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OMEGA LA REUNION ANTENNA SYSTEM: MODIFICATION AND VALIDATION TE--ETC(U)

JUL 79 J C HANSELMAN

N00123-78-C-0043

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NOSC-TR-484-VOL-2

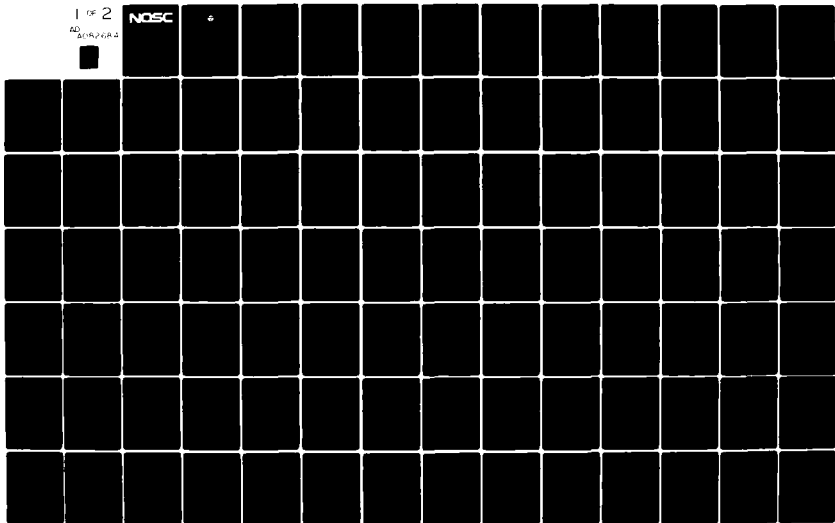
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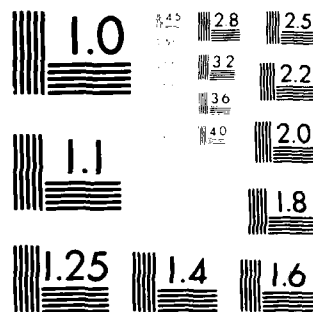
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MICROCOPY RESOLUTION TEST CHART
 NATIONAL BUREAU OF STANDARDS-1963-A

LEVEL 12

NOSC

NOSC TR 484
Volume 2

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NOSC TR 484
Volume 2

Technical Report 484
Volume 2

OMEGA LA REUNION ANTENNA SYSTEM: MODIFICATION AND VALIDATION TESTS

Volume 2: Data Sheets

JC Hanselman, Megatek Corp.
10 July 1979

Final Report

Prepared for
US Coast Guard

DTIC
1980

Approved for public release; distribution unlimited

NAVAL OCEAN SYSTEMS CENTER
SAN DIEGO, CALIFORNIA 92152

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Technical Director

ADMINISTRATIVE INFORMATION

Electronic measurements were performed on the La Reunion OMEGA Antenna System during the month of August 1978. The work was performed under NOSC project MP01538B10 with Megatek as contractor under NOSC Technical Agreement 532-008, Contract N00123-78-C-0043.

Volume 1 of NOSC TR 484 is the report proper. Volume 2 contains data sheets.

Released by
JH Richter, Head
EM Propagation Division

Under authority of
JD Hightower, Head
Environmental Sciences Department

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20. KEY WORDS (Continue on reverse side if necessary and identify by block number) Omega vlf navigation system Antennas - configuration Monopole antenna Measurements - electrical Radiation resistance - efficiency		
21. ABSTRACT (Continue on reverse side if necessary and identify by block number) Electronic measurements were performed on the La Reunion Omega Antenna System during the month of August 1978. The work was performed under NOSC project MP01538B10, with Megatek Corporation as contractor. The necessary connections to the antenna helix tuning coil were completed so that the station can now operate on 11.050 kHz. The total antenna system resistance was measured and found to compare favorably with original measurements made in 1975. An analysis was made of optimum gear ratios to use with the variometers used to keep the antenna system tuned. The electrical height of the antenna was found to be 163 metres for 10.2 kHz and to increase slightly with frequency to 170 metres at 13.6 kHz. The antenna system efficiency varies		

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 68 IS OBSOLETE
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20. Abstract (Continued)

with frequency from 8% to 13.8%. The station can easily radiate the designed 10 kW power.

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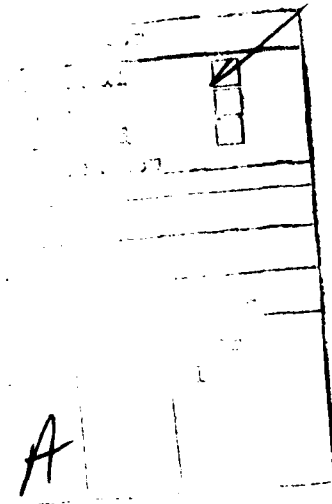
DATA SHEET 2: ANTENNA SYSTEM RESISTANCE , , .DS2-1 through DS2-7

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INTRODUCTION

During the performance of modification and validation tests at OMEGA La Reunion, data and all pertinent information collected were recorded on appropriate data sheets. This information was later transcribed as necessary to data sheets designed to facilitate analysis and computation of desired operating parameters.

These data and computation sheets are presented herewith in rough form for future reference.

DATA SHEET 2

ANTENNA SYSTEM RESISTANCE

R_{as}

29 July 1978
Date

1. Frequency 10,200 Hertz

2. Fixed Resistor, Z (Impedance) 0.22 μH 1.001 Ohms

3. $R_{as} = \frac{E_1 Z}{E - E_1}$ (Ohms)

4. Voltage Readings:

Trial 1 $E = \underline{4} . \underline{926}$ Volts
 $E_1 = \underline{1} . \underline{890}$ Volts
 $R_{as(1)} = \underline{0} . \underline{623}$ Ohms

Trial 2 $E = \underline{4} . \underline{922}$ Volts
 $E_1 = \underline{1} . \underline{888}$ Volts
 $R_{as(2)} = \underline{0} . \underline{623}$ Ohms

Trial 3 $E = \underline{4} . \underline{218}$ Volts
 $E_1 = \underline{1} . \underline{617}$ Volts
 $R_{as(3)} = \underline{0} . \underline{622}$ Ohms

Trial 4 $E = \underline{4} . \underline{705}$ Volts
 $E_1 = \underline{1} . \underline{803}$ Volts
 $R_{as(4)} = \underline{0} . \underline{622}$ Ohms

Trial 5 $E = \underline{4} . \underline{923}$ Volts
 $E_1 = \underline{1} . \underline{887}$ Volts
 $R_{as(5)} = \underline{0} . \underline{622}$ Ohms

5. Average $R_{as} = \underline{0} . \underline{622}$ Ohms

DATA SHEET 2

ANTENNA SYSTEM RESISTANCE

R_{as}

29 JULY 1978
Date

1. Frequency

11,050 Hertz

2. Fixed Resistor, Z (Impedance) 0.22 μH

1.001 Ohms

3. $R_{as} = \frac{E_1 Z}{E - E_1}$ (Ohms)

4. Voltage Readings:

Trial 1 $E = \underline{4.870}$ Volts

$E_1 = \underline{1.885}$ Volts

$R_{as(1)} = \underline{0.632}$ Ohms

Trial 2 $E = \underline{4.460}$ Volts

$E_1 = \underline{1.725}$ Volts

$R_{as(2)} = \underline{0.631}$ Ohms

Trial 3 $E = \underline{4.795}$ Volts

$E_1 = \underline{1.855}$ Volts

$R_{as(3)} = \underline{0.632}$ Ohms

Trial 4 $E = \underline{4.130}$ Volts

$E_1 = \underline{1.597}$ Volts

$R_{as(4)} = \underline{0.631}$ Ohms

Trial 5 $E = \underline{4.129}$ Volts

$E_1 = \underline{1.597}$ Volts

$R_{as(5)} = \underline{0.631}$ Ohms

5.

Average $R_{as} = \underline{0.631}$ Ohms

DATA SHEET 2

ANTENNA SYSTEM RESISTANCE

R_{as}

29 JULY 1978
Date

1. Frequency 11,333 Hertz

2. Fixed Resistor, Z (Impedance) 0.22 μH 1.001 Ohms

3. $R_{as} = \frac{E_1 Z}{E - E_1}$ (Ohms)

4. Voltage Readings:

Trial 1 $E = \underline{4} . \underline{593}$ Volts
 $E_1 = \underline{1} . \underline{786}$ Volts
 $R_{as(1)} = \underline{0} . \underline{637}$ Ohms

Trial 2 $E = \underline{4} . \underline{250}$ Volts
 $E_1 = \underline{1} . \underline{650}$ Volts
 $R_{as(2)} = \underline{0} . \underline{635}$ Ohms

Trial 3 $E = \underline{4} . \underline{631}$ Volts
 $E_1 = \underline{1} . \underline{790}$ Volts
 $R_{as(3)} = \underline{0} . \underline{631}$ Ohms

Trial 4 $E = \underline{4} . \underline{208}$ Volts
 $E_1 = \underline{1} . \underline{634}$ Volts
 $R_{as(4)} = \underline{0} . \underline{636}$ Ohms

Trial 5 $E = \underline{4} . \underline{615}$ Volts
 $E_1 = \underline{1} . \underline{789}$ Volts
 $R_{as(5)} = \underline{0} . \underline{634}$ Ohms

5. Average $R_{as} = \underline{0} . \underline{635}$ Ohms

DATA SHEET 2

ANTENNA SYSTEM RESISTANCE

R_{as}

29 JULY 1978
Date

1. Frequency 12,300 Hertz

2. Fixed Resistor, Z (Impedance) 0.22 μH 1.001 Ohms

3. $R_{as} = \frac{E_1 Z}{E - E_1}$ (Ohms)

4. Voltage Readings:

Trial 1 $E = \underline{4.789}$ Volts
 $E_1 = \underline{1.934}$ Volts
 $R_{as(1)} = \underline{0.678}$ Ohms

Trial 2 $E = \underline{4.517}$ Volts
 $E_1 = \underline{1.824}$ Volts
 $R_{as(2)} = \underline{0.678}$ Ohms

Trial 3 $E = \underline{4.646}$ Volts
 $E_1 = \underline{1.876}$ Volts
 $R_{as(3)} = \underline{0.678}$ Ohms

Trial 4 $E = \underline{4.400}$ Volts
 $E_1 = \underline{1.777}$ Volts
 $R_{as(4)} = \underline{0.678}$ Ohms

Trial 5 $E = \underline{4.660}$ Volts
 $E_1 = \underline{1.882}$ Volts
 $R_{as(5)} = \underline{0.678}$ Ohms

5. Average $R_{as} = \underline{0.678}$ Ohms

APPEARED ERRATIC, RERUN.

