

**SAGASCO RESOURCES LIMITED**

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**OCEAN EPOCH RIG POSITIONING  
ONTO FLINDERS 1 LOCATION BASS BASIN  
NOVEMBER 1992.**

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**Issue No: 1**  
**Doc No: LTD0128**  
**Date: December 1992**

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## 1.0 INTRODUCTION.

As part of the QC Rig Positioning Agreement between BHP ENGINEERING and SAGASCO RESOURCES, BHP Engineering were required to oversee the work carried out by the survey contractor, RACAL SURVEY (AUSTRALIA), during the moving of the semi-submersible OCEAN EPOCH , from the KING #1 location, to the FLINDERS #1 location, situated in concession area T/25P, in the Bass Strait.

In addition to the above work BHP Engineering are also required to confirm the final position of the rig by an independent navigation system, namely real time differentially corrected GPS satellite observations.

The project covered in this report began on the 1st October 1992, with the deployment of an acoustic array centred on the proposed drilling location, and was completed on the 29th November 1992 when GPS data was recorded in order to confirm the final location of the rig.

The Ragna Viking and Terge Viking were the vessels in attendance for towing and anchor handling duties.

All times mentioned in this report are UTC (Universal Coordinated Time which is Local Time minus 11 hours) unless otherwise stated. The Racal log sheets in Appendix I and the summary of events are referenced to local time.

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**SUMMARY OF RESULTS**

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**2.0 SUMMARY OF RESULTS.**

The coordinates of the Flinders #1 location, as supplied by Sagasco Resources on the 11th November 1992 were;

Latitude ; 40 degrees 22 minutes 51.8 seconds South.  
Longitude ; 145 degrees 40 minutes 18.7 seconds East.  
Eastings ; 387 261.10m  
Northings ; 5 529 085.76m  
Proposed Rig Heading ; 250.0 degrees

Sagasco Resources requested that the final position of the rig as determined by GPS observations be within a circle of radius 30 metres centred on the proposed coordinates.

The rig, Ocean Epoch, was positioned on the above location on the 28th November, 1992, and the coordinates of the drillstem as determined by GPS observations between 1405 & 1606 were;

Latitude ; 40 degrees 22 minutes 51.81 seconds South.  
Longitude ; 145 degrees 40 minutes 18.69 seconds East.  
Eastings ; 387 260.8m  
Northings ; 5 529 085.5m  
Rig Heading ; 249.0 degrees

The above position is a distance of 0.4 metres on a bearing of 225.4 degrees from the proposed location.

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**GEODETIC PARAMETERS**


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**3.0 GEODETIC PARAMETERS**

The parameters listed below were used throughout this project and should be quoted when reference is made to coordinates shown in this report.

Reference Spheriod	; Australian National Spheriod
Semi-Major Axis	; 6,378,160m
Semi-Minor Axis	; 6,356,774.719m
Flattening 1/f	; 1/298.25
Eccentricity <sup>2</sup> (E <sup>2</sup> )	; 0.006694542
Reference Datum	; Australian Geodetic Datum 1984
Projection	; Transverse Mercator
False Eastings	; 500,000m
False Northings	; 10,000,000m
Latitude of Origin	; 0.0 degrees
Longitude of Central Meridian	; 147 degrees East
Scale Factor on C.M.	; 0.999600
Units	; International Metres

The GPS navigation system and the associated satellites work on the WGS 84 Spheriod, whose parameters are shown below, and conversion of coordinates between this spheriod and the spheriod mentioned above is performed using parameters shown at the end of this section.

Reference Spheriod	; World Geodetic Spheriod 1984
Semi-Major Axis	; 6,378,137m
Semi-Minor Axis	; 6,356,752.31m
Flattening 1/f	; 1/298.257223563
Eccentricity <sup>2</sup> (E <sup>2</sup> )	; 0.00669438

In order to convert coordinates from WGS84 to AGD 84 the following block shift values are used;

$$\text{AGD84(latitude)} = \text{WGS84(latitude)} + 5.38 \text{ secs.}$$

$$\text{AGD84(longitude)} = \text{WGS84(longitude)} - 4.91 \text{ secs.}$$

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**ACOUSTIC PARAMETERS**


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**4.0 ACOUSTIC POSITIONING****4.1 ACOUSTIC CALIBRATION.**

Racal Survey deployed four Sonardyne medium frequency acoustic transponders centred on the proposed drilling location on the 1st October 1992.

The proposed drop coordinates of each transponder were computed, so that transponders were kept as clear as possible of anchor chains yet still giving the optimum angle of cut of LOP's at the proposed location.

The transponders were calibrated both relatively and absolutely using the Racal Survey Oasis Software Package and GPS on the 1st October 1992.

The results of the relative calibration were as follows, and are based on transponder 1 assuming the origin of the local grid system;

Transponder	1	2	3	4
Code	201	105	803	906
Eastings	0.00	1066.49	463.79	506.80
Northings	0.00	0.00	691.02	-818.53
Depth	67.40	64.50	62.00	65.80

The absolute coordinates for the transponders as computed by the Oasis Software are as follows;

Transponder	1	2	3	4
Code	201	105	803	906
Eastings	386 814.46	387 817.82	387 016.58	387 568.71
Northings	5 528 923.5	5 529 285.04	5 529 730.87	5 528 325.25
Depth	67.40	64.50	62.00	65.80

## ACOUSTIC PARAMETERS

## 4.2 FINAL ACOUSTIC DRILLSTEM POSITION.

The final position of the rig was taken on the 28th November 1992, after all anchors had been deployed, pre-tensioned, then set to their working tensions and the rig ballasted down to its drilling draught. The final acoustic position was derived from the mean of 20 position fixes taken over 15 minutes.

The coordinates of the acoustic transducer were computed using the following mean raw ranges;

Transponder	Code	Range
1	201	476.08
2	105	591.04
3	803	690.27
4	906	819.49

## Final Transducer Position

Eastings ; 387 261.411m  
Northings ; 5 529 084.891m

Using the offsets shown in Appendix C the position of the drillstem was computed as follows;

Latitude ; 40 degrees 22 minutes 51.768 seconds South.  
Longitude ; 145 degrees 40 minutes 18.746 seconds East.  
Eastings ; 387 262.17m  
Northings ; 5 529 086.77m  
Rig Heading ; 249.0 degrees

The above position is a distance of 1.5 metres on a bearing of 47 degrees from the proposed location.

This position was approved by the Sagasco Resources Company Representative onboard the rig at 1345 hrs on 28th November 1992, and the Sagasco Resources office in Adelaide was advised of the co-ordinates by fax.

## GPS CONFIRMATION POSITION

## 5.0 GPS CONFIRMATION POSITION

The confirmation of the acoustic coordinates was carried out between 1405 hrs and 1606 hrs on the 28th November 1992, using real-time differentially corrected GPS. One GPS receiver set up onboard the rig and the Racal Skyfix system for differential corrections was initialised for the final position in order to reduce errors caused by the atmosphere and by selective availability of the satellites, thus increasing the accuracy of the fix. Selective availability has been installed on satellites within the GPS system so as to de-grade the accuracy of the system available to the user. However by monitoring data at a know point ( Adelaide monitor station ) from identical satellites as those being recorded by the mobile receiver, and simultaneously, the errors caused by selective availability are eliminated.

The following constellations were observed during this period both onboard the rig and by the GPS Skyfix monitor situated at Adelaide;

Satellite Numbers	Time Start	Time End
25,28,21,15,12,11	1405	1406
25,21,15,12,11	1407	1432
28,21,15,12,11	1433	1455
28,25,21,15,11	1456	1502
12,25,21,15,11	1503	1505
21,25,15,14,11	1521	1606

Data was recorded by both GPS receivers, and real time differential corrections passed direct to the rig via the Racal Skyfix communication link. Using the real-time differentially corrected data a mean position of the antenna was computed as;

WGS 84 Spheriod

Latitude ; 40degrees 22 minutes 46.928 seconds South.

Longitude ; 145 degrees 40 minutes 21.878 seconds East.

AGD84 Spheriod. Central Meridian 147 degs East Zone 55.

Latitude ; 40 degrees 22 minutes 52.313 seconds South.

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**GPS CONFIRMATION POSITION**

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Longitude ; 145 degrees 40 minutes 16.969 seconds East.  
Eastings ; 387 220.51m  
Northings ; 5 529 069.34m  
Rig Heading ; 249.0 degrees

Using the offsets as shown in appendix C the coordinates of the drillstem were computed as;

AGD84 Spheriod. Central Meridian 147 deg East. Zone 55

Latitude ; 40 degrees 22 minutes 51.810 seconds South.  
Longitude ; 145 degrees 40 minutes 18.687 seconds East.  
Eastings ; 387 260.80m  
Northings ; 5 529 085.46m  
Rig Heading ; 249.0 degrees

The above position is a distance of 0.4 metres on a bearing of 225.4 degrees from the proposed location.

The above position was approved by the Sagasco Resources Company Representative onboard the rig at 1630 hrs on 28th November 1992, and Sagasco Resources office in Adelaide were advised of the coordinates by fax.

## SUMMARY OF EVENTS

## 6.0 SUMMARY OF EVENTS

24th Nov	1000	B.Edmonds departs Sydney for Devonport
	1425	B.Edmonds, J.Austin & C.Hakkennes depart Devonport for Ocean Epoch at King #1 location
	1520	Equipment mobilization commenced aboard Ocean Epoch
	2359	Equipment set-up complete and tested
25th Nov	0600	Only #8 anchor racked since midnight
	0658	#1 anchor racked
	0718	#8 anchor racked
	0755	Anchor handling halted due to weather Weathered down at King #1 location
26th Nov		Weathered down at King #1 location
27th Nov	1010	Anchor handling re-commenced
	1100	#5 anchor racked
	1235	#7 anchor racked. Terje Viking on tow bridle
	1417	#3 anchor racked
	1630	#2 anchor racked
	1713	#6 anchor recovered by Ocean Epoch Ocean Epoch underway to Flinders #1 location
28th Nov	0300	Rig approx. 5 nm from location
	0500	Rig approx. 1.7 nm from #6 anchor location
	0554	#6 anchor dropped
	0705	#2 anchor on bottom
	0816	#7 anchor on bottom
	0920	#3 anchor on bottom
	1230	#8 anchor on bottom
	1339	#4 anchor on bottom
	1435	#1 anchor on bottom
	1445	#5 anchor on bottom
	1848	Pre-tensioning complete, and ballasting down
	2327	Rig at drilling draft

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**SUMMARY OF EVENTS**

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29th Nov	0001	Sonardyne system set-up complete, and acoustic final fix commenced
	0015	Raw ranges read to notepad, due to Racal software failure
	0030	Ranging complete and acoustic position computed by hand
	0105	DGPS data collection commenced for final fix
	0306	DGPS position computed and approved
	0400	Commenced demobilization of all survey equipment
	1000	Demob complete
	1100	B.Edmonds, J.Austin and C.Hakkennes depart for Devonport
	1355	B.Edmonds departs Devonport for Sydney
	1720	Arrival at Sydney
30th Nov		Completing report and data checks.

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**DISCUSSION**

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**7.0 DISCUSSION**

The rigmove from King #1 to Flinders #1 was achieved with only minor disruptions on the survey side of events.

It is recommended that in future (with the absence of anchor buoys), that the GOLF LASER be used to track the workboats during anchor handling operations. The Ragna Viking reported the drop position of #7 anchor to be 15 degrees off from the required bearing, and on #4 anchor the Ragna Viking was heading out at a bearing of 280 degrees, instead of the 310 degrees required.

If possible, there should be a site survey report available on the rig at all times, for the survey party's use.

The Racal Acoustic logging software version 2.06 was again found to be wanting (only logging two ranges), when called upon to record ranges for the final fix. This was overcome by calculating the final acoustic position by hand.

The Racal survey party, completed the rigmove in an adequate and professional manner

Those survey personnel involved in the rigmove were;

Bill Edmonds	Sagasco Representative (BHPE)
John Austin	Racal Surveyor & Party Chief
Chris Hakkennes	Racal Engineer

**CLIENT:** SAGASCO RESOURCES LIMITED

**TITLE:** FLINDERS #1 RIG POSITIONING

**REPORT NO:** LTD0128

**ISSUE DATE:** 3 December 1992

**PREPARED BY:** W Edmonds Date

W. Edmonds

7/12/92

**APPROVED BY:**

B E Milliken

Date

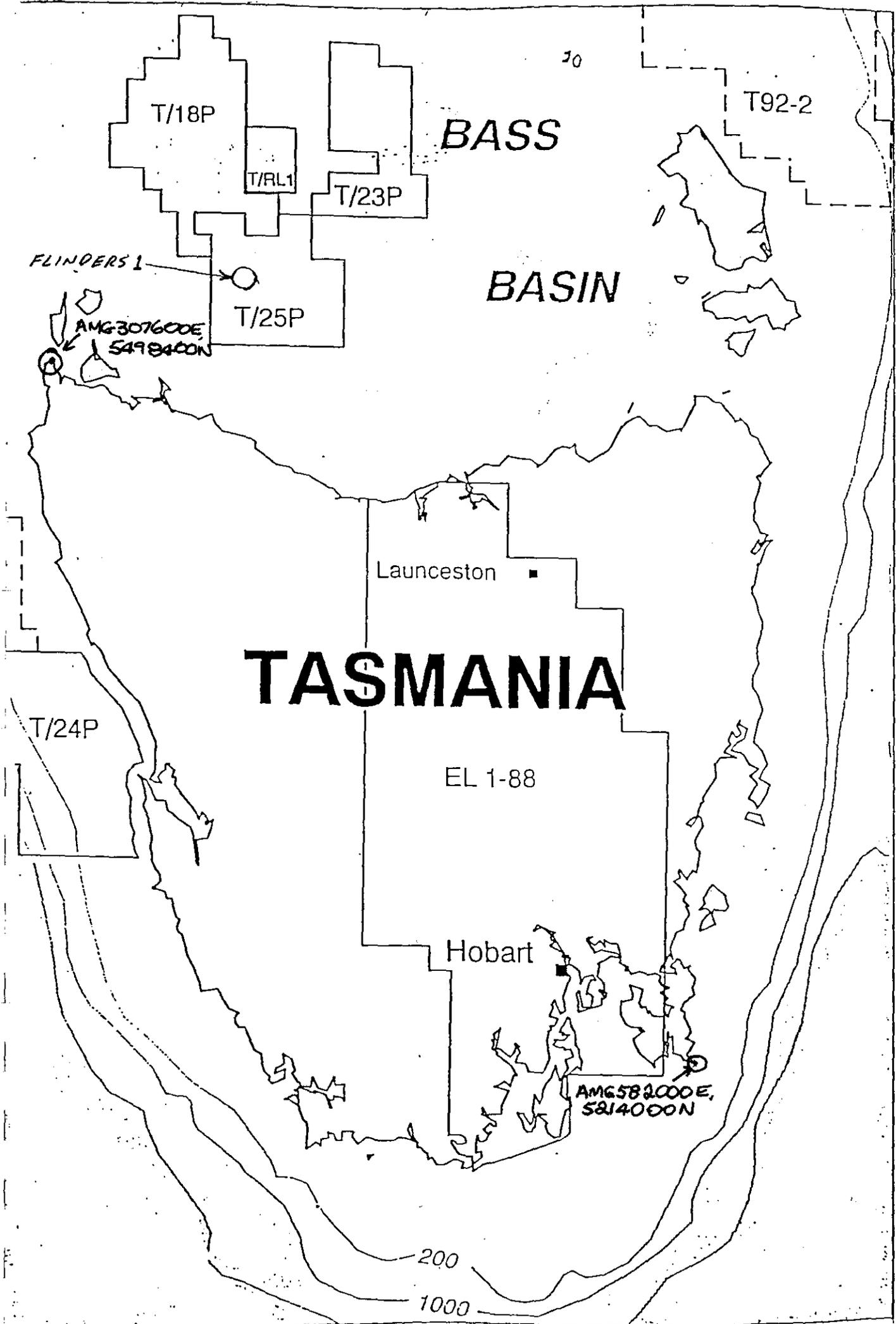
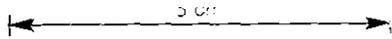
B. E. Milliken

7/12/92

**APPENDIX A**

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**LOCATION MAP**



**APPENDIX B**

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**CORRESPONDENCE SHOWING  
PROPOSED COORDINATES**

PMD9206003-PMD

**1.0 SUMMARY**

- 1.1 Well Name : Flinders 1
- 1.2 Objective of Well : Eastern View Coal Measures
- 1.3 Surface Location : Latitude : 40° 22'51.83"S  
Longitude : 145° 40' 18.70E  
Line : TNK4-79  
Shot Point : 900
- 1.4 Location Tolerance : Within 30m radius of called location.
- 1.5 Permit/Basin : T/25P - Bass
- 1.6 Elevations:  
Rotary Table to M S L : 22.3 m  
Water Depth : 68.5 m (measured)
- 1.7 Rig:  
Name : Ocean Epoch  
Type : Semisubmersible  
Contractor : Diamond M General Co
- 1.8 Proposed TD : 2723 m RT
- 1.9 Rig Days:  
Dry Hole Basis : 31

**APPENDIX 1****Item 1****SERVICES****1.0 Location of Work**

Positioning of the drilling rig "Ocean Epoch" in Permit T18/P, is to be performed at the King #1 location with Australian National Spheroid co-ordinates as follows:

Latitude	39 degrees 35 minutes 24.44 seconds South
Longitude	145 degrees 31 minutes 08.80 seconds East

Australian Geodetic Datum 1984 co-ordinates:

Easting	372,836 m
Northing	5,616,671 m

Zone 55  
Central Meridian 147 degrees East

Positioning of the drilling rig "Ocean Epoch" in permit T/25P is to be performed at the Flinders 1 location within Australian National Spheroid co-ordinates as follows:

Latitude	40 degrees 22 minutes 51.8 seconds South
Longitude	145 degrees 40 minutes 18.7 seconds East

Australian Geodetic Datum 1984 co-ordinates:

Easting	387,261 m
Northing	5,529,085 m

**2.0 Works to be Performed**

Rig Positioning Services are to be performed at the King 1 and Flinders 1 drilling locations as detailed below:

**Phase 1**

- Perform King 1 Final rig positioning utilising Acoustic Net.
- Confirm rig position utilising real time DGPS survey methods.

**Phase 2**

- Perform Flinders 1 Final rig positioning utilising Acoustic Net.
- Confirm Rig Position utilising real time DGPS survey methods.

### 3.3 Seabed Condition and Drilling Hazards

Based on offset well data and interpretation of reprocessed seismic data no shallow gas is likely to be encountered in the 914mm (36") or 445mm (17.5") holes. A site survey completed on 15 June 1992 recorded an essentially flat and smooth seabed devoid of obstructions to anchoring systems and characterised by surficial deposits to 2.6 metres thick comprising predominantly slight to moderately cohesive silty clays.

### 3.4 Formation Integrity Tests

#### 3.4.1 Procedure

On drilling out the 340mm (13<sup>3</sup>/<sub>8</sub>" ) and 244mm (9<sup>5</sup>/<sub>8</sub>" ) casing shoes a Formation Integrity Test (F.I.T) will be performed according to the following procedures.

- (i) Perform phase 1 casing test to obtain pressure/volume profile
- (ii) Drill out shoe and rathole
- (iii) Drill 2m of new hole
- (iii) Circulate and condition mud to ensure uniform mud weight
- (iv) Pull back into casing shoe
- (v) Close BOP's and pressure up with constant pump rate recording barrels of fluid pumped and pressures reached.
- (vi) With reference to the phase 1 casing pressure profile, stop pumping when pressure profile variation indicates when formation first starts to take fluid.
- (vii) Monitor and record pressure until a stable pressure is obtained.
- (viii) Calculate equivalent mud weight using the stabilised pressure and the initial breakover pressure.
- (ix) Report both calculated values as well as the amount of fluid pumped and amount of fluid recovered during pressure bleed off.

Note: It is vitally important to discontinue pumping once the formation yield point has been established so as to prevent formation integrity collapse.

APPENDIX C

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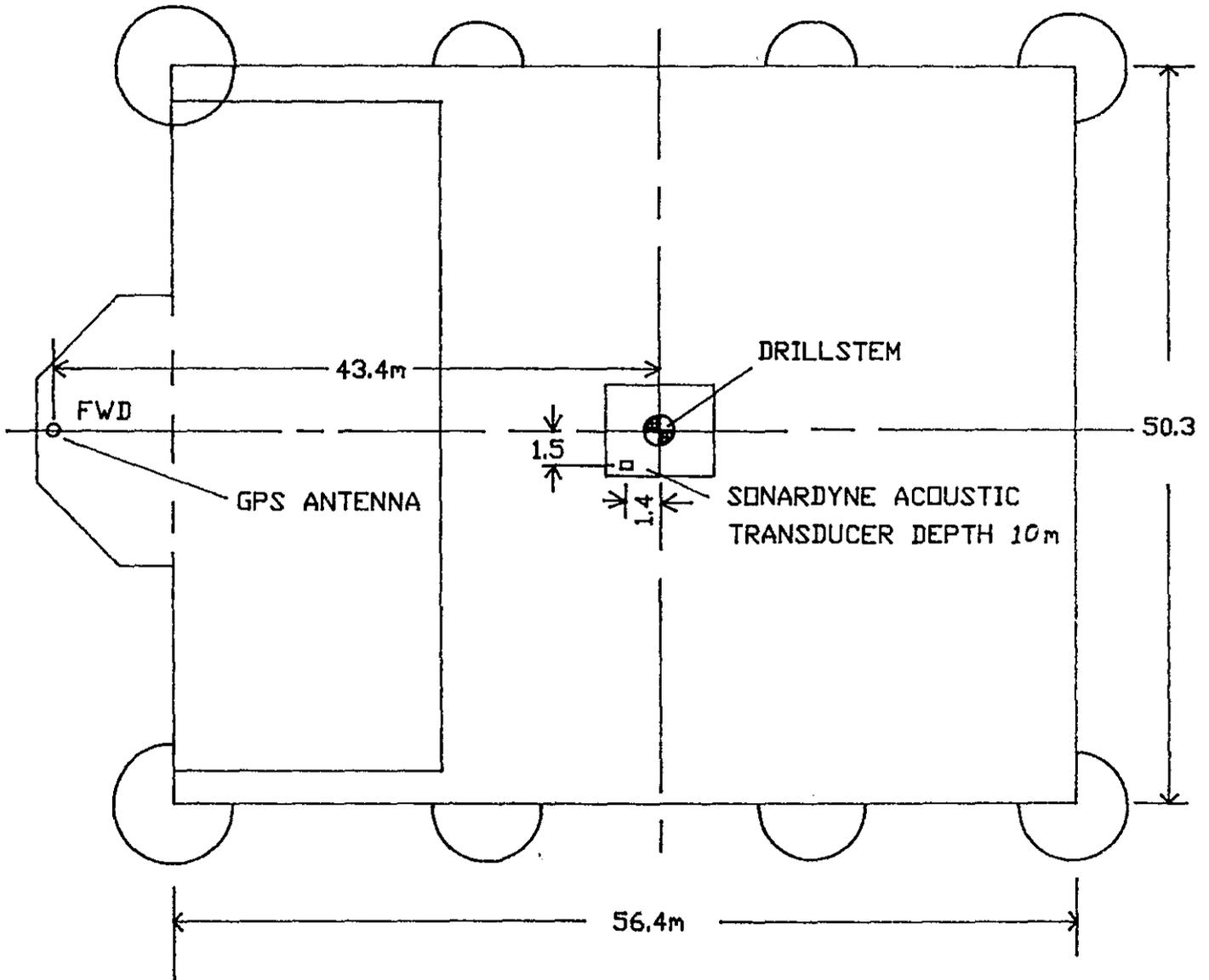
OFFSET DIAGRAM OF  
RIG

# OCEAN EPOCH LAYOUT DIAGRAM

(DIAGRAMATIC ONLY - NOT TO SCALE)

DIMENSIONS SHOWN IN METRES

RIG HEADING 249 DEGREES



GENERAL ARRANGEMENT MAIN / HELIDECK PLAN VIEW

LOCATION: FLINDERS-1	
DATE NOV 92	BHP Engineering
SCALE NTS	REV.

**APPENDIX D**

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**PROPOSED ANCHOR/MARKER BUOY  
PATTERN PLAN/COORDINATES**

*NOVEMBER*Wednesday, 25 ~~December~~ 1992

Rig OCEAN EPOCH at FLINDERS #1 Rig Heading 250.0 degrees

Location Co ordinates : Easting 387261.100 Northing 5529085.760

ANCHOR #	BEARING	DISTANCE	EASTING	NORTHING
1	190.00	1158.240	387042.059	5527911.885
2	220.00	1158.240	386498.683	5528165.265
3	280.00	1158.240	386085.372	5529300.828
4	310.00	1158.240	386338.753	5529844.204
5	10.00	1158.240	387480.141	5530259.635
6	40.00	1158.240	388023.517	5530006.255
7	100.00	1158.240	388436.828	5528870.692
8	130.00	1158.240	388183.447	5528327.316

**APPENDIX E**

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**FINAL ACOUSTIC POSITION  
PRINT-OUT**

Ready Use Data (Stored on disc R02.06) on 29 Nov 1992 at 00:41:45

System Definition

System 1 Sonardyne On/Off Status=OFF  
 System 2 Tau On/Off Status=ON  
 System 3 Not defined On/Off Status=OFF  
 System 4 Not defined On/Off Status=OFF

Station Data :- System 1 Sonardyne FLINDERS-1 Chain

!TPDR 1 ! 201! 386814.46! 5528923.55! 67.40! S ! Y ! 1 ! 1 ! 2 !  
 !TPDR 2 ! 105! 387817.82! 5529285.04! 64.50! S ! Y ! 5 ! 1 ! 2 !  
 !TPDR 3 ! 803! 387016.58! 5529730.87! 62.00! S ! Y ! 3 ! 1 ! 2 !  
 !TPDR 4 ! 906! 387568.71! 5528325.25! 65.00! S ! Y ! 6 ! 1 ! 2 !

