"-
MT. RUSKIN	-"-	-"-	HTL-04	013	—	1	-"-

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0001	2400	D. POWELL	SNIFFER/SPARKER/SIDESCAN
		CLIENT REP	SURVEY

O/T Requested By | Total System - Hours Operation For Client 24.00

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (UTC)

0001: SHOOTING ON LINE 13A → 090°

0059: EOL 13A LSP#308 → 090°

0134: SOL U81-44 FSP#20 → 180° USING 7021/C-BANKS TO SP 200 THEN MT. RUSKIN/7021 TO EOL

0415: EOL U81-44 LSP#598

0500: SOL U81-46 FSP#1 → 000° USING MT. RUSKIN/7021 TO SP 352 THEN 7021/C-BANKS TO EOL

0827 EOL U81-46 LSP#593 - SHALLOWS, CUT SHORT

0904 SOL U81-48 FSP#30 → 180° USING MT RUSKIN/7021 TO EOL

1119 EOL U81-48 LSP#550

1211 SOL U81-52 FSP#1 → 000° USING MT. RUSKIN/7021 TO EOL

1300 SP 139 ABORT LINE SNIFFER TROUBLE - CIRCLE LAST GOOD SP 130

1322 RESTART LINE U81-52 FSP 120A (120-130 IS Ä" SHOT)

1543 EOL U81-52 LSP 540 - SHALLOWS - CUT SHORT

1620 SOL U81-54 FSP 100 → 180° USING MT. RUSKIN/7021 TO EOL

Mobile Operator(s) M. BERGSTROM, T. HOGGART Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

Operations Log & Remarks (cont'd.) ALL TIMES IN LOCAL TIME (VIC.) 000183

1918: EOL U81-54 LSP #730

2016: SOL U81-21 FSP #1 → 270 USING MT. RUSKIN/7021 TO EOL

2148: EOL U81-21 LSP #244 DEEP WATER - CUT SHORT

2200: CALIBRATING SNIFFER GOING FAIR SEAS (SW)

2250: CALIBRATION COMPLETED HEADING FOR LINE U81-19 WEST END.

2400: IN LINE CHANGE

INSTRUCTIONS

1. This form is to be filled out completely for each day that the crew, or any member thereof, is in a work status.
2. It is intended to provide a concise but complete log of one day's activity on an operating radiopositioning crew. Completeness is more important than brevity.
3. If more space is needed in order to make a complete report, use supplemental sheets.
4. In addition to providing an operational log, it also provides information required for billing purposes, particularly as it lists operating days, lost time, overtime, etc.
5. It has been specifically modified from previous forms to provide (under Operating Time) for a notation as to what the system is being used for during a specific period. This is particularly important (1) in case of overtime operations; (2) when the system is being used for other than the client's normal, day to day, operations; and (3) when the system is kept on the air but no production is being realized.
6. Under "Operating Time", the name of the client's representative requesting that the system be turned on or off or requesting overtime (O/T) operations should be noted. Notations such as "Client" or "Client Rep." are not sufficient.
7. Mobile operations should ascertain from their Party Chief if overtime charges are applicable on a particular operation (Party Chiefs are normally furnished with a copy of the applicable contract). If overtime is applicable to the operation, it should not be incurred without the client representative being fully aware of it and specifically authorizing it. In brief, if the system is not required, it should be turned off. If the client will not permit its being turned off to eliminate unnecessary overtime, that should be noted on this form, including all pertinent particulars.
8. The client, or his representative, always has the final decision as to whether the system should be turned on or off.

000184

OFFSHORE NAVIGATION INC.

MINIRANGER III ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number: P-1357 Date: 21 JUNE 81 Vessel: HALCYON Client Party Number: N/A
Geophysical Company: EGG/INTEROCEAN Oil Company: ULTRAMAR Radio Frequency: 7841,4 KHz
Country: AUSTRALIA Area/Prospect: SOUTH Stepback: SEE DRAWING Shot Point Interval: 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9.330 MHz	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~ #	Amplifier	Code	Ant. Type(s)
MT. ELEPHANT	RUSSEL/WELLS	9420	HTL-05	008	—	2	HQL-9
C. BANKS	-"-	-"-	HTL-04	007	—	3	HORN
7021 OFFS.	-"-	-"-	HTL-04	005	—	4	HORN
MT. RUSKIN	-"-	-"-	HTL-04	013	—	1	HORN

OPERATING TIME

Time On	Time Off	Requested By	System Used For
0001	1500	D. POWELL	SNIFFER/SPARKER/SIDESCAN
		CLIENT REP	SURVEY

O/T Requested By: | Total System - Hours Operation For Client: 15 Hrs

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks: ALL TIMES IN LOCAL TIME (VIC.)
0001: LINE CHANGE - HEADING FOR LINE U81-19 W. END
0043: SOL U81-19 FSP#1 → 090° USING MT. RUSKIN AND 7021
0422: EOL U81-19 LSP# 679
0538: SOL 17A (EXTRA) FSP# 950 → 270° (COUNTING DOWN ON SP)
USING MT. RUSKIN/7021 TO SP#368 THEN 7021/C.BANKS TO EOL
1020: SP 152 CIRCLE - INSTRUMENT TROUBLE
1053: RESTART LINE 17A → 270 FSP 160A (160 - 152 IS 8 SHOTS)
1202: EOL 17A LSP#1 LAST LINE ON SURVEY
1300: ALL GEAR ONBOARD HEADING NW TO PICK UP
CURRENT METER #3
1500: WEATHER WORSENING TURNING AROUND AND HEADING
FOR PORTLAND
2330: ARRIVED PORTLAND
2400: IN PORTLAND STANDING BY DUE BAD WEATHER

Mobile Operator(s): M. BERGSTROM, T. HOGGART Project Supervisor: D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

000185

OFFSHORE NAVIGATION INC.