TRIAL 1

DATA SHEET 2

ANTENNA SYSTEM RESISTANCE

R_{as}

29 JULY 1978
Date

1. Frequency 12,300 Hertz

2. Fixed Resistor, Z (Impedance) 0.25 μH 1.001 Ohms

3. $R_{as} = \frac{E_1 Z}{E - E_1}$ (Ohms)

4. Voltage Readings:

Trial 1 $E = \underline{4.285}$ Volts
 $E_1 = \underline{1.699}$ Volts
 $R_{as(1)} = \underline{0.658}$ Ohms

Trial 2 $E = \underline{4.539}$ Volts
 $E_1 = \underline{1.801}$ Volts
 $R_{as(2)} = \underline{0.659}$ Ohms

Trial 3 $E = \underline{4.076}$ Volts
 $E_1 = \underline{1.616}$ Volts
 $R_{as(3)} = \underline{0.658}$ Ohms

Trial 4 $E = \underline{4.640}$ Volts
 $E_1 = \underline{1.839}$ Volts
 $R_{as(4)} = \underline{0.657}$ Ohms

Trial 5 $E = \underline{4.781}$ Volts
 $E_1 = \underline{1.896}$ Volts
 $R_{as(5)} = \underline{0.658}$ Ohms

5. Average $R_{as} = \underline{0.658}$ Ohms

AFTER 5 MINUTES OF RELAY OPERATION.
TRIAL 2.

DATA SHEET 2

ANTENNA SYSTEM RESISTANCE

R_{as}

29 JULY 1978
Date

1. Frequency 12,300 Hertz
2. Fixed Resistor, Z (Impedance) 0.22 μH 1.001 Ohms

3. $R_{as} = \frac{E_1 Z}{E - E_1}$ (Ohms)

4. Voltage Readings:

Trial 1 $E = \underline{4} . \underline{760}$ Volts
 $E_1 = \underline{1} . \underline{891}$ Volts
 $R_{as(1)} = \underline{0} . \underline{660}$ Ohms

Trial 2 $E = \underline{4} . \underline{675}$ Volts
 $E_1 = \underline{1} . \underline{858}$ Volts
 $R_{as(2)} = \underline{0} . \underline{660}$ Ohms

Trial 3 $E = \underline{4} . \underline{127}$ Volts
 $E_1 = \underline{1} . \underline{639}$ Volts
 $R_{as(3)} = \underline{0} . \underline{660}$ Ohms

Trial 4 $E = \underline{4} . \underline{476}$ Volts
 $E_1 = \underline{1} . \underline{779}$ Volts
 $R_{as(4)} = \underline{0} . \underline{660}$ Ohms

Trial 5 $E = \underline{4} . \underline{759}$ Volts
 $E_1 = \underline{1} . \underline{891}$ Volts
 $R_{as(5)} = \underline{0} . \underline{660}$ Ohms

5. Average $R_{as} = \underline{0} . \underline{660}$ Ohms

REPLACED RELAX.

TRIAL 3

DATA SHEET 2

ANTENNA SYSTEM RESISTANCE

R_{as}

29 JULY 1978
Date

1. Frequency 13,600 Hertz
2. Fixed Resistor, Z (Impedance) 0.22 μH 1.001 Ohms

$$3. R_{as} = \frac{E_1 Z}{E - E_1} \text{ (Ohms)}$$

4. Voltage Readings:

Trial 1 $E = \underline{4.618}$ Volts
 $E_1 = \underline{1.876}$ Volts
 $R_{as(1)} = \underline{0.685}$ Ohms

Trial 2 $E = \underline{4.620}$ Volts
 $E_1 = \underline{1.876}$ Volts
 $R_{as(2)} = \underline{0.684}$ Ohms

Trial 3 $E = \underline{4.006}$ Volts
 $E_1 = \underline{1.628}$ Volts
 $R_{as(3)} = \underline{0.685}$ Ohms

Trial 4 $E = \underline{4.320}$ Volts
 $E_1 = \underline{1.756}$ Volts
 $R_{as(4)} = \underline{0.686}$ Ohms

Trial 5 $E = \underline{4.319}$ Volts
 $E_1 = \underline{1.756}$ Volts
 $R_{as(5)} = \underline{0.686}$ Ohms

5. Average $R_{as} = \underline{0.685}$ Ohms

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 3 AUG 1978 I_{as} 400 * A. K_1 0.98 K_2 0.99 K_3 - . -LOOP HEIGHT 6 (ft.) (A/ft.) TRIPOD X HELICOPTER
(ABOVE: SURFACE - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1407	10.20	24.1					
1405	13.60	34.2					
1404	11.1/3	27.1					
1403	11.05	26.4					
1402	F_t 12.30	29.3					

1415	10.20	24.3					
1413	13.60	34.1					
1412	11-1/3	27.0					
1411	11.05	26.5					
1409	F_t 12.30	29.3					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT * NOT SURE THE ANTENNA CURRENT IS BEING
MAINTAINED AT THIS TIME. WILL TRY AGAIN
AT 1430.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 3 AUG 1978

I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 - . -

LOOP HEIGHT 6 (m/ft.) TRIPOD X HELICOPTER
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1430	10.20	24.9					
1432	13.60	34.7					
1433	11.1/3	27.5					
1434	11.05	27.0					
1435	F_t 12.30	30.2					

1436	10.20	25.0					
1437	13.60	34.6					
1438	11-1/3	27.5					
1439	11.05	27.0					
1440	F_t 12.30	30.4					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 3 AUG 1978

I_{as} 400 A. K_1 0.98 K_2 1.00 K_3 —

LOOP HEIGHT 6 (ft.) TRIPOD — HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK — ROUTINE —

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1505	10.20	22.3	020				
1504	13.60	30.6					
1500	11.1/3	25.0					
1458	11.05	24.5					
1457	F_t 12.30	29.5					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT LOOP PARALLEL TO HELD AXIS.
NOSE TOWARD STATION
EXTREMELY NOISEY.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 3 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 1.00 K₃ -.-

LOOP HEIGHT 1000 (m/ft.) TRIPOD HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
	10.20		—				
	13.60						
	11.1/3						
	11.05						
1512	F _t 12.30	27.0					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

LOOP PARALLEL TO HELD AXIS.

COMMENT TOO NOISY TO USE. BACK TO THE SURFACE.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 3 AUG 1978 I_{as} 400 A. K_1 0.98 K_2 1.00 K_3 —LOOP HEIGHT 6 (ft.) TRIPOD — HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK — ROUTINE —

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1540	10.20	21.9	205				
1539	13.60	29.9					
1539	11.1/3	24.6					
1538	11.05	24.4					
1536	F_t 12.30	27.0					

1545	10.20	21.7					
1544	13.60	31.2					
1543	11-1/3	23.7					
1542	11.05	24.0					
1541	F_t 12.30	26.5					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

LOOP PARALLEL TO HELD AXIS.
 COMMENT NOSE AWAY FROM STATION.
 EXTREMELY NOISE X.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 3 AUG 1978

I_{as} 400 A. K_1 0.98 K_2 1.00 K_3 —

LOOP HEIGHT 1000 (m./ft.) TRIPOD — HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK — ROUTINE —

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D	M	E	D2	DIST. km.	AZ. OT.
1556	10.20	22.8	205							
1556	13.60	29.9								
1555	11.1/3	22.6								
1554	11.05	22.6								
1553	F_t 12.30	26.9								

	10.20									
	13.60									
	11-1/3									
	11.05									
	F_t 12.30									

	10.20									
	13.60									
	11-1/3									
	11.05									
	F_t 12.30									

COMMENT LOOP PARALLEL TO HELD AXIS,
NOSE AWAY FROM STATION.
EXTREMELY NOISEY.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 2 DATE: 3 AUG 1978

I_{as} 400 A. K_1 0.98 K_2 1.00 K_3 =

LOOP HEIGHT 1000 (ft.) TRIPOD HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1608	10.20	32.6	207				
1608	13.60	43.5					
1607	11.1/3	36.6					
1606	11.05	34.8					
1604	F_t 12.30	39.5					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT LOOP PARALLEL TO HELO AXIS.
NOSE AWAY FROM STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 2 DATE: 3 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ - -

LOOP HEIGHT 6 (m/ft.) TRIPOD X HELICOPTER
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D2	DIST. km.	AZ. OT.
1627	10.20	37.3	205				
1625	13.60	51.4					
1624	11.1/3	41.4					
1624	11.05	40.5					
1623	F _t 12.30	46.2					
1632	10.20	36.8					
1631	13.60	51.2					
1630	11-1/3	41.6					
1629	11.05	40.4					
1628	F _t 12.30	46.1					
1633	10.20	36.8					
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 2 DATE: 3 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 1.00 K₃ —

LOOP HEIGHT 6 (m/ft.) TRIPOD — HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK — ROUTINE —

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1650	10.20	35.0	210				
1649	13.60	50.4					
1648	11.1/3	40.8					
1647	11.05	38.6					
1646	F _t 12.30	44.6					

	10.20						
	13.60						
	11-1/3						
	11.05						
1651	F _t 12.30	44.3					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT LOOP PARALLEL TO HELD AXIS.
NOSE AWAY FROM STATION.
RAN OUT OF TIME (FUEL RESERVE)

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 2 DATE: 4 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ - . -

LOOP HEIGHT 6 (ft.) TRIPOD X HELICOPTER
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
0931	10.20	39.2	25				
0930	13.60	52.3					
0929	11.1/3	42.6					
0928	11.05	41.9					
0928	F _t 12.30	48.5					

0939	10.20	39.1					
0938	13.60	51.9					
0936	11-1/3	42.6					
0934	11.05	42.2					
0933	F _t 12.30	48.6					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

LOOP ON WEST SIDE OF HELO.