Spheroid Data :- System 2 Tau

Name : WGS 84  
 Semi Axis : 6378137.00 metres  
 Eccentr^2 : .00669438  
 Parameter Shifts :- to AUSTRALIAN NAT 1984 Spheroid  
 GX : +116.00 in Metres  
 GY : +50.47 -''-  
 GZ : -141.69 -''-  
 Rotation (X) : +.2300 in seconds  
 (Y) : +.3900 in seconds  
 (Z) : +.3440 in seconds  
 Scaling (ppm) : -.0983

Station Data :- System 3 Not defined No Station Data

Station Data :- System 4 Not defined No Station Data

Pattern Corrections and Standard Deviations

System 1 Sonardyne	System 2 Tau	System 3 Not defined
Compatt C-0 St.Dev HRB	C-0 Corrections :-	No Data
0201 +0.00 3.00 Rng	Latit. +0.000 Secs	
0105 +0.00 3.00 Rng	Long. +0.000 Secs	
0803 +0.00 3.00 Rng	Height +0.000 M	
0906 +0.00 3.00 Rng		

Pattern Corrections and Standard Deviations

System 4 Not defined  
 No Data

Receiver Interface Addresses

System 1 Sonardyne	System 2 Tau	System 3 Not defined	System 4 Not defined
Receiver 1 702	Receiver 1 70102	Receiver 1	Receiver 1
		Receiver 2	Receiver 2

Peripheral Interface Addresses

GYRO 1 70105  
 GYRO 2 Unassigned

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ECHO SOUNDER      Unassigned
INCLINOMETER     Unassigned
TELEMETRY        Unassigned
FIX MODULE       Unassigned
LASER 1         Unassigned
LASER 2         Unassigned
GPS Differ.     Unassigned
POSH OUTPUT     Unassigned
C-D OUTPUT     Unassigned
MOBILES 3D      Unassigned
  
```

Antennae/Transducer Offsets

System 1 Sonardyne	System 2 Tau	System 3 Not defined	System 4 Not defined
Transducer 1	Receiver 1	Receiver 1	Receiver 1
X Y Depth	X Y Height	X Y Height	X Y Height
-1.50 +1.40 +10.00	+0.00 +43.40 +28.00	+0.00 +0.00 +0.00	+0.00 +0.00 +0.00
Transducer 2	Receiver 2	Receiver 2	Receiver 2
X Y Depth	X Y Height	X Y Height	X Y Height
+0.00 +0.00 +0.00	+0.00 +0.00 +0.00	+0.00 +0.00 +0.00	+0.00 +0.00 +0.00
R,,,,,,,,,,,,,I	R,,,,,,,,,,,,,I	R,,,,,,,,,,,,,I	R,,,,,,,,,,,,,I
. Heading .	. Heading .	. Heading .	. Heading .
. ^ .	. ^ .	. ^ .	. ^ .
. +Y .	. +Y .	. +Y .	. +Y .
. / .	. / .	. / .	. / .
. -X,,,,,X,,,,,+X .	. -X,,,,,X,,,,,+X .	. -X,,,,,X,,,,,+X .	. -X,,,,,X,,,,,+X .
. . .	. . .	. . .	. . .
. . .	. . .	. . .	. . .
. -Y .	. -Y .	. -Y .	. -Y .
F,,,,,,,,,,,,,G	F,,,,,,,,,,,,,G	F,,,,,,,,,,,,,G	F,,,,,,,,,,,,,G

Datum Point= Receiver 1=/ Receiver 2=X

Receiver Pattern codes

System 1	System 2	System 3	System 4	Receiver1	Receiver1	Receiver1 Re
Sonardyne	Tau	Not defined	Not defined			
Receiver1 Receiver2						
OFF	ON	OFF	OFF			
0201 R	Geogs 1					
0105 R						
0803 R						
0906 R						

Computation Pattern Codes

Primary(OFF)	Secondary(ON) [TRACKING]	Tertiary(OFF)	Quaternary(OFF)
LOP Patt Code SRC HRB	LOP Patt Code SRC HRB	No Data	No Data
1 0201 111 R	1 Geogs 211 1		
2 0105 112 R			
3 0803 113 R			
4 0906 114 R			

S=System B=Receiver C=Channel \*=Pattern temporarily not used in computation

Spheroidal Data

Spheroid :- AUSTRALIAN NAT 1984  
 Eccentricity ^2= 0.006694542  
 Semi-major axis= 6378160.000 Metres

Projection Parameters UTM/IM

Grid scale const = 0.9996000  
 Unit Conv. Factor = 1.0000000  
 False Easting = 500000.00 Metres  
 False Northing = 10000000.00 Metres  
 Central Meridian =147 DEG 00 MIN 00.000 SEC E  
 Lat of Origin = 00 DEG 00 MIN 00.000 SEC

Acoustic Parameters

System 1 Sonardyne  
 Velocity of Propagation = 1494.2 M/Sec  
 Cable out tow point fish= 0.0 M

Tow Point Offsets

System 1 Sonardyne  
 X Y Height  
 +0.00 +0.00 +0.00  
 R,.....,F  
 . Heading .  
 . ^ .  
 . +Y .  
 . . .  
 . . .  
 . -X,.....X,.....+X .  
 . . .  
 . . .  
 . . .  
 . -Y .  
 F,.....,G

Datum Point= Receiver 1=/ Receiver 2=X

Tidal Data

```

-----
| Date | Time | Height |
-----
| 28 Nov 1992 | 15:04 | +2.80 |
| 28 Nov 1992 | 21:45 | +.30 |
| 29 Nov 1992 | 03:58 | +2.98 |
| 29 Nov 1992 | 10:15 | +.80 |
| 29 Nov 1992 | 15:52 | +2.00 |
-----

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GoIf Laser System

Laser 1 : Not Selected Laser 2 : Not Selected

**APPENDIX F**

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**FINAL GPS POSITION PRINTOUT**

FINAL POSITION ANALYSIS: R/M OF OCEAN EPOCH TO FLINDERS-1

GNS v R2.06 01:05:40 29 Nov 1992 to 03:06:20 29 Nov 1992  
 GPS Weighting Option - Constellations weighted by sample size  
 Mean Corrected Gyro...249.0 Gyro Correction... -3.5  
 Mean Grid Heading....248.2 Convergence..... +0.860

SECONDARY COMPUTATION - TauCONSTELLATIONS USED

Const. #	Samples	S.U.s
A	3	25,28,21,15,12,11
B	105	25,21,15,12,11
C	90	28,21,15,12,11
D	27	28,25,21,15,11
E	23	12,25,21,15,11
F	182	21,25,15,14,11

Total number of samples used = 430

COMPUTED FINAL ANTENNA POSITION

WGS 84 Spheroid

Latitude 40 DEG 22 MIN 46.928 SEC S (S.D. 1.18 Metres)  
 Longitude 145 DEG 40 MIN 21.878 SEC E (S.D. .78 Metres)  
 Height 17.31 Metres (S.D. 3.61 Metres)

AUSTRALIAN NAT 1984 Spheroid

Latitude 40 DEG 22 MIN 52.313 SEC S  
 Longitude 145 DEG 40 MIN 16.969 SEC E  
 Height 34.48 Metres  
 UTM/TM  
 Eastings 387220.51 Metres  
 Northings 5529069.34 Metres

COMPUTED FINAL DATUM POSITION

AUSTRALIAN NAT 1984 Spheroid

Latitude 40 DEG 22 MIN 51.810 SEC S  
 Longitude 145 DEG 40 MIN 18.687 SEC E  
 UTM/TM  
 Eastings 387260.80 Metres  
 Northings 5529085.46 Metres

INTENDED FINAL DATUM LOCATION

AUSTRALIAN NAT 1984 Spheroid

Latitude 40 DEG 22 MIN 51.800 SEC S  
 Longitude 145 DEG 40 MIN 18.700 SEC E  
 UTM/TM  
 Eastings 387261.10 Metres  
 Northings 5529085.76 Metres

Final Datum Position is .42 Metres (spheroidal distance) bearing 225.35 T from the Intended Loc.

## Laser Stns set-up as 'STATIC' Stations -

```

|-----|-----|-----|
| # | E | N | Desc |
|-----|-----|-----|

```

## Laser Stns set-up as 'MOBILE' Stations -

based on Local Metric grid (same as Antenna Offsets)

```

|-----|-----|-----|
| # | X | Y | Desc |
|-----|-----|-----|
| 0 | 0.00 | 0.00 | DATUM |
|-----|-----|-----|

```

CURRENT OFFSET Posn : DATUM

+0.00 X, +0.00 Y

DATA TRANSFER SEQUENCE TO ONLINE OPERATION COMPLETE - R2.06A

FIX # 95 01:05:03 29 Nov 1992 Gyro(T): 249.0 Corr: -3.5 Speed MG(K): .4

CURRENT OFFSET : DATUM +0.00 X +0.00 Y

E 387257.80 N 5529083.54 Lat 40 22 51.870S 145 40 18.559E

Line: Thru Anc-6 CC Speed(K): 0.0 Dist to Go(M): -8909

Waypoint: FLIN-1 Dist(M): 4 Drg(T): 56.9

SECONDARY COMP. (T)

GPS (Tau) E 387257.80 N 5529083.54 Height +2.4

C-0s applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84

29 Nov 1992 UTC Time :14 05 10.4 CMG :00.10 SMG :000.1

Posn(WGS 84) Lat : 40 22 46.990 S Long :145 40 21.750 E (PR Corr.) Ht : 13.20 M

PRNs:125 SN:11 RE:001 STAT:01C28 SN:15 RE:000 STAT:01C21 SN:20 RE:001 STAT:01C15 SN:10 RE:002 STAT:01C12 SN:09 RE:001 STAT:01C11 SN:

POOP :02.3 HOOP :01.3 3D-Err :000 2D-Err :000 Mode :4SU

Fix	Time	Datum Pt	Raw Lat, Long & Ht
96	010510	387258.3 5529084.2	40 22 46.970 S 145 40 21.770 E 13.70 M
97	010520	387258.5 5529085.7	40 22 46.920 S 145 40 21.780 E 15.50 M
98	010530	387258.5 5529085.4	40 22 46.930 S 145 40 21.780 E 11.98 M
0	010540	387259.9 5529087.0	40 22 46.880 S 145 40 21.840 E 9.60 M
1	010550	387260.1 5529088.5	40 22 46.830 S 145 40 21.850 E 10.00 M
2	010600	387259.4 5529087.6	40 22 46.860 S 145 40 21.820 E 12.18 M
3	010610	387259.4 5529086.6	40 22 46.890 S 145 40 21.820 E 14.60 M
4	010620	387258.7 5529085.7	40 22 46.920 S 145 40 21.790 E 17.00 M
5	010630	387257.8 5529084.5	40 22 46.960 S 145 40 21.750 E 18.50 M
6	010640	387257.8 5529084.5	40 22 46.960 S 145 40 21.750 E 18.50 M
7	010650	387256.9 5529083.5	40 22 46.990 S 145 40 21.710 E 21.20 M
8	010700	387256.6 5529083.2	40 22 47.000 S 145 40 21.700 E 20.18 M

FINAL POSITION ANALYSIS: R/M OF OCEAN EPOCH TO FLINDERS-1

WGS 84 Spheroid

GMS v R 2.06

SECONDARY COMPUTATION CONSTELLATION SUB FINAL POSITION - Tau

SECONDARY COMPUTATION    CONSTELLATION SUB FINAL POSITION - Tau  
 Sub-final Position R       Constellation:(25,28,21,15,12,11)  
 01:05:40 29 Nov 1992    to    01:06:20 29 Nov 1992

No samples:    3                    1 to    3  
 No samples used:    Lat/Long 3    Height 3  
 P.O.O.P    Minimum    2.0            Maximum    2.3  
 H.O.O.P    Minimum    1.2            Maximum    1.3  
 3D error    Minimum    0.0m          Maximum    0.0m  
 2D error    Minimum    0.0m          Maximum    0.0m  
 Latitude    40 DEG 22 MIN 46.887 SEC S    (S.D.    .94m)  
 Longitude    145 DEG 40 MIN 21.817 SEC E    (S.D.    .59m)  
 Height            12.90 m            (S.D.    3.76m)

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9	010710	387256.6	5529083.5	40 22 46.990 S	145 40 21.708 E	19.50 M
10	010720	387257.1	5529082.9	40 22 47.010 S	145 40 21.720 E	18.10 M
11	010730	387258.0	5529082.9	40 22 47.010 S	145 40 21.760 E	17.00 M
12	010740	387259.4	5529083.6	40 22 46.990 S	145 40 21.820 E	18.20 M
13	010750	387259.7	5529083.9	40 22 46.980 S	145 40 21.830 E	18.70 M
14	010800	387260.9	5529083.9	40 22 46.980 S	145 40 21.880 E	18.50 M
15	010810	387262.0	5529083.9	40 22 46.980 S	145 40 21.930 E	19.20 M
16	010820	387262.0	5529083.9	40 22 46.980 S	145 40 21.930 E	18.80 M
17	010830	387261.6	5529084.5	40 22 46.960 S	145 40 21.910 E	19.40 M
18	010840	387261.3	5529085.1	40 22 46.940 S	145 40 21.900 E	19.90 M
19	010850	387260.6	5529084.5	40 22 46.960 S	145 40 21.870 E	19.80 M
20	010900	387260.6	5529083.6	40 22 46.990 S	145 40 21.870 E	19.20 M
21	010910	387260.9	5529083.6	40 22 46.990 S	145 40 21.880 E	18.90 M
22	010920	387260.4	5529083.6	40 22 46.990 S	145 40 21.860 E	18.80 M
23	010930	387259.9	5529083.0	40 22 47.010 S	145 40 21.840 E	18.30 M
24	010940	387259.9	5529082.0	40 22 47.040 S	145 40 21.840 E	16.00 M
25	010950	387260.2	5529082.0	40 22 47.040 S	145 40 21.850 E	15.30 M
26	011000	387260.9	5529082.7	40 22 47.020 S	145 40 21.880 E	14.70 M
27	011010	387261.3	5529083.9	40 22 46.980 S	145 40 21.900 E	15.10 M
28	011020	387261.3	5529083.9	40 22 46.980 S	145 40 21.900 E	14.20 M
29	011030	387261.8	5529083.9	40 22 46.980 S	145 40 21.920 E	13.50 M
30	011040	387262.7	5529084.2	40 22 46.970 S	145 40 21.960 E	14.10 M

32 011100 387264.1 5529085.2 40 22 46.940 S 145 40 22.020 E 14.70 M

33 011110 387263.2 5529084.2 40 22 46.970 S 145 40 21.980 E 11.80 M

34 011120 387263.2 5529083.6 40 22 46.990 S 145 40 21.980 E 11.50 M

35 011130 387263.2 5529084.2 40 22 46.970 S 145 40 21.980 E 14.50 M

36 011140 387262.5 5529084.5 40 22 46.960 S 145 40 21.950 E 16.90 M

37 011150 387261.8 5529085.1 40 22 46.940 S 145 40 21.920 E 18.30 M

38 011200 387262.0 5529085.8 40 22 46.920 S 145 40 21.930 E 20.20 M

39 011210 387262.0 5529085.5 40 22 46.930 S 145 40 21.930 E 19.30 M

40 011220 387261.8 5529085.1 40 22 46.940 S 145 40 21.920 E 18.10 M

41 011230 387261.8 5529084.8 40 22 46.950 S 145 40 21.920 E 17.40 M

42 011240 387262.5 5529084.8 40 22 46.950 S 145 40 21.950 E 18.10 M

43 011250 387263.2 5529085.2 40 22 46.940 S 145 40 21.980 E 19.20 M

44 011300 387263.4 5529085.2 40 22 46.940 S 145 40 21.990 E 20.50 M

45 011310 387262.0 5529084.5 40 22 46.960 S 145 40 21.930 E 20.40 M

FIX # 46 01:13:20 29 Nov 1992 Gyro(T): 249.0 Corr: -3.5 Speed MG(K): .1  
 CURRENT OFFSET : DATUM +0.00 X +0.00 Y  
 E 387262.03 N 5529084.22 Lat 40 22 51.850S 145 40 18.739E  
 Line: Thru Anc-6 \* CC Speed(K): .1 Dist to Go(M): -8986  
 Waypoint: FLIN-1 Dist(M): 2 Brg(T): 329.6  
 SECONDARY COMP. (T)  
 GPS (Tau) E 387262.03 N 5529084.22 Height +8.2  
 C-0s applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84  
 29 Nov 1992 UTC Time :14 13 27.3 CMG :00.10 SMG :000.1  
 Posn(WGS 84) Lat : 40 22 46.970 S Long :145 40 21.930 E (PR Corr.) Ht : 19.00 M  
 PRNs:C25 SN:07 RE:001 STAT:03C21 SN:21 RE:003 STAT:03E15 SN:10 RE:001 STAT:03C12 SN:10 RE:003 STAT:03E11 SN:22 RE:002 STAT:03  
 P00P :02.1 HD0P :01.2 30-Err :000 20-Err :000 Mode :4SV

Fix. Time	Datum Pt	Raw Lat, Long & Ht
47 011330	387261.6 5529083.9	40 22 46.980 S 145 40 21.910 E 17.10 M
48 011340	387261.3 5529083.6	40 22 46.990 S 145 40 21.900 E 16.20 M
49 011350	387260.9 5529083.3	40 22 47.000 S 145 40 21.880 E 15.60 M
50 011400	387260.4 5529083.3	40 22 47.000 S 145 40 21.860 E 15.40 M
51 011410	387260.9 5529083.3	40 22 47.000 S 145 40 21.880 E 16.20 M
52 011420	387260.6 5529083.0	40 22 47.010 S 145 40 21.870 E 15.50 M
53 011430	387260.2 5529083.0	40 22 47.010 S 145 40 21.850 E 14.70 M
54 011440	387259.7 5529083.3	40 22 47.000 S 145 40 21.830 E 14.30 M
55 011450	387259.2 5529083.3	40 22 47.000 S 145 40 21.810 E 14.10 M
56 011500	387259.9 5529083.3	40 22 47.000 S 145 40 21.840 E 14.90 M

55	011450	387259.2	5529083.3	40	22	47.000	S	145	40	21.810	E	14.10	M
56	011500	387259.9	5529083.3	40	22	47.000	S	145	40	21.840	E	14.90	M
57	011510	387260.9	5529083.3	40	22	47.000	S	145	40	21.880	E	16.50	M
58	011520	387260.6	5529083.6	40	22	46.990	S	145	40	21.870	E	16.50	M
59	011530	387260.2	5529083.9	40	22	46.980	S	145	40	21.850	E	16.00	M
60	011540	387259.7	5529083.6	40	22	46.990	S	145	40	21.830	E	15.30	M
61	011550	387259.9	5529083.6	40	22	46.990	S	145	40	21.840	E	15.50	M
62	011600	387259.2	5529083.9	40	22	46.980	S	145	40	21.810	E	15.90	M
63	011610	387259.2	5529083.9	40	22	46.980	S	145	40	21.810	E	16.20	M
64	011620	387259.9	5529084.2	40	22	46.970	S	145	40	21.840	E	17.80	M
65	011630	387261.1	5529084.2	40	22	46.970	S	145	40	21.890	E	19.60	M
66	011640	387261.8	5529084.2	40	22	46.970	S	145	40	21.920	E	20.30	M
67	011650	387262.0	5529084.2	40	22	46.970	S	145	40	21.930	E	20.40	M
68	011700	387261.6	5529084.2	40	22	46.970	S	145	40	21.910	E	20.20	M
69	011710	387261.6	5529084.2	40	22	46.970	S	145	40	21.910	E	18.90	M
70	011720	387261.8	5529084.5	40	22	46.960	S	145	40	21.920	E	17.60	M
71	011730	387261.3	5529084.2	40	22	46.970	S	145	40	21.900	E	16.40	M
72	011740	387260.2	5529083.6	40	22	46.990	S	145	40	21.850	E	16.10	M
73	011750	387259.2	5529082.9	40	22	47.010	S	145	40	21.810	E	15.90	M
74	011800	387258.8	5529082.3	40	22	47.030	S	145	40	21.790	E	15.50	M
75	011810	387258.8	5529081.7	40	22	47.050	S	145	40	21.790	E	16.00	M
76	011820	387259.0	5529082.6	40	22	47.020	S	145	40	21.800	E	18.00	M
77	011830	387259.2	5529083.3	40	22	47.000	S	145	40	21.810	E	19.70	M
78	011840	387259.5	5529082.9	40	22	47.010	S	145	40	21.820	E	19.60	M
79	011850	387259.7	5529082.6	40	22	47.020	S	145	40	21.830	E	19.30	M
80	011900	387259.7	5529083.3	40	22	47.000	S	145	40	21.830	E	20.40	M
81	011910	387260.2	5529083.9	40	22	46.980	S	145	40	21.850	E	22.30	M
82	011920	387260.8	5529084.8	40	22	46.950	S	145	40	21.880	E	22.80	M
83	011930	387261.6	5529084.8	40	22	46.950	S	145	40	21.910	E	22.80	M
84	011940	387260.8	5529084.8	40	22	46.950	S	145	40	21.880	E	22.40	M

85 011950 387259.7 5529084.5 40 22 46.960 S 145 40 21.830 E 21.30 M  
 86 012000 387259.2 5529084.2 40 22 46.970 S 145 40 21.810 E 19.80 M  
 87 012010 387258.7 5529083.9 40 22 46.980 S 145 40 21.790 E 18.90 M

88 012020 387258.7 5529083.6 40 22 46.990 S 145 40 21.790 E 18.60 M  
 89 012030 387259.0 5529083.6 40 22 46.990 S 145 40 21.800 E 19.10 M  
 90 012040 387259.0 5529083.9 40 22 46.980 S 145 40 21.800 E 18.10 M  
 91 012050 387258.5 5529083.6 40 22 46.990 S 145 40 21.780 E 16.90 M  
 92 012100 387257.8 5529082.6 40 22 47.020 S 145 40 21.750 E 15.60 M  
 93 012110 387258.3 5529082.6 40 22 47.020 S 145 40 21.770 E 16.20 M  
 94 012120 387258.8 5529082.9 40 22 47.010 S 145 40 21.790 E 17.20 M  
 95 012130 387259.7 5529083.6 40 22 46.990 S 145 40 21.830 E 19.60 M

FIX # 96 01:21:40 29 Nov 1992 Gyro(T): 249.0 Corrn: -3.5 Speed MG(K): .2  
 CURRENT OFFSET : DATUM +0.00 X +0.00 Y  
 E 387260.15 N 5529083.88 Lat 40 22 51.860S 145 40 18.659E  
 Line: Thru Anc-6 CC Speed(K): .1 Dist to Go(M): -8987  
 Waypoint: FLIN-1 Dist(M): 2 Brg(T): 27.6  
 SECONDARY COMP. (T)  
 GPS (Tau) E 387260.15 N 5529083.88 Height +9.3  
 C-0s applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84  
 29 Nov 1992 UTC Time :14 21 47.4 CMG :00.00 SMG :000.0  
 Posn(WGS 84) Lat : 40 22 46.980 S Long :145 40 21.850 E (PR Corr.) Ht : 20.10 M  
 PRNs: [25 SN:08 RE:000 STA#:03C21 SN:19 RE:001 STAT:03C15 SN:13 RE:003 STAT:03C12 SN:09 RE:003 STAT:03C11 SN:22 RE:002 STAT:03  
 PDOP :02.3 HDOP :01.2 3D-Err :000 2D-Err :000 Mode :4SU

Fix	Time	Datum	Pt	Raw Lat,	Long & Ht
97	012150	387259.7	5529083.9	40 22 46.980 S 145 40 21.830 E	19.70 M
98	012200	387259.4	5529083.9	40 22 46.980 S 145 40 21.820 E	19.40 M
99	012210	387259.7	5529084.2	40 22 46.970 S 145 40 21.830 E	20.00 M
100	012220	387259.7	5529084.5	40 22 46.960 S 145 40 21.830 E	20.60 M
101	012230	387259.0	5529083.9	40 22 46.980 S 145 40 21.800 E	18.60 M
102	012240	387258.0	5529083.5	40 22 46.990 S 145 40 21.760 E	16.10 M
103	012250	387258.0	5529083.2	40 22 47.000 S 145 40 21.760 E	17.30 M
104	012300	387258.0	5529082.6	40 22 47.020 S 145 40 21.760 E	17.60 M
105	012310	387257.6	5529082.0	40 22 47.040 S 145 40 21.740 E	16.60 M
106	012320	387257.3	5529082.0	40 22 47.040 S 145 40 21.730 E	15.20 M
107	012330	387257.3	5529082.0	40 22 47.040 S 145 40 21.730 E	15.10 M
108	012340	387257.8	5529082.0	40 22 47.040 S 145 40 21.750 E	16.50 M
109	012350	387258.3	5529082.0	40 22 47.040 S 145 40 21.770 E	18.80 M