MINIRANGER ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number: P-1357 Date: 22 JUNE 81 Vessel: HALCYON Client Party Number: N/A
Geophysical Company: EGG/INTEROCEAN Oil Company: ULTRAMAR Radio Frequency: 7841.9 KHz
Country: AUSTRALIA Area/Prospect: SOUTH Stepback: SEE DRAWING Shot Point Interval: 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 MHz	HTM-04/003	HMM-10/002	—	HAM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	Control Box	Amplifier	Code	Ant. Type(s)
NONE USED							

OPERATING TIME

Time On	Time Off	Requested By	System Used For
NIL			

O/T Requested By: | Total System - Hours Operation For Client:

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks: ALL TIMES IN LOCAL TIME (VIC)
0001: M/V HALCYON DOCKED AT TRAWLER WHF PORTLAND DUE TO ROUGH WEATHER - STANDING BY
0100: MOBILE OPS. BERGSTROM/HOGGART CHECKING IN AT "HENTYS" MOTEL PORTLAND
0800: ROUTINE MAINTAINANCE OF EQUIPMENT
1000: D. RUSSEL/G. WELLS ARRIVES PORTLAND
1230: MOBILE OP. T. HOGGART LEAVES FOR NEW ZEALAND
1800: IN "HENTYS" MOTEL - PORTLAND STANDING BY FOR BETTER WEATHER
2400: STANDING BY AS BEFORE

Mobile Operator(s): MIKE BERGSTROM / T. HOGGART
Project Supervisor: D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

MINIRANGER II

OFFSHORE NAVIGATION INC.
MAXIRAN DAILY OPERATIONS LOG

000186

Project Number: P-1357 Date: 23 JUNE 81 Vessel: HALCYON Client Party Number: N/A
Geophysical Company: EGG/INTEROCEAN Oil Company: ULTRAMAR Radio Frequency: 7841,9 KHz
Country: AUSTRALIA Area/Prospect: SOUTH Stepback: SEE DRAWING Shot Point Interval: 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 MHz	HIM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	Control Box	Amplifier	Code	Ant. Type(s)
NONE UTILIZED							

OPERATING TIME

Time On	Time Off	Requested By	System Used For
NIL			

O/T Requested By | Total System - Hours Operation For Client

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks: ALL TIMES IN LOCAL TIME

0001 M/V HALCYON IN PORT AWAITING WEATHER IMPROVEMENT TO GO OUT AND RETRIVIE EGG CURRENT METERS - ONI PERSONELL IN "HENTYS" MOTEL PORTLAND

0800 - 1800: ROUTINE MAINTAINANCE OF EQUIPMENT EGG AND INTEROCEAN DEMOBILIZING BOAT

1800: STANDING BY AT "HENTYS" MOTEL PORTLAND - AWAITING BETTER WEATHER

2400: STANDING BY AS BEFORE

Mobile Operator(s): MIKE BERGSTROM

Project Supervisor: D RUSSEL

SEE INSTRUCTIONS ON REVERSE

OFFSHORE NAVIGATION INC.

MINIRANGER ~~MAXIRAN~~ DAILY OPERATIONS LOG

000187

Project Number P-1357 Date 24 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7541.9 Khz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 Mhz	HTM-04/003	HMM-10/002	—	HRM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	Control Box	Amplifier	Code	Ant. Type(s)
NONE UTILIZED							

OPERATING TIME

Time On	Time Off	Requested By	System Used For
NIL			

O/T Requested By | Total System - Hours Operation For Client

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)

0001: M/V HALCYON IN PORT AWAITING WEATHER IMPROVEMENT TO GO OUT AND RETRIVE EGG CURRENT METERS - ONI PERSONELL IN "HENTYS" MOTEL PORTLAND

0800-1800 ROUTINE MAINTAINANCE OF EQUIPMENT EGG AND INTEROCEAN DEMOBILIZING

1800: STANDING BY AT HENTYS MOTEL - PORTLAND AWAITING BETTER WEATHER

2400: STANDING BY AS BEFORE

Mobile Operator(s) MIKE BERGSTROM

Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

OFFSHORE NAVIGATION INC.

MINIRANGER II ~~MAXIRAN~~ DAILY OPERATIONS LOG

000188

Project Number P-1357 Date 25 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.9 KHz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 MHZ	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	~~Control Box~~	Amplifier	Code	Ant. Type(s)
7021 OFFS.	RUSSEL/WELLS	9420	HTL-04	# 005	—	4	HORN
C. BANKS	-"-	-"-	HTL-04	# 007	—	3	HORN
M. ELEPHANT	-"-	-"-	HTL-05	# 002	—	2	HQL-9

OPERATING TIME

Time On	Time Off	Requested By	System Used For
1530	2400	D. POWELL	CURRENT METER RETRIVAL
		CLIENT REP.	

O/T Requested By | Total System - Hours Operation For Client | 8 Hrs 30 M.a

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME (VIC.)

0001: M/V HALCYON AT DOCK IN PORTLAND STANDING BY FOR WEATHER IMPROVEMENT TO GO OUT AND RETRIVE EGG CURRENT METERS #1, #2 AND #3 - OUT PERSONELL STAYS AT "HENTYS" MOTEL PORTLAND

1110: SAILED PORTLAND UNDERWAY CURRENT METER #3

1530: MINIRANGER ON RECEIVING 7021 (33KM) C. BANKS (63 KM)

1700: ARRIVED LOCATION CM #3 - NO SURFACE BUOYS BUT INDICATION ON ECHOSOUNDER TRYING GRAPNEL - CIRCLING AROUND.

1750: FOUND CUT BUOY LINE ON LOCATION SECURED ONBOARD

1840: CM #3 ONBOARD UNDERWAY TO CURRENT METER #2

2200: ON LOCATION CM #2 BUOY SIGHTED WEATHER NOW ROUGH

2245: BUOY/ANCHORWIRE PARTED ON ATTEMPT TO LIFT METER ONBOART - ABANDON THIS BUOY AND HEADING FOR CM #1 (ONE SURFACE BUOY STILL ATTACHED TO #2 CM)

2400: WEATHER NOW VERY ROUGH - TURNING AROUND AND HEADING FOR PORTLAND - MINIRANGER OFF.

Mobile Operator(s) MIKE BERGSTROM

Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

000189

OFFSHORE NAVIGATION INC.