COMMENT

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 2 DATE: 4 AUG 1978 I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 - . -LOOP HEIGHT 6 (6/ft.) TRIPOD X HELICOPTER
(ABOVE: SURFACE - ~~5 ft. 11 in.~~)TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
<u>1003</u>	<u>10.20</u>	<u>37.3</u>					
<u>1002</u>	<u>13.60</u>	<u>49.6</u>					
<u>1001</u>	<u>11.1/3</u>	<u>40.6</u>					
<u>1000</u>	<u>11.05</u>	<u>39.9</u>					
<u>0959</u>	F_t <u>12.30</u>	<u>44.2</u>					

	<u>10.20</u>						
	<u>13.60</u>						
	<u>11-1/3</u>						
	<u>11.05</u>						
	F_t <u>12.30</u>						

	<u>10.20</u>						
	<u>13.60</u>						
	<u>11-1/3</u>						
	<u>11.05</u>						
	F_t <u>12.30</u>						

COMMENT LOOP ON EAST SIDE OF HELD.
LARGE DIFFERENCES IN FIELD FOR A SHORT
CHANGE IN DISTANCE PROVED THE SITE BAD.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 4 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ - . -

LOOP HEIGHT 6 (m./ft.) TRIPOD X HELICOPTER
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1035	10.20	25.2	15				
1039	13.60	34.8	*				
1041	11.1/3	27.4					
1042	11.05	27.4					
1043	F _t 12.30	30.2					

1054	10.20	26.0	16				
1053	13.60	36.3	#				
1051	11-1/3	28.2					
1050	11.05	27.9					
1048	F _t 12.30	31.1					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT * LOOP ON WEST SIDE OF HELO.
LOOP ON EAST SIDE OF HELO.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 4 AUG 1978

I_{as} 400 A. K_1 0.98 K_2 0.99* K_3 -.-

LOOP HEIGHT 6 (ft.) TRIPOD _____ HELICOPTER X
(ABOVE: SURFACE - ~~SURFACE~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK _____ ROUTINE _____

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1128	10.20	25.2	105				
1127	13.60	36.2					
1126	11.1/3	28.3					
1125	11.05	27.5					
1123	F_t 12.30	30.7					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT * BLUE LOOP MOUNTED PERPENDICULAR TO
AXIS OF HELD FOR MINIMUM NOISE.
LOOP TOWARD THE STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 4 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99* K₃ -

LOOP HEIGHT 6 (m./ft.) TRIPOD HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1142	10.20	24.8	290				
1141	13.60	34.9					
1138	11.1/3	27.5					
1137	11.05	27.3					
1135	F _t 12.30	30.1					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT * BLUE LOOP MOUNTED PERPENDICULAR TO
AXIS OF HELO FOR MINIMUM NOISE.
LOOP AWAY FROM THE STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 4 AUG 1978

I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 1.00

LOOP HEIGHT 1000 (m./ft.) TRIPOD _____ HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1152	10.20	26.5	120				
1151	13.60	36.5					
1150	11.1/3	28.5					
1149	11.05	28.1					
1147	F_t 12.30	31.3					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

LOOP TOWARD STATION.

COMMENT

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 3 DATE: 4 AUG 1978

I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 1.00

LOOP HEIGHT 1000 (m./ft.) TRIPOD _____ HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1446	10.20	46.6	335				
1445	13.60	65.0					
1445	11.1/3	54.1					
1444	11.05	51.9					
1441	F_t 12.30	55.0					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT LOOP TOWARD STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 4 DATE: 4 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.00

LOOP HEIGHT 1000 (ft.) (ABOVE: SURFACE - SEA LEVEL) TRIPOD HELICOPTER X

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1458	10.20	40.9	350				
1457	13.60	54.0					
1456	11.1/3	44.9					
1455	11.05	43.2					
1454	F _t 12.30	49.4					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT LOOP TOWARD STATION.
STRONG CROSS WIND, X 25 KNOTS. SHORT OF FUEL.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 5 DATE: 4 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.02

LOOP HEIGHT 300 (m/ft) TRIPOD _____ HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1537	10.20	33.8	175				
1536	13.60	44.3					
1535	11.1/3	36.2					
1534	11.05	35.0					
1533	F _t 12.30	40.0					

1546	10.20	33.7	180				
1545	13.60	44.1					
1545	11-1/3	36.8					
1543	11.05	35.8					
1542	F _t 12.30	40.8					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT LOOP AWAY FROM STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 6 DATE: 4 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.02

LOOP HEIGHT 400 (m. ~~Air~~) TRIPOD _____ HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1601	10.20	28.1	195				
1600	13.60	36.8					
1559	11.1/3	30.2					
1558	11.05	29.1					
1557	F _t 12.30	33.3					

1610	10.20	28.7	190				
1609	13.60	37.0					
1608	11-1/3	30.6					
1608	11.05	29.5					
1606	F _t 12.30	34.3					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

LOOP AWAY FROM STATION.

COMMENT

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 8 AUG 1978 I_{as} 400 μ A. K_1 0.98 K_2 0.99 K_3 - -LOOP HEIGHT 6 (ft.) (ABOVE: SURFACE - ~~SEA LEVEL~~) TRIPOD X HELICOPTER TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D	M	E	D2	DIST. km.	AZ. OT.
1542	10.20	24.5	18							
1541	13.60	33.4								
1540	11.1/3	26.7								
1539	11.05	26.3								
1538	F_t 12.30	29.8								

1549	10.20	24.4								
1548	13.60	33.2								
1547	11-1/3	26.7								
1547	11.05	26.3								
1546	F_t 12.30	29.7								

1556	10.20	24.4								
1555	13.60	33.3								
1554	11-1/3	26.7								
1552	11.05	26.3								
1551	F_t 12.30	29.8								

COMMENT *ANTENNA CURRENT BEING MEASURED WRONG.
 LOOP ON THE SEAWARD (LEFT) SIDE OF HELICOPTER.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 8 AUG 1978 I_{as} 400* K_1 0.98 K_2 0.99 K_3 - . -LOOP HEIGHT 6 (m/ft.) TRIPOD HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1619	10.20	23.6	107				
1618	13.60	33.4					
1617	11.1/3	26.4					
1616	11.05	26.1					
1615	F_t 12.30	29.9					
1625	10.20	24.0	107				
1624	13.60	32.9					
1623	11-1/3	26.6					
1622	11.05	25.7					
1621	F_t 12.30	29.6					
1632	10.20	24.1	110				
1631	13.60	33.3					
1630	11-1/3	26.9					
1628	11.05	26.1					
1627	F_t 12.30	30.1					

COMMENT *ANTENNA CURRENT BEING MEASURED WRONG.
 LOOP TOWARD STATION.
 HELICOPTER WITH FLOATS.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: PEUNION SITE NO. 1 DATE: 8 AUG 1978

I_{as} 400 *A. K₁ 0.98 K₂ 0.99 K₃ - -

LOOP HEIGHT 6 (m/ft.) TRIPOD HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1641	10.20	24.0	285				
1640	13.60	33.1					
1640	11.1/3	27.3					
1638	11.05	26.6					
1637	F _t 12.30	30.3					

1646	10.20	24.1	285				
1645	13.60	33.0					
1644	11-1/3	26.8					
1643	11.05	26.4					
1642	F _t 12.30	30.1					

1654	10.20	24.0	285				
1652	13.60	33.5					
1651	11-1/3	27.2					
1650	11.05	26.8					
1648	F _t 12.30	30.1					

*ANTENNA CURRENT BEING MEASURED WRONG.
COMMENT LOOP AWAY FROM THE STATION.
HELICOPTER WITH FLOATS.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 8 AUG 1978

I_{as} 400 *A. K_1 0.98 K_2 0.99 K_3 1.01

LOOP HEIGHT 1000 (ft.) TRIPOD HELICOPTER X
(ABOVE: SURFACE - SURFACE)

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1705	10.20	24.8					
1704	13.60	34.2					
1704	11.1/3	27.9					
1702	11.05	27.3					
1701	F_t 12.30	30.0					

1712	10.20	24.1					
1711	13.60	33.5					
1710	11-1/3	27.6					
1708	11.05	26.8					
1707	F_t 12.30	29.9					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT * ANTENNA CURRENT BEING MEASURED WRONG.
NOT USED FOR HEIGHT-GAIN MEASUREMENTS,
OR RADIATED POWER CALCULATIONS.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. A1 DATE: 9 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.01