109 012350 387258.3 5529082.0 40 22 47.040 S 145 40 21.770 E 18.80 M

110 012400 387258.8 5529081.7 40 22 47.050 S 145 40 21.790 E 19.90 M

262035

111 012410 387259.0 5529081.7 40 22 47.050 S 145 40 21.800 E 19.60 M

112 012420 387259.2 5529082.9 40 22 47.010 S 145 40 21.810 E 19.90 M

113 012430 387259.4 5529084.8 40 22 46.950 S 145 40 21.820 E 20.60 M

114 012440 387259.4 5529085.7 40 22 46.920 S 145 40 21.820 E 19.80 M

115 012450 387259.2 5529085.7 40 22 46.920 S 145 40 21.810 E 18.70 M

116 012500 387259.7 5529085.4 40 22 46.930 S 145 40 21.830 E 19.70 M

117 012510 387259.2 5529085.4 40 22 46.930 S 145 40 21.810 E 17.80 M

118 012520 387258.9 5529086.0 40 22 46.910 S 145 40 21.800 E 16.90 M

119 012530 387259.4 5529086.3 40 22 46.900 S 145 40 21.820 E 17.50 M

120 012540 387261.1 5529086.1 40 22 46.910 S 145 40 21.890 E 18.00 M

121 012550 387261.1 5529085.1 40 22 46.940 S 145 40 21.890 E 17.10 M

122 012600 387260.8 5529084.8 40 22 46.950 S 145 40 21.880 E 15.90 M

123 012610 387260.4 5529084.8 40 22 46.950 S 145 40 21.860 E 15.00 M

124 012620 387260.1 5529084.5 40 22 46.960 S 145 40 21.850 E 15.10 M

125 012630 387260.8 5529084.8 40 22 46.950 S 145 40 21.880 E 14.90 M

126 012640 387261.3 5529085.1 40 22 46.940 S 145 40 21.900 E 14.70 M

127 012650 387261.3 5529085.1 40 22 46.940 S 145 40 21.900 E 15.60 M

128 012700 387261.3 5529085.4 40 22 46.930 S 145 40 21.900 E 17.10 M

129 012710 387261.3 5529085.4 40 22 46.930 S 145 40 21.900 E 18.40 M

130 012720 387261.3 5529085.1 40 22 46.940 S 145 40 21.900 E 19.30 M

131 012730 387260.6 5529084.5 40 22 46.960 S 145 40 21.870 E 19.00 M

132 012740 387260.4 5529083.9 40 22 46.980 S 145 40 21.860 E 18.10 M

133 012750 387260.6 5529083.6 40 22 46.990 S 145 40 21.870 E 18.30 M

134 012800 387260.6 5529083.6 40 22 46.990 S 145 40 21.870 E 17.40 M

135 012810 387260.2 5529083.3 40 22 47.000 S 145 40 21.850 E 16.10 M

136 012820 387260.2 5529083.3 40 22 47.000 S 145 40 21.850 E 16.10 M

137 012830 387259.9 5529083.3 40 22 47.000 S 145 40 21.840 E 16.10 M

139 012850 387259.0 5529082.9 40 22 47.010 S 145 40 21.800 E 14.60 M  
 140 012900 387259.0 5529082.3 40 22 47.030 S 145 40 21.800 E 14.80 M

141 012910 387258.8 5529082.0 40 22 47.040 S 145 40 21.790 E 13.60 M  
 142 012920 387258.1 5529081.4 40 22 47.060 S 145 40 21.760 E 11.80 M  
 143 012930 387257.8 5529081.4 40 22 47.060 S 145 40 21.750 E 10.20 M  
 144 012940 387258.1 5529081.4 40 22 47.060 S 145 40 21.760 E 10.70 M  
 145 012950 387258.0 5529082.9 40 22 47.010 S 145 40 21.760 E 12.10 M

FIX # 146 01:30:00 29 Nov 1992 Gyro(T): 249.0 Corrn: -3.5 Speed MG(K): .4  
 CURRENT OFFSET : DATUM +0.00 X +0.00 Y  
 E 387257.79 N 5529084.16 Lat 40 22 51.850S 145 40 18.559E  
 Line: Thru Anc-6 CC Speed(K): .3 Dist to Go(M): -8989  
 Waypoint: FLIN-1 Dist(M): 4 Brg(T): 65.0  
 SECONDARY COMP. (T)  
 GPS (Tau) E 387257.79 N 5529084.16 Height +3.5  
 C-0s applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84  
 29 Nov 1992 UTC Time :14 30 07.3 CMG :00.00 SMG :000.0  
 Posn(WGS 84) Lat : 40 22 46.970 S Long :145 40 21.750 E (PR Corr.) Ht : 14.30 M  
 PRNs:[25 SN:09 RE:001 STAT:0]C21 SN:19 RE:001 STAT:0]C15 SN:15 RE:001 STAT:0]C12 SN:10 RE:000 STAT:0]C11 SN:20 RE:003 STAT:0]  
 PDOP :02.5 HDOP :01.2 3D-Err :000 2D-Err :000 Mode :4SU

Fix	Time	Datum Pt	Raw Lat, Long & Ht
147	013010	387257.8 5529084.8	40 22 46.950 S 145 40 21.750 E 14.40 M
148	013020	387258.7 5529084.8	40 22 46.950 S 145 40 21.790 E 11.70 M
149	013030	387259.7 5529084.2	40 22 46.970 S 145 40 21.830 E 9.60 M
150	013040	387260.4 5529083.9	40 22 46.980 S 145 40 21.860 E 8.70 M
151	013050	387260.2 5529083.3	40 22 47.000 S 145 40 21.850 E 8.90 M
152	013100	387260.2 5529083.6	40 22 46.990 S 145 40 21.850 E 10.30 M
153	013110	387260.9 5529083.6	40 22 46.990 S 145 40 21.880 E 12.00 M
154	013120	387260.9 5529083.9	40 22 46.980 S 145 40 21.880 E 14.00 M
155	013130	387260.1 5529084.2	40 22 46.970 S 145 40 21.850 E 15.10 M
156	013140	387259.9 5529084.2	40 22 46.970 S 145 40 21.840 E 15.90 M
157	013150	387260.1 5529084.2	40 22 46.970 S 145 40 21.850 E 16.30 M
158	013200	387260.6 5529084.5	40 22 46.960 S 145 40 21.870 E 17.40 M
159	013210	387260.4 5529084.5	40 22 46.960 S 145 40 21.860 E 17.40 M
160	013220	387260.1 5529084.5	40 22 46.960 S 145 40 21.850 E 16.30 M
161	013230	387260.4 5529084.5	40 22 46.960 S 145 40 21.860 E 15.10 M
162	013240	387260.4 5529084.2	40 22 46.970 S 145 40 21.860 E 14.00 M
163	013250	387260.4 5529084.2	40 22 46.970 S 145 40 21.860 E 14.70 M

162 013240 387260.4 5529084.2 40 22 46.970 S 145 40 21.860 E 14.00 M  
 163 013250 387260.4 5529084.2 40 22 46.970 S 145 40 21.860 E 14.70 M  
 164 013300 387260.4 5529084.2 40 22 46.970 S 145 40 21.860 E 14.70 M

165 013310 387259.5 5529082.9 40 22 47.010 S 145 40 21.820 E 15.90 M  
 166 013320 387258.8 5529082.3 40 22 47.030 S 145 40 21.790 E 16.30 M

SECONDARY COMPUTATION      CONSTELLATION SUB FINAL POSITION - Tau  
 Sub-final Position B      Constellation:(25,21,15,12,11)  
 01:07:10 29 Nov 1992    to    01:32:30 29 Nov 1992  
 No samples: 105                    4 to 108  
 No samples used:    Lat/Long 105    Height 105  
 P.O.O.P    Minimum 2.0            Maximum 2.6  
 H.O.O.P    Minimum 1.2            Maximum 1.2  
 3D error    Minimum 0.0m            Maximum 0.0m  
 2D error    Minimum 0.0m            Maximum 0.0m  
 Latitude    40 DEG 22 MIN 46.981 SEC S    (<S.D.    .98m)  
 Longitude   145 DEG 40 MIN 21.849 SEC E    (<S.D.    1.46m)  
 Height            17.15 m                    (<S.D.    2.68m)

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 167 013330 387258.8 5529082.6 40 22 47.020 S 145 40 21.790 E 16.80 M  
 168 013340 387258.3 5529081.1 40 22 47.070 S 145 40 21.770 E 15.70 M  
 169 013350 387258.1 5529079.8 40 22 47.110 S 145 40 21.760 E 14.80 M  
 170 013400 387258.6 5529080.2 40 22 47.100 S 145 40 21.780 E 16.00 M  
 171 013410 387259.3 5529080.8 40 22 47.080 S 145 40 21.810 E 16.50 M  
 172 013420 387260.4 5529082.0 40 22 47.040 S 145 40 21.860 E 16.90 M  
 173 013430 387261.3 5529083.0 40 22 47.010 S 145 40 21.900 E 17.80 M  
 174 013440 387261.3 5529082.7 40 22 47.020 S 145 40 21.900 E 19.50 M  
 175 013450 387260.4 5529081.7 40 22 47.050 S 145 40 21.860 E 19.50 M  
 176 013500 387260.2 5529081.7 40 22 47.050 S 145 40 21.850 E 19.00 M  
 177 013510 387260.7 5529082.0 40 22 47.040 S 145 40 21.870 E 19.40 M  
 178 013520 387261.8 5529082.4 40 22 47.030 S 145 40 21.920 E 21.00 M  
 179 013530 387262.8 5529083.0 40 22 47.010 S 145 40 21.960 E 21.70 M  
 180 013540 387263.7 5529084.2 40 22 46.970 S 145 40 22.000 E 21.60 M  
 181 013550 387264.1 5529085.2 40 22 46.940 S 145 40 22.020 E 20.70 M  
 182 013600 387263.7 5529085.2 40 22 46.940 S 145 40 22.000 E 19.60 M  
 183 013610 387263.7 5529085.5 40 22 46.930 S 145 40 22.000 E 19.40 M  
 184 013620 387263.4 5529085.8 40 22 46.920 S 145 40 21.990 E 20.40 M

185 013630 387263.7 5529086.4 40 22 46.900 S 145 40 22.000 E 20.60 M  
 186 013640 387264.4 5529086.7 40 22 46.890 S 145 40 22.030 E 19.50 M  
 187 013650 387264.4 5529086.7 40 22 46.890 S 145 40 22.030 E 18.00 M  
  
 188 013700 387264.8 5529087.3 40 22 46.870 S 145 40 22.050 E 17.60 M  
 189 013710 387265.0 5529088.3 40 22 46.840 S 145 40 22.060 E 17.90 M  
 190 013720 387265.0 5529088.6 40 22 46.830 S 145 40 22.060 E 18.20 M  
 191 013730 387264.6 5529088.3 40 22 46.840 S 145 40 22.040 E 17.90 M  
 192 013740 387264.6 5529088.0 40 22 46.850 S 145 40 22.040 E 17.20 M  
 193 013750 387263.9 5529087.6 40 22 46.860 S 145 40 22.010 E 16.40 M  
 194 013800 387262.5 5529086.1 40 22 46.910 S 145 40 21.950 E 14.00 M  
 195 013810 387261.3 5529084.8 40 22 46.950 S 145 40 21.900 E 12.40 M

FIX # 196 01:38:20 29 Nov 1992 Gyro(T): 249.0 Corrn: -3.5 Speed MG(K): 0.0  
 CURRENT OFFSET : DATUM +0.00 X +0.00 Y  
 E 387261.08 N 5529084.82 Lat 40 22 51.831S 145 40 18.699E  
 Line: Thru Anc-6 CC Speed(K): 0.0 Dist to Go(M): -8986  
 Waypoint: FLIN-1 Dist(M): 1 Brg(T): 2.0  
 SECONDARY COMP. (T)  
 GPS (Tau) E 387261.08 N 5529084.82 Height +1.1  
 C-0s applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84  
 29 Nov 1992 UTC Time :14 38 27.4 CMG :00.10 SMG :000.1  
 Posn(WGS 84) Lat : 40 22 46.950 S Long :145 40 21.890 E (PR Corr.) Ht : 11.90 M  
 PRNs:C28 SN:10 RE:001 STAT:0JC21 SN:20 RE:001 STAT:0JC15 SN:15 RE:001 STAT:0JC12 SN:11 RE:001 STAT:0JC11 SN:21 RE:001 STAT:0J  
 POOP :02.5 HOOP :01.3 3D-Err :000 2D-Err :000 Mode :4SV

Fix	Time	Datum Pt	Raw Lat, Long & Ht
197	013830	387260.6 5529084.5	40 22 46.960 S 145 40 21.870 E 12.60 M
198	013840	387261.1 5529084.8	40 22 46.950 S 145 40 21.890 E 13.70 M
199	013850	387261.1 5529084.8	40 22 46.950 S 145 40 21.890 E 14.40 M
200	013900	387260.9 5529084.2	40 22 46.970 S 145 40 21.880 E 14.90 M
201	013910	387260.4 5529083.6	40 22 46.990 S 145 40 21.860 E 14.90 M
202	013920	387259.5 5529082.9	40 22 47.010 S 145 40 21.820 E 15.70 M
203	013930	387258.8 5529082.3	40 22 47.030 S 145 40 21.790 E 18.70 M
204	013940	387258.5 5529082.6	40 22 47.020 S 145 40 21.780 E 21.00 M
205	013950	387258.5 5529082.3	40 22 47.030 S 145 40 21.780 E 21.20 M
206	014000	387258.3 5529081.1	40 22 47.070 S 145 40 21.770 E 19.90 M
207	014010	387257.8 5529080.1	40 22 47.100 S 145 40 21.750 E 18.70 M
208	014020	387259.2 5529081.4	40 22 47.060 S 145 40 21.810 E 19.80 M
209	014030	387259.7 5529083.0	40 22 47.010 S 145 40 21.830 E 21.00 M

208 014020 387259.2 5529081.4 40 22 47.060 S 145 40 21.810 E 19.80 M

209 014030 387259.7 5529083.0 40 22 47.010 S 145 40 21.830 E 21.00 M

210 014040 387260.6 5529084.8 40 22 46.950 S 145 40 21.870 E 21.60 M

262039

211 014050 387261.3 5529085.4 40 22 46.930 S 145 40 21.900 E 21.70 M

212 014100 387262.5 5529086.4 40 22 46.900 S 145 40 21.950 E 19.70 M

213 014110 387262.9 5529087.3 40 22 46.870 S 145 40 21.970 E 19.00 M

214 014120 387263.2 5529087.3 40 22 46.870 S 145 40 21.980 E 19.00 M

215 014130 387264.1 5529087.6 40 22 46.860 S 145 40 22.020 E 19.10 M

216 014140 387263.9 5529087.9 40 22 46.850 S 145 40 22.010 E 18.70 M

217 014150 387263.2 5529087.9 40 22 46.850 S 145 40 21.980 E 17.40 M

218 014200 387262.9 5529087.6 40 22 46.860 S 145 40 21.970 E 16.40 M

219 014210 387262.9 5529087.0 40 22 46.880 S 145 40 21.970 E 15.80 M

220 014220 387262.0 5529085.1 40 22 46.940 S 145 40 21.930 E 15.10 M

221 014230 387261.6 5529084.5 40 22 46.960 S 145 40 21.910 E 15.60 M

222 014240 387261.6 5529084.2 40 22 46.970 S 145 40 21.910 E 15.80 M

223 014250 387262.5 5529084.5 40 22 46.960 S 145 40 21.950 E 17.70 M

224 014300 387263.0 5529083.9 40 22 46.980 S 145 40 21.970 E 19.80 M

225 014310 387263.0 5529083.6 40 22 46.990 S 145 40 21.970 E 20.40 M

226 014320 387262.7 5529084.8 40 22 46.950 S 145 40 21.960 E 21.00 M

227 014330 387262.7 5529085.2 40 22 46.940 S 145 40 21.960 E 20.30 M

228 014340 387261.6 5529084.8 40 22 46.950 S 145 40 21.910 E 20.10 M

229 014350 387261.1 5529084.5 40 22 46.960 S 145 40 21.890 E 20.10 M

230 014400 387260.9 5529084.2 40 22 46.970 S 145 40 21.880 E 18.90 M

231 014410 387261.3 5529084.5 40 22 46.960 S 145 40 21.900 E 18.20 M

232 014420 387261.1 5529084.5 40 22 46.960 S 145 40 21.890 E 17.70 M

233 014430 387260.9 5529084.5 40 22 46.960 S 145 40 21.880 E 17.60 M

234 014440 387261.3 5529085.1 40 22 46.940 S 145 40 21.900 E 18.00 M

235 014450 387261.1 5529085.1 40 22 46.940 S 145 40 21.890 E 18.00 M

236 014500 387260.4 5529084.2 40 22 46.970 S 145 40 21.860 E 17.10 M

237 014510 387260.4 5529084.5 40 22 46.960 S 145 40 21.860 E 16.60 M

239 014530 387262.2 5529086.1 40 22 46.910 S 145 40 21.940 E 16.00 M  
 240 014540 387262.3 5529085.5 40 22 46.930 S 145 40 21.940 E 16.80 M

241 014550 387262.3 5529085.1 40 22 46.940 S 145 40 21.940 E 16.40 M

242 014600 387263.2 5529086.4 40 22 46.900 S 145 40 21.980 E 16.00 M

243 014610 387262.9 5529086.4 40 22 46.900 S 145 40 21.970 E 16.90 M

244 014620 387262.5 5529086.1 40 22 46.910 S 145 40 21.950 E 17.90 M

245 014630 387261.8 5529085.8 40 22 46.920 S 145 40 21.920 E 18.10 M

FIX # 246 01:46:40 29 Nov 1992 Gyro(T): 249.0 Corrns: -3.5 Speed MG(K): .1  
 CURRENT OFFSET : DATUM +0.00 X +0.00 Y  
 E 387262.24 N 5529086.38 Lat 40 22 51.780S 145 40 18.749E  
 Line: Thru Anc-6 CC Speed(K): 0.0 Dist to Go(M): -8984  
 Waypoint: FLIN-1 Dist(M): 1 Brg(T): 242.3  
 SECONDARY COMP. (T)  
 GPS (Tau) E 387262.24 N 5529086.38 Height +7.9  
 C-0s applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84  
 29 Nov 1992 UTC Time :14 46 47.4 CMG :00.10 SMG :000.1  
 Posn(WGS 84) Lat : 40 22 46.900 S Long :145 40 21.940 E (PR Corr.) Ht : 18.70 M  
 PRNs:C28 SM:12 RE:000 STAT:0JC21 SN:19 RE:001 STAT:0JC15 SN:19 RE:000 STAT:0JC12 SM:09 RE:000 STAT:0JC11 SN:23 RE:001 STAT:0J  
 PDOP :02.6 HDOP :01.3 3D-Err :000 2D-Err :000 Mode :4SV

Fix Time Datum Pt Row Lat, Long & Ht  
 247 014650 387263.6 5529087.3 40 22 46.870 S 145 40 22.000 E 20.40 M

248 014700 387263.6 5529087.0 40 22 46.880 S 145 40 22.000 E 20.70 M

249 014710 387263.2 5529085.5 40 22 46.930 S 145 40 21.980 E 20.70 M

250 014720 387263.4 5529084.9 40 22 46.950 S 145 40 21.990 E 21.30 M

251 014730 387263.4 5529084.2 40 22 46.970 S 145 40 21.990 E 22.60 M

252 014740 387264.4 5529085.5 40 22 46.930 S 145 40 22.030 E 24.30 M

253 014750 387264.1 5529085.5 40 22 46.930 S 145 40 22.020 E 24.00 M

254 014800 387263.7 5529084.6 40 22 46.960 S 145 40 22.000 E 21.50 M

255 014810 387263.4 5529084.5 40 22 46.960 S 145 40 21.990 E 20.90 M

256 014820 387263.0 5529083.9 40 22 46.980 S 145 40 21.970 E 21.40 M

257 014830 387263.4 5529084.5 40 22 46.960 S 145 40 21.990 E 22.30 M

258 014840 387264.1 5529084.9 40 22 46.950 S 145 40 22.020 E 21.40 M

259 014850 387265.1 5529086.1 40 22 46.910 S 145 40 22.060 E 20.50 M

260 014900 387264.6 5529086.1 40 22 46.910 S 145 40 22.040 E 20.70 M

261 014910 387264.1 5529085.5 40 22 46.930 S 145 40 22.020 E 21.10 M

262 014920 387263.7 5529085.5 40 22 46.930 S 145 40 22.000 E 20.50 M

263 014930 387263.4 5529085.8 40 22 46.920 S 145 40 21.990 E 20.30 M

262 014920	387263.7	5529085.5	40 22 46.930	S 145 40 22.000	E	20.50	M
263 014930	387263.4	5529085.8	40 22 46.920	S 145 40 21.990	E	20.30	M
264 014940	387264.1	5529086.7	40 22 46.890	S 145 40 22.020	E	20.40	M
265 014950	387264.1	5529087.3	40 22 46.870	S 145 40 22.020	E	21.30	M
266 015000	387263.4	5529087.6	40 22 46.860	S 145 40 21.990	E	21.60	M
267 015010	387262.0	5529086.7	40 22 46.890	S 145 40 21.930	E	21.70	M
268 015020	387261.8	5529086.1	40 22 46.910	S 145 40 21.920	E	22.70	M
269 015030	387262.5	5529085.8	40 22 46.920	S 145 40 21.950	E	23.30	M
270 015040	387263.4	5529086.4	40 22 46.900	S 145 40 21.990	E	21.60	M
271 015050	387263.0	5529085.8	40 22 46.920	S 145 40 21.970	E	19.60	M
272 015100	387262.7	5529085.5	40 22 46.930	S 145 40 21.960	E	19.30	M
273 015110	387262.7	5529085.5	40 22 46.930	S 145 40 21.960	E	18.90	M
274 015120	387262.9	5529086.4	40 22 46.900	S 145 40 21.970	E	19.30	M
275 015130	387263.4	5529086.7	40 22 46.890	S 145 40 21.990	E	21.20	M
276 015140	387263.2	5529086.4	40 22 46.900	S 145 40 21.980	E	23.50	M
277 015150	387261.6	5529084.5	40 22 46.960	S 145 40 21.910	E	24.40	M
278 015200	387261.3	5529084.2	40 22 46.970	S 145 40 21.900	E	24.50	M
279 015210	387262.7	5529084.8	40 22 46.950	S 145 40 21.960	E	24.90	M
280 015220	387262.5	5529084.8	40 22 46.950	S 145 40 21.950	E	26.10	M
281 015230	387263.0	5529085.8	40 22 46.920	S 145 40 21.970	E	26.70	M
282 015240	387264.1	5529087.6	40 22 46.860	S 145 40 22.020	E	26.00	M
283 015250	387264.6	5529088.6	40 22 46.830	S 145 40 22.040	E	24.00	M
284 015300	387263.9	5529087.9	40 22 46.850	S 145 40 22.010	E	21.60	M
285 015310	387262.7	5529086.4	40 22 46.900	S 145 40 21.960	E	20.60	M
286 015320	387261.8	5529085.1	40 22 46.940	S 145 40 21.920	E	21.20	M
287 015330	387262.0	5529085.1	40 22 46.940	S 145 40 21.930	E	22.60	M
288 015340	387263.2	5529085.8	40 22 46.920	S 145 40 21.980	E	24.40	M
289 015350	387264.1	5529086.7	40 22 46.890	S 145 40 22.020	E	25.00	M
290 015400	387263.9	5529086.7	40 22 46.890	S 145 40 22.010	E	24.30	M
291 015410	387263.6	5529087.3	40 22 46.870	S 145 40 22.000	E	24.40	M

292 015420 387262.9 5529087.0 40 22 46.880 S 145 40 21.970 E 24.30 M

293 015430 387262.5 5529086.7 40 22 46.890 S 145 40 21.950 E 23.40 M

294 015440 387261.7 5529087.6 40 22 46.860 S 145 40 21.920 E 24.10 M

295 015450 387261.5 5529088.5 40 22 46.830 S 145 40 21.910 E 25.40 M

FIX # 296 01:55:00 29 Nov 1992 Gyro(T): 249.0 Corr: -3.5 Speed MG(K): .1

CURRENT OFFSET : DATUM +0.00 X +0.00 Y

E 387261.51 N 5529087.60 Lat 40 22 51.740S 145 40 18.719E

Line: Thru Anc-6 CC Speed(K): 0.0 Dist to Go(M): -8983

Waypoint: FLIN-1 Dist(M): 2 Brg(T): 193.5

SECONDARY COMP. (T)