MINIRANGER III ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number P-1357 Date 26 JUNE 1981 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.9 KHz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 Mhz	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	Control Box	Amplifier	Code	Ant. Type(s)
NONE UTILIZED							
(BEING DISMANTLED)							

OPERATING TIME

Time On	Time Off	Requested By	System Used For
NIL			

O/T Requested By | Total System - Hours Operation For Client: NIL

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME

0001: HEADING FOR FORTLAND DUE TO VERY ROUGH SEAS AND STRONG WIND

1100: ALONGSIDE TRAWLER WAREH - PORTLAND

1400: D.RUSSEL/G.WELLS ARRIVES PORTLAND WITH BASE STATIONS UNLOADED AND STORED IN WAREHOUSE AT DOCK

1800: ONI PERSONELL CHECKING IN AT "HENTYS" MOTEL PORTLAND STANDING BY FOR WEATHER IMPROVEMENT TO GO OUT AND RETRIVE EGG CURRENT METERS #1 AND #2

2400: STANDING BY AS BEFORE

Mobile Operator(s) MIKE BERGSTROM

Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

000190

OFFSHORE NAVIGATION INC.

MINIRANGER ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number P-1357 Date 27 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.9

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 MHz	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	Control Box	Amplifier	Code	Ant. Type(s)
NONE UTILIZED							

OPERATING TIME

Time On	Time Off	Requested By	System Used For
NIL			

O/T Requested By | Total System - Hours Operation For Client

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME

0001: M/V HALCYON IN PORTLAND DOCK - STANDING BY AWAITING BETTER WEATHER TO GO OUT AND RETRIVE EGG CURRENT METERS #1 AND #2 - ONI PERSONELL STAYS AT "HEWTYS" MOTEL

0800 - 1800 PACKING EQUIPMENT AND DISMOUNT OMNI ANTENNA AND TOWER ON THE "HALCYON" ROTATING ANTENNA W. TOWER PLUS REST OF MINIRANGER TT REMAIN ONBORD FOR RETRIVING EGG CURRENT METERS NOS. 1 AND 2.

1800: IN MOTEL "HEWTYS" STANDING BY

2400: STANDING BY AS BEFORE

Mobile Operator(s) MIKE BERGSTROM

Project Supervisor D. RUSSEL

000191

OFFSHORE NAVIGATION INC.

MINIRANGER ~~MAXIRAN~~ DAILY OPERATIONS LOG

Project Number: D-1357 Date: 28 JUNE 81 Vessel: HALCYON Client Party Number: N/A

Geophysical Company: EGG/INTEROCEAN Oil Company: ULTRAMAR Radio Frequency: 7841.9 Khz

Country: AUSTRALIA Area/Prospect: SOUTH Stepback: SEE DRAWING Shot Point Interval: 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 Mhz	HTM-04/003	HMM-10/002	—	HQM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	Control Box	Amplifier	Code	Ant. Type(s)
NONE UTILIZED							

OPERATING TIME

Time On	Time Off	Requested By	System Used For
NIL			

O/T Requested By: | Total System - Hours Operation For Client:

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks: ALL TIMES IN LOCAL TIME

0001: M/V HALCYON IN PORTLAND DOCK - STANDING BY AWAITING BETTER WEATHER TO GO OUT AND RETRIVE EGG CURRENT METERS #1 AND #2 ONI PERSONELL STAYS AT "HENTYS" MOTEL IN PORTLAND - DOING PAPER WORKS

2400 - AS BEFORE

Mobile Operator(s): MIKE BERGSTROM

Project Supervisor: D. RUSSELL

SEE INSTRUCTIONS ON REVERSE

OFFSHORE NAVIGATION INC.

MINIRANGER ~~MAXIRAN~~ DAILY OPERATIONS LOG

000192

Project Number P-1357 Date 29 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.9 Khz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 Mhz	HTM-04/0003	HMM-10/0002	—	HQM-10/0005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	Control Box	Amplifier	Code	Ant. Type(s)
NONE UTILIZED							

OPERATING TIME

Time On	Time Off	Requested By	System Used For
NIL			

O/T Requested By | Total System - Hours Operation For Client

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME

0001: M/V HALCYON IN PORTLAND DOCK STANDING BY AWAITING BETTER WEATHER TO GO OUT AND RETRIVE EGG CURRENT METERS #1 AND #2 ONI PERSONELL STAYS AT "HENTYS" MOTEL - PORTLAND - DOING PAPER WORKS.

2400: AS ABOVE

Mobile Operator(s) MIKE BERGSTROM

Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

OFFSHORE NAVIGATION INC.

MINIRANGER OF ~~MAXIRAN~~ DAILY OPERATIONS LOG

000195

Project Number P-1357 Date 30 JUNE 81 Vessel HALCYON Client Party Number N/A

Geophysical Company EGG/INTEROCEAN Oil Company ULTRAMAR Radio Frequency 7841.9 KHz

Country AUSTRALIA Area/Prospect SOUTH Stepback SEE DRAWING Shot Point Interval 50 M

Mobile Station	FREQUENCY	INTERROGATOR	MONITOR	AMPLIFIER	ANTENNA SYSTEM
	9330 MHz	HTM-04/003	HMM-10/002	—	HRM-10/005

BASE STATIONS

Station Name/No.	Operator	Frequency	Beacon	Control Box	Amplifier	Code	Ant. Type(s)
NONE UTILIZED							

OPERATING TIME

Time On	Time Off	Requested By	System Used For
NIL			

O/T Requested By | Total System - Hours Operation For Client

LOST TIME

From	To	Hours Lost	Reason(s)
NIL			

Brief Operations Log & Remarks ALL TIMES IN LOCAL TIME

0001: M/V HALCYON IN PORTLAND DOCK STANDING BY AWAITING BETTER WEATHER TO GO OUT AND RE-TRIVE EGG CURRENT METERS #1 AND #2

ONI PERSONELL STAYS AT "HENTYS" MOTEL - PORTLAND - DOING PAPER WORKS.

2400: STANDING BY AS ABOVE

Mobile Operator(s) MIKE BERGSTROM

Project Supervisor D. RUSSEL

SEE INSTRUCTIONS ON REVERSE

OBSERVERS LOGS.