LOOP HEIGHT 1000 (m/ft.) TRIPOD HELICOPTER X
(ABOVE: ~~SEA LEVEL~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D M E D1 D2		DIST. km.	AZ. OT.
1024	10.20	27.3	335	24478	17519	28.1	044
1023	13.60	37.3		24425	17531	28.0	044
1021	11.1/3	29.0		24481	17450	28.1	044
1020	11.05	29.1		24483	17481	28.1	044
1018	F _t 12.30	34.5		24502	17483	28.1	044

1030	10.20	28.3		24445	17451	28.0	044
1029	13.60	36.3		24413	17407	28.0	045
1027	11-1/3	30.1		24405	17420	28.0	045
1026	11.05	29.7		24461	17543	28.1	044
1025	F _t 12.30	34.7		24445	17522	28.0	044

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. A2 DATE: 9 AUG 1978 I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 1.01LOOP HEIGHT 1000 (m/ft.) TRIPOD _____ HELICOPTER X
(ABOVE: ~~SEA LEVEL~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1042	10.20	32.5	335	20503	17728	23.9	045
1041	13.60	42.9		20439	17795	23.9	045
1039	11.1/3	34.6		20392	17751	23.8	045
1038	11.05	34.7		20407	17775	23.8	045
1037	F_t 12.30	39.8		20432	17778	23.8	045

1050	10.20	32.9		20246	17880	23.7	045
1047	13.60	42.6		20315	17782	23.7	045
1048	11-1/3	35.3		20307	17791	23.7	045
1044	11.05	33.6		20333	17785	23.8	045
1043	F_t 12.30	39.9		20507	17763	23.9	045

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT LOOP TOWARD STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. A3 DATE: 9 AUG 1978

I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 1.01

LOOP HEIGHT 1000 (ft.) TRIPOD _____ HELICOPTER X
(ABOVE: ~~SEA LEVEL~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1107	10.20	38.2	330	16931	19118	20.3	045
1105	13.60	50.1		16850	19212	20.2	045
1102	11.1/3	42.6		16828	19245	20.2	045
1104	11.05	40.2		16865	19211	20.2	045
1100	F_t 12.30	46.5		16910	19239	20.3	045

1112	10.20	38.4		16827	19228	20.2	045
1111	13.60	50.2		16858	19209	20.2	045
1110	11-1/3	41.7		16885	19175	20.2	045
1109	11.05	40.5		16867	19265	20.2	045
1108	F_t 12.30	46.5		16869	19220	20.2	045

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT LOOP TOWARD STAT IDN.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. A4 DATE: 9 AUG 1978 I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 1.01LOOP HEIGHT 1000 (1000 ft.) (ABOVE: ~~SURFACE~~ - SEA LEVEL) TRIPOD _____ HELICOPTER XTYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1134	10.20	45.6	325	13050	21653	16.4	043
1133	13.60	60.5		13064	21677	16.5	043
1132	11.1/3	50.3		13077	21636	16.5	043
1131	11.05	49.0		13137	21575	16.5	043
1130	F_t 12.30	54.9		13208	21535	16.6	043

1140	10.20	46.3		12895	21746	16.3	043
1139	13.60	61.5		12887	21739	16.3	043
1138	11-1/3	51.3		12847	21812	16.2	043
1137	11.05	49.5		12930	21743	16.3	043
1135	F_t 12.30	55.1		13025	21653	16.4	043

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT LOOP TOWARD STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. B 1 DATE: 10 AUG 1978 I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 1.01LOOP HEIGHT 1000 (ft.) TRIPOD _____ HELICOPTER X
(ABOVE: ~~SURFACE~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1012	10.20	30.4	270	21585	43483	27.1	345
1009	13.60	41.3		21608	43489	27.1	345
1008	11.1/3	33.1		21655	43503	27.2	345
1007	11.05	31.9		21604	43468	27.1	345
1006	F_t 12.30	37.7		21604	43430	27.1	345

1020	10.20	31.1		21735	43656	27.3	345
1016	13.60	42.0		21653	43650	27.2	345
1015	11-1/3	34.0		21624	43625	27.2	345
1014	11.05	32.9		21614	43627	27.1	345
1013	F_t 12.30	37.9		21615	43585	27.1	345

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT LOOP TOWARD STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. B2 DATE: 10 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.01

LOOP HEIGHT 1000 (ft.) (ABOVE: ~~SURFACE~~ - SEA LEVEL) TRIPOD _____ HELICOPTER X

TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1033	10.20	35.5	275	17701	40963	23.2	345
1032	13.60	48.7		17725	40957	23.3	345
1031	11.1/3	39.5		17756	40936	23.3	346
1030	11.05	38.3		17692	40879	23.2	346
1029	F _t 12.30	44.0		17847	40973	23.4	346

1053	10.20	35.5		18002	41377	23.5	345
1052	13.60	48.8		17939	41350	23.5	345
1051	11-1/3	39.2		17854	41350	23.4	344
1050	11.05	38.3		17833	41303	23.4	345
1049	F _t 12.30	44.6		17750	41201	23.3	345

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT LOOP TOWARD STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. B3 DATE: 10 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.01

LOOP HEIGHT 1000 (ft.) TRIPOD _____ HELICOPTER X
(ABOVE: ~~SEA LEVEL~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1103	10.20	42.5	275	14057	39002	19.6	345
1102	13.60	58.8		14027	38953	19.6	345
1101	11.1/3	47.1		14074	38912	19.6	346
1100	11.05	46.1		14079	38869	19.6	346
1059	F _t 12.30	52.1		14055	38778	19.6	346

1108	10.20	42.7		14104	39174	19.6	345
1107	13.60	59.3		14067	39099	19.6	345
1106	11-1/3	47.7		14051	39092	19.6	345
1105	11.05	46.6		14035	39063	19.6	345
1105	F _t 12.30	53.1		14049	39044	19.6	345

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT LOOP TOWARD STATION

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. B4 DATE: 10 AUG 1979I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.01LOOP HEIGHT 1000 (m./ft.) TRIPOD _____ HELICOPTER X
(ABOVE: ~~SEA LEVEL~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1127	10.20	56.2	275	9673	36271	15.3	348
1125	13.60	76.8		9685	36172	15.3	349
1124	11.1/3	61.5		9722	36088	15.3	349
1123	11.05	59.5		9751	36135	15.4	349
1122	F _t 12.30	67.6		9746	35989	15.4	350

1132	10.20	55.9		9733	36409	15.3	348
1131	13.60	77.2		9648	36295	15.2	348
1130	11-1/3	62.8		9688	36340	15.3	348
1129	11.05	61.5		9588	36276	15.2	348
1128	F _t 12.30	69.7		9610	36282	15.2	348

1138	10.20	55.5		9848	36368	15.4	348
1137	13.60	76.3		9859	36370	15.5	348
1136	11-1/3	62.6		9825	36360	15.4	348
1135	11.05	60.5		9816	36364	15.4	348
1133	F _t 12.30	69.5		9783	36358	15.4	348

COMMENT LOOP TOWARD STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. C 1 DATE: 10 AUG 1978 I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 1.01LOOP HEIGHT 1000 (m/ft.) TRIPOD _____ HELICOPTER X
(ABOVE: ~~SEA LEVEL~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
	10.20		<u>215</u>				
	13.60						
	11.1/3						
<u>1440</u>	11.05	<u>30.7</u>		<u>28820</u>	<u>44326</u>		
<u>1438</u>	F_t 12.30	<u>34.1</u>		<u>28862</u>	<u>44168</u>		

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT FLIGHT CANCELLED DUE TO ERRATIC OPERATION
OF DME. INSPECTION OF TRANSPONDER SITE
FOUND TRANSPONDER BEHIND TREES AND 150
METERS OUT OF POSITION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. C3 DATE: 10 AUG 1978 I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 1.01LOOP HEIGHT 1000 (ft.) TRIPOD _____ HELICOPTER X
(ABOVE: ~~SURFACE~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1631	10.20	41.0	NOT	19729	38800	20.6	284
1630	13.60	58.8	RECORDED	19691	38723	20.5	284
1629	11.1/3	45.9		19657	38678	20.5	284
1627	11.05	43.7		20011	39205	20.9	285
1626	F_t 12.30	48.9		20350	38609	21.0	282

1637	10.20	40.5		19745	38940	20.6	284
1635	13.60	57.1		19730	38843	20.6	284
1634	11-1/3	45.5		19726	38814	20.6	284
1633	11.05	44.5		19722	38810	20.5	284
1632	F_t 12.30	49.5		19734	38807	20.6	284

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT POSITIONS "CW" FROM THE BASELINE
LOOP TOWARD STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. C2 DATE: 10 AUG 1978 I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 1.01LOOP HEIGHT 1000 (m./ft.) TRIPOD HELICOPTER X
(ABOVE: ~~SURFACE~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1604	10.20	33.4	205	24215	40924	24.8	280
1603	13.60	46.2		24206	40867	24.8	280
1602	11.1/3	36.9		24175	40870	24.8	280
1602	11.05	36.1		24255	40880	24.8	280
1601	F_t 12.30	41.8		24241	40779	24.8	280

1610	10.20	33.6	*	26247	41256	24.9	281
1609	13.60	45.5	*	26230	41175	24.9	281
1608	11-1/3	37.3	*	26219	41067	24.9	281
1607	11.05	35.5	*	26281	41134	24.9	281
1605	F_t 12.30	41.5	*	26253	41235	24.9	281