GPS (Tau) E 387261.51 N 5529087.60 Height +13.8

C-0s applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84

29 Nov 1992 UTC Time :14 55 07.3 CMG :00.00 SMG :000.0

Posn(WGS 84) Lat : 40 22 46.860 S Long :145 40 21.910 E (PR Corr.) Ht : 24.60 M

PRNs:C28 SN:10 RE:000 STAT:0JC21 SN:18 RE:000 STAT:0JC15 SN:19 RE:000 STAT:0JC12 SN:07 RE:006 STAT:0JC11 SN:19 RE:001 STAT:0J

PDOP :02.5 HDOP :01.3 3D-Err :000 2D-Err :000 Mode :4SV

Fix	Time	Datum Pt	Raw Lat, Long & Ht
297	015510	387261.7 5529087.9	40 22 46.850 S 145 40 21.920 E 23.10 M
298	015520	387261.7 5529088.5	40 22 46.830 S 145 40 21.920 E 24.10 M
299	015530	387261.5 5529089.8	40 22 46.790 S 145 40 21.910 E 26.30 M
300	015540	387261.2 5529090.1	40 22 46.780 S 145 40 21.900 E 26.00 M
301	015550	387260.6 5529088.5	40 22 46.830 S 145 40 21.870 E 24.70 M
302	015600	387260.6 5529088.5	40 22 46.830 S 145 40 21.870 E 24.70 M
303	015610	387260.1 5529085.1	40 22 46.940 S 145 40 21.850 E 20.10 M
304	015620	387260.1 5529084.5	40 22 46.960 S 145 40 21.850 E 17.80 M

## SECONDARY COMPUTATION CONSTITUTION SUB FINAL POSITION - Tau

Sub-Final Position C Constellation:(28,21,15,12,11)

01:33:30 29 Nov 1992 to 01:55:30 29 Nov 1992

No samples: 90 109 to 198

No samples used: Lat/Long 90 Height 90

P.D.O.P Minimum 2.5 Maximum 3.5

H.D.O.P Minimum 1.3 Maximum 1.5

3D error Minimum 0.0m Maximum 0.0m

2D error Minimum 0.0m Maximum 0.0m

Latitude 40 DEG 22 MIN 46.934 SEC S (S.D. 2.03m)

Longitude 145 DEG 40 MIN 21.942 SEC E (S.D. 1.73m)

Height 19.77 m (S.D. 3.19m)

305 015630 387260.1 5529084.5 40 22 46.960 S 145 40 21.850 E 17.10 M

306 015640 387260.1 5529084.5 40 22 46.960 S 145 40 21.850 E 17.30 M

307 015650 387260.1 5529085.1 40 22 46.940 S 145 40 21.850 E 18.10 M

308 015700 387260.6 5529086.0 40 22 46.910 S 145 40 21.870 E 19.50 M

309 015710 387260.8 5529085.7 40 22 46.920 S 145 40 21.880 E 18.60 M

309	015710	387260.8	5529085.7	40 22	46.920	S 145 40	21.880	E	18.60	M
310	015720	387260.8	5529085.7	40 22	46.920	S 145 40	21.880	E	17.50	M
311	015730	387259.9	5529086.7	40 22	46.890	S 145 40	21.840	E	20.60	M
312	015740	387259.2	5529086.6	40 22	46.890	S 145 40	21.810	E	23.00	M
313	015750	387259.2	5529087.6	40 22	46.860	S 145 40	21.810	E	24.90	M
314	015800	387259.4	5529086.6	40 22	46.890	S 145 40	21.820	E	22.30	M
315	015810	387259.6	5529086.7	40 22	46.890	S 145 40	21.830	E	21.20	M
316	015820	387259.6	5529087.0	40 22	46.880	S 145 40	21.830	E	21.10	M
317	015830	387259.4	5529087.0	40 22	46.880	S 145 40	21.820	E	20.40	M
318	015840	387258.9	5529087.6	40 22	46.860	S 145 40	21.800	E	21.40	M
319	015850	387259.1	5529087.9	40 22	46.850	S 145 40	21.810	E	21.30	M
320	015900	387259.1	5529087.9	40 22	46.850	S 145 40	21.810	E	18.90	M
321	015910	387258.9	5529087.6	40 22	46.860	S 145 40	21.800	E	17.30	M
322	015920	387259.1	5529088.2	40 22	46.840	S 145 40	21.810	E	19.60	M
323	015930	387259.6	5529089.1	40 22	46.810	S 145 40	21.830	E	22.40	M
324	015940	387260.3	5529089.4	40 22	46.800	S 145 40	21.860	E	22.90	M
325	015950	387261.0	5529089.1	40 22	46.810	S 145 40	21.890	E	23.10	M
326	020000	387260.8	5529089.1	40 22	46.810	S 145 40	21.880	E	22.50	M
327	020010	387259.9	5529088.2	40 22	46.840	S 145 40	21.840	E	22.00	M
328	020020	387259.4	5529087.9	40 22	46.850	S 145 40	21.820	E	22.20	M
329	020030	387259.2	5529087.6	40 22	46.860	S 145 40	21.810	E	21.90	M
330	020040	387259.4	5529089.1	40 22	46.810	S 145 40	21.820	E	24.50	M
331	020050	387259.8	5529091.0	40 22	46.750	S 145 40	21.840	E	27.90	M
332	020100	387260.7	5529091.6	40 22	46.730	S 145 40	21.880	E	27.90	M
333	020110	387261.0	5529090.4	40 22	46.770	S 145 40	21.890	E	25.00	M
334	020120	387261.0	5529089.1	40 22	46.810	S 145 40	21.890	E	21.20	M
335	020130	387260.8	5529087.6	40 22	46.860	S 145 40	21.880	E	16.20	M
336	020140	387260.1	5529085.7	40 22	46.920	S 145 40	21.850	E	12.40	M
337	020150	387260.1	5529084.5	40 22	46.960	S 145 40	21.850	E	9.00	M

262043

339 020210 387260.2 5529083.9 40 22 46.980 S 145 40 21.850 E 8.50 M  
 340 020220 387260.1 5529084.8 40 22 46.950 S 145 40 21.850 E 9.90 M

262044

341 020230 387260.1 5529085.1 40 22 46.940 S 145 40 21.850 E 10.10 M  
 342 020240 387260.4 5529085.1 40 22 46.940 S 145 40 21.860 E 10.40 M  
 343 020250 387260.6 5529085.1 40 22 46.940 S 145 40 21.870 E 10.00 M  
 344 020300 387260.6 5529085.1 40 22 46.940 S 145 40 21.870 E 10.00 M  
 345 020310 387260.6 5529087.9 40 22 46.850 S 145 40 21.870 E 20.30 M

FIX # 346 02:03:20 29 Nov 1992 Gyro(T): 249.0 Corrn: -3.5 Speed MG(K): .4  
 CURRENT OFFSET : DRTM +0.00 X +0.00 Y  
 E 387260.56 N 5529087.90 Lat 40 22 51.730S 145 40 18.679E  
 Line: Thru Anc-6 CC Speed(K): .1 Dist to Go(M): -8984  
 Waypoint: FLIN-1 Dist(M): 2 Brg(T): 166.8  
 SECONDARY COMP. (T)  
 GPS (Tau) E 387260.56 N 5529087.90 Height +9.5  
 C-0s applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84  
 29 Nov 1992 UTC Time :15 03 27.3 CMG :00.10 SMG :000.1  
 Posn(WGS 84) Lat : 40 22 46.850 S Long :145 40 21.870 E (PR Corr.) Ht : 20.30 M  
 PRNs:[12 SN:09 RE:005 STAT:03] [25 SN:15 RE:000 STAT:03] [21 SN:15 RE:001 STAT:03] [15 SN:22 RE:001 STAT:03] [11 SN:13 RE:001 STAT:03]  
 POOP :12.1 H00P :01.6 3D-Err :001 2D-Err :000 Mode :4SV

Fix Time Datum Pt Raw Lat, Long & Ht  
 347 020330 387262.4 5529088.5 40 22 46.830 S 145 40 21.950 E 33.10 M

SECONDARY COMPUTATION CONSTELLATION SUB FINAL POSITION - Tau

Sub-Final Position D Constellation:(28,25,21,15,11)  
 01:56:30 29 Nov 1992 to 02:02:30 29 Nov 1992  
 No samples: 27 199 to 225  
 No samples used: Lat/Long 27 Height 27  
 P.O.O.P Minimum 3.3 Maximum 3.4  
 H.O.O.P Minimum 1.4 Maximum 1.4  
 3D error Minimum 0.0m Maximum 1.0m  
 2D error Minimum 0.0m Maximum 0.0m  
 Latitude 40 DEG 22 MIN 46.879 SEC S (S.D. 2.04m)  
 Longitude 145 DEG 40 MIN 21.842 SEC E (S.D. .63m)  
 Height 19.24 m (S.D. 5.26m)

348 020340 387262.5 5529087.6 40 22 46.860 S 145 40 21.950 E 32.90 M  
 349 020350 387262.2 5529086.7 40 22 46.890 S 145 40 21.940 E 30.40 M  
 350 020400 387262.2 5529086.4 40 22 46.900 S 145 40 21.940 E 34.50 M  
 351 020410 387262.0 5529086.7 40 22 46.890 S 145 40 21.930 E 39.90 M  
 352 020420 387262.2 5529088.2 40 22 46.840 S 145 40 21.940 E 44.30 M  
 353 020430 387262.2 5529088.8 40 22 46.820 S 145 40 21.940 E 44.30 M  
 354 020440 387262.2 5529088.8 40 22 46.820 S 145 40 21.940 E 44.60 M  
 355 020450 387262.0 5529088.5 40 22 46.830 S 145 40 21.930 E 46.70 M  
 356 020500 387261.3 5529087.6 40 22 46.860 S 145 40 21.900 E 34.30 M

355 020450 387262.0 5529088.5 40 22 46.830 S 145 40 21.930 E 46.70 M  
 356 020500 387261.3 5529087.6 40 22 46.860 S 145 40 21.900 E 34.30 M  
 357 020510 387260.1 5529086.4 40 22 46.900 S 145 40 21.850 E 21.00 M

262045

358 020520 387258.0 5529083.9 40 22 46.980 S 145 40 21.760 E .10 M  
 359 020530 387257.6 5529083.5 40 22 46.990 S 145 40 21.740 E -4.30 M

SECONDARY COMPUTATION      CONSTELLATION SUB FINAL POSITION - Tau

Sub-Final Position E      Constellation:(12,25,21,15,11)  
 02:03:40 29 Nov 1992      to      02:05:20 29 Nov 1992  
 No samples:      ?      226 to 232  
 No samples used:      Lat/Long ?      Height ?  
 P.D.O.P      Minimum 12.6      Maximum 16.0  
 H.D.O.P      Minimum 1.6      Maximum 1.8  
 3D error      Minimum 2.0m      Maximum 2.0m  
 2D error      Minimum 0.0m      Maximum 0.0m  
 Latitude      40 DEG 22 MIN 46.876 SEC S      (S.D. 1.73m)  
 Longitude      145 DEG 40 MIN 21.901 SEC E      (S.D. 1.67m)  
 Height      32.01 m      (S.D. 16.69m)

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 360 020540 387258.7 5529084.2 40 22 46.970 S 145 40 21.790 E -1.70 M  
 361 020550 387260.1 5529084.8 40 22 46.950 S 145 40 21.850 E 5.80 M  
 362 020600 387261.1 5529086.1 40 22 46.910 S 145 40 21.890 E 17.10 M  
 363 020610 387261.5 5529087.3 40 22 46.870 S 145 40 21.910 E 26.50 M  
 364 020620 387261.7 5529087.9 40 22 46.850 S 145 40 21.920 E 34.10 M  
 365 020630 387261.5 5529087.9 40 22 46.850 S 145 40 21.910 E 33.60 M  
 366 020640 387261.3 5529087.6 40 22 46.860 S 145 40 21.900 E 30.60 M  
 367 020650 387261.0 5529087.9 40 22 46.850 S 145 40 21.890 E 34.00 M  
 368 020700 387261.0 5529087.9 40 22 46.850 S 145 40 21.890 E 44.30 M  
 369 020710 387260.3 5529087.3 40 22 46.870 S 145 40 21.860 E 34.20 M  
 370 020720 387258.9 5529086.9 40 22 46.880 S 145 40 21.800 E 16.30 M  
 371 020730 387258.5 5529086.3 40 22 46.900 S 145 40 21.780 E 11.40 M  
 372 020740 387258.0 5529086.3 40 22 46.900 S 145 40 21.760 E 8.20 M  
 373 020750 387257.5 5529086.9 40 22 46.880 S 145 40 21.740 E 6.70 M  
 374 020800 387257.0 5529087.5 40 22 46.860 S 145 40 21.720 E 5.80 M  
 375 020810 387256.8 5529087.5 40 22 46.860 S 145 40 21.710 E 5.20 M  
 376 020820 387256.6 5529087.2 40 22 46.870 S 145 40 21.700 E 5.30 M  
 377 020830 387256.1 5529086.3 40 22 46.900 S 145 40 21.680 E 8.30 M

378 020840 387256.1 5529086.6 40 22 46.890 S 145 40 21.680 E 8.30 M  
 379 020850 387257.5 5529086.9 40 22 46.880 S 145 40 21.740 E 8.00 M  
 380 020900 387258.5 5529086.0 40 22 46.910 S 145 40 21.780 E 10.00 M

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381 020910 387258.9 5529085.4 40 22 46.930 S 145 40 21.800 E 12.60 M  
 382 020920 387258.7 5529085.1 40 22 46.940 S 145 40 21.790 E 12.60 M  
 383 020930 387258.2 5529085.1 40 22 46.940 S 145 40 21.770 E 11.60 M  
 384 020940 387258.0 5529085.1 40 22 46.940 S 145 40 21.760 E 10.90 M  
 385 020950 387257.3 5529085.4 40 22 46.930 S 145 40 21.730 E 8.10 M  
 386 021000 387257.3 5529085.7 40 22 46.920 S 145 40 21.730 E 5.50 M  
 387 021010 387257.5 5529085.7 40 22 46.920 S 145 40 21.740 E 6.90 M  
 388 021020 387257.1 5529085.7 40 22 46.920 S 145 40 21.720 E 9.30 M  
 389 021030 387256.4 5529085.4 40 22 46.930 S 145 40 21.690 E 9.80 M  
 390 021040 387255.4 5529084.7 40 22 46.950 S 145 40 21.650 E 8.00 M  
 391 021050 387255.2 5529084.7 40 22 46.950 S 145 40 21.640 E 7.10 M  
 392 021100 387255.2 5529085.0 40 22 46.940 S 145 40 21.640 E 6.40 M  
 393 021110 387255.2 5529085.4 40 22 46.930 S 145 40 21.640 E 5.70 M

SECONDARY COMPUTATION CONSTELLATION SUB FINAL POSITION - Tau

Sub-final Position E Constellation:(12,25,21,15,11)  
 02:03:40 29 Nov 1992 to 02:11:00 29 Nov 1992  
 No samples: 23 226 to 248  
 No samples used: Lat/Long 23 Height 23  
 P.D.O.P Minimum 4.5 Maximum 16.0  
 H.D.O.P Minimum 1.4 Maximum 1.8  
 3D error Minimum 1.0m Maximum 2.0m  
 2D error Minimum 0.0m Maximum 0.0m  
 Latitude 40 DEG 22 MIN 46.900 SEC S (S.D. 1.25m)  
 Longitude 145 DEG 40 MIN 21.777 SEC E (S.D. 2.34m)  
 Height 15.69 m (S.D. 14.18m)

394 021120 387254.9 5529085.0 40 22 46.940 S 145 40 21.630 E 6.70 M  
 395 021130 387255.4 5529086.3 40 22 46.900 S 145 40 21.650 E 7.20 M

FIX # 396 02:11:40 29 Nov 1992 Gyro(T): 249.0 Corrn: -3.5 Speed M(K): .8  
 CURRENT OFFSET : DATUM +0.00 X +0.00 Y  
 E 387257.01 N 5529088.77 Lat 40 22 51.701S 145 40 18.529E  
 Line: Thru Anc-6 CC Speed(K): .1 Dist to Go(M): -8985  
 Waypoint: FLIN-1 Dist(M): 5 Brg(T): 127.2  
 SECONDARY COMP. (T)  
 GPS (Tau) E 387257.01 N 5529088.77 Height -2.5  
 C-0s applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84  
 29 Nov 1992 UTC Time :15 11 47.3 CMG :00.10 SMG :000.1  
 Posn(WGS 84) Lat : 40 22 46.820 S Long :145 40 21.720 E (PR Corr.) Ht : 8.30 M  
 PRNs:[12 SN:09 RE:001 STAT:0]C25 SN:17 RE:001 STAT:0]C21 SN:17 RE:003 STAT:0]C15 SN:21 RE:001 STAT:0]C11 SN:16 RE:002 STAT:0]  
 POOP :04.5 H00P :01.4 3D-Err :001 2D-Err :000 Mode :4SV

Fix Time	Datum Pt	Raw Lat, Long & Ht
397 021150	387257.8 5529089.5	40 22 46.790 S 145 40 21.750 E 10.20 M
398 021200	387258.0 5529088.9	40 22 46.810 S 145 40 21.760 E 13.80 M

FIX # 399 02:20:01 29 Nov 1992 Gyro(T): 249.0 Corrn: -3.5 Speed MG(K): .3  
 CURRENT OFFSET : DATUM +0.00 X +0.00 Y  
 E 387261.75 N 5529087.61 Lat 40 22 51.740S 145 40 18.729E  
 Line: Thru Anc-6 CC Speed(K): .3 Dist to Go(M): -8983  
 Waypoint: FLIN-1 Dist(M): 2 Brg(T): 200.2  
 SECONDARY COMP. (T)  
 GPS (Tau) E 387261.75 N 5529087.61 Height +24.5  
 C-0s applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84  
 29 Nov 1992 UTC Time :15 20 08.3 CMG :00.10 SMG :000.1  
 Posn(WGS 84) Lat : 40 22 46.860 S Long :145 40 21.920 E (PR Corr.) Ht : 35.30 M  
 PRNs:C21 SN:15 RE:001 STAT:0JC25 SN:20 RE:000 STAT:0JC15 SN:21 RE:000 STAT:0JC14 SN:10 RE:001 STAT:0JC11 SN:16 RE:001 STAT:0J  
 POOP :03.0 HDOP :01.4 3D-Err :001 2D-Err :000 Mode :4SV

Fix Time	Datum Pt	Raw Lat, Long & Ht
400 022010	387261.3 5529087.6	40 22 46.860 S 145 40 21.900 E 28.30 M
401 022020	387261.3 5529087.0	40 22 46.880 S 145 40 21.900 E 17.40 M
402 022030	387261.1 5529085.4	40 22 46.930 S 145 40 21.890 E 9.70 M
403 022040	387261.1 5529085.4	40 22 46.930 S 145 40 21.890 E 9.70 M
404 022050	387261.3 5529083.9	40 22 46.980 S 145 40 21.900 E 5.50 M

SECONDARY COMPUTATION CONSTELLATION SUB FINAL POSITION - Tau

Sub-Final Position E Constellation:(12,25,21,15,11)  
 02:03:40 29 Nov 1992 to 02:11:00 29 Nov 1992  
 No samples: 23 226 to 248  
 No samples used: Lat/Long 23 Height 23  
 P.O.O.P Minimum 4.5 Maximum 16.0  
 H.O.O.P Minimum 1.4 Maximum 1.8  
 3D error Minimum 1.0m Maximum 2.0m  
 2D error Minimum 0.0m Maximum 0.0m  
 Latitude 40 DEG 22 MIN 46.900 SEC S (S.D. 1.25m)  
 Longitude 145 DEG 40 MIN 21.777 SEC E (S.D. 2.34m)  
 Height 15.69 m (S.D. 14.18m)

405 022100	387261.6 5529084.8	40 22 46.950 S 145 40 21.910 E 3.30 M
406 022110	387262.2 5529085.8	40 22 46.920 S 145 40 21.940 E 5.70 M
407 022120	387262.7 5529086.1	40 22 46.910 S 145 40 21.960 E 7.10 M
408 022130	387262.5 5529086.4	40 22 46.900 S 145 40 21.950 E 6.80 M
409 022140	387262.9 5529086.7	40 22 46.890 S 145 40 21.970 E 5.40 M
410 022150	387263.4 5529087.0	40 22 46.880 S 145 40 21.990 E 5.60 M

411	022200	387263.4	5529087.6	40 22 46.860 S	145 40 21.990 E	8.90 M
412	022210	387263.9	5529087.9	40 22 46.850 S	145 40 22.010 E	14.70 M
413	022220	387264.3	5529088.0	40 22 46.850 S	145 40 22.030 E	22.80 M
414	022230	387263.9	5529087.6	40 22 46.860 S	145 40 22.010 E	29.10 M
415	022240	387263.4	5529087.6	40 22 46.860 S	145 40 21.990 E	32.60 M
416	022250	387264.3	5529088.3	40 22 46.840 S	145 40 22.030 E	34.70 M
417	022300	387265.5	5529089.8	40 22 46.790 S	145 40 22.080 E	34.80 M
418	022310	387265.2	5529090.1	40 22 46.780 S	145 40 22.070 E	31.50 M
419	022320	387264.3	5529088.6	40 22 46.830 S	145 40 22.030 E	25.20 M
420	022330	387263.9	5529087.3	40 22 46.870 S	145 40 22.010 E	17.00 M
421	022340	387263.4	5529086.7	40 22 46.890 S	145 40 21.990 E	10.50 M
422	022350	387262.7	5529086.7	40 22 46.890 S	145 40 21.960 E	6.80 M
423	022400	387262.7	5529085.8	40 22 46.920 S	145 40 21.960 E	10.20 M
424	022410	387262.2	5529086.7	40 22 46.890 S	145 40 21.940 E	10.80 M
425	022420	387262.2	5529086.7	40 22 46.890 S	145 40 21.940 E	14.80 M
426	022430	387262.5	5529086.7	40 22 46.890 S	145 40 21.950 E	18.10 M
427	022440	387262.2	5529087.0	40 22 46.880 S	145 40 21.940 E	20.50 M
428	022450	387261.7	5529088.2	40 22 46.840 S	145 40 21.920 E	20.20 M
429	022500	387261.7	5529088.5	40 22 46.830 S	145 40 21.920 E	15.60 M
430	022510	387262.2	5529088.2	40 22 46.840 S	145 40 21.940 E	12.70 M
431	022520	387261.8	5529087.0	40 22 46.880 S	145 40 21.920 E	14.70 M
432	022530	387261.3	5529086.4	40 22 46.900 S	145 40 21.900 E	16.80 M
433	022540	387260.6	5529085.4	40 22 46.930 S	145 40 21.870 E	12.40 M
434	022550	387260.1	5529084.8	40 22 46.950 S	145 40 21.850 E	9.90 M
435	022600	387259.9	5529084.5	40 22 46.960 S	145 40 21.840 E	12.80 M
436	022610	387259.7	5529084.8	40 22 46.950 S	145 40 21.830 E	12.40 M
437	022620	387259.4	5529086.0	40 22 46.910 S	145 40 21.820 E	7.30 M
438	022630	387258.9	5529086.6	40 22 46.890 S	145 40 21.800 E	6.10 M
439	022640	387258.7	5529086.6	40 22 46.890 S	145 40 21.790 E	5.60 M
440	022650	387258.9	5529086.3	40 22 46.900 S	145 40 21.800 E	5.10 M
441	022700	387259.6	5529087.0	40 22 46.880 S	145 40 21.830 E	7.50 M
442	022710	387260.1	5529086.7	40 22 46.890 S	145 40 21.850 E	12.10 M

441 022700 387259.6 5529087.0 40 22 46.880 S 145 40 21.830 E 7.50 M  
 442 022710 387260.1 5529086.7 40 22 46.890 S 145 40 21.850 E 12.10 M  
 443 022720 387260.8 5529085.1 40 22 46.940 S 145 40 21.880 E 18.00 M

444 022730 387261.8 5529084.5 40 22 46.960 S 145 40 21.920 E 21.90 M  
 445 022740 387261.6 5529084.2 40 22 46.970 S 145 40 21.910 E 20.10 M  
 446 022750 387261.1 5529083.6 40 22 46.990 S 145 40 21.890 E 13.90 M  
 447 022800 387260.6 5529083.3 40 22 47.000 S 145 40 21.870 E 6.40 M  
 448 022810 387259.7 5529083.6 40 22 46.990 S 145 40 21.830 E .90 M

FIX # 449 02:28:20 29 Nov 1992 Gyro(T): 249.0 Corrn: -3.5 Speed MG(K): .2

CURRCHT OFFSET : DATUM +0.00 X +0.00 Y

E 387258.97 N 5529083.87 Lat 40 22 51.8615 145 40 18.609E

Line: Thru Anc-6 CC Speed(K): .2 Dist to Go(M): -8988

Waypoint: FLIN-1 Dist(M): 3 Brg(T): 49.1

SECONDARY COMP. (T)