000194

Date: 26-5-81 Client: Ultramar Area: Australia / EPP 18

Page: 1 Job: Operators: CB PH KC PFA

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Power (Joules)	Scale Lines	Boomer / Sparker: Print Sweep	Boomer / Sparker: Filters LC	Boomer / Sparker: Filters HC	Gain	Separation	Stepback: H'Phone	Stepback: Transducer	SSS: Cable Length	SSS: Scale	Navigation System: Base Station	Navigation System: Transponder	Remarks
17-59	481-1	001	15KT	100ms	1 Sec	40	200	TVG		100'		700'	200 MIN			SOL
																SP020 Passed
																35-200 Hz at SP036
																SP160 Passed
19-15		210														Line Aborted. Generator + ss fish on bottom!

000195

e: 31-5-81 Client: Ultramar Area: Australia EPP/18

e: 2 Job: 600-009 Operators: LE PH PFB KC

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Boomer / Sparker: Power (Joules)	Boomer / Sparker: Scale Lines	Boomer / Sparker: Print Sweep	Boomer / Sparker: Filters LC	Boomer / Sparker: Filters HC	Gain	Separation	Stepback: H'Phone	Stepback: Transducer	SSS: Cable Length	SSS: Scale	Navigation System: Base Station	Navigation System: Transponder	Remarks
020	22X	1003	15KJ	100ms	1sec	40	200	Lin	40'	100'		1000	250m			SOL 22X Extra data before Line 22
												Varied 100-1000'				
120	22	201	15KJ	100ms	1sec	40	200	Lin	40'	100'			250m			SOL 22
																SP 440-450 Circuit breaker trans. Modata
2600																SP 860 Back in line Navigation problems
1800	22	830														Re start at SP 830
2808	22	850														Line aborted - Snuffer problem

000196

Date: 3-6-81 Client: Ultramar Area: Australia EPP/13

Page: 3 Job: 600-009 Operators: LC PH KC PFB

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Power (Joules)	Scale Lines	Boomer / Sparker: Print Sweep	Boomer / Sparker: Filters LC	Boomer / Sparker: Filters HC	Gain	Separation	Stepback: H'Phone	Stepback: Transducer	SSS: Cable Length	SSS: Scale	Navigation System: Base Station	Navigation System: Transponder	Remarks
																Ro. start on Line 20
09-55	20	270 A	15KJ	.100ms	1 sec	2.0	200	Lin	20'	100'	—					Back off line - Sniffer problem
11-20	"	540														

000197

Date: 3-6-81 Client: Ultramar Area: Australia EPP/15

Page: 4 Job: 500-370 Operators: LB PH KC PFB

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Boomer / Sparker: Power (Joules)	Boomer / Sparker: Scale Lines	Boomer / Sparker: Print Sweep	Boomer / Sparker: Filters LC	Boomer / Sparker: Filters HC	Boomer / Sparker: Gain	Boomer / Sparker: Separation	Stepback: H'Phone	Stepback: Transducer	SSS: Cable Length	SSS: Scale	Navigation System: Base Station	Navigation System: Transponder	Remarks
21-25	22	820A	15KJ	100m	1sec	20	200	Lin	40ft	100ft	/	-				Restart on line 22
29-55	22	920	"	"	"	"	"	"	"	"						EOL
2254	3	50	15KJ	100m	1sec	20	200	Lin	40ft	100ft	/	-				SOL 3
0100	3	450	"	"	"	"	"	"	"	"						Line 3 about - navigation fix
4-6-81 0511	3	440	"	"	"	"	"	"	"	"						Restart on Line 3
0600	3	590														Abort Line 3 - loss of nav
0635	3	580														Restart on Line 3
0831	3	900														EOL #3
0945	5	001	15KJ	100m	1sec	20	200	Lin	40ft	100ft	/					SOL #5
1517	5	1020	"	"	"	"	"	"	"	"						S.P.'s 010-040: Record obliterated by radio transmitter
																EOL
1616	7X	1000	15KJ	100m	1sec	20	200	Lin	40ft	100ft		15'	200 meters		BOL	EPX LINE TRACKING
1874	7X	1140.													EOL	ALONG COASTLINE.
1906	7		15KJ	100m	1sec	20	200	Lin	40ft	100ft		15'			BOL	Missed first S.P. 30
5-6-81 0043	7														EOL	

000198

Date: 5-6-81 Client: Ultramar Area: Australia EP?/18

Page: 5 Job: 600-009 Operators: LE PH KC PFB

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Boomer / Sparker: Power (Joules)	Scale Lines	Print Sweep	Filters LC	Filters HC	Gain	Separation	Stepback: H'Phone	Transducer	SSS: Cable Length	Scale	Navigation System: Base Station	Transponder	Remarks
9-50hrs	9	001	15KJ	100ms	1s	20	200	Linear	40'	100'	/	VAR	200m[illegible]			SOL #9
10-50hrs		200														Line abort - Snifter problem
	"															Restart on Line 9
13-20	9	190A	"	"	"	"	"	"	"	"		✓	✓			S.P. 590-595 [illegible] X
16-25	9	836	"	"	"	"	"	"	"	"				←		BOL #9
																Sparkarray tow deepened to approx 13ft
1726	11	200	"	"	"	"	"	"	"	"		✓	✓			SOL #11
1955	11	620														generator failure.
2009	11	697														EOL #11
												✓	✓			BOL U81-16.
2047	U81-16.	006														SSS only
																EOL.
2115 6/6/81		920														

000199

Date: 6/6/81 Client: ULTRAMAR. Area: EPP-18 SOUTH AUSTRALIA.

Page: SIX Job: 600-009 Operators: L.E. PH PB KC.