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT * SOME TROUBLE WITH DMU. FLUCTUATING IN THE SECOND DIGIT. DETERMINED THAT THE NUMBER SHOULD HAVE BEEN 24xxx SO USED THAT FOR CALCULATIONS. LOOP TOWARD STATION. POSITIONS "CW" FROM THE BASELINE.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. C4 DATE: 10 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.01

LOOP HEIGHT 1000 (ft.) (ABOVE: ~~SURFACE~~ - SEA LEVEL) TRIPOD _____ HELICOPTER X

TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1658	10.20	57.6	215	14246	35652	15.1	287
1656	13.60	79.3		14203	35649	15.0	287
1655	11.1/3	64.3		14186	35610	15.0	287
1654	11.05	63.9		14125	35426	14.9	286
1653	F _t 12.30	70.1		14267	35505	15.0	286

1705	10.20	57.0		14135	35910	15.1	288
1703	13.60	78.4		14120	35772	15.0	288
1702	11-1/3	62.8		14149	35764	15.0	288
1700	11.05	62.3		14238	35697	15.1	287
1659	F _t 12.30	69.9		14256	35700	15.1	287

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT POSITIONS "CW" FROM THE BASELINE.
LOOP TOWARD STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 7 DATE: 16 AUG 1978

I_{as} 400 * A. K₁ 0.98 K₂ 0.99 K₃ -.-

LOOP HEIGHT 15 (m./ft.) TRIPOD X HELICOPTER
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK X ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1601	10.20	27.2					
1600	13.60	36.4					
1559	11.1/3	30.5					
1558	11.05	29.3					
1556	F _t 12.30	33.6					

1606	10.20	27.1					
1605	13.60	36.4					
1604	11-1/3	30.5					
1603	11.05	29.3					
1602	F _t 12.30	33.7					

1623	10.20	27.1	} MEASURED BY FOUYET.				
1621	13.60	36.5					
1618	11-1/3	30.2					
1615	11.05	29.3					
1611	F _t 12.30	33.4					

COMMENT * UNTIL 1600 LST. AT THIS TIME THE MILITARY
STATION CREW GO HOME.
AT GILOT AIRPORT.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 18 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ -

LOOP HEIGHT 5 (M./ft.) TRIPOD X HELICOPTER
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK X ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1024	10.20	25.1					
1022	13.60	34.5					
1021	11.1/3	27.3					
1019	11.05	27.1					
1018	F _t 12.30	30.3					

1108	10.20	24.9					
1106	13.60	34.8					
1104	11-1/3	27.6					
1102	11.05	27.4					
1059	F _t 12.30	30.2					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT MEASURED BY HANSELMAN.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 18 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ -

LOOP HEIGHT 5 (m/ft.) TRIPOD X HELICOPTER
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK X ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1041	10.20	24.6					
1039	13.60	34.9					
1036	11.1/3	27.4					
1032	11.05	27.2					
1028	F _t 12.30	30.3					

1057	10.20	24.7					
1054	13.60	34.8					
1050	11-1/3	27.7					
1048	11.05	27.3					
1045	F _t 12.30	30.2					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT MEASURED BY FOUYET.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 19 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ - . -

LOOP HEIGHT 6 (X/ft.) TRIPOD X HELICOPTER
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
0917	10.20	24.6	LOOP 016				
0916	13.60	34.0					
0915	11.1/3	27.1					
0914	11.05	26.8					
0913	F _t 12.30	30.2					

0923	10.20	24.6					
0922	13.60	33.9					
0921	11-1/3	27.1					
0920	11.05	26.7					
0919	F _t 12.30	30.3					

<u>X</u>	10.20	24.60					
	13.60	33.95					
	11-1/3	27.10					
	11.05	26.75					
	F _t 12.30	30.25					

COMMENT LOOP SEAWARD FROM HELD.

DATA SHEET 5 (DS-6)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 19 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ - -

LOOP HEIGHT 6 (X./ft.) TRIPOD HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
0946	10.20	24.6	105				
0945	13.60	34.0					
0944	11.1/3	26.6					
0942	11.05	26.7					
0941	F _t 12.30	30.1					

0958	10.20	24.9					
0957	13.60	34.0					
0956	11-1/3	27.2					
0954	11.05	27.0					
0953	F _t 12.30	30.4					

X	10.20	24.75					
	13.60	34.00					
	11-1/3	26.90					
	11.05	26.85					
	F _t 12.30	30.25					

COMMENT R.A.S. HELD. REGULAR LANDING SKIDS.
LOOP PERPENDICULAR TO AXIS OF HELD.
LOOP TOWARD THE STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 19 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ -.-

LOOP HEIGHT 6 (X./ft.) TRIPOD HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. X BENCHMARK ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1006	10.20	24.6	285				
1005	13.60	34.6					
1004	11.1/3	27.5					
1003	11.05	27.0					
1002	F _t 12.30	30.1					

1012	10.20	24.2					
1011	13.60	34.2					
1009	11-1/3	27.4					
1008	11.05	26.9					
1007	F _t 12.30	29.7					

<u>X</u>	10.20	24.40					
	13.60	34.40					
	11-1/3	27.45					
	11.05	26.95					
	F _t 12.30	29.90					

COMMENT

R.A.S. HELD. REGULAR LANDING SKIDS.
LOOP PERPENDICULAR TO AXIS OF HELD.
LOOP AWAY FROM THE STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 19 AUG 1978 I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 1.00LOOP HEIGHT 1,000 (X/ft.) TRIPOD _____ HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X*

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1023	10.20	24.7	105				
1022	13.60	34.5					
1021	11.1/3	27.4					
1020	11.05	27.0					
1018	F_t 12.30	30.2					

1029	10.20	24.5					
1028	13.60	34.3					
1026	11-1/3	27.4					
1027	11.05	27.0					
1024	F_t 12.30	29.7					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT LOOP TOWARD THE STATION.* HEIGHT-GAIN MEASUREMENT.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 19 AUG 1978 I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 1.00LOOP HEIGHT 2,000 (X/ft.) TRIPOD _____ HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X*

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D	M	E	D2	DIST. km.	AZ. OT.
1040	10.20	25.5	110							
1039	13.60	35.2								
1038	11.1/3	28.5								
1037	11.05	27.8								
1036	F_t 12.30	31.3								

1045	10.20	25.6								
1043	13.60	35.5								
1043	11-1/3	28.3								
1042	11.05	27.9								
1042	F_t 12.30	30.6								

	10.20									
	13.60									
	11-1/3									
	11.05									
	F_t 12.30									

COMMENT LOOP TOWARD THE STATION.

* HEIGHT-GAIN MEASUREMENT.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 19 AUG 1978I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.00LOOP HEIGHT 3,000 (X/ft.) TRIPOD _____ HELICOPTER X
(ABOVE: SURFACE - ~~SEA LEVEL~~)TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X*

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1055	10.20	26.1	105				
1054	13.60	35.5					
1053	11.1/3	29.5					
1052	11.05	28.4					
1051	F _t 12.30	31.3					

1102	10.20	25.8					
1101	13.60	35.5					
1059	11-1/3	29.1					
1058	11.05	28.4					
1056	F _t 12.30	31.4					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT LOOP TOWARD THE STATION.
+ HEIGHT-GAIN MEASUREMENT.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 19 AUG 1978I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.00LOOP HEIGHT 4,000 (X/ft.) (ABOVE: SURFACE - ~~SEA LEVEL~~) TRIPOD _____ HELICOPTER XTYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X*

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D	M	E	D2	DIST. km.	AZ. OT.
1110	10.20	26.4	110							
1109	13.60	35.8								
1108	11.1/3	29.1								
1107	11.05	28.7								
1106	F _t 12.30	31.5								

1114	10.20	26.4								
1113	13.60	36.2								
1112	11-1/3	29.1								
1111	11.05	28.5								
1111	F _t 12.30	31.6								

	10.20									
	13.60									
	11-1/3									
	11.05									
	F _t 12.30									

COMMENT LOOP TOWARD THE STATION.

* HEIGHT-GAIN MEASUREMENT.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 19 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.00

LOOP HEIGHT 5,000 (m./ft.) TRIPOD HELICOPTER X
(ABOVE: SURFACE - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK ROUTINE X*

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
	10.20		105				
	13.60						
	11.1/3						
	11.05						
1454	F _t 12.30	32.3					
	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						
	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT LOOP TOWARD THE STATION.

* HEIGHT-GAIN MEASUREMENT.

ABORTED - CLOUDS UNDER THE HELD.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 2 DATE: 19 AUG 1978 I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 1.00LOOP HEIGHT 3000 (X/ft.) TRIPOD _____ HELICOPTER X
(ABOVE: SURFACE - ~~SURFACE~~)TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X*

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1509	10.20	36.6	105				
1508	13.60	47.6					
1507	11.1/3	39.1					
1506	11.05	38.6					
1504	F_t 12.30	45.3					

1516	10.20	36.6					
1515	13.60	48.8					
1514	11-1/3	40.4					
1513	11.05	39.6					
1510	F_t 12.30	45.0					

1521	10.20	36.9					
1520	13.60	48.7					
1519	11-1/3	40.9					
1518	11.05	40.1					
1517	F_t 12.30	45.2					

LOOP TOWARD THE STATION.
 COMMENT * HEIGHT-GAIN MEASUREMENT.
 NO HIGHER ALT. POSSIBLE DUE TO WIND.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 8 DATE: 19 AUG 1978 I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 1.00LOOP HEIGHT 2000 (x./ft.) TRIPOD HELICOPTER X
(ABOVE: SURFACE - ~~5000~~)TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK ROUTINE X*

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D	M	E	D2	DIST. km.	AZ. OT.
1536	10.20	48.5	107							
1535	13.60	60.4								
1533	11.1/3	52.4								
1533	11.05	51.0								
1532	F_t 12.30	57.6								

1542	10.20	47.4								
1541	13.60	60.5								
1540	11-1/3	52.3								
1539	11.05	50.6								
1538	F_t 12.30	56.6								

#	10.20									
#	13.60									
1546	11-1/3	54.1								
1545	11.05	49.8								
1544	F_t 12.30	57.5								

LOOP TOWARD STATION.