GPS (Tau) E 387258.97 N 5529083.87 Height -14.2

C-Os applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84

29 Nov 1992 UTC Time :15 28 27.4 CMG :00.10 SMG :000.1

Posn(WGS 84) Lat : 40 22 46.980 S Long :145 40 21.800 E (PR Corr.) Ht : -3.40 M

PRNs:C21 SM:11 RE:001 STAT:0JC25 SM:18 RE:000 STAT:0JC15 SM:24 RE:001 STAT:0JC14 SM:09 RE:005 STAT:0JC11 SM:14 RE:000 STAT:0J

POOP :03.0 HOOP :01.4 30-Err :000 20-Err :000 Mode :4SV

Fix	Time	Datum Pt	Raw Lat, Long & Ht
450	022830	387259.0	5529085.1 40 22 46.940 S 145 40 21.800 E -1.70 M
451	022840	387259.4	5529086.0 40 22 46.910 S 145 40 21.820 E 2.90 M
452	022850	387259.9	5529085.7 40 22 46.920 S 145 40 21.840 E 7.90 M
453	022900	387259.9	5529085.1 40 22 46.940 S 145 40 21.840 E 13.50 M
454	022910	387260.4	5529085.1 40 22 46.940 S 145 40 21.860 E 15.50 M
455	022920	387261.8	5529086.1 40 22 46.910 S 145 40 21.920 E 19.20 M
456	022930	387262.7	5529086.4 40 22 46.900 S 145 40 21.960 E 24.40 M
457	022940	387262.7	5529085.5 40 22 46.930 S 145 40 21.960 E 27.60 M
458	022950	387262.9	5529086.1 40 22 46.910 S 145 40 21.970 E 29.20 M
459	023000	387262.9	5529086.7 40 22 46.890 S 145 40 21.970 E 28.70 M
460	023010	387262.5	5529087.6 40 22 46.860 S 145 40 21.950 E 27.40 M
461	023020	387261.7	5529088.5 40 22 46.830 S 145 40 21.920 E 24.70 M
462	023030	387260.8	5529088.8 40 22 46.820 S 145 40 21.880 E 19.90 M
463	023040	387260.8	5529089.4 40 22 46.800 S 145 40 21.880 E 15.90 M

465	023100	387261.1	5529086.7	40	22	46.890	S	145	40	21.890	E	11.30	M
466	023110	387261.3	5529086.1	40	22	46.910	S	145	40	21.900	E	9.80	M
467	023120	387261.5	5529087.3	40	22	46.870	S	145	40	21.910	E	5.40	M
468	023130	387261.5	5529087.6	40	22	46.860	S	145	40	21.910	E	3.70	M
469	023140	387261.5	5529087.6	40	22	46.860	S	145	40	21.910	E	5.30	M
470	023150	387261.3	5529088.2	40	22	46.840	S	145	40	21.900	E	6.30	M
471	023200	387261.0	5529089.1	40	22	46.810	S	145	40	21.890	E	8.70	M
472	023210	387260.8	5529089.1	40	22	46.810	S	145	40	21.880	E	12.60	M
473	023220	387260.3	5529088.2	40	22	46.840	S	145	40	21.860	E	16.30	M
474	023230	387260.6	5529088.5	40	22	46.830	S	145	40	21.870	E	18.70	M
475	023240	387260.3	5529088.5	40	22	46.830	S	145	40	21.860	E	19.70	M
476	023250	387260.1	5529088.2	40	22	46.840	S	145	40	21.850	E	19.10	M
477	023300	387259.8	5529089.1	40	22	46.810	S	145	40	21.840	E	18.10	M
478	023310	387259.6	5529089.1	40	22	46.810	S	145	40	21.830	E	17.20	M
479	023320	387259.4	5529088.2	40	22	46.840	S	145	40	21.820	E	17.60	M
480	023330	387260.3	5529087.3	40	22	46.870	S	145	40	21.860	E	21.30	M
481	023340	387260.8	5529086.7	40	22	46.890	S	145	40	21.880	E	24.90	M
482	023350	387260.8	5529086.7	40	22	46.890	S	145	40	21.880	E	25.70	M
483	023400	387261.0	5529087.0	40	22	46.880	S	145	40	21.890	E	25.20	M
484	023410	387261.5	5529087.3	40	22	46.870	S	145	40	21.910	E	23.90	M
485	023420	387261.5	5529087.6	40	22	46.860	S	145	40	21.910	E	21.50	M
486	023430	387260.8	5529087.3	40	22	46.870	S	145	40	21.880	E	18.20	M
487	023440	387259.7	5529085.7	40	22	46.920	S	145	40	21.830	E	13.50	M
488	023450	387259.2	5529084.2	40	22	46.970	S	145	40	21.810	E	11.40	M
489	023500	387259.7	5529083.6	40	22	46.990	S	145	40	21.830	E	9.60	M
490	023510	387259.9	5529083.9	40	22	46.980	S	145	40	21.840	E	6.80	M
491	023520	387260.1	5529084.2	40	22	46.970	S	145	40	21.850	E	7.50	M
492	023530	387260.6	5529086.0	40	22	46.910	S	145	40	21.870	E	11.10	M
493	023540	387261.5	5529087.6	40	22	46.860	S	145	40	21.910	E	12.90	M
494	023550	387262.0	5529087.6	40	22	46.860	S	145	40	21.930	E	16.00	M
495	023600	387261.8	5529086.7	40	22	46.890	S	145	40	21.920	E	18.10	M

171 023550 387262.0 5529087.6 40 22 46.860 S 145 40 21.930 E 16.00 M

262051

495 023600 387261.8 5529086.7 40 22 46.890 S 145 40 21.920 E 18.10 M

496 023610 387261.3 5529084.8 40 22 46.950 S 145 40 21.900 E 21.90 M

497 023620 387261.3 5529084.2 40 22 46.970 S 145 40 21.900 E 22.70 M

498 023630 387261.5 5529086.4 40 22 46.900 S 145 40 21.910 E 23.60 M

FIX # 499 02:36:40 29 Nov 1992 Gyro(T): 249.0 Corrn: -3.5 Speed MG(K): .8

CURRENT OFFSET : DATUM +0.00 X +0.00 Y

E 387261.73 N 5529088.84 Lat 40 22 51.700S 145 40 18.729E

Line: Thru Anc-6 CC Speed(K): .5 Dist to Go(M): -8982

Waypoint: FLIN-1 Dist(M): 3 Brg(T): 192.4

SECONDARY COMP. (T)

GPS (Tau) E 387261.73 N 5529088.84 Height +12.9

C-0s applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84

29 Nov 1992 UTC Time :15 36 47.3 CMG :00.10 SMG :000.1

Posn(WGS 84) Lat : 40 22 46.820 S Long :145 40 21.920 E (PR Corr.) Ht : 23.70 M

PRNs:C21 SN:09 RE:002 STAT:0JC25 SN:21 RE:000 STAT:0JC15 SN:19 RE:000 STAT:0JC14 SN:11 RE:004 STAT:0JC11 SN:13 RE:002 STAT:0J

PDOP :02.9 HDOP :01.4 3D-Err :000 2D-Err :000 Mode :4SV

Fix	Time	Datum Pt	Raw Lat, Long & Ht
500	023650	387261.7	5529088.5 40 22 46.830 S 145 40 21.920 E 23.00 M
501	023700	387261.5	5529087.3 40 22 46.870 S 145 40 21.910 E 21.50 M
502	023710	387261.7	5529088.2 40 22 46.840 S 145 40 21.920 E 20.20 M
503	023720	387261.5	5529087.9 40 22 46.850 S 145 40 21.910 E 22.40 M
504	023730	387261.5	5529088.2 40 22 46.840 S 145 40 21.910 E 23.60 M
505	023740	387261.7	5529088.8 40 22 46.820 S 145 40 21.920 E 26.50 M
506	023750	387261.7	5529088.8 40 22 46.820 S 145 40 21.920 E 26.40 M
507	023800	387261.7	5529088.5 40 22 46.830 S 145 40 21.920 E 27.00 M
508	023810	387261.7	5529088.8 40 22 46.820 S 145 40 21.920 E 25.50 M
509	023820	387261.7	5529089.5 40 22 46.800 S 145 40 21.920 E 23.90 M
510	023830	387262.2	5529089.8 40 22 46.790 S 145 40 21.940 E 25.60 M
511	023840	387262.7	5529088.9 40 22 46.820 S 145 40 21.960 E 26.00 M
512	023850	387263.1	5529088.6 40 22 46.830 S 145 40 21.980 E 28.30 M
513	023900	387263.9	5529088.9 40 22 46.820 S 145 40 22.010 E 30.20 M
514	023910	387263.6	5529089.2 40 22 46.810 S 145 40 22.000 E 31.00 M
515	023920	387262.4	5529089.2 40 22 46.810 S 145 40 21.950 E 32.60 M
516	023930	387261.7	5529087.9 40 22 46.850 S 145 40 21.920 E 33.80 M
517	023940	387262.0	5529087.3 40 22 46.870 S 145 40 21.930 E 31.20 M

518 023950	387261.3	5529087.0	40 22 46.800	S 145 40 21.900	E	30.60	M
519 024000	387260.6	5529086.4	40 22 46.900	S 145 40 21.870	E	29.40	M
520 024010	387260.4	5529085.7	40 22 46.920	S 145 40 21.860	E	26.30	M
521 024020	387260.1	5529085.7	40 22 46.920	S 145 40 21.850	E	24.50	M
522 024030	387259.6	5529087.0	40 22 46.800	S 145 40 21.830	E	21.30	M
523 024040	387259.4	5529085.1	40 22 46.940	S 145 40 21.820	E	17.90	M
524 024050	387259.0	5529082.6	40 22 47.020	S 145 40 21.800	E	13.40	M
525 024100	387258.5	5529081.7	40 22 47.050	S 145 40 21.780	E	8.50	M
526 024110	387258.3	5529081.4	40 22 47.060	S 145 40 21.770	E	4.50	M
527 024120	387258.3	5529081.1	40 22 47.070	S 145 40 21.770	E	2.40	M
528 024130	387258.8	5529082.0	40 22 47.040	S 145 40 21.790	E	3.10	M
529 024140	387259.2	5529082.9	40 22 47.010	S 145 40 21.810	E	6.80	M
530 024150	387259.2	5529083.9	40 22 46.980	S 145 40 21.810	E	9.10	M
531 024200	387259.2	5529084.5	40 22 46.960	S 145 40 21.810	E	10.10	M
532 024210	387259.4	5529085.4	40 22 46.930	S 145 40 21.820	E	10.10	M
533 024220	387259.7	5529085.7	40 22 46.920	S 145 40 21.830	E	10.20	M
534 024230	387260.6	5529086.7	40 22 46.890	S 145 40 21.870	E	15.30	M
535 024240	387261.5	5529088.2	48 22 46.840	S 145 40 21.910	E	21.40	M
536 024250	387262.0	5529088.8	40 22 46.820	S 145 40 21.930	E	25.60	M
537 024300	387261.7	5529088.2	40 22 46.840	S 145 40 21.920	E	26.40	M
538 024310	387261.5	5529088.2	40 22 46.840	S 145 40 21.910	E	20.60	M
539 024320	387261.7	5529088.8	40 22 46.820	S 145 40 21.920	E	14.30	M
540 024330	387261.7	5529089.5	40 22 46.800	S 145 40 21.920	E	8.10	M
541 024340	387261.9	5529091.0	40 22 46.750	S 145 40 21.930	E	5.20	M
542 024350	387261.2	5529090.7	40 22 46.760	S 145 40 21.900	E	3.10	M
543 024400	387261.0	5529089.8	40 22 46.790	S 145 40 21.890	E	1.70	M
544 024410	387260.6	5529087.6	40 22 46.860	S 145 40 21.870	E	2.10	M
545 024420	387260.3	5529087.0	40 22 46.880	S 145 40 21.860	E	1.40	M
546 024430	387260.3	5529088.5	40 22 46.830	S 145 40 21.860	E	.60	M
547 024440	387260.6	5529088.2	40 22 46.840	S 145 40 21.870	E	.30	M
548 024450	387260.1	5529084.2	40 22 46.970	S 145 40 21.850	E	.70	M

FIX # 549 02:45:00 29 Nov 1992 Gyro(T): 249.0 Corrn: -3.5 Speed MG(K): .6  
 CURRENT OFFSET : DATUM +0.00 X +0.00 Y

E 387259.93 N 5529082.95 Lat 40 22 51.891S 145 40 18.649E  
 Line: Thru Anc-6 CC Speed(K): .3 Dist to Go(M): -8988  
 Waypoint: FLIN-1 Dist(M): 3 Brg(T): 23.5

SECONDARY COMP. (T)

GPS (Tau) E 387259.93 N 5529082.95 Height -10.4  
 C-0s applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84

29 Nov 1992 UTC Time :15 45 07.4 CMG :00.10 SMG :000.1

Posn(WGS 84) Lat : 40 22 47.010 S Long :145 40 21.840 E (PR Corr.) Ht : .40 M

PRNs:C21 SM:14 RE:001 STAT:0JC25 SM:25 RE:002 STAT:0JC15 SM:20 RE:000 STAT:0JC14 SM:08 RE:004 STAT:0JC11 SM:13 RE:002 STAT:0J

PDP :02.7 HDOP :01.4 3D-Err :000 2D-Err :000 Mode :4SV

Fix	Time	Datum Pt	Raw Lat, Long & Ht
550	024510	387259.2 5529082.0	40 22 47.040 S 145 40 21.810 E -1.60 M
551	024520	387259.5 5529082.3	40 22 47.030 S 145 40 21.820 E 1.80 M
552	024530	387259.7 5529082.6	40 22 47.020 S 145 40 21.830 E .80 M
553	024540	387259.5 5529081.1	40 22 47.070 S 145 40 21.820 E 3.40 M
554	024550	387259.5 5529079.9	40 22 47.110 S 145 40 21.820 E 4.60 M
555	024600	387259.3 5529078.9	40 22 47.140 S 145 40 21.810 E 4.30 M
556	024610	387259.5 5529077.7	40 22 47.180 S 145 40 21.820 E 4.70 M
557	024620	387259.3 5529076.8	40 22 47.210 S 145 40 21.810 E 6.60 M
558	024630	387259.3 5529078.0	40 22 47.170 S 145 40 21.810 E 8.40 M
559	024640	387260.0 5529079.6	40 22 47.120 S 145 40 21.840 E 9.90 M
560	024650	387260.7 5529081.1	40 22 47.070 S 145 40 21.870 E 11.70 M
561	024700	387260.9 5529082.4	40 22 47.030 S 145 40 21.880 E 13.50 M
562	024710	387260.9 5529082.0	40 22 47.040 S 145 40 21.880 E 15.00 M
563	024720	387261.1 5529083.0	40 22 47.010 S 145 40 21.890 E 16.90 M
564	024730	387260.9 5529084.2	40 22 46.970 S 145 40 21.880 E 16.30 M
565	024740	387260.8 5529085.1	40 22 46.940 S 145 40 21.880 E 14.90 M
566	024750	387260.4 5529084.5	40 22 46.960 S 145 40 21.860 E 14.40 M
567	024800	387260.2 5529083.3	40 22 47.000 S 145 40 21.850 E 15.20 M
568	024810	387260.2 5529083.6	40 22 46.990 S 145 40 21.850 E 16.50 M
569	024820	387260.1 5529084.8	40 22 46.950 S 145 40 21.850 E 19.20 M
570	024830	387260.4 5529085.4	40 22 46.930 S 145 40 21.860 E 21.80 M

572 024850	387260.1	5529087.9	40 22 46.850 S	145 40 21.850 E	24.30 M
573 024900	387259.6	5529087.6	40 22 46.860 S	145 40 21.830 E	22.90 M
574 024910	387260.1	5529088.2	40 22 46.840 S	145 40 21.850 E	20.30 M
575 024920	387260.8	5529088.5	40 22 46.830 S	145 40 21.880 E	19.10 M
576 024930	387261.5	5529090.1	40 22 46.780 S	145 40 21.910 E	19.50 M
577 024940	387261.9	5529091.3	40 22 46.740 S	145 40 21.930 E	19.80 M
578 024950	387261.5	5529091.0	40 22 46.750 S	145 40 21.910 E	20.00 M
579 025000	387261.1	5529089.5	40 22 46.790 S	145 40 21.890 E	18.80 M
580 025010	387261.1	5529088.9	40 22 46.810 S	145 40 21.890 E	18.60 M
581 025020	387261.3	5529088.6	40 22 46.820 S	145 40 21.900 E	18.10 M
582 025030	387261.6	5529088.3	40 22 46.830 S	145 40 21.910 E	18.10 M
583 025040	387262.1	5529087.4	40 22 46.860 S	145 40 21.930 E	18.00 M
584 025050	387262.3	5529087.7	40 22 46.850 S	145 40 21.940 E	16.60 M
585 025100	387262.8	5529086.2	40 22 46.900 S	145 40 21.960 E	15.00 M
586 025110	387262.6	5529085.6	40 22 46.920 S	145 40 21.950 E	17.80 M
587 025120	387262.1	5529085.6	40 22 46.920 S	145 40 21.930 E	20.80 M
588 025130	387261.6	5529085.2	40 22 46.930 S	145 40 21.910 E	21.40 M
589 025140	387261.4	5529084.6	40 22 46.950 S	145 40 21.900 E	21.20 M
590 025150	387261.9	5529084.6	40 22 46.950 S	145 40 21.920 E	21.30 M
591 025200	387262.3	5529084.9	40 22 46.940 S	145 40 21.940 E	21.70 M
592 025210	387262.8	5529084.9	40 22 46.940 S	145 40 21.960 E	21.80 M
593 025220	387262.3	5529084.6	40 22 46.950 S	145 40 21.940 E	22.50 M
594 025230	387261.9	5529084.9	40 22 46.940 S	145 40 21.920 E	23.70 M
595 025240	387261.6	5529084.6	40 22 46.950 S	145 40 21.910 E	24.40 M
596 025250	387261.9	5529084.0	40 22 46.970 S	145 40 21.920 E	24.90 M
597 025300	387261.9	5529084.0	40 22 46.970 S	145 40 21.920 E	24.20 M
598 025310	387261.2	5529083.7	40 22 46.980 S	145 40 21.890 E	23.50 M

FIX # 599 02:53:20 29 Nov 1992 Gyro(T): 249.3 Corrns: -3.5 Speed M6(K): .2

CURRENT OFFSET : DATUM +0.00 X +0.00 Y

E 387260.46 N 5529084.29 Lat 40 22 51.847S 145 40 18.672E

Line: Thru Anc-6 CC Speed(K): .1 Dist to Go(M): -8987

Waypoint: FLIN-1 Dist(M): 2 Brg(T): 24.3

SECONDARY COMP. (T)

GPS (Tau) E 387260.46 N 5529084.29 Height +11.7

Line: Thru Hnc-b CC Speed(K): .1 Dist to Go(M): -8987  
 Waypoint: FLIN-1 Dist(M): 2 Brg(T): 24.3  
 SECONDARY COMP. (T)  
 GPS (Tau) E 387260.46 N 5529084.29 Height +11.7  
 C-0s applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84  
 29 Nov 1992 UTC Time :15 53 27.4 CMG :00.00 SMG :000.0

262055

Posn(WGS 84) Lat : 40 22 46.960 S Long :145 40 21.860 E (PR Corr.) Ht : 22.50 M  
 PRNs:C21 SN:11 RE:001 STAT:0JC25 SN:23 RE:002 STAT:0JC15 SN:21 RE:002 STAT:0JC14 SN:11 RE:000 STAT:0JC11 SN:09 RE:003 STAT:0J  
 PDOP :02.5 HOOP :01.4 3D-Err :000 2D-Err :000 Mode :4SV

Fix	Time	Datum Pt	Raw Lat, Long & Ht
600	025330	387259.7	5529084.9 40 22 46.940 S 145 40 21.830 E 21.60 M
601	025340	387259.5	5529085.5 40 22 46.920 S 145 40 21.820 E 23.20 M
602	025350	387259.3	5529086.1 40 22 46.900 S 145 40 21.810 E 24.60 M
603	025400	387259.2	5529087.0 40 22 46.870 S 145 40 21.810 E 25.90 M
604	025410	387258.8	5529087.0 40 22 46.870 S 145 40 21.790 E 25.50 M
605	025420	387258.5	5529087.0 40 22 46.870 S 145 40 21.780 E 25.10 M
606	025430	387258.5	5529087.0 40 22 46.870 S 145 40 21.780 E 25.90 M
607	025440	387258.5	5529087.7 40 22 46.850 S 145 40 21.780 E 26.20 M
608	025450	387258.7	5529088.6 40 22 46.820 S 145 40 21.790 E 25.20 M
609	025500	387258.5	5529089.2 40 22 46.800 S 145 40 21.780 E 25.20 M
610	025510	387259.0	5529089.5 40 22 46.790 S 145 40 21.800 E 26.10 M
611	025520	387259.2	5529089.5 40 22 46.790 S 145 40 21.810 E 24.70 M
612	025530	387259.2	5529089.8 40 22 46.780 S 145 40 21.810 E 23.00 M
613	025540	387259.4	5529088.9 40 22 46.810 S 145 40 21.820 E 21.80 M
614	025550	387259.0	5529088.0 40 22 46.840 S 145 40 21.800 E 21.30 M
615	025600	387259.0	5529087.0 40 22 46.870 S 145 40 21.800 E 21.00 M
616	025610	387259.2	5529087.4 40 22 46.860 S 145 40 21.810 E 19.50 M
617	025620	387259.2	5529087.7 40 22 46.850 S 145 40 21.810 E 18.80 M
618	025630	387258.8	5529087.4 40 22 46.860 S 145 40 21.790 E 19.80 M
619	025640	387259.0	5529088.0 40 22 46.840 S 145 40 21.800 E 21.70 M
620	025650	387259.2	5529088.3 40 22 46.830 S 145 40 21.810 E 23.50 M
621	025700	387259.7	5529088.3 40 22 46.830 S 145 40 21.830 E 25.80 M
622	025710	387259.9	5529088.3 40 22 46.830 S 145 40 21.840 E 27.00 M
623	025720	387260.6	5529088.6 40 22 46.820 S 145 40 21.870 E 23.90 M
624	025730	387260.9	5529088.9 40 22 46.810 S 145 40 21.880 E 19.60 M

625	025740	387261.1	5529088.6	40 22 46.820	S 145 40 21.890	E	15.80	M
626	025750	387261.4	5529088.0	40 22 46.840	S 145 40 21.900	E	13.30	M
627	025800	387261.4	5529087.4	40 22 46.860	S 145 40 21.900	E	11.80	M
628	025810	387261.8	5529087.1	40 22 46.870	S 145 40 21.920	E	10.20	M
629	025820	387261.8	5529086.8	40 22 46.880	S 145 40 21.920	E	9.60	M
630	025830	387261.6	5529086.8	40 22 46.880	S 145 40 21.910	E	10.60	M
631	025840	387261.6	5529086.8	40 22 46.880	S 145 40 21.910	E	10.70	M
632	025850	387261.8	5529087.1	40 22 46.870	S 145 40 21.920	E	11.70	M
633	025900	387262.1	5529087.4	40 22 46.860	S 145 40 21.930	E	12.50	M
634	025910	387262.3	5529087.1	40 22 46.870	S 145 40 21.940	E	13.40	M
635	025920	387262.3	5529086.8	40 22 46.880	S 145 40 21.940	E	13.80	M
636	025930	387261.9	5529085.9	40 22 46.910	S 145 40 21.920	E	13.00	M
637	025940	387261.9	5529085.2	40 22 46.930	S 145 40 21.920	E	12.10	M
638	025950	387261.9	5529084.3	40 22 46.960	S 145 40 21.920	E	11.50	M
639	030000	387261.7	5529083.4	40 22 46.990	S 145 40 21.910	E	9.90	M
640	030010	387261.2	5529083.1	40 22 47.000	S 145 40 21.890	E	8.40	M
641	030020	387260.7	5529083.1	40 22 47.000	S 145 40 21.870	E	7.80	M
642	030030	387260.9	5529083.7	40 22 46.980	S 145 40 21.880	E	7.10	M
643	030040	387261.2	5529085.5	40 22 46.920	S 145 40 21.890	E	9.20	M
644	030050	387261.4	5529085.5	40 22 46.920	S 145 40 21.900	E	11.60	M
645	030100	387261.4	5529084.0	40 22 46.970	S 145 40 21.900	E	12.60	M
646	030110	387260.9	5529084.6	40 22 46.950	S 145 40 21.880	E	15.40	M
647	030120	387260.2	5529083.7	40 22 46.980	S 145 40 21.850	E	16.80	M
648	030130	387259.3	5529082.4	40 22 47.020	S 145 40 21.810	E	18.30	M

FIX # 649 03:01:40 29 Nov 1992 Gyro(I): 249.3 Corr: -3.5 Speed MG(K): .1

CURRENT OFFSET : DATUM +0.00 X +0.00 Y

E 387258.84 N 5529082.42 Lat 40 22 51.9075 145 40 18.602E

Line: Thru Anc-6 CC Speed(K): 0.0 Dist to Go(M): -8989

Waypoint: FLIN-1 Dist(M): 4 Brg(I): 34.9

SECONDARY COMP. (I)