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Boomer / Sparker: Power (Joules)	Boomer / Sparker: Scale Lines	Boomer / Sparker: Print Sweep	Boomer / Sparker: Filters LC	Boomer / Sparker: Filters HC	Gain	Separation	Stepback: H'Phone	Stepback: Transducer	SSS: Cable Length	SSS: Scale	Navigation System: Base Station	Navigation System: Transponder	Remarks
												VAR	200 METRES	MRS-III		CABLE LENGTH VARIED DURING LINES AND IS MARKED ON SONOGRAPH ACCORDINGLY.
0415	V81-02	001	—	—	—	—	—	—	—	—	—					BOL
0726	—	541														EOL
0826	V81-04	001	—	—	—	—	—	—	—	—	—	✓	✓	—		BOL
1109	—	550														EOL
1159	V81-06	001	—	—	—	—	—	—	—	—	—	✓	✓	—		BOL
1403	—	400														EOL LINE ABORTED SNIFFER PRO
1440	V81-06	390	—	—	—	—	—	—	—	—	—	✓	✓	—		EOL RE-START.
1632	—	720														EOL 650 – 720 MISSED DEEP WATER / CABLE
1719	V81-08.	001	—	—	—	—	—	—	—	—	—	✓	✓	—		BOL
2101	—	741														EOL.
2143.	V81-10	001	—	—	—	—	—	—	—	—	—	✓	✓	—		BOL
2205	—	810														EOL
7/6/81																

Date: 7-6-81 Client: [illegible] Area: EPP 18 South Australia **EG&G** INTERNATIONAL INC.

Page: 7 Job: 600 ~ 009 Operators: [illegible] PH KC RRB

Time	Line	Fix No.	Boomer / Sparker: Power (Joules)	Scale Lines	Print Sweep	Filters LC	Filters HC	Gain	Separation	Stepback: H'Phone	Trans-ducer	SSS: Cable Length	Scale	Navigation System: Base Station	Tran-sponder	Remarks
												905	200			[illegible] SOL#12
0612	U81-12	001	—	—	—	—	—	—	—	—						line abort – navigation prob
0845	–	460														
																ROL#12 at S.P. 401A
0910	U81-12	410A														EOL#12
1137	U81-12	917														
												1	2			SOL#14
1226	U81-14	006														EOL#14
1718	– " –	960	Stopped at SP930 out of range at 1714													
												2	"			BOL 11
1810	U81-18	001														LCL
2251	–	910														
																120 FSP 880 [illegible]
2342	U81-20	880														EOL [illegible] to C/P
2230	–	340	8/6/81													RUNNING BOOTH PREV. 20 [illegible]

Date: 8 6 81 Client: ULTRAMAR Area: SOUTH AUSTRALIA EPP 18

Page: 8 Job: 600 - 009 Operators: LE PH PR KC

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Boomer / Sparker: Power (Joules)	Boomer / Sparker: Scale Lines	Boomer / Sparker: Print Sweep	Boomer / Sparker: Filters LC	Boomer / Sparker: Filters HC	Gain	Separation	Stepback: H'Phone	Stepback: Transducer	SSS: Cable Length	SSS: Scale	Navigation System: Base Station	Navigation System: Transponder	Remarks
																CABLE LENGTH VARIED DURING LINES AND IS MARKED ON RECORD
0328	V81-74	003	—	—	—	—	—	—	—	—	—	VAR	208 MRS	MRS -	ITT	80 L
0342	—	075														50L
0434	V81-73	001	—	—	—	—	—	—	—	—	—	✓	✓			80L
0519	—	075														EOL
1025	V81-24	070	—	—	—	—	—	—	—	—	—	✓	✓			130L
1035	—	080														LINE ABORTED - DRIFTED OFFLINE
1100	V81-24	060	—	—	—	—	—	—	—		—	✓	✓			150 C
1155	—	240														LINE ABORTED NAV
1235	V81-24	190A	—	—	—	—	—		—	—	—	✓	✓			R L
1332	—	410														LINE ABORTED DUE TO [illegible] SEA WATER

000202

Date: 12-6-81 Client: Ultramar Area: S. Australia EPP 18

Page: 9 Job: 600-009 Operators: LB PH KC PPB

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Boomer / Sparker: Power (Joules)	Boomer / Sparker: Scale Lines	Boomer / Sparker: Print Sweep	Boomer / Sparker: Filters LC	Boomer / Sparker: Filters HC	Gain	Separation	Stepback: H'Phone	Stepback: Transducer	SSS: Cable Length	SSS: Scale	Navigation System: Base Station	Navigation System: Transponder	Remarks
11-16	50	SP 070	15KJ	160ms	1s	30	200	Lin	50'	100'		VAR.	200 meters	MRS-III		BOL shot 070 due to generator problems
		SP. 150				25	200									filters to 25-200 Hz
																EOL
1400	50	SP 600														
																BOL mixed FSP 006 started from 010
1411	50X	006	"	"	"	"	"	"	"	"		"	"		—	
																EOL
1515	50X	070													—	
			"	"	"	"	"	"	"	"		"	"		—	BOL mixed SP 070 to 27 due to power supply problems
1821	481-13	100	"	"	"	"	"	"	"	"		"	"		—	
																EOL
2210	481-13	710	13KJ	"	"	"	"	"	"	"					—	
																SOL

Date: 13/6/81 Client: Ultramar Area: EPP 18 South Dunt.

Page: 10 Job: 600-009 Operators: LE PH KL PRB

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Power (Joules)	Scale Lines	Beamer / Sparker Print Sweep	Filters LC	Filters HC	Gain	Separation	Stepback H'Phone	Stepback Transducer	SSS Cable Length	SSS Scale	Navigation System Base Station	Navigation System Transponder	Remarks
0148	24	1	15KJ	100msec	1	30	200		50'	100'		Var	200m	MRS	III	Varied SSS cable length on all lines.
0400		330	Line aborted - sniffer problems.													
0641	28	1	13KJ	"	"	"	"	"	"	"			"	"	"	BSL
0915	28	370	13KJ													Line abort - sniffer trouble
10-30	28	300A	13KJ										"	"		Restart on line 28
		480	9KJ													Changing to 9KJ at 2s
1357	28	910														EOL
1439	30	020	11KJ	100ms	1	25	200		40'	100'	50'	VAR	200m	"	"	BOL
1841	30	832														EOL
21-59	17	001	11KJ	100m	1	20	200	Linear	40'	100'	50'	Var	200m	"	"	SOL