COMMENT * HEIGHT - GAIN MEASUREMENT.

NO HIGHER ALT. POSSIBLE DUE TO WIND.

ABORTED FLIGHT - FUEL FILTER & NO SPARE.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 20 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.00

LOOP HEIGHT 5,000 (K/ft.) TRIPOD _____ HELICOPTER X
(ABOVE: ~~SEA LEVEL~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X*

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D	M	E	D2	DIST. km.	AZ. OT.
0857	10.20	27.1	105							
0856	13.60	36.7								
0855	11.1/3	29.3								
0854	11.05	29.1								
0851	F _t 12.30	33.2								

	10.20									
	13.60									
	11-1/3									
	11.05									
	F _t 12.30									

	10.20									
	13.60									
	11-1/3									
	11.05									
	F _t 12.30									

COMMENT LOOP TOWARD THE STATION.
* HEIGHT-GAIN MEASUREMENT.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 20 AUG 1978
 I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 1.00
 LOOP HEIGHT 6,000 (M./ft.) TRIPOD _____ HELICOPTER X
 (ABOVE: ~~SURFACE~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X*

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
0905	10.20	28.1	105				
0904	13.60	37.1					
0903	11.1/3	29.5					
0902	11.05	29.7					
0901	F_t 12.30	33.8					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

	10.20						
	13.60						
	11-1/3						
	11.05						
	F_t 12.30						

COMMENT LOOP TOWARD THE STATION.
 * HEIGHT-GAIN MEASUREMENT.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 1 DATE: 20 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.00

LOOP HEIGHT 2,000 (X./ft.) (ABOVE: ~~SURFACE~~ - SEA LEVEL) TRIPOD HELICOPTER X

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK ROUTINE X*

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
0914	10.20	28.7	105				
0913	13.60	37.7					
0911	11.1/3	30.1					
0910	11.05	29.6					
0909	F _t 12.30	34.1					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT LOOP TOWARD THE STATION.
* LAST OF HEIGHT-GAIN MEASUREMENTS.
TOO MUCH WIND, NOISEY SIGNALS.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNIONSITE NO. 2DATE: 20 AUG 1978I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.00LOOP HEIGHT 7,000 (X./ft.)
(ABOVE: ~~WATER~~ - SEA LEVEL)TRIPOD HELICOPTER XTYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
0926	10.20	37.9	105				
0925	13.60	51.1					
0924	11.1/3	42.5					
0923	11.05	42.2					
0921	F _t 12.30	47.6					

0932	10.20	38.9					
0931	13.60	51.5					
0930	11-1/3	43.2					
0929	11.05	42.4					
0928	F _t 12.30	48.5					

0942	10.20	39.4					
0941	13.60	51.4					
0940	11-1/3	42.8					
0936	11.05	42.1					
0934	F _t 12.30	47.6					

COMMENT LOOP TOWARD THE STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNIONSITE NO. 8DATE: 20 AUG 1978I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.00LOOP HEIGHT 7,000 (M./ft.)
(ABOVE: ~~SEA LEVEL~~ - SEA LEVEL)TRIPOD HELICOPTER XTYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D M E			DIST. km.	AZ. OT.
				D1		D2		
0956	10.20	50.9	120					
0955	13.60	65.8						
0954	11.1/3	55.6						
0952	11.05	55.6						
0951	F _t 12.30	61.6						
1000	10.20	51.1						
1000	13.60	66.3						
0959	11-1/3	55.8						
0958	11.05	54.5						
0957	F _t 12.30	60.9						
1006	10.20	51.2						
1005	13.60	66.4						
1004	11-1/3	55.7						
1003	11.05	54.9						
1002	F _t 12.30	61.8						

COMMENT LOOP TOWARD THE STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 3 DATE: 20 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.00

LOOP HEIGHT 7,000 (X/ft.) TRIPOD HELICOPTER X
(ABOVE: ~~SEA LEVEL~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D	M	E	D2	DIST. km.	AZ. OT.
1059	10.20	49.4	150							
1058	13.60	66.6								
1057	11.1/3	53.7								
1055	11.05	51.5								
1054	F _t 12.30	60.5								

1104	10.20	48.7								
1103	13.60	65.8								
1102	11-1/3	54.0								
1101	11.05	52.7								
1100	F _t 12.30	60.5								

	10.20									
	13.60									
	11-1/3									
	11.05									
	F _t 12.30									

COMMENT LOOP AWAY FROM THE STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 4 DATE: 20 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.00

LOOP HEIGHT 7,000 (ft.) (X/ft.) TRIPOD _____ HELICOPTER X
(ABOVE: ~~SURFACE~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
<u>1114</u>	<u>10.20</u>	<u>39.6</u>	<u>160</u>				
<u>1114</u>	<u>13.60</u>	<u>51.7</u>					
<u>1113</u>	<u>11.1/3</u>	<u>43.5</u>					
<u>1112</u>	<u>11.05</u>	<u>42.6</u>					
<u>1111</u>	F _t <u>12.30</u>	<u>48.6</u>					

<u>1119</u>	<u>10.20</u>	<u>39.7</u>					
<u>1118</u>	<u>13.60</u>	<u>50.9</u>					
<u>1117</u>	<u>11-1/3</u>	<u>42.3</u>					
<u>1116</u>	<u>11.05</u>	<u>42.4</u>					
<u>1115</u>	F _t <u>12.30</u>	<u>48.1</u>					

	<u>10.20</u>						
	<u>13.60</u>						
	<u>11-1/3</u>						
	<u>11.05</u>						
	F _t <u>12.30</u>						

COMMENT LOOP AWAY FROM THE STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: K2INION SITE NO. 5 DATE: 20 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ 1.00

LOOP HEIGHT 7,000 (K/ft.) TRIPOD HELICOPTER X
(ABOVE: ~~SURFACE~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1129	10.20	32.5					
1127	13.60	42.7					
1126	11.1/3	35.5					
1125	11.05	35.2					
11.25	F _t 12.30	40.2					

1135	10.20	32.7					
1133	13.60	42.8					
1132	11-1/3	34.7					
1131	11.05	34.7					
1130	F _t 12.30	39.9					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT LOOP AWAY FROM THE STATION.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 9B DATE: 22 AUG 1978

I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 -

LOOP HEIGHT 6 (X/ft.) TRIPOD X HELICOPTER
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK X ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D M E			DIST. km.	AZ. OT.
				D1		D2		
1038	10.20	31.2	279					
1036	13.60	40.0						
1035	11.1/3	33.2						
1032	11.05	32.9						
1033	F_t 12.30	37.2						

	10.20							
	13.60							
	11-1/3							
	11.05							
	F_t 12.30							

	10.20							
	13.60							
	11-1/3							
	11.05							
	F_t 12.30							

COMMENT

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION. REUNION SITE NO. 9A DATE: 22 AUG 1978 I_{as} 400 A. K_1 0.98 K_2 0.99 K_3 — . —LOOP HEIGHT 6 (X/ft.) TRIPOD X HELICOPTER —
(ABOVE: SURFACE - ~~SEA LEVEL~~)TYPE OF MEASUREMENT: HELICOPTER CAL. — BENCHMARK X ROUTINE —

TIME (LOCAL)	FREQUENCY (kHz)	E_g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1047	10.20	31.4					
1046	13.60	40.1					
1045	11.1/3	33.1					
1043	11.05	32.9					
1041	F_t 12.30	37.3					

1122	10.20	31.7					
1127	13.60	40.6					
1128	11-1/3	32.7					
1130	11.05	33.0					
1132	F_t 12.30	37.0					

1143	10.20	31.5					
1140	13.60	40.3					
1138	11-1/3	33.2					
1136	11.05	32.3					
1134	F_t 12.30	37.0					

COMMENT

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 9C DATE: 22 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ - . -

LOOP HEIGHT 6 (X/ft.) TRIPOD X HELICOPTER
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK X ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
<u>1100</u>	10.20	<u>31.0</u>	<u>279</u>				
	13.60	<u>39.9</u>					
	11.1/3	<u>32.7</u>					
	11.05	<u>33.5</u>					
<u>1055</u>	F _t 12.30	<u>36.7</u>					

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

	10.20						
	13.60						
	11-1/3						
	11.05						
	F _t 12.30						

COMMENT

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 9D DATE: 22 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ - . -

LOOP HEIGHT 6 (X/ft.) TRIPOD X HELICOPTER
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK X ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
<u>1113</u>	<u>10.20</u>	<u>30.9</u>					
<u>1111</u>	<u>13.60</u>	<u>39.9</u>					
<u>1110</u>	<u>11.1/3</u>	<u>32.7</u>					
<u>1109</u>	<u>11.05</u>	<u>32.8</u>					
<u>1107</u>	F _t <u>12.30</u>	<u>36.7</u>					

	<u>10.20</u>						
	<u>13.60</u>						
	<u>11-1/3</u>						
	<u>11.05</u>						
	F _t <u>12.30</u>						

	<u>10.20</u>						
	<u>13.60</u>						
	<u>11-1/3</u>						
	<u>11.05</u>						
	F _t <u>12.30</u>						