GPS (Tau) E 387258.84 N 5529082.42 Height +10.9

C-Os applied dLat : +0.00 dLong : +0.00 dHeight : +0.00 Rx spheroid : WGS 84

29 Nov 1992 UTC Time :16 01 47.4 CMG :00.10 SMG :000.1

Posn(WGS 84) Lat : 40 22 47.020 S Long :145 40 21.790 E (PR Corr.) Ht : 21.70 M

PRNs:C21 SN:06 RE:000 STAT:0J[C25 SN:22 RE:000 STAT:0J[C15 SN:17 RE:004 STAT:0J[C14 SN:15 RE:001 STAT:0J[C11 SN:12 RE:000 STAT:0J

PDOP :02.4 HDOP :01.4 3D-Err :000 2D-Err :000 Mode :4SU

Fix Time Datum Pt Raw Lat, Long & Ht

262057

Fix	Time	Datum	Pt	Raw Lat, Long & Ht
650	030150	387258.8	5529083.0	40 22 47.000 S 145 40 21.790 E 23.70 M
651	030200	387259.5	5529084.0	40 22 46.970 S 145 40 21.820 E 21.60 M
652	030210	387260.2	5529084.3	40 22 46.960 S 145 40 21.850 E 17.00 M
653	030220	387260.5	5529083.1	40 22 47.000 S 145 40 21.860 E 12.30 M
654	030230	387260.3	5529081.5	40 22 47.050 S 145 40 21.850 E 8.70 M
655	030240	387260.0	5529080.9	40 22 47.070 S 145 40 21.840 E 5.60 M
656	030250	387260.1	5529080.3	40 22 47.090 S 145 40 21.840 E 2.90 M
657	030300	387260.3	5529080.9	40 22 47.070 S 145 40 21.850 E 3.80 M
658	030310	387260.0	5529080.9	40 22 47.070 S 145 40 21.840 E 6.10 M
659	030320	387260.0	5529080.6	40 22 47.080 S 145 40 21.840 E 7.20 M
660	030330	387259.8	5529081.5	40 22 47.050 S 145 40 21.830 E 7.30 M
661	030340	387259.8	5529081.8	40 22 47.040 S 145 40 21.830 E 8.50 M
662	030350	387259.8	5529082.1	40 22 47.030 S 145 40 21.830 E 10.40 M
663	030400	387260.5	5529082.8	40 22 47.010 S 145 40 21.860 E 12.30 M
664	030410	387260.9	5529084.6	40 22 46.950 S 145 40 21.880 E 15.00 M
665	030420	387261.1	5529085.8	40 22 46.910 S 145 40 21.890 E 17.10 M
666	030430	387261.4	5529086.5	40 22 46.890 S 145 40 21.900 E 18.20 M
667	030440	387261.4	5529087.1	40 22 46.870 S 145 40 21.900 E 17.80 M
668	030450	387260.9	5529084.3	40 22 46.960 S 145 40 21.880 E 13.90 M
669	030500	387260.9	5529084.0	40 22 46.970 S 145 40 21.880 E 12.70 M
670	030510	387261.2	5529084.6	40 22 46.950 S 145 40 21.890 E 13.30 M
671	030520	387260.7	5529084.0	40 22 46.970 S 145 40 21.870 E 13.10 M
672	030530	387259.8	5529083.4	40 22 46.990 S 145 40 21.830 E 12.60 M
673	030540	387259.8	5529083.7	40 22 46.980 S 145 40 21.830 E 14.40 M
674	030550	387260.0	5529084.3	40 22 46.960 S 145 40 21.840 E 17.00 M
675	030600	387260.0	5529084.0	40 22 46.970 S 145 40 21.840 E 18.60 M
676	030610	387260.5	5529084.3	40 22 46.960 S 145 40 21.860 E 18.70 M
677	030620	387260.9	5529085.2	40 22 46.930 S 145 40 21.880 E 17.90 M

## SECONDARY COMPUTATION      CONSTELLATION SUB FINAL POSITION - Tau

Sub-Final Position f      Constellation:(21,25,15,14,11)

02:21:00 29 Nov 1992    to    03:06:20 29 Nov 1992

No samples: 182      249 to 430

No samples used:    Lat/Long 182    Height 182

262058

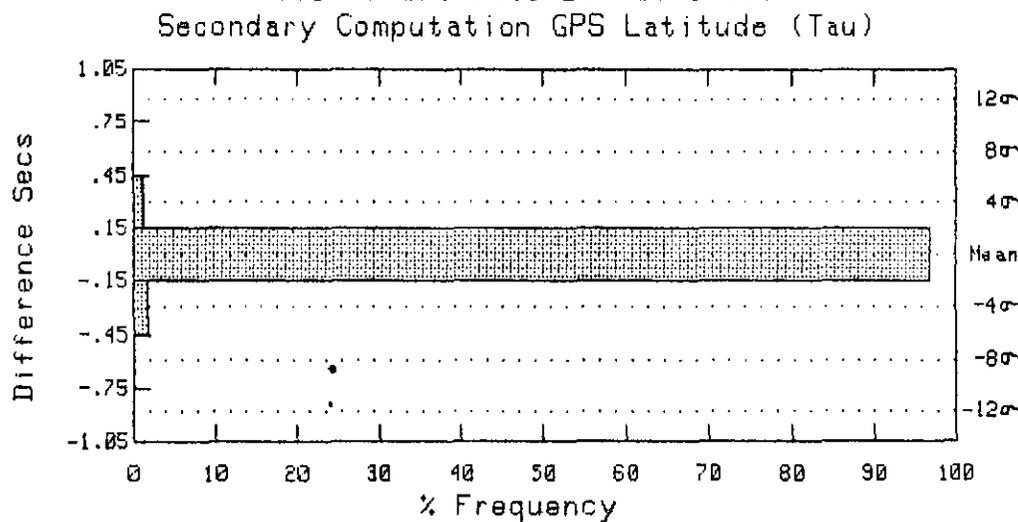
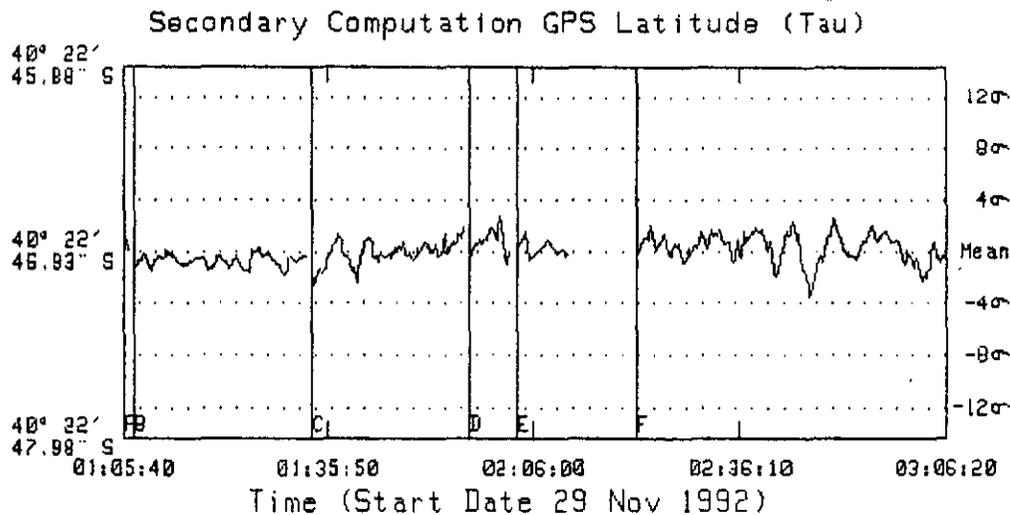
P.D.O.P	Minimum	2.4	Maximum	3.0
H.D.O.P	Minimum	1.4	Maximum	1.4
3D error	Minimum	0.0m	Maximum	0.0m
2D error	Minimum	0.0m	Maximum	0.0m
Latitude	40 DEG 22 MIN 46.906 SEC S	(S.D.	2.51m)	
Longitude	145 DEG 40 MIN 21.882 SEC E	(S.D.	1.37m)	
Height	16.18 m	(S.D.	8.01m)	

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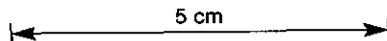
678 030630 387260.9 5529085.2 40 22 46.930 S 145 40 21.880 E 15.60 M

Analysis data stored to file ANALYSIS10

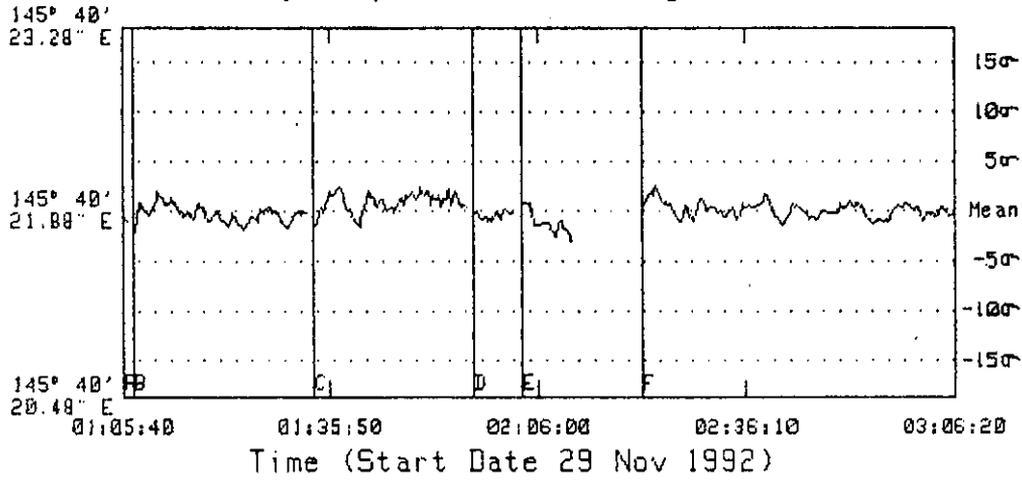
Analysis data stored to file ANALYSIS10



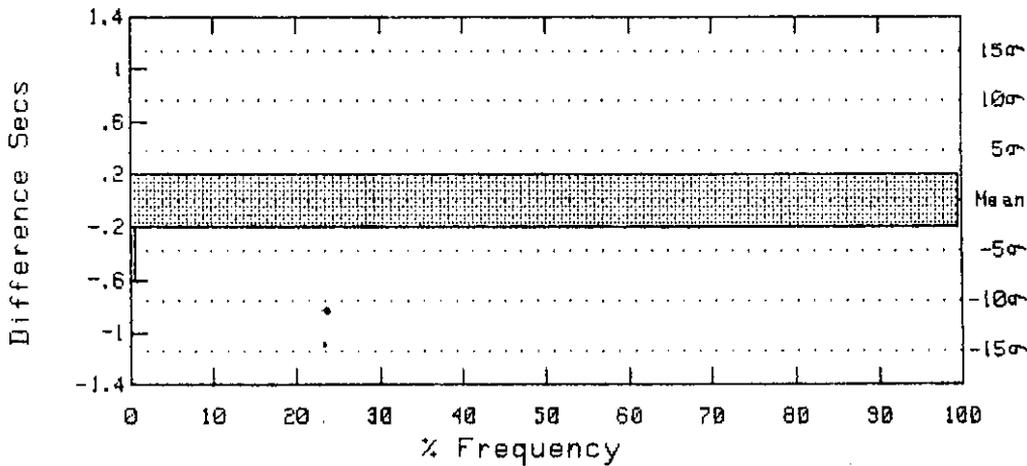
Secondary Computation (WGS 84 - Tau)  
 Centred on mean of antenna position (passes 1 to 430).  
 Latitude 40 DEG 22 MIN 46.928 SEC S Sd 2.265 Metres



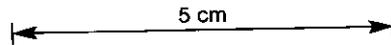
Secondary Computation GPS Longitude (Tau)



Secondary Computation GPS Longitude (Tau)



Secondary Computation (WGS 84 - Tau)  
 Centred on mean of antenna position (passes 1 to 430).  
 Longitude 145 DEG 40 MIN 21.878 SEC E Sd 1.785 Metres



**APPENDIX G**

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**BHPE OBSERVATION SHEETS**

Spheroid Defined --> Australian National-AMG  
 Parameters : A 6378160.000 B 6356774.719 K .99960  
 E0 -500000.000 N0 -1000000.000

Fixed stations for survey control from file :FLINDERS.TPN

STATION NAME	EASTING	NORTHING	R.L.
1	386814.460	5528923.550	-67.400
2	387817.820	5529285.040	-64.500
3	387016.580	5529730.870	-62.000
4	387568.710	5528325.250	-65.800

PROJECTION = TRANSVERSE MERCATOR  
 SPHEROID = Australian National-AMG  
 C.M. = 149 00 00.00  
 Std. Devn = 1.0 + 20.0 ppm

#### PARAMETER SETTINGS

Standard velocity of propagation (m/s) 1494.400  
 Actual velocity of propagation (m/s) 1494.200  
 Tide height (above +ve, below -ve) to datum .000  
 Transducer depth 10.000  
 Offset angle of trans/anten 0-360 deg. 315 00 00.  
 Offset distance 2.200  
 Gyro heading 0-360 deg. 249 20 00.  
 Way Point No. 1 387261.100E 5529085.760N

FIX No.	1	29/11/92 00:08:59	387262.7E	5529086.9N	
From Station	Raw Range	Red Range	Residual	PPM	
1	476.2	472.7	2.99	6294.	
2	590.7	588.1	2.99	5065.	
3	691.0	688.9	2.17	3144.	
4	819.3	817.3	2.21	2702.	

To Way Point 1 235 08 07. 2.0

FIX No.	2	29/11/92 00:20:17	387262.5E	5529086.6N	
From Station	Raw Range	Red Range	Residual	PPM	
1	476.0	472.5	2.85	5992.	
2	591.2	588.6	2.84	4800.	
3	690.9	688.8	2.47	3580.	
4	818.8	816.8	2.52	3076.	

To Way Point 1 239 07 33. 1.6

## \*\*\*\*\* Hydro Navigation Settings \*\*\*\*\*

## \*\*\*\*\* Vessel Parameters \*\*\*\*\*

Vessel name	OCEAN EPOCH
Compass variation	0°00
Antenna height	18.60 m
Antenna-Offset starb'd	0.00 m
Antenna-Offset for'hed	-43.40 m

## \*\*\*\*\* Log and Fix Parameters \*\*\*\*\*

Current log file	FLINLOG
Moving average range	10
Maximum velocities to consider	12.0 kts
Log frequency	1
Mark/Print frequency	1
Fix type	Time
Fix dist interval	10.0 m
Fix time interval	30.0
Auto log	Off

## \*\*\*\*\* Device Parameters \*\*\*\*\*

		Stop Data Com	
Equipment	Baud Prty	Bits	Bits Port
Pos1 : DELTAnav	9600 None	-1-	-8- pcCOM1
	Approximate E		0.0 m
	Approximate N		0.0 m
	Kalman Filter		0

## \*\*\*\*\* Data Paths \*\*\*\*\*

Digitized Data Path :	C:\JOBBDATA\
Log Data Path :	C:\HYDRQDAT\

## \*\*\*\*\* Geodetic Parameters \*\*\*\*\*

Projection	Transverse Mercator
Spheroid	Australian
Semi-major axis	6378160.00 m
Flattening 1/	298.25000
scale factor	0.999600000
False easting	500000.0 m
False northing	1000000.0 m
Central meridian	147°00'00.0 E
Latitude Origin	0°00'00 N

## Datum shift

Rotation X	0°00'00.230
Rotation Y	0°00'00.390
Rotation Z	0°00'00.344
Scale	-0.098
Translation X	116.00
Translation Y	50.47
Translation Z	-141.69

Line name FLIN001 Date 29/11/92

SOL 387261.1 E 5529085.8 N

EOL 387261.1 E 5529085.8 N

Bearing 0°00

Distance 0.0

HYDRONAV filename : C:\HYDRODAT\FLINLOG

Antenna to Offset starb'd : 0.0 For'hed : -43.4

Tide correction : 0.0

Fix #	Time	Antenna E	Antenna N	Offset E	Offset N	Latitude	Longitude
LOGGED ON AT : 01:32:59.77							
00001	01:32:59.8	387218.5	5529066.3	387259.0	5529081.7	-40.224702	145.402179
00002	01:33:29.7	387218.1	5529063.4	387258.7	5529078.8	-40.224711	145.402177
00003	01:33:59.7	387221.1	5529066.6	387261.7	5529082.0	-40.224702	145.402189
00004	01:34:29.7	387219.8	5529065.3	387260.3	5529080.7	-40.224705	145.402185
00005	01:34:59.7	387222.2	5529066.1	387262.8	5529081.5	-40.224703	145.402194
00006	01:35:29.7	387223.6	5529068.9	387264.1	5529084.4	-40.224694	145.402201
00007	01:35:59.7	387223.1	5529069.8	387263.7	5529085.3	-40.224691	145.402199
00008	01:36:29.7	387224.4	5529070.7	387264.9	5529086.2	-40.224688	145.402204
00009	01:36:59.7	387224.5	5529072.2	387265.0	5529087.7	-40.224683	145.402205
00010	01:37:29.7	387222.4	5529070.2	387263.0	5529085.6	-40.224689	145.402197
00011	01:37:59.7	387220.5	5529068.4	387261.1	5529083.9	-40.224695	145.402188
00012	01:38:29.7	387220.5	5529068.0	387261.0	5529083.5	-40.224696	145.402188
00013	01:38:59.7	387218.5	5529066.1	387259.1	5529081.6	-40.224702	145.402180
00014	01:39:29.7	387218.0	5529065.1	387258.6	5529080.6	-40.224705	145.402177
00015	01:39:59.7	387219.4	5529066.3	387259.9	5529081.8	-40.224703	145.402182
00016	01:40:29.7	387221.9	5529069.9	387262.5	5529085.3	-40.224691	145.402193
00017	01:40:59.7	387223.5	5529071.0	387264.0	5529086.4	-40.224687	145.402200
00018	01:41:29.7	387222.6	5529071.2	387263.1	5529086.6	-40.224686	145.402197
00019	01:41:59.7	387221.4	5529067.9	387261.9	5529083.3	-40.224696	145.402192
00020	01:42:29.7	387222.6	5529067.8	387263.2	5529083.2	-40.224697	145.402196
00021	01:42:59.7	387222.7	5529069.0	387263.3	5529084.4	-40.224694	145.402197
00022	01:43:29.7	387220.5	5529067.7	387261.1	5529083.2	-40.224697	145.402188
00023	01:43:59.7	387220.5	5529068.1	387261.0	5529083.6	-40.224696	145.402188
00024	01:44:29.7	387220.2	5529068.0	387260.8	5529083.4	-40.224696	145.402187
00025	01:44:59.7	387222.2	5529069.6	387262.8	5529085.0	-40.224692	145.402194
00026	01:45:29.7	387222.6	5529069.5	387263.1	5529085.0	-40.224692	145.402196
00027	01:45:59.7	387221.6	5529069.7	387262.2	5529085.1	-40.224691	145.402193
00028	01:46:29.7	387223.8	5529071.1	387264.3	5529086.5	-40.224687	145.402201
00029	01:46:59.7	387222.9	5529067.7	387263.4	5529083.1	-40.224697	145.402198
00030	01:47:29.7	387223.5	5529068.7	387264.1	5529084.1	-40.224694	145.402201
00031	01:47:59.7	387222.9	5529067.9	387263.5	5529083.3	-40.224697	145.402198
00032	01:48:29.7	387224.6	5529069.7	387265.2	5529085.2	-40.224691	145.402205
00033	01:48:59.7	387223.0	5529069.1	387263.6	5529084.5	-40.224693	145.402199
00034	01:49:29.7	387223.5	5529071.4	387264.1	5529086.8	-40.224686	145.402201
00035	01:49:59.7	387222.1	5529069.7	387262.6	5529085.1	-40.224691	145.402194
00036	01:50:29.7	387222.3	5529069.0	387262.9	5529084.4	-40.224693	145.402196
00037	01:50:59.7	387223.3	5529070.5	387263.8	5529086.0	-40.224689	145.402199
00038	01:51:29.7	387220.6	5529067.2	387261.1	5529082.6	-40.224698	145.402189
00039	01:51:59.7	387222.4	5529068.8	387263.0	5529084.2	-40.224694	145.402196
00040	01:52:29.7	387224.0	5529071.9	387264.6	5529087.4	-40.224684	145.402203
00041	01:52:59.7	387221.4	5529068.6	387262.0	5529084.1	-40.224694	145.402192
00042	01:53:29.7	387224.0	5529070.8	387264.5	5529086.2	-40.224688	145.402202

Line name FLIN001 Date 29/11/92

SQL 387261.1 ■ E 5529085.8 ■ N

EOL 387261.1 ■ E 5529085.8 ■ N

Bearing 0°00

Distance 0.0 ■

HYDRONAV filename : C:\HYDRONAV\FLIN.LOG

Antenna to Offset starb'd : 0.0 ■ For'hed : -43.4 ■

Tide correction : 0.0 ■

Fix #	Time	Antenna E	Antenna N	Offset E	Offset N	Latitude	Longitude
00043	01:53:59.7	387222.3	5529070.2	387262.9	5529085.6	-40.224689	145.402196
00044	01:54:29.8	387220.9	5529071.4	387261.5	5529086.9	-40.224685	145.402190
00045	01:54:59.7	387221.4	5529073.0	387262.0	5529088.4	-40.224681	145.402192
00046	01:55:29.7	387219.4	5529070.4	387259.9	5529085.9	-40.224687	145.402184
00047	01:55:59.7	387219.9	5529068.1	387260.4	5529083.5	-40.224696	145.402185
00048	01:56:29.8	387220.2	5529069.6	387260.7	5529085.0	-40.224692	145.402186
00049	01:56:59.7	387219.9	5529070.1	387260.5	5529085.6	-40.224690	145.402186
00050	01:57:29.7	387218.9	5529071.0	387259.4	5529086.4	-40.224687	145.402181
00051	01:57:59.7	387219.3	5529070.2	387259.9	5529085.7	-40.224689	145.402183
00052	01:58:29.7	387218.9	5529071.1	387259.5	5529086.6	-40.224686	145.402181
00053	01:58:59.7	387219.5	5529072.6	387260.0	5529088.1	-40.224682	145.402183
00054	01:59:29.7	387220.8	5529072.7	387261.3	5529088.1	-40.224681	145.402189
00055	01:59:59.7	387218.8	5529071.1	387259.3	5529086.5	-40.224686	145.402181
00056	02:00:29.7	387220.1	5529075.6	387260.7	5529091.0	-40.224673	145.402186
00057	02:00:59.7	387220.8	5529071.6	387261.4	5529087.0	-40.224684	145.402189
00058	02:01:29.8	387219.9	5529066.9	387260.4	5529082.3	-40.224699	145.402185
00059	02:01:59.7	387219.6	5529068.9	387260.1	5529084.3	-40.224694	145.402184
00060	02:02:29.7	387220.0	5529069.5	387260.6	5529085.0	-40.224692	145.402186
00061	02:02:59.7	387222.4	5529072.3	387263.0	5529087.7	-40.224683	145.402195
00062	02:03:29.7	387222.2	5529070.3	387262.7	5529085.7	-40.224689	145.402195
00063	02:03:59.7	387221.9	5529072.4	387262.5	5529087.9	-40.224683	145.402194
00064	02:04:29.7	387221.4	5529071.7	387261.9	5529087.2	-40.224684	145.402192
00065	02:04:59.7	387217.0	5529066.8	387257.5	5529082.2	-40.224699	145.402174
00066	02:05:29.7	387220.8	5529069.3	387261.4	5529084.7	-40.224693	145.402188
00067	02:05:59.7	387221.2	5529071.6	387261.7	5529087.0	-40.224685	145.402191
00068	02:06:29.7	387220.8	5529071.9	387261.3	5529087.4	-40.224684	145.402189
00069	02:06:59.8	387218.0	5529069.7	387258.6	5529085.2	-40.224690	145.402178
00070	02:07:29.7	387216.6	5529071.0	387257.2	5529086.4	-40.224687	145.402172
00071	02:07:59.7	387216.0	5529070.1	387256.5	5529085.5	-40.224689	145.402169
00072	02:08:29.7	387218.3	5529070.2	387258.8	5529085.6	-40.224689	145.402177
00073	02:08:59.7	387218.1	5529068.7	387258.7	5529084.2	-40.224694	145.402178
00074	02:09:29.7	387216.9	5529069.4	387257.5	5529084.8	-40.224692	145.402173
00075	02:09:59.7	387216.2	5529069.0	387256.7	5529084.4	-40.224693	145.402170
00076	02:10:29.7	387214.8	5529068.8	387255.4	5529084.3	-40.224694	145.402164