Date: 14-6-81 Client: Ultramar Area: S Australia EPP/18

Page: 11 Job: 600-009 Operators: CE PH KC PFB

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Boomer / Sparker: Power (Joules)	Boomer / Sparker: Scale Lines	Boomer / Sparker: Print Sweep	Boomer / Sparker: Filters LC	Boomer / Sparker: Filters HC	Gain	Separation	Stepback: H'Phone	Stepback: Transducer	SSS: Cable Length	SSS: Scale	Navigation System: Base Station	Navigation System: Transponder	Remarks
	17		11KJ	100ms	1s	20	200	Linear	40'	100'	50'	Var	200m	Odovola	TRSTC	
0150	17	760														Line aborted ship problem
0302	52	240	"	"	"	"	"	"	"	"	"	"	"	"	"	BOL
0416	52	450														EOL
0456	17A	001	"	"	"	"	"	"	"	"	"	"	"	"	"	BOL CROSS LINE
0530	"	091														EOL
0602	17B	080	"	"	"	"	"	"	"	"	"	"	"	"	"	BOL CROSS LINE
0636	"	001														EOL
			"													
0730	17	700A	"	"	"	"	"	"	"	"	"	"	"	"	"	Restart line
09-01	17	998														EOL
10-37	60	001	11KJ	"	"	"	"	"	"	"	"	"	"	"	"	SOL #60
10-55	"	060														Line abort - navigation problems
11-30	60 A	001	11KJ	"	"	"	"	"	"	"	"	"	"	"	"	EOL #60
2-05	60	500	"													BOL #60

ate: 14th JUNE 1981 Client: Ultramar Area: AUSTRALIA EPP/18

age: 12 Job: 600-009 Operators:

EG&G INTERNATIONAL INC.

			Boomer / Sparker							Stepback		SSS		Navigation System		
Time	Line	Fix No.	Power (Joules)	Scale Lines	Print Sweep	Filters LC	Filters HC	Gain	Separation	H'Phone	Transducer	Cable Length	Scale	Base Station	Transponder	Remarks
1512	58	060	1K	100ms	First	20	200	Linear	40	100'	50'	Var	200 m	Motorola	MiniRanger	BOL
1925		807														EOL
			"	"	"	"	"	"	"	"	"	"	"	"	"	BOL

000206

ate: 15-6-81 Client: Ultramar Area: Australia ZPP/18

age: 13 Job: 600-009 Operators: LD PA KC RPB

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Boomer / Sparker							Stepback		SSS		Navigation System		Remarks
			Power (Joules)	Scale Lines	Print Sweep	Filters LC	Filters HC	Gain	Separation	H'Phone	Transducer	Cable Length	Scale	Base Station	Transponder	
7-20	U81-56	001	1KJ	100m	1s	20	200	Linear	40'	100'	50'	Var	200m	MRS	TP	SOL #56
7-53	U81-56	100														Line abort - sniffer problems
8-35	U81-56	90A	"	"	"	"	"	"	"	"	"	"	"	"	"	Restart on Line 55
1-51	U81-56	740	"	"	"	"	"	"	"	"	"	"	"	"	"	EOL #56
23 16	U81-15	001	"	"	"	"	"	"	"	"	"	"	"	"	"	BOL
0544	U81-15	1295														EOL

Date: 16-6-81 Client: Ultramar Area: S Australia EPP/15 -000207

Page: 14 Job: 600-009 Operators: LB PH KC PRB

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Power (Joules)	Scale Lines	Print Sweep	Boomer / Sparker Filters LC	Filters HC	Gain	Separation	Stepback H'Phone	Stepback Transducer	SSS Cable Length	SSS Scale	Navigation System Base Station	Navigation System Transponder	Remarks
06-33	U81-26	050	1KJ	100ms	1s	20	200	Lower	40'	100'	50	V4	200	NRS	[illegible]	
06-45	"	080														SOL at SP 050
																Generator fail at SOL. 1st [illegible]
07-25	"	212														SP's 130-205 [illegible]
07-41	U81-26	260														Generator fail
08 12	Wellhead Xing W1															BOL. No data SP's 212-26
		001	"	"	"	"	"	"	"	"	"					
08 41	"	090	"									"	"			SOL Wellhead [illegible] Heading 030
																EOL (Wellhead [illegible])
1000	U81-26	250	"	"	"	"	"	"	"	"	"	"	"	"		Restart on Line 26 1st S.P. 250
		350														
1330	"	960														Image problem [illegible] 375 Data lost } 375 385 Stylus change }
																EOL
1552	U81-24	050	"	"												
1726	"	370			"	"	"	"	"	"	"	"	"	"	"	BOL
																EOL [illegible] to be [illegible]
1812	7B	001	"	"	"	"	"	"	"							
1841	7B	085								"	"	"	"	"	"	BOL
																EOL

ate: 16-6-81 Client: Ultramar Area: SAUSSIE EPP/18 **EG&G** INTERNATIONAL INC.,

age: 15 Job: 600-009 Operators:

					Boomer / Sparker					Stepback		SSS		Navigation System		
Time	Line	Fix No.	Power (Joules)	Scale Lines	Print Sweep	Filters LC	Filters HC	Gain	Separation	H'Phone	Transducer	Cable Length	Scale	Base Station	Transponder	Remarks
1912	7A	001	11K	100ms	1s	20	200	Linear	40	100	50	var	200m	MRS	III	BOL
1935		075														EOL
2014	24	360A	"	"	"	"	"	"	"	"	"	"	"	"	"	Restart of line.
2251	24	880														EOL
											"	"	"	"	"	BOL

000209

Date: 17-6-81 Client: Ultramar Area: SAUSSIE

Page: 16 Job: 600-009 Operators:

EG&G INTERNATIONAL INC.,

Time	Line	Fix No.	Power (Joules)	Scale Lines	Boomer / Sparker Print Sweep	Filters LC	Filters HC	Gain	Separation	Stepback H'Phone	Stepback Transducer	SSS Cable Length	SSS Scale	Navigation System Base Station	Navigation System Transponder	Remarks
			11K	100ms	1sec	20	200	Linear	40'	100'	50'	Var.	200m	MRS	3	SOL #32
01-07hr	U81-32	001														BOL #32
05-15	"	690														
			"	"	"	"	"	"	"	"	"	"	"	"	"	SOL #11 (counting down)
06-20	U81-11	210A														BOL #11
07-00	"	080														
			"	"	"	"	"	"	"	"	"	"	"	"	"	SOL #4
07-50	U81-34	020														aborted to avoid ship
0903		330														Restart line
1001	-"-	340A														EOL
1106	-"-	580														
			"	"	"	"	"	"	"	"	"	—	—	"	"	EOL
1140	U81-36	060														EOL
1448	-"-	632														
			"	"	"	"	"	"	"	"	"	—	—	"	"	SOL #52
21-19	U81-52	070														Line abort - ship problem
	"	360														

Date: 19 6-81 Client: Ultramar Area: S. Australia EPP/18

Page: 17 Job: 600-009 Operators:

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Power (Joules)	Scale Lines	Boomer / Sparker: Print Sweep	Filters: LC	Filters: HC	Gain	Separation	Stepback: H'Phone	Stepback: Transducer	SSS: Cable Length	SSS: Scale	Navigation System: Base Station	Navigation System: Transponder	Remarks
0045	U81-19	SP001	1KJ	100ms	1s	20	200	Linear	40'	100'	50'	Var	200m	NRS3		SOL #19
0118	"	SP070														Line abort - navigation
0216	"	SP001														Line restart
0311	"	SP 120	"	"	"	"	"	"	"	"	"	"	"	"	"	Line abort - navigation
0625	U81-48	SP 001	"	"	"	"	"	"	"	"	"	"	"	"	"	SOL #48
0930		570														EOL
1002	U81-40	080														SOL
1305		570														EOL
1349	U81-38	001	"	"	"	"	"	"	"	"	"					SOL #38
1435	"	135														Line abort - navigation problem
1745	"	123A	"	"	"	"	"	"	"	"	"	"	"	"	"	SOL #38
2020	"	590	"	"	"	"	"	"	"	"	"	"	"	"	"	EOL #38
2326	U81-13A	001														

Date: 20-6-81 Client: Ultramar Area: S Australia EPP/18

Page: 18 Job: 600-607. Operators:

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Boomer / Sparker: Power (Joules)	Boomer / Sparker: Scale Lines	Boomer / Sparker: Print Sweep	Boomer / Sparker: Filters LC	Boomer / Sparker: Filters HC	Gain	Separation	Stepback: H'Phone	Stepback: Transducer	SSS: Cable Length	SSS: Scale	Navigation System: Base Station	Navigation System: Transponder	Remarks
			11KJ	10mlsec	1	20Hz	200Hz		40'	100'	50'	Var.	Zoom	MRS	TTL	
0057	13A	308														EOL Line started 19/6 FSP 001.
0132	44	020														SOL
0413	44	598														EOL
0500	46	001	"	"	"	"	"		"	"	"					SOL #s 44,
0829	46	593	"	"	"	"	"		"	"	"					EOL #s 46
0905	48	030	"	"	"	"	"		"	"	"					SOL #s 48
1034	"	382														Gun water failure
1055	"	450														Starter running / no 450 lost
1120	"	550	"	"	"	"	"		"	"	"					EOL #s 48
1209	52	001														SOL
1542		590														EOL
1618	54	100														SOL
1920		730														EOL

Date: 20-6-81 21-6-81 Client: Ultramar Area: S Australia [illegible]

Page: 18 Job: 600-009. Operators:

000212

EG&G INTERNATIONAL INC.

Time	Line	Fix No.	Power (Joules)	Scale Lines	Boomer / Sparker Print Sweep	Filters LC	Filters HC	Gain	Sepa-ration	Stepback H'Phone	Stepback Trans-ducer	SSS Cable Length	SSS Scale	Navigation System Base Station	Navigation System Tran-sponder	Remarks
2017	U81-21	001	11KJ	100ms	1	70Hz	2000Hz	Linear	40'	100'	50'	Var	200m	MRC	III	
2149	"	244	"	"	"	"	"	"								SOL #21
																EOL # 21
0045	U81-19	001	"	"	"	"	"	"	"	"	"	"				
0422	"	679	"		"	"	"	"	"	"	"	"	"			SOL # 19
																EOL # 19
0538	U81-17A	950	"													
1200		001														SOL # 17A
																EOL

213

SUMMARY OF SPARKER LINES

LINE NO.	
01	Moderate sea. Loss of generator power at SP 180. No further data. 15KJ.
02	No data - failed deck generator. Other systems continued.
03	Moderate sea. Data good. 15 KJ.
04	No data - failed deck generator. Other systems continued.
05	Moderate sea. Data good. 15KJ.
06	No data - failed deck generator. Other systems continued.
07	Moderate sea. Data good. 15KJ.
07X	Moderate sea. Data good. 15KJ.
08	No data - failed deck generator. Other systems continued.
09	10' swell - poor conditions. 15KJ.
10	No data - failed deck generator. Other systems continued.
11	10' swell - poor conditions. SOL at SP 080. Generator failed at SP 620. No data from SP 620 to EOL, at SP 697. 15KJ. (2 plans)
12	No data - failed deck generator. Other systems continued.
13	10' swell, rough sea - poor conditions. SOL at SP 100.Sparker down until SP 220 with failed power supply. 11KJ power.
13A	Moderate sea, long period 10' swell. Data reasonable.
14	No data - failed deck generator. Other systems continued.
15	Moderate sea, long period 10' swell. Data reasonable. 11KJ.
16	No data - failed deck generator. Other systems continued.
17	Rough sea, affecting data quality. 'Sniffer' anomoly around SP 600. 11KJ. (3 plans)
17A	Rough sea, 10' swell, reducing data quality. 40 knot wind towards end of line! SP's 170-200 no data due to changing hydrophone battery. 11KJ.
X17A	Rough sea. 11KJ.
X17B	Rough sea. 11KJ.
18	No data - failed deck generator. Other systems continued.
19	Rough sea, 8' swell, reducing data quality. 11 KJ. (2 plans)
20	Rough sea. Unable to 'fire-up'due to seaspray on deck until line re-start (SP270).
21	Moderate sea, data reasonable. 11KJ.
22	Rough sea, 10' swell. SP's 440-480 no data, power supplies tripped out. (2 plans)
24	Rough sea, very poor conditions. Trying 13KJ at 4 s firing. (3 plans)
26	Moderate sea, 8' long period swell. Data reasonable. 11KJ. (2 plans)
28	Rough sea, very poor conditions. 13 KJ at 4s initially. 9KJ at 2s trial at SP 480.
30	Rough sea. 11KJ.
32	Moderate to rough sea, 6'swell. Data reasonable. 11KJ.