COMMENT

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: REUNION SITE NO. 10 DATE. 22 AUG 1978

I_{as} 400 A. K₁ 0.98 K₂ 0.99 K₃ - . -

LOOP HEIGHT 6 (K/ft.) TRIPOD X HELICOPTER
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TYPE OF MEASUREMENT: HELICOPTER CAL. BENCHMARK X ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E _g (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1611	10.20	23.7	277				
1608	13.60	32.2					
1606	11.1/3	25.4					
1604	11.05	25.2					
1601	F _t 12.30	29.0					

1622	10.20	23.5					
1620	13.60	32.1					
1619	11-1/3	25.4					
1616	11.05	25.3					
1614	F _t 12.30	29.1					

1634	10.20	23.5					
1632	13.60	32.1					
1629	11-1/3	25.3					
1627	11.05	25.2					
1625	F _t 12.30	29.2					

COMMENT

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. BENCHMARK ROUTINE X

OMEGA STATION: REUNION SITE NUMBER: A1 DATE: 9 AUG 1978
 Distance: km., $K_1 = \frac{I_a}{I_{a0}}$ $K_2 = \frac{0.99}{\text{Loop Factor}}$ $K_3 = \frac{1.01}{\text{Vehicle Factor}}$
 (If constant)

Dist. (km.)	Freq. (kHz)	I_{a0} (A)	E_q (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
28.1	10.20	400	27.3	392	27.3	26.9	6.4	151	0.0414	1.930
28.0			28.3		28.3	27.9	6.8	156	0.0442	1.994
.										
28.0	13.60		37.3		37.3	37.0	11.9	155	0.0776	2.643
28.0			36.3		36.3	36.0	11.3	151	0.0735	2.572
.										
28.1	11-1/3		29.0		29.0	28.7	7.2	144	0.0470	2.056
28.0			30.1		30.1	29.8	7.7	149	0.0502	2.126
.										
28.1	11.05		29.1		29.1	28.8	7.3	148	0.0472	2.062
28.1			29.7		29.7	29.4	7.6	152	0.0492	2.104
.										
28.1	12.30		34.5		34.5	34.2	10.2	158	0.0667	2.450
28.0			34.7		34.7	34.0	10.3	159	0.0670	2.455
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

OMEGA STATION: REUNION SITE NUMBER: A 2 DATE: 9 AUG 1978
 Distance: _____ km., $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$ $K_2 = \frac{0.99}{\text{Loop Factor}}$ $K_3 = \frac{1.01}{\text{Vehicle Factor}}$
 (If constant)

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
23.9	10.20	400	32.5	392	32.5	31.9	6.5	152	0.0420	1.944
23.7			32.9		32.9	32.3	6.5	152	0.0423	1.951
.										
23.9	13.60		42.9		42.9	42.4	11.4	151	0.0744	2.588
23.7			42.6		42.6	42.1	11.1	149	0.0721	2.548
.										
23.8	11-1/3		34.6		34.6	34.1	7.3	145	0.0475	2.068
23.7			35.3		35.3	34.8	7.5	148	0.0490	2.101
.										
23.8	11.05		34.7		34.7	34.1	7.3	149	0.0477	2.073
23.8			33.6		33.6	33.1	6.9	145	0.0448	2.007
.										
23.9	12.30		39.8		39.8	39.3	9.8	155	0.0637	2.395
23.9			39.9		39.9	39.4	9.8	155	0.0641	2.401
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

OMEGA STATION: REUNION SITE NUMBER: A 3 DATE: 9 AUG 1978
 Distance: _____ km., $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$ $K_2 = \underline{0.99}$ $K_3 = \underline{1.01}$
 (If constant) Loop Factor Vehicle Factor

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
20.3	10.20	400	38.2	392	38.2	37.2	6.3	150	0.0413	1.927
20.2			38.4		38.4	37.4	6.3	150	0.0413	1.928
20.2	13.60		50.1		50.1	49.4	11.0	149	0.0719	2.543
20.2			50.2		50.2	49.5	11.1	149	0.0722	2.548
20.2	11-1/3		42.6		42.6	41.7	7.9	151	0.0513	2.149
20.2			41.7		41.7	40.8	7.6	148	0.0492	2.103
20.2	11.05		40.2		40.2	39.3	7.0	146	0.0456	2.026
20.2			40.5		40.5	39.6	7.1	147	0.0463	2.041
20.3	12.30		46.5		46.5	45.7	9.5	153	0.0621	2.365
20.2			46.5		46.5	45.7	9.5	152	0.0615	2.353

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

OMEGA STATION: REUNION SITE NUMBER: A4 DATE: 9 AUG 1978
 Distance: _____ km., $K_1 = \frac{0.98}{I_a/I_{as}}$ $K_2 = \frac{0.99}{\text{Loop Factor}}$ $K_3 = \frac{1.01}{\text{Vehicle Factor}}$
 (If constant)

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_q (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
16.4	10.20	400	45.6	392	45.6	43.8	5.7	143	0.0374	1.834
16.3			46.3		46.3	44.5	5.8	144	0.0380	1.850
.										
16.5	13.60		60.5		60.5	59.2	10.6	146	0.0689	2.491
16.3			61.5		61.5	60.1	10.7	146	0.0694	2.500
.										
16.5	11-1/3		50.3		50.3	48.7	7.2	144	0.0467	2.051
16.2			51.3		51.3	49.6	7.2	144	0.0468	2.052
.										
16.5	11.05		49.0		49.0	47.4	6.8	144	0.0442	1.995
16.3			49.5		49.5	47.8	6.8	143	0.0440	1.989
.										
16.6	12.30		54.9		54.9	53.5	8.7	146	0.0569	2.264
16.4			55.1		55.1	53.6	8.6	145	0.0559	2.243
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____

BENCHMARK _____

ROUTINE _____

X

OMEGA STATION: REUNION SITE NUMBER: B 1 DATE: 10 AUG 1978

Distance: _____ km., $K_1 = \frac{I_a}{I_{a0}}$ $K_2 = \frac{0.98}{\text{Loop Factor}}$ $K_3 = \frac{1.01}{\text{Vehicle Factor}}$
(If constant)

Dist. (km.)	Freq. (kHz)	I_{a0} (A)	E_q (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
27.1	10.20	400	30.4	392	30.4	30.0	7.3	162	0.0476	2.071
27.3			31.1		31.1	30.6	7.8	167	0.0506	2.135
.										
27.1	13.60		41.3		41.3	41.0	13.7	166	0.0891	2.831
27.2			42.0		42.0	41.7	14.3	169	0.0928	2.890
.										
27.2	11-13		33.1		33.1	32.7	8.8	159	0.0572	2.269
27.2			34.0		34.0	33.6	9.3	164	0.0604	2.331
.										
27.1	11.05		31.9		31.9	31.5	8.1	157	0.0527	2.178
27.1			32.9		32.9	32.5	8.6	162	0.0560	2.246
.										
27.1	12.30		37.7		37.7	37.3	11.4	167	0.0739	2.580
27.1			37.9		37.9	37.5	11.5	168	0.0747	2.593
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____

BENCHMARK _____

ROUTINE _____

X

OMEGA STATION: _____ REUNION _____ SITE NUMBER: B 2 DATE: 10 AUG 1978

Distance: _____ km., $K_1 = \frac{0.98}{I_a/I_{as}}$ $K_2 = \frac{0.99}{\text{Loop Factor}}$ $K_3 = \frac{1.01}{\text{Vehicle Factor}}$
(If constant)

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
23.2	10.20	400	35.5	392	35.5	34.8	7.2	161	0.0471	2.059
23.5			35.5		35.5	34.8	7.4	163	0.0484	2.087
.										
23.3	13.60		48.7		48.7	48.2	14.0	167	0.0910	2.862
23.5			48.8		48.8	48.3	14.3	169	0.0930	2.893
.										
23.3	11-1/3		39.5		39.5	38.9	9.1	162	0.0593	2.310
23.4			39.2		39.2	38.6	9.1	162	0.0589	2.303
.										
23.2	11.05		38.3		38.3	37.6	8.5	160	0.0552	2.228
23.4			38.3		38.3	37.7	8.6	162	0.0562	2.248
.										
23.4	12.30		44.0		44.0	43.4	11.5	168	0.0746	2.591
23.3			44.6		44.6	44.0	11.7	169	0.0760	2.615
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

OMEGA STATION: REUNION SITE NUMBER: B 2 DATE: 10 AUG 1978

Distance: _____ km., $K_1 = \frac{I_a}{I_{as}} = \frac{0.98}{0.99}$ $K_2 = \frac{P_r}{\text{Loop Factor}} = \frac{0.99}{1.01}$ $K_3 = \frac{R_r}{\text{Vehicle Factor}} = \frac{1.01}{1.01}$

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_{η} (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
19.6	10.20	400	42.5	392	42.5	41.3	7.3	161	0.0475	2.067
19.6			42.7		42.7	41.5	7.4	162	0.0479	2.076
.										
19.6	13.60		58.8		58.8	57.9	14.3	169	0.0930	2.894
19.6			59.3		59.3	58.4	14.5	171	0.0946	2.918
.										
19.6	11-1/3		47.1		47.1	46.0	9.0	162	0.0589	2.302
19.6			47.7		47.7	46.6	9.3	164	0.0604	2.332
.										
19.6	11.05		46.1		46.1	45.0	8.6	162	0.0563	2.251
19.6			46.6		46.6	45.5	8.8	164	0.0575	2.275
.										
19.6	12.30		52.1		52.1	51.1	11.1	165	0.0725	2.555
19.6			53.1		53.1	52.1	11.6	168	0.0754	2.604
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____