LOGGED OFF AT : 02:10:47.26

Line name FLIN001 Date 29/11/92

SOL 387261.1 E 5529085.8 N

EOL 387261.1 E 5529085.8 N

Bearing 0°00

Distance 0.0

HYDRONAV filename : C:\HYDRDDAT\FLINLOG

Antenna to Offset starb'd : 0.0 For'hed : -43.4

Tide correction : 0.0

Fix # Time Antenna E Antenna N Offset E Offset N Latitude Longitude

LOGGED ON AT : 02:19:30.04

00077	02:19:30.1	387220.9	5529071.8	387261.4	5529087.3	-40.224686	145.402191
00078	02:20:00.0	387221.0	5529069.2	387261.6	5529084.6	-40.224692	145.402190
00079	02:20:30.0	387221.3	5529068.3	387261.9	5529083.7	-40.224696	145.402191
00080	02:21:00.0	387222.4	5529070.1	387263.0	5529085.5	-40.224690	145.402196
00081	02:21:29.9	387223.2	5529071.3	387263.7	5529086.8	-40.224686	145.402199
00082	02:21:59.9	387223.8	5529071.2	387264.3	5529086.7	-40.224686	145.402202
00083	02:22:30.0	387225.2	5529073.0	387265.8	5529088.5	-40.224681	145.402207
00084	02:23:00.0	387223.8	5529071.1	387264.3	5529086.5	-40.224686	145.402202
00085	02:23:30.0	387222.4	5529069.6	387263.0	5529085.1	-40.224691	145.402196
00086	02:23:59.9	387222.2	5529070.3	387262.8	5529085.8	-40.224689	145.402195
00087	02:24:29.9	387221.2	5529072.3	387261.7	5529087.7	-40.224683	145.402191
00088	02:25:00.0	387220.9	5529070.2	387261.5	5529085.6	-40.224689	145.402190
00089	02:25:30.0	387219.8	5529067.7	387260.1	5529083.9	-40.224697	145.402185
00090	02:26:00.0	387218.9	5529070.1	387259.1	5529086.3	-40.224690	145.402181
00091	02:26:30.0	387219.2	5529070.6	387259.5	5529086.8	-40.224688	145.402182
00092	02:27:00.0	387221.4	5529068.0	387261.7	5529084.2	-40.224696	145.402191
00093	02:27:29.9	387220.5	5529066.8	387260.8	5529083.0	-40.224700	145.402188
00094	02:28:00.0	387218.7	5529068.2	387258.9	5529084.4	-40.224696	145.402180
00095	02:28:30.0	387219.3	5529068.6	387259.6	5529084.7	-40.224694	145.402183
00096	02:28:59.9	387222.4	5529070.1	387262.6	5529086.3	-40.224690	145.402195
00097	02:29:30.0	387222.8	5529070.0	387263.1	5529086.1	-40.224690	145.402197
00098	02:30:00.0	387220.3	5529072.1	387260.6	5529088.3	-40.224683	145.402188
00099	02:30:30.0	387220.8	5529070.3	387261.1	5529086.5	-40.224688	145.402189
00100	02:31:00.0	387221.2	5529071.0	387261.5	5529087.1	-40.224687	145.402191

LOGGED OFF AT : 02:31:05.28

60.9

35.2

\ GEODSY >>> (MP2.4) B.H.P. Engineering, Wollongong  
 OPTION 3 Bearing & Distance between Grid/Geographicals  
 HEROID : Australian National

Station	FLINDERS #1	OCEAN EPOCH
Latitude	- 40 22 51.7988	- 40 22 51.8181
Longitude	145 40 18.7001	145 40 18.6912
Easting	387261.100	387260.900
Northing	5529085.800	5529085.200
Zone		55
Azimuth	199 17 43.79	19 17 43.80
Grid Conv.	- 0 51 37.98	- 0 51 37.98
Grid Bearing	198 26 05.82	18 26 05.82
Arc-to-Chord	- 0 00 00.00	0 00 00.00
Plane Bearing	198 26 05.82	18 26 05.82
Point Scale Factor	.99975645	.99975645
Spheroidal Distance		.633
Line Scale Factor		.99975645
Grid Distance		.632

**APPENDIX H**

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**COPIES OF TELEXES/FAXES  
RELATING TO FINAL COORDINATES**

BHP ENGINEERING  
Land Technologies  
Division

OCEAN EPOCH  
Fax : 007 134092  
Ph : 007 134091

DATE: 29 November, 1992 TIME: 1:21 AM CST

TO: SAGASCO RESOURCES LIMITED

ATTENTION: MIKE RENISON

TITLE: OPERATIONS GEOLOGIST

FAX No: 08 2231851

CC: Stuart Irvine - Sagasco Company Representative

Simon Dykes - BHPE Wollongong - 042 280893

Racal Survey - Perth - 09 3448783

SUBJECT: OCEAN EPOCH AT FLINDERS 1 - FINAL ACOUSTIC POSITION

SENDER: BILL EDMONDS - SURVEYOR

If there are any problems with this transmission, please contact sender.

The intended position of this location was given as:

AGD84

Latitude 40 Deg 22 Min 51.8 Sec South  
Longitude 145 Deg 40 Min 18.7 Sec East

AMG Zone 55

Easting 387 261.10 East  
Northing 5 529 085.76 North  
Rig Heading 250 Degrees

The final acoustic fix was taken onboard the OCEAN EPOCH between 0015 hrs and 0030 hrs on the 29th November, 1992. The computed position of the drillstem on the rig was as follows:

AGD84

Latitude 40 Deg 22 Min 51.768 Sec South  
Longitude 145 Deg 40 Min 18.746 Sec East

AMG Zone 55

Easting 387 262.17 East  
Northing 5 529 086.77 North  
Rig Heading 249 Degrees

This places the well 1.5 metres on a bearing 47 degrees from the proposed location.

Sattelite confirmation of the rig will be taken as soon as possible.

Regards,  
Bill Edmonds.

BHP ENGINEERING  
Land Technologies  
Division

OCEAN EPOCH  
Fax : 007 134092  
Ph : 007 134091

DATE: 29 November, 1992 TIME: 3:30 AM CST

TO: SAGASCO RESOURCES LIMITED

ATTENTION: MIKE RENISON

TITLE: OPERATIONS GEOLOGIST

FAX No: 08 2231851

CC: Stuart Irvine - Sagasco Company Representative  
Simon Dykes - BHPE Wollongong - 042 280893  
Racal Survey - Perth - 09 3448783

SUBJECT: OCEAN EPOCH AT FLINDERS 1 - FINAL SATTELITE POSITION

SENDER: BILL EDMONDS - SURVEYOR

If there are any problems with this transmission, please contact sender.

The intended position of this location was given as:

AGD84

Latitude 40 Deg 22 Min 51.8 Sec South  
Longitude 145 Deg 40 Min 18.7 Sec East

AMG Zone 55

Easting 387 261.10 East  
Northing 5 529 085.76 North  
Rig Heading 250 Degrees

The final satellite fix was taken onboard the OCEAN EPOCH between 0105 hrs and 0306 hrs on the 29th November, 1992. The computed position of the drillstem on the rig was as follows:

AGD84

Latitude 40 Deg 22 Min 51.81 Sec South  
Longitude 145 Deg 40 Min 18.69 Sec East

AMG Zone 55

Easting 387 260.8 East  
Northing 5 529 085.5 North  
Rig Heading 249 Degrees

This places the well 0.4 metres on a bearing 225.4 degrees from the proposed location.

Regards,  
Bill Edmonds.

262072

**APPENDIX I**

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**COPY OF RACAL DAILY LOG SHEETS**

# RACAL SURVEY AUSTRALIA LIMITED



## DAILY RECORD SHEET

WX	Sea State	Swell	Wind Dir.
0000			
0600			
1200			
1800			

Client : <u>SAGASCO</u>		Job No : <u>2010</u>		Date : <u>24 NOV 92</u>		Vessel : <u>OCEAN EPOCH</u>		Anchors / Tpdrs		
RACAL Equipment on Board	Op	NonOp	RACAL Equipment on Board	Op	NonOp	RACAL Personnel	Consummables		Laid	Recovered
SKYFIX	2		STD-12/ VELOCITY PROBE	1		J. AUSTIN	ITEM	USED	REMAIN	
SYLEDIS			ECHO SOUNDER (20/25)			C. HAKKLNES	SIDESCAN PAPER			
MICROFIX			SIDESCAN (595/531/PINGER)				E/SOUNDER PAPER			
ARGO			BOOMER (DELPH/EPC)				ELICS PAPER			
GNS	2		SPARKER (DELPH/EPC)				DISKS		7	
GYRO	1		CORING (GRAVITY/GRAB)				PRINTER CART.	1	1	
TRIMBLE SST'S			THEODOLITE / EDM			CLIENT Personnel	EPC ROLLS			
TELEMETRY			UNDERWATER TRACKING			<u>B. EDMONDS</u>				
SONARDYNE COMPATTS	4									
SONARDYNE PAN	2									
SONARDYNE (Dunker/Winch/Fish)	2/0/0									

DIARY OF OPERATIONS: TUESDAY 24 NOVEMBER 1992. TIME ZONE -11.

0930 RACAL PERSONNEL ARRIVE AT DEVONPORT AIRPORT.

SKYFIX EQPT CONFIRMED AS HAVING BEEN TRANSPORTED TO RIG BY LLOYDS 23 NOV 92

1335 BIHE SURVEYOR (QC. REP) B. EDMONDS ARRIVES DEVONPORT AIRPORT.

1425 SURVEY PERSONNEL DEPART DEVONPORT FOR RIG BY LLOYDS HELICOPTER.

1520 SURVEY PERSONNEL ABOARD OCEAN EPOCH. EQUIPMENT SET-UP COMMENCED.

1740 DISCUSSION WITH S. IRVINE, COMPANY'S NIGHT-MAN. RIG HEADING AT FLINDERS-1 TO BE 250°; CHAIN LENGTH 3500'. NOTED AN INTENDED POSITION (φ 40°22'51"83) - ERROR

1915 PRE-MOVE MEETING WITH A. CHAPMAN, R. WATTS, D. PHILLIPS (COMPANY'S MAN, TOOLPUSHER, LARGE MASTER) RIG HEADING TO BE 250° CHAIN LENGTH 3800', RUN-IN REQUESTED AS 3 MILLS. FIRST ANCHOR TO BE NO. 6; - BUT MAY BE NO. 7.

AGREED WITH B. EDMONDS THE φ ERROR 0°03' IS INSIGNIFICANT, AND DATUM IS NOT LISTED.

2359 EQUIPMENT SET-UP COMPLETE; GYRO ERROR REMAINS TO BE DETERMINED.

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Transponders to be listed by type and serial numbers. Following codes to be used: L - Laid, R - Recovered, FR - Failed to Reply, FS - Failed to Surface.

Signature

J. Austin  
SURVEYOR/ENGINEER

WHITE : Commercial Office  
BLUE : Operations  
YELLOW : Clients Representative

Signature

B. Edmonds  
CLIENTS REPRESENTATIVE

262073

# RACAL SURVEY AUSTRALIA LIMITED



## DAILY RECORD SHEET

WX	SeaState	Swell	WindDir.
0000			
0600	3	2W/2m	240/15
1200	6	W/4m	240/25
1800	5	W/4m	240/20

Client : SAGASCO		Job No : 2010		Date : 25 NOV 92		Vessel : OCEAN EPOCH		Anchors / Tpdrs		
RACAL Equipment on Board	Op	NonOp	RACAL Equipment on Board	Op	NonOp	RACAL Personnel	Consummables		Laid	Recovered
SKYFIX	2		STD-42 / VELOCITY PROBE	1		J. AUSTIN	ITEM	USED	REMAIN	
SYLEDIS			ECHO SOUNDER (20/25)			C. HARKENNES	SIDESCAN PAPER			
MICROFIX			SIDESCAN (595/531/PINGER)				E/SOUNDER PAPER			
ARGO			BOOMER (DELPH/EPC)				ELICS PAPER			
GNS	2		SPARKER (DELPH/EPC)				DISKS		7	
GYRO	1		CORING (GRAVITY/GRAB)				PRINTER CART.	1	1	
TRIMBLE SST'S			THEODOLITE / EDM			CLIENT Personnel	EPC ROLLS			
TELEMETRY			UNDERWATER TRACKING			B. EDMONDS				
SONARDYNE COMPATTS	4									
SONARDYNE PAN	2									
SONARDYNE (Dunker/Winch/Fish)	2/0									

DIARY OF OPERATIONS: WEDNESDAY'S 25 NOVEMBER 1992. TIME ZONE -11.

0600 SITREP. RIG AT KING-1, PULLING ANCHORS. ONLY ONE ANCHOR RACKED SINCE MIDNIGHT. - NO. 8.

0658 ANC-1 ON BOLSTER.

0718 ANC-4 ON BOLSTER.

0755 ANCHOR HANDLING PAUSED DUE TO WEATHER, AND SEA STATE.

1521 DIFS NOT AVAILABLE FROM ADELAIDE - SYDNEY AND PERTH DIFS RECEIVED SATISFACTORILY.

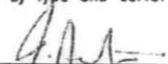
1540 DIFS AGAIN AVAILABLE FROM ADELAIDE.

2022 SUN GYRO CHECK - THROUGH HEAVY CLOUD  $\delta 5 20^{\circ} 19.8$ . AMP  $26.6$   $\therefore$  TRUE ANG  $243.4$   
 OCEAN EPOCH GYRO LOG  $241^{\circ}$  TO THE SUN,  $\therefore 2\frac{1}{2}^{\circ}$  L.  
 OCEAN EPOCH SHIP'S HEAD WAS  $259^{\circ}$ ;  $\therefore$  TRUE SHIP'S HEAD WAS  $261\frac{1}{2}^{\circ}$ .  
 RACAL GYRO SHIP'S HEAD LOG  $264\frac{1}{2}^{\circ}$ ,  $\therefore 3^{\circ}$  HIGH. CLAIMED ACCURACY  $\approx \pm 5^{\circ}$ , DUE TO CLOUD.

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Signature

  
 SURVEYOR/ENGINEER

WHITE	: Commercial Office
BLUE	: Operations
YELLOW	: (blank)

Signature

  
 CLIENTS REPRESENTATIVE

262074

# RACAL SURVEY AUSTRALIA LIMITED



## DAILY RECORD SHEET

WX	Sea State	Swell	Wind Dir.
0000			
0600	5	3m	260/35
1200	5	3m	260/35
1800	5	3m	210/35

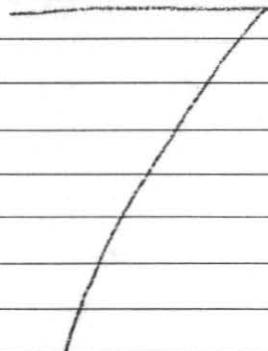
Client : <u>SAGASCO</u>		Job No : <u>2010</u>		Date : <u>26 NOV 92</u>		Vessel : <u>OCEAN EPOCH</u>		Anchors / Tpdrs					
RACAL Equipment on Board		Op	NonOp	RACAL Equipment on Board		Op	NonOp	RACAL Personnel		Consummables		Laid	Recovered
SKYFIX		1		STD 12 / VELOCITY PROBE				<u>J. AUSTIN</u>		ITEM	USED	REMAIN	
SYLEDIS				ECHO SOUNDER (20/25)				<u>C. HAKKENNES</u>		SIDESCAN PAPER			
MICROFIX				SIDESCAN (595/531/PINGER)						E/SOUNDER PAPER			
ARGO				BOOMER (DELPH/EPC)						ELICS PAPER			
GNS		2		SPARKER (DELPH/EPC)						DISKS		7	
GYRO		1		CORING (GRAVITY/GRAB)						PRINTER CART.	1	1	
TRIMBLE SST'S				THEODOLITE / EDM				CLIENT Personnel		EPC ROLLS			
TELEMETRY				UNDERWATER TRACKING				<u>B. EDMONDS</u>					
SONARDYNE COMPATTS		4											
SONARDYNE PAN		2											
SONARDYNE (Dunker/Winch/Fish)		2/0/0											

DIARY OF OPERATIONS: THURSDAY 26 NOVEMBER 1992 TIME ZONE -11.

SITREP - RIG REMAINS SECURED AT KING-1, BY 5 ANCHORS. RECOVERY OF THE REMAINING ANCHORS AWAITS A LESSENING OF THE SEA STATE.

2020 - SUNSET FULLY OBSCURED - NO GYRO CHECK POSSIBLE.

2315 - WIND 40 KTS, GUSTING 45 KTS.



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Signature

*J. Austin*  
SURVEYOR/ENGINEER

WHITE : Commercial Office  
BLUE : Operations  
YELLOW : Clients Representative

Signature

*B. Edmonds*  
CLIENTS REPRESENTATIVE

262075

# RACAL SURVEY AUSTRALIA LIMITED



## DAILY RECORD SHEET

WX	SeaState	Swell	WindDir.
0000	5	4m	W/45
0600	4	3m	W/30
1200	3	2m	W/15
1800	3	1.5m	W/10

Client : <u>SAGASCO</u>		Job No : <u>2010</u>		Date : <u>27 NOV 92</u>		Vessel : <u>OCLAN ERCH</u>		Anchors / Tpdrs		
RACAL Equipment on Board	Op	NonOp	RACAL Equipment on Board	Op	NonOp	RACAL Personnel	Consummables		Laid	Recovered
SKYFIX	2		STD-42/ VELOCITY PROBE	1		J. AUSTIN	ITEM	USED	REMAIN	
SYLEDIS			ECHO SOUNDER (20/25)			C. HARKENNES	SIDESCAN PAPER			
MICROFIX			SIDESCAN (595/531/PINGER)				E/SOUNDER PAPER			
ARGO			BOOMER (DELPH/EPC)				ELICS PAPER			
GNS	2		SPARKER (DELPH/EPC)				DISKS		7	
GYRO	1		CORING (GRAVITY/GRAB)				PRINTER CART.	1	1	
TRIMBLE SST'S			THEODOLITE / EDM			CLIENT Personnel	EPC ROLLS			
TELEMETRY			UNDERWATER TRACKING			B. EDMONDS				
SONARDYNE COMPATTS	4									
SONARDYNE PAN	2									
SONARDYNE (Dunker/Winch/Fish)	2/0									

DIARY OF OPERATIONS: FRIDAY'S 27 NOVEMBER 1992

1011 ANCHOR - HANDLING RECOMMENCED - WIND W, 20 KTS

1100 ANCHOR 5 ON BOLSTER. TERSE VIKING PREPARING FOR BRIDLE, RAGNA VIKING PREPARING TO RECOVER ANCHOR-7.

1236 ~~TERSE VIKING~~ RAGNA VIKING FINISHED WITH ANCHOR-7  
TERSE VIKING ON TOW BRIDLE.

1417 ANCHORS 2 & 6 STILL OUT; TERSE VIKING ON TOW; RAGNA VIKING RECOVERING ANCHOR-3; RIG 700', 300" FROM KING-1.

1530 SKYFIX HUNG-UP. CAUSE WAS INCORRECT REF POSITION DATA, WITH ADDITIONAL PROBLEM OF ONLY 3EV AVAILABLE. REF POSITION ALTERED TO KING-1 LOCATION.

1607. RIG COMMENCED HAULING ON ANCHOR-6. RAGNA VIKING STILL RECOVERING ANCHOR-2, ABOUT 700' AWAY FROM RIG. TERSE VIKING ON BRIDLE.

1630. ANCHOR-2 RECOVERED. RAGNA VIKING RELEASED

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Signature [Signature]  
SURVEYOR/ENGINEER

WHITE : Commercial Office  
BLUE : Operations

Signature [Signature]  
CLIENTS REPRESENTATIVE

262076

# RACAL SURVEY AUSTRALIA LIMITED



## DAILY RECORD SHEET

PAGE 2

WX	Sea State	Swell	Wind Dir.
0000			
0600			
1200			
1800			

Client : SAGASCO		Job No : 2010		Date : 27 NOV 92		Vessel : OCEAN EPOCH.		Anchors / Tpdrs		
RACAL Equipment on Board	Op	NonOp	RACAL Equipment on Board	Op	NonOp	RACAL Personnel	Consummables		Laid	Recovered
SKYFIX			STD I2 / VELOCITY PROBE				ITEM	USED	REMAIN	
SYLEDIS			ECHO SOUNDER (20/25)				SIDESCAN PAPER			
MICROFIX			SIDESCAN (595/531/PINGER)				E/SOUNDER PAPER			
ARGO			BOOMER (DELPH/EPC)				ELICS PAPER			
GNS			SPARKER (DELPH/EPC)				DISKS			
GYRO			CORING (GRAVITY/GRAB)				PRINTER CART.			
TRIMBLE SST'S			THEODOLITE / EDM			CLIENT Personnel	EPC ROLLS			
TELEMETRY			UNDERWATER TRACKING							
SONARDYNE COMPATTS										
SONARDYNE PAN										
SONARDYNE (Dunker/Winch/Fish)										

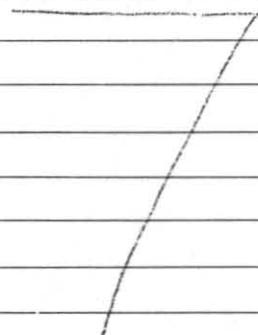
**DIARY OF OPERATIONS :**

1713 RIG UNDERWAY - ANC NO.6 OFF THE BOTTOM.

1740 ↓ 6 RACKED

TOW TO FLINDERS-1 COMMENCED.

2100 POSITION S 39° 47' 57" E 145° 34' 22 DIST TO GO 32.9 N.M.



262077

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Signature

\_\_\_\_\_  
SURVEYOR/ENGINEER

- |        |                          |
|--------|--------------------------|
| WHITE  | : Commercial Office      |
| BLUE   | : Operations             |
| YELLOW | : Clients Representative |

Signature

\_\_\_\_\_  
CLIENTS REPRESENTATIVE



# RACAL SURVEY AUSTRALIA LIMITED

## DAILY RECORD SHEET

WX	Sea State	Swell	Wind Dir.
0000	2	1 1/2	W/101
0600	2	1	W/151
1200	2	1 1/2	W/201
1800			

Client : SAGASCO		Job No : 2010		Date : 28 NOV 92		Vessel : OCLAN EPOCH		Anchors / Tpdrs		
RACAL Equipment on Board	Op	NonOp	RACAL Equipment on Board	Op	NonOp	RACAL Personnel	Consummables		Laid	Recovered
SKYFIX	2		STD-J2 / VELOCITY PROBE	1		J. AUSTIN	ITEM	USED	REMAIN	8.
SYLEDIS			ECHO SOUNDER (20/25)			C. HAKKINNIS	SIDESCAN PAPER			
MICROFIX			SIDESCAN (595/531/PINGER)				E/SOUNDER PAPER			
ARGO			BOOMER (DELPH/EPC)				ELICS PAPER			
GNS	2		SPARKER (DELPH/EPC)				DISKS		7	
GYRO	1		CORING (GRAVITY/GRAB)				PRINTER CART.	1	1	
TRIMBLE SST'S			THEODOLITE / EDM			CLIENT Personnel	EPC ROLLS			
TELEMETRY			UNDERWATER TRACKING			B. EDMONDS				
SONARDYNE COMPATTS	4									
SONARDYNE PAN	2									
SONARDYNE (Dunker/Winch/Fish)	2/0/0									

DIARY OF OPERATIONS: SATURDAY 28 NOVEMBER 1992

0001 POSITION S 40° 00' 39" L 145° 39' 22" D.T.G. 19.7 NM  
RIG UNDER TOW TO FLINDERS-1 LOCATION

0300 POSITION S 40° 30' 49" L 145° 43' 54"

0500 1.7 NM TO J6 LOCATION

0522 1.0 NM TO J6 DRAP LOCATION. COMMENCED 60s FIXING.

0554 HLT 60, J6. 29m FROM INTENDED POSITION

0624 DRILL STRING OVER LOCATION. CABLE NO. 6 CEASED PAYOUT. CEASED 60s FIXING.

0705 RAGNA VIKING PLACED NO. 2 ON THE BOTTOM

0816 RAGNA VIKING PLACED NO. 7 ON THE BOTTOM; PACE MAKING 110", NOT OFF.

0920 RAGNA VIKING PLACED NO. 3 ON THE BOTTOM

1105 TERSEL CAST OFF TOWING BRIDLE

1230 TERSEL VIKING PLACED NO. 8 ON THE BOTTOM.

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Signature \_\_\_\_\_  
SURVEYOR/ENGINEER

WHITE : Commercial Office  
BLUE : Operations  
YELLOW : Clients Representative

Signature W. Edmonds  
CLIENTS REPRESENTATIVE

262078



DAILY RECORD SHEET

Page 2

WX	Sea State	Swell	Wind Dir.
0000			
0600			
1200			
1800			

Client : SAGASCO		Job No : 2010		Date : 28 NOV 1992		Vessel : OCEAN EPOCH		Anchors / Tpdrs					
RACAL Equipment on Board		Op	NonOp	RACAL Equipment on Board		Op	NonOp	RACAL Personnel		Consummables		Laid	Recovered
SKYFIX				STD I2 / VELOCITY PROBE						ITEM	USED	REMAIN	
SYLEDIS				ECHO SOUNDER (20/25)						SIDESCAN PAPER			
MICROFIX				SIDESCAN (595/531/PINGER)						E/SOUNDER PAPER			
ARGO				BOOMER (DELPH/EPC)						ELICS PAPER			
GNS				SPARKER (DELPH/EPC)						DISKS			
GYRO				CORING (GRAVITY/GRAB)						PRINTER CART.			
TRIMBLE SST'S				THEODOLITE / EDM				CLIENT Personnel		EPC ROLLS			
TELEMETRY				UNDERWATER TRACKING									
SONARDYNE COMPATTS													
SONARDYNE PAN													
SONARDYNE (Dunker/Winch/Fish)													

DIARY OF OPERATIONS: SATURDAY 28 NOVEMBER 1992.