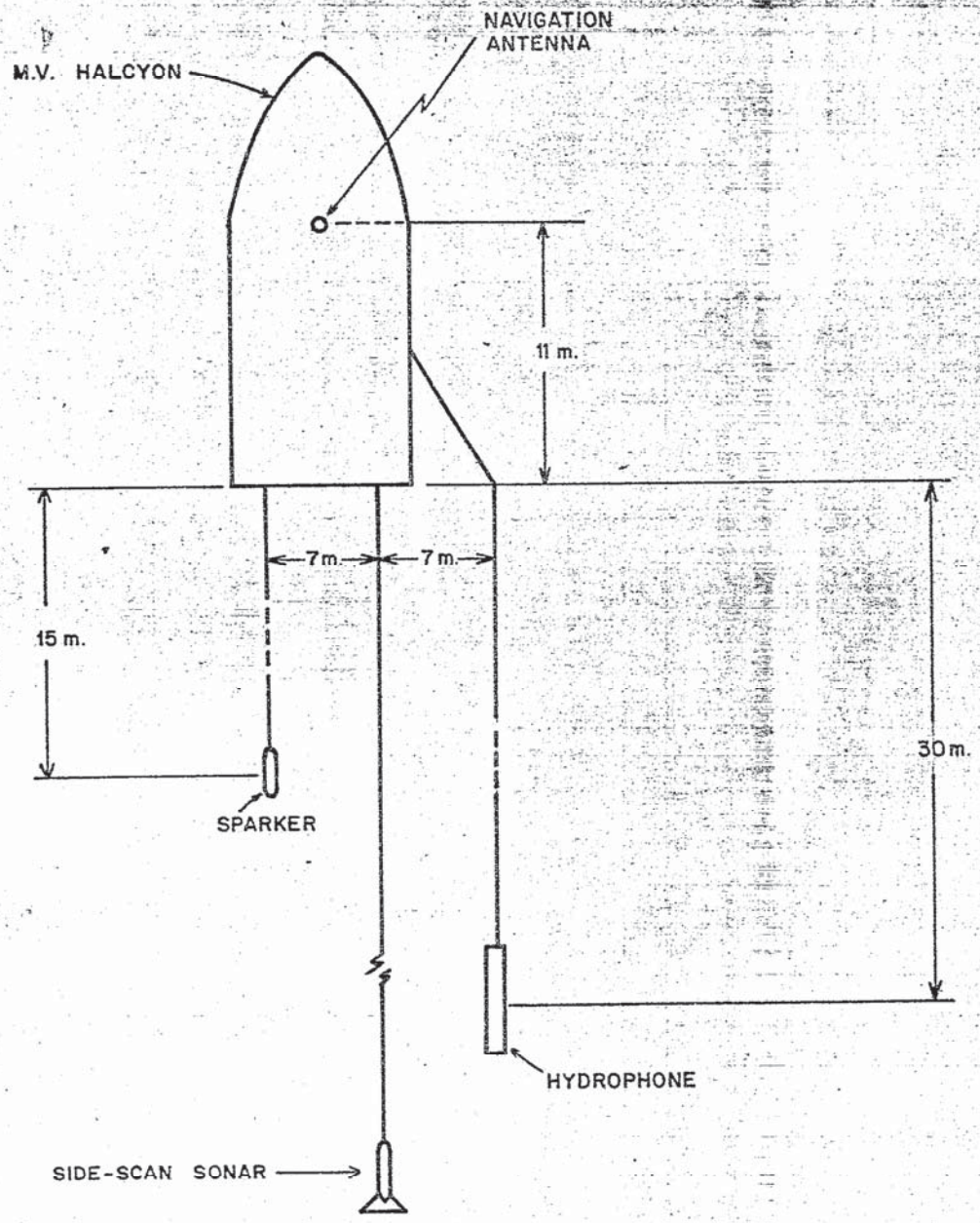
APPENDIX 1 - SUMMARY OF SPARKER LINES - CONT ...

LINE NO.	
34	Moderate to rough sea, 6' swell. Data reasonable. 11KJ.
36	Moderate to rough sea, 6' swell. Data reasonable. 11KJ.
38	Moderate sea, long period 10' swell. Data reasonable, but some incoherence. 11KJ.
40	Moderate sea, long period 10' swell. Data reasonable, but some incoherence. 11KJ.
42	Moderate sea, long period 10' swell. Data reasonable, but some incoherence. 11KJ.
44	" " " " " " " " " " " "
46	" " " " " " " " " " " "
48	Moderate sea, long period 10' swell. 11KJ. SP380-450 no data. generator failed.
50	Rough sea, 10' swell. SOL to SP070 no data, generator failed. 11KJ.
50X	Rough sea, 10' swell. 11KJ.
52	Moderate sea, 6' swell. Data reasonable. 11KJ. (3 plans)
54	Moderate sea 6' swell. Data reasonable. 11KJ.
56	Moderate sea, long period 10' swell. Data reasonable. 11KJ.
58	Rough sea. 11KJ.
60	Rough sea. 11KJ.
W1	WELL HEAD CROSSING.

SPARKER EQUIPMENT (15 KILOJOULES)

1 X 9 electrode sparkarray
3 X EGG 232 power supply
3 X 231 Trigger/capacitor bank
6 X 233 capacitor bank
1 X 50' 8 - element XOC 45 hydrophone
1 X EPC 4600 graphic recorder
1 X Kronhite 3700 filter.
1 X TSS 307 TVG amplifier
1 X TSS 30 8 tape replay unit
2 X Nakamichi cassette tape deck (with read after write facility)

000216



TOWING CONFIGURATION OF EG&G SYSTEMS