1330 RAGNA VIKING PLACED ANC-4 ON THE BOTTOM - ON BEARING; RANGE SHORT?

1435 ELRJE VIKING PLACED ANC-1 ON THE BOTTOM.

1445 RAGNA VIKING PLACED ANC-5 ON THE BOTTOM

1848 PRETENSIONING COMPLETE. RIG APPROX 4 ft FROM LOCATION; BALLASTING DOWN COMMENCED.

2026 SUNSLT. SUN GYRO CHLCK 8 S 20 1/2 . AMP 27.6 .∴ TRUE BNG 242 1/2  
 OCEAN EPOCH GYRO BORE 241° TO THE SUN, .∴ 1 1/2° L  
 OCEAN EPOCH SHIPS HD WAS 248° .∴ TRUE SHIPS HD WAS 249 1/2  
 RACAL GYRO BORE 253° AT SHIPS HEAD.∴ 3 1/2° HIGH. ENTERED AS C-O.

2327 OCEAN EPOCH AT DRILLING DRAFT BALLASTING COMPLETE.

262079

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Signature \_\_\_\_\_  
 SURVEYOR/ENGINEER

WHITE : Commercial Office  
 BLUE : Operations  
 YELLOW : Clients Representative

Signature W. Edwards  
 CLIENTS REPRESENTATIVE

# RACAL SURVEY AUSTRALIA LIMITED



## DAILY RECORD SHEET

WX	Sea State	Swell	Wind Dir.
0000	3	12	W/131
0600			
1200			
1800			

Client : SIGAFSCO		Job No : 2010		Date : 29 NOV 92		Vessel : OCEAN EPOCH			Anchors / Tpdrs		
RACAL Equipment on Board	Op	NonOp	RACAL Equipment on Board	Op	NonOp	RACAL Personnel	Consummables			Laid	Recovered
SKYFIX	2		STD-12 / VELOCITY PROBE	1		J. AUSTIN	ITEM	USED	REMAIN		
SYLEDIS			ECHO SOUNDER (20/25)			C. HARKENNES	SIDESCAN PAPER				
MICROFIX			SIDESCAN (595/531/PINGER)				E/SOUNDER PAPER				
ARGO			BOOMER (DELPH/EPC)				ELICS PAPER				
GNS	2		SPARKER (DELPH/EPC)				DISKS	1	6		
GYRO	1		CORING (GRAVITY/GRAB)				PRINTER CART.	1	1		
TRIMBLE SST'S			THEODOLITE / EDM			CLIENT Personnel	EPC ROLLS				
TELEMETRY			UNDERWATER TRACKING			B. EDMONDS					
SONARDYNE COMPATTS	4										
SONARDYNE PAN	2										
SONARDYNE (Dunker/Winch/Fish)	2/0/0										

**DIARY OF OPERATIONS: SUNDAY 29 NOVEMBER 1992**

0001 SONARDYNE SYSTEM SETUP, TRANSpondERS ENABLED. ACOUSTIC FINAL FIX COMMENCED; HOWEVER ONLY TWO RANGES OF FOUR AVAILABLE TO GNS COMPUTATION. REVERTED TO HAND-RECORDING OF DATA:

0015 TPDR "201: ( 475.8, 476.1, 475.7, 476.1, 476.6, 476.3, 476.1, 476.3, 475.7, 476.2

$\bar{X} = 476.08m$  ( 475.9, 475.8, 476.0, 476.2, 476.1, 475.9, 476.2, 476.1, 476.2, 476.3.

TPDR "105: ( 591.4, 590.9, 590.6, 591.1, 591.1, 591.1, 591.1, 591.1, 591.0, 591.0,

$\bar{X} = 591.04m$  ( 591.1, 590.9, 591.3, 591.5, 591.1, 591.1, 591.0, 591.1, 590.4, 590.8

TPDR "803 ( 690.2, 692.2, 690.3, 691.7, 691.4, 691.4, 690.6, 690.3, 691.0, 690.8,

$\bar{X} = 690.97m$  ( 689.6, 689.8, 691.4, 691.9, 692.1, 691.5, 691.0, 690.9, 690.9, 691.4.

TPDR "906 ( 818.8, 816.2, 815.0, 821.9, 820.2, 820.0, 819.4, 819.7, 819.1, 819.2

$\bar{X} = 819.49m$  ( 819.4, 820.0, 821.2, 820.0, 820.5, 819.4, 820.4, 820.0, 819.2, 820.3.

0030. RANGING COMPLETE. RAW TRANSponder POSITION: E 387261.411, N 5529084.891. SD. 4.87m

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Signature \_\_\_\_\_

SURVEYOR/ENGINEER

WHITE : Commercial Office  
 BLUE : Operations  
 YELLOW : Clients Representative

Signature \_\_\_\_\_

CLIENTS REPRESENTATIVE

262080

# RACAL SURVEY AUSTRALIA LIMITED



## DAILY RECORD SHEET

PAGE 2.

WX	Sea State	Swell	Wind Dir.
0000			
0600			
1200			
1800			

Client : <u>SAGASCO</u>		Job No : <u>2010</u>		Date : <u>29 NOV 92</u>		Vessel : <u>OCLAN EPOCH</u>		Anchors / Tpdrs		
RACAL Equipment on Board	Op	NonOp	RACAL Equipment on Board	Op	NonOp	RACAL Personnel	Consummables		Laid	Recovered
SKYFIX			STD I2 / VELOCITY PROBE				ITEM	USED	REMAIN	
SYLEDIS			ECHO SOUNDER (20/25)				SIDESCAN PAPER			
MICROFIX			SIDESCAN (595/531/PINGER)				E/SOUNDER PAPER			
ARGO			BOOMER (DELPH/EPC)				ELICS PAPER			
GNS			SPARKER (DELPH/EPC)				DISKS			
GYRO			CORING (GRAVITY/GRAB)				PRINTER CART.			
TRIMBLE SST'S			THEODOLITE / EDM			CLIENT Personnel	EPC ROLLS			
TELEMETRY			UNDERWATER TRACKING							
SONARDYNE COMPATTS										
SONARDYNE PAN										
SONARDYNE (Dunker/Winch/Fish)										

DIARY OF OPERATIONS: SUNDAY 29 NOVEMBER 1992.

THE TRANSPONDER WAS SUSPENDED 1.4m END OF THE DRILL, 1.5m PORT OF  $\phi$ ; HDG 248°

∴ THE DRILL STRING IS E 387 262.169 N 5529 086.769

40° 22' 51.768 S, 145° 40' 18.746 E

WHICH IS 1.47m, bearing 046° 44' FROM THE INTENDED LOCATION.

0031 COMMENCED DGPS FIX, SETUP, SLT-UP DNAVN.

0105 DGPS DATA COLLECTION COMMENCED

0306 DGPS DATA COLLECTION COMPLETED.

COMPUTED FINAL DATUM POSITION: AGDBA 40° 22' 51.810 S, 145° 40' 18.687 E

E 387 260.80 N 5529 085.46

WHICH IS 0.42m BEARING 225.35(T) FROM THE INTENDED LOCATION.

AND 1.89m BEARING 226° FROM THE ACOUSTIC FIX POSITION.

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Signature \_\_\_\_\_

SURVEYOR/ENGINEER

WHITE	: Commercial Office
BLUE	: Operations
YELLOW	: Clients Representative

Signature \_\_\_\_\_

CLIENTS REPRESENTATIVE

262081

# RACAL SURVEY AUSTRALIA LIMITED



## DAILY RECORD SHEET

PAGE 3.

WX	SeaState	Swell	WindDir.
0000			
0600			
1200			
1800			

Client : <u>SAGASCO</u>		Job No : <u>2010</u>		Date : <u>29 NOV 92</u>		Vessel : <u>OCEAN EPOCH</u>		Anchors / Tpdrs		
RACAL Equipment on Board	Op	NonOp	RACAL Equipment on Board	Op	NonOp	RACAL Personnel	Consummables		Laid	Recovered
SKYFIX			STD I2 / VELOCITY PROBE				ITEM	USED	REMAIN	4
SYLEDIS			ECHO SOUNDER (20/25)				SIDESCAN PAPER			
MICROFIX			SIDESCAN (595/531/PINGER)				E/SOUNDER PAPER			
ARGO			BOOMER (DELPH/EPC)				ELICS PAPER			
GNS			SPARKER (DELPH/EPC)				DISKS			
GYRO			CORING (GRAVITY/GRAB)				PRINTER CART.			
TRIMBLE SST'S			THEODOLITE / EDM			CLIENT Personnel	EPC ROLLS			
TELEMETRY			UNDERWATER TRACKING							
SONARDYNE COMPATTS										
SONARDYNE PAN										
SONARDYNE (Dunker/Winch/Fish)										

**DIARY OF OPERATIONS :**

0630 C. HAYLANDS TRANSFERRED TO RAGNA VIKING TO RECOVER TRANSPONDERS.  
 0848 TRANSPONDERS RECOVERED TRANSFERRED TO OCEAN EPOCH.  
 1030 EQUIPMENT STOWED OR READY FOR AIRFREIGHT.  
 1115 PERSONNEL LEFT RIG FOR DEVONPORT AIRPORT WITH LLOYDS HELICOPTER  
 1355 PERSONNEL DEPARTED DEVONPORT AIRPORT FOR MELBOURNE.

7

Forms are to be completed daily in duplicate on all vessels. Each form should be countersigned by the Clients Representative, the original being retained on board until the next crew change or at the end of job, whichever is the earlier, when they should be returned to the PERTH office.

Transponders to be listed by type and serial numbers. Following codes to be used: L - Laid, R - Recovered, FR - Failed to Reply, FS - Failed to Surface.

Signature

J. M. L.  
SURVEYOR/ENGINEER

WHITE : Commercial Office  
 BLUE : Operations

Signature

M. E. Schumacher  
CLIENTS REPRESENTATIVE

262082

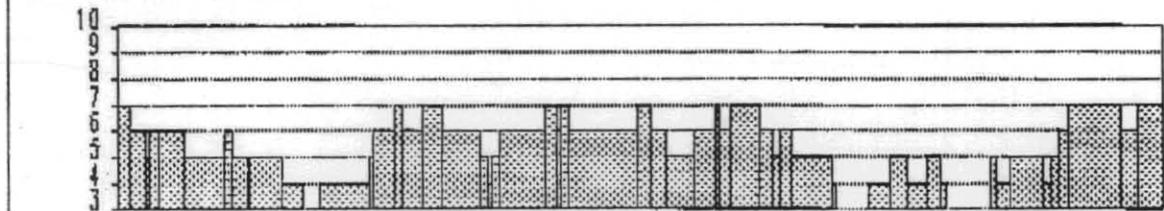


All-In-View PDOP vs Time

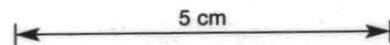
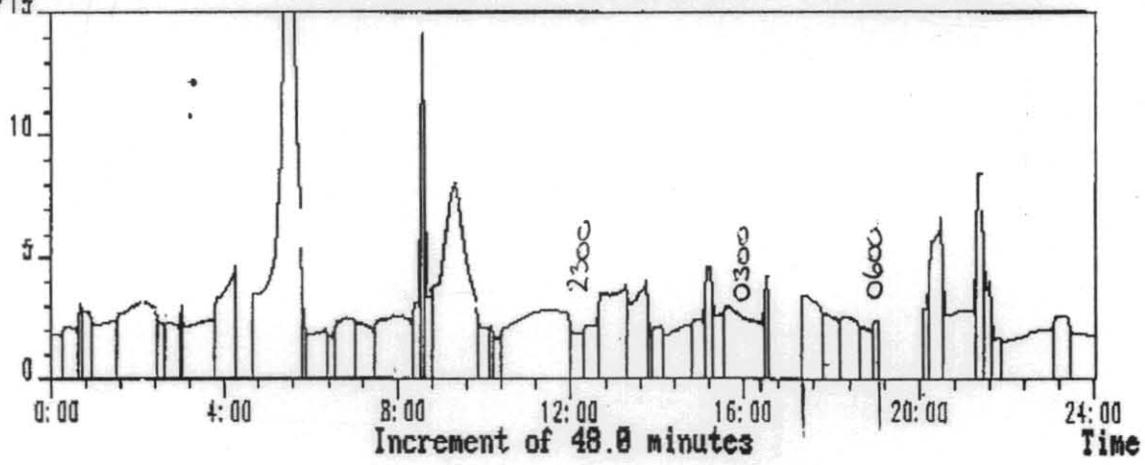
Station : FLINDERS#1 Latitude : 48 22' 46"S Longitude : 145 40' 23"E  
Date : 27 Nov 1992 Zone : 0:00 Cut-off Elevation : 10

Number of Satellites

8 Channel Receiver



PDOP

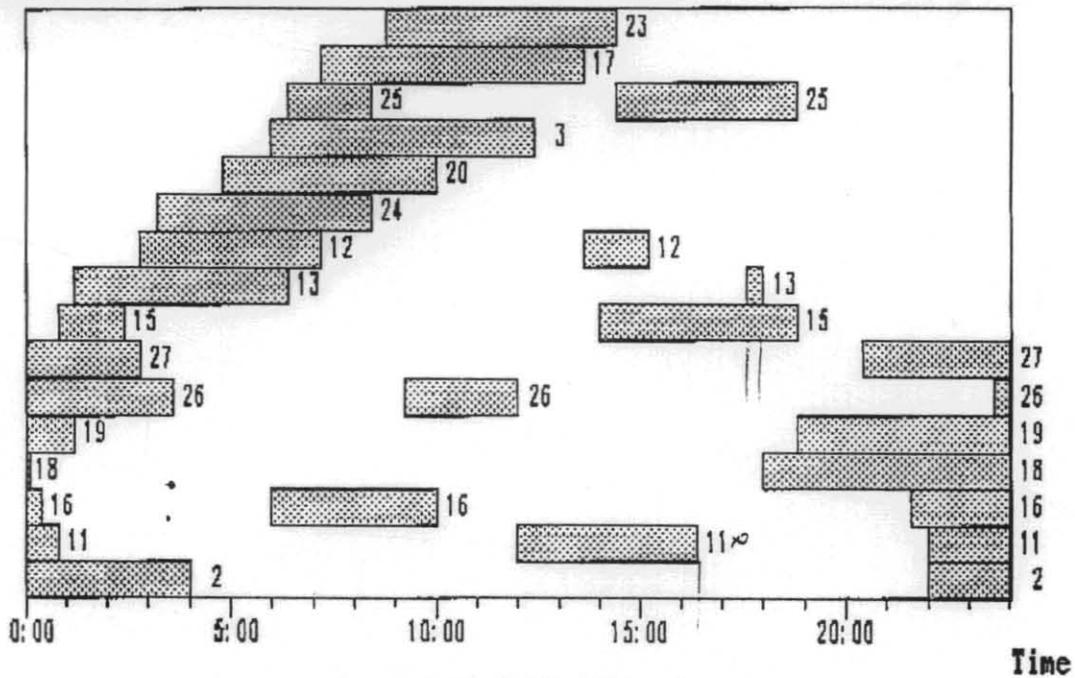


262084

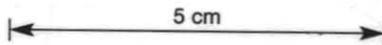


### Visible Satellites vs Time

Station : FLINDERS#1    Latitude : 40 22'46"S    Longitude : 145 40'23"E  
Date : 27 Nov 1992    Zone : 0:00    Cut-off Elevation : 10



Increment of 60.0 minutes  
Page 1 of 2 Pages



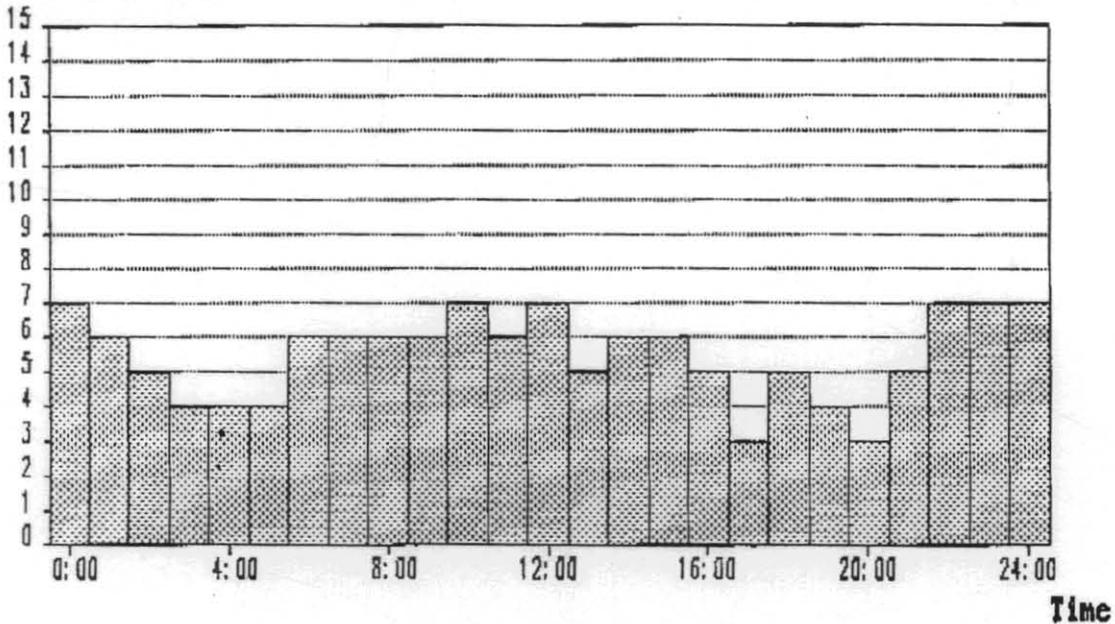
262085



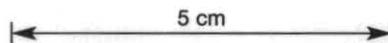
### Number of Visible Satellites vs Time

Station : FLINDERS#1    Latitude : 40 22'46"S    Longitude : 145 40'23"E  
Date : 27 Nov 1992    Zone : 0:00    Cut-off Elevation : 10

Number of Satellites



Increment of 60.0 minutes



## All-In-View PDOP for FLINDERS#1

Date : 27 Nov 1992  
 Time : 0:00 -> 24:00  
 Cut-off Elevation : 10°

Latitude : 40° 22' 46" S  
 Longitude : 145° 40' 23" E  
 Zone : 0:00

Satellite Constellation	Time Rise	Time Set	dT	PDOP Rise	PDOP S t
2 11 16 18 19 26 27	0:00	0:17	0:17	1.8	1.8
2 11 16 19 26 27	0:17	0:37	0:20	2.1	1.
2 11 19 26 27	0:37	0:42	0:05	3.1	3.1
2 11 15 19 26 27	0:42	0:57	0:15	2.8	2.7
2 13 15 19 26 27	0:57	1:32	0:35	2.2	2.
2 13 15 26 27	1:32	2:27	0:55	2.7	2.
2 12 13 15 26 27	2:27	2:37	0:10	2.3	2.2
2 12 13 26 27	2:37	2:57	0:20	2.3	2.1
2 12 13 26	2:57	3:02	0:05	3.0	3.
2 12 13 24 26	3:02	3:47	0:45	2.2	2.5
2 12 13 24	3:47	4:15	0:28	3.4	4.6
12 13 20 24	4:40	5:47	1:07	3.5	5.
12 13 16 20 24	5:47	5:52	0:05	2.2	2.2
3 12 13 16 20 24	5:52	6:22	0:30	1.8	2.0
3 12 13 16 20 24 25	6:22	6:32	0:10	1.8	1.8
3 12 16 20 24 25	6:32	7:02	0:30	2.4	2.5
3 12 16 17 20 24 25	7:02	7:27	0:25	2.3	2.0
3 16 17 20 24 25	7:27	8:22	0:55	2.4	2.3
3 16 17 20 25	8:22	8:32	0:10	3.2	3.0
3 16 17 20	8:32	8:37	0:05	14.2	14.2
3 16 17 20 23	8:37	8:47	0:10	3.4	3.7
3 16 17 20 23 26	8:47	9:52	1:05	3.8	2.9
3 16 17 20 21 23 26	9:52	10:07	0:15	2.2	2.1
3 16 17 21 23 26	10:07	10:12	0:05	2.2	2.2
3 16 17 21 23 26 28	10:12	10:22	0:10	1.7	1.3
3 17 21 23 26 28	10:22	11:57	1:35	2.1	2.6
3 11 17 21 23 26 28	11:57	12:17	0:20	1.9	1.9
3 11 17 21 23 28	12:17	12:37	0:20	2.2	2.3
11 17 21 23 28	12:37	13:17	0:40	3.6	3.9
11 12 17 21 23 28	13:17	13:47	0:30	3.1	4.1
11 12 15 17 21 23 28	13:47	13:52	0:05	1.8	1.8
11 12 15 21 23 28	13:52	14:07	0:15	2.2	2.2
11 12 15 21 23 25 28	14:07	14:47	0:40	1.9	2.2
11 12 15 21 25 28	14:47	15:07	0:20	2.5	2.3
11 12 15 21 25	15:07	15:17	0:10	4.6	4.5
11 12 14 15 21 25	15:17	15:32	0:15	2.6	2.6
11 14 15 21 25	15:32	16:27	0:55	3.0	2.3
14 15 21 25	16:27	16:35	0:08	4.2	3.7
13 14 15 25	17:20	17:47	0:27	3.5	2.9
13 14 15 18 25	17:47	18:12	0:25	2.7	2.4
14 15 18 25	18:12	18:37	0:25	2.6	2.3
14 15 18 19 25	18:37	18:57	0:20	2.1	2.0
14 18 19 25	18:57	19:05	0:08	2.5	2.5
14 18 19 24 27	20:05	20:12	0:07	3.0	2.9
14 18 19 27	20:12	20:32	0:20	5.7	6.7

**RACAL**

**RACAL SURVEY AUSTRALIA LIMITED**

A.C.N. 000 601 909

HYDROGRAPHIC HOUSE

P.O. Box 515, Balcatta 6021 Western Australia

Telephone (09) 344 7166 Telex AA94341 RACSUR Fax (09) 344 8783

**DELIVERY NOTE**

05363

Date 17.11.92

CLIENT P/O No. <u>SAGAS60</u>	JOB No. <u>2010</u>	CARRIER <u>ANSETT</u>
TO <del>SAGAS60 Resources Limited</del> <del>SAGAS60 Supply Base</del> <del>Beu Bay</del> <del>TASMANIA</del>		CON. NOTE No. <u>G089966A</u>
ATT: Norm Willoughby MATERIALS SUPERVISOR		PAGE 1 OF 2

ITEM	BOX	QTY.	DESCRIPTION	SERIAL No.
	1, 2	1	RIG PORTABLE	✓ 105249/012
		2	CANS OF CONTACT CLEANER	
		1	ANSSIE POWER BOARD	
		1	" EXT CABLES	
		1	ROLL OF JET PAPER	
		24	FOUR 600. TAPE + DATA DISKS	
	3	1	TOSHIBA T 5200/100 ASSORTED CABLES	✓ 6356
	4	1	DEMODULATOR	✓ 2329
		1	DECODER BOX ASSORTED CABLES	
	5	1	DEMODULATOR	✓ 2330
		1	DECODER BOX ASS CABLES	
	6	1	TRIMBLE D.L.	✓ 1400
		1	" A.E.	165
		1	" i/o + PSU	NSW
		1	30m A.E. CABLES	
		1	A.E. POLS	
		1	MANUAL + CABLES	

DISTRIBUTION  
1ST WITH GOODS  
2ND H.O.  
3RD DEPOT

Received in good order and condition as described above.

Date.....Signature.....

262088

09 344 8783

RSA LTD

004

**RACAL**

**RACAL SURVEY  
AUSTRALIA LIMITED**

A.C.N. 000 601 909

**HYDROGRAPHIC HOUSE**

P.O. Box 515, Balcatta 6021 Western Australia

Telephone (09) 344 7166 Telex AA94341 RACSUR Fax (09) 344 8783

**DELIVERY NOTE**

05364

Date.....

CLIENT P/O No.

JOB No.

CARRIER

TO

*Cent.*

CON. NOTE No.

*G089965A*

*PAGE 2 OF 2*

ITEM	BOX	QTY.	DESCRIPTION	SERIAL No.
	<i>7</i>	<i>1</i>	<i>TRIMBLE D.L.</i>	<i>964</i>
		<i>1</i>	<i>" A.P.</i>	<i>2002</i>
		<i>1</i>	<i>" i/o</i>	<i>243</i>
		<i>1</i>	<i>FANNEN PSU</i>	<i>9488</i>
		<i>1</i>	<i>A.P. POLE (WOOD)</i>	
		<i>1</i>	<i>30m RE CABLE</i>	
			<i>AKI. CABLES.</i>	

*2*

DISTRIBUTION  
1ST WITH GOODS  
2ND H.O.

Received in good order and condition as described above.

Signature.....