BENCHMARK _____

ROUTINE XOMEGA STATION: _____ REUNION _____ SITE NUMBER: B4 DATE: 10 AUG 1978Distance: _____ km., $K_1 = \frac{I_a}{I_{as}}$ $K_2 = \frac{0.99}{\text{Loop Factor}}$ $K_3 = \frac{1.01}{\text{Vehicle Factor}}$
(If constant)

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_g (m)	R_r (Ohm)	E_{pd}/I_a (Units)
15.3	10.20	400	56.2	392	56.2	53.7	7.5	164	0.0489	2.097
15.3			55.9		55.9	53.4	7.4	163	0.0484	2.086
15.4			55.5		55.5	53.1	7.4	163	0.0483	2.086
15.3	13.60		76.8		76.8	74.8	14.6	171	0.0948	2.921
15.2			77.2		77.2	75.2	14.5	171	0.0945	2.916
15.5			76.3		76.3	74.4	14.8	172	0.0962	2.942
15.3	11-1/3		61.5		61.5	59.3	9.1	162	0.0595	2.314
15.3			62.8		62.8	60.5	9.5	166	0.0620	2.363
15.4			62.6		62.6	60.4	9.6	167	0.0625	2.372
15.4	11.05		59.5		59.5	57.3	8.6	162	0.0563	2.250
15.2			61.5		61.5	59.2	9.0	165	0.0585	2.294
15.4			60.5		60.5	58.2	8.9	165	0.0582	2.288
15.4	12.30		67.6		67.6	65.5	11.3	167	0.0737	2.575
15.2			69.7		69.7	67.5	11.7	169	0.0762	2.618
15.4			69.5		69.5	67.4	12.0	171	0.0779	2.647
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____

BENCHMARK _____

ROUTINE _____

X

NO DATA. TRANSPONDER OUT OF POSITION & BEHIND A GROVE OF TREES.

OMEGA STATION: _____ SITE NUMBER: C 1 DATE: 10 AUG 1978

Distance: _____ km., $K_1 = \frac{I_a}{I_{as}}$ $K_2 = \frac{E_r}{E_m}$ $K_3 = \frac{P_r}{P_e}$ Vehicle Factor _____

(If constant)

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	P_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20									
.										
.										
.	13.60									
.										
.										
.	11-1/3									
.										
.										
.	11.05									
.										
.										
.	12.30									
.										
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

OMEGA STATION: REUNION SITE NUMBER: C 2 DATE: 10 AUG 1978
 Distance: _____ km., $K_1 = \frac{0.98}{I_a/I_{as}}$ $K_2 = 0.99$ $K_3 = \frac{1.01}{\text{Vehicle Factor}}$
 (If constant) Loop Factor

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
24.8	10.20	400	33.4	392	33.4	32.8	7.4	162	0.0479	2.076
24.9			33.6		33.6	33.0	7.5	164	0.0489	2.097
.										
24.8	13.60		46.2		46.2	45.7	14.3	169	0.0930	2.894
24.9			45.5		45.5	45.0	14.0	167	0.0910	2.862
.										
24.8	11-1/3		36.9		36.9	36.4	9.0	162	0.0588	2.301
24.9			37.3		37.3	36.8	9.3	164	0.0606	2.336
.										
24.8	11.05		36.1		36.1	35.6	8.6	162	0.0562	2.250
24.9			35.5		35.5	35.0	8.4	160	0.0548	2.222
.										
24.8	12.30		41.8		41.8	41.3	11.7	169	0.0758	2.612
24.9			41.5		41.5	41.0	11.6	168	0.0754	2.604
.										
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____

BENCHMARK _____

ROUTINE _____

X

OMEGA STATION: REUNION SITE NUMBER: C 3 DATE: 10 AUG 1978

Distance: _____ km., $K_1 = \frac{I_a}{I_{as}} = 0.98$ $K_2 = \frac{0.99}{\text{Loop Factor}}$ $K_3 = \frac{1.01}{\text{Vehicle Factor}}$

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_g (m)	R_r (Ohm)	E_{rd}/I_a (Units)
20.6	10.20	400	41.0	392	41.0	40.0	7.5	164	0.0490	2.101
20.6			40.5		40.5	39.5	7.4	162	0.0478	2.075
20.5	13.60		58.8		58.8	58.0	15.7	177	0.1020	3.031
20.6			57.1		57.1	56.3	14.9	173	0.0972	2.958
20.5	11-1/3		45.9		45.9	45.0	9.4	165	0.0614	2.351
20.6			45.5		45.5	44.6	9.4	164	0.0610	2.342
20.9	11.05		43.7		43.7	42.8	8.9	164	0.0578	2.281
20.5			44.5		44.5	43.5	8.9	164	0.0576	2.277
21.0	12.30		48.9		48.9	48.1	11.3	167	0.0737	2.576
20.6			49.5		49.5	48.6	11.2	165	0.0726	2.556

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

OMEGA STATION: REUNION SITE NUMBER: C 4 DATE: 10 AUG 1978
 Distance: _____ km., $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$ $K_2 = \underline{0.99}$ $K_3 = \underline{1.01}$
 (If constant) Loop Factor Vehicle Factor

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_g (m)	R_r (Ohm)	E_{rd}/I_a (Units)
15.1	10.20	400	57.6	392	57.6	55.0	7.7	165	0.0499	2.119
15.1			57.0		57.0	54.4	7.5	164	0.0489	2.097
.										
15.0	13.60		79.3		79.3	77.2	14.9	173	0.0970	2.954
15.0			78.4		78.4	76.3	14.6	171	0.0948	2.921
.										
15.0	11-1/3		64.3		64.3	61.9	9.6	166	0.0623	2.369
15.0			62.8		62.8	60.5	9.1	162	0.0595	3.313
.										
14.9	11.05		63.9		63.9	61.4	9.3	168	0.0605	2.333
15.1			62.3		62.3	59.9	9.1	166	0.0591	2.307
.										
15.0	12.30		70.1		70.1	67.9	11.5	168	0.0749	2.597
15.1			69.9		69.9	67.7	11.6	169	0.0755	2.608
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK X ROUTINE _____
GILOT AIRPORT

OMEGA STATION: REUNION SITE NUMBER: 7 DATE: 16 AUG 1978

Distance: 25.1 km., $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$ $K_2 = \underline{0.99}$ $K_3 = \underline{\hspace{1cm}}$
 (If constant) Loop Factor Vehicle Factor

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_g (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	27.2	392	26.9	26.5	4.9	132	0.0319	1.695
.			27.1		26.8	26.4	4.9	132	0.0317	1.689
.			27.1		26.8	26.4	4.9	132	0.0317	1.689
.	13.60		36.4		36.0	35.7	8.9	134	0.0580	2.285
.			36.4		36.0	35.7	8.9	134	0.0580	2.285
.			36.5		36.1	35.8	9.0	134	0.0583	2.291
.	11-1/3		30.5		30.2	29.8	6.2	134	0.0404	1.907
.			30.5		30.2	29.8	6.2	134	0.0404	1.907
.			30.2		29.9	29.5	6.1	133	0.0396	1.888
.	11.05		29.3		29.0	28.6	5.7	132	0.0372	1.830
.			29.3		29.0	28.6	5.7	132	0.0372	1.830
.			29.3		29.0	28.6	5.7	132	0.0372	1.830
.	12.30		33.6		33.3	32.9	7.6	136	0.0492	2.105
.			33.7		33.4	33.0	7.6	137	0.0495	2.111
.			33.4		33.1	32.7	7.5	135	0.0486	2.092
.										
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK X ROUTINE _____
MEASURED BY HANSELMAN.

OMEGA STATION: REUNION SITE NUMBER: 1 DATE: 18 Aug 1978

Distance: 25 . 8 km., $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$ $K_2 = \underline{0.99}$ $K_3 = \underline{\quad}$

(If constant)

Loop Factor Vehicle Factor

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	25.1	392	24.8	24.4	4.4	126	0.0288	1.609
.			24.9		24.7	24.3	4.4	125	0.0283	1.596
.										
.	13.60		34.5		34.2	33.8	8.5	130	0.0551	2.227
.			34.8		34.5	34.1	8.6	131	0.0561	2.247
.										
.	11-1/3		27.3		27.0	26.7	5.3	123	0.0342	1.756
.			27.6		27.3	27.0	5.4	125	0.0350	1.775
.										
.	11.05		27.1		26.8	26.5	5.2	125	0.0337	1.742
.			27.4		27.1	26.8	5.3	127	0.0344	1.761
.										
.	12.30		30.3		30.0	29.7	6.5	126	0.0424	1.952
.			30.2		29.9	29.6	6.5	126	0.0421	1.946
.										
.										
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____

BENCHMARK X

ROUTINE _____

MEASURED BY FOUVEY

DATE: 18 AUG 1979

SITE NUMBER: 1

OMEGA STATION: REUNION

Distance: 25 . 8 km., $K_1 = \frac{I_a}{I_{as}} = \frac{0.98}{0.94} = \frac{K_2}{K_3}$ Vehicle Factor

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	24.6	392	24.4	24.0	4.2	123	0.0276	1.577
.			24.7		24.5	24.1	4.3	124	0.0279	1.584
.										
.	13.60		34.9		34.6	34.2	8.7	132	0.0564	2.253
.			34.8		34.5	34.1	8.6	131	0.0561	2.247
.										
.	11-1/3		27.4		27.1	26.8	5.3	124	0.0345	1.762
.			27.7		27.4	27.1	5.4	125	0.0353	1.781
.										
.	11.05		27.2		26.9	26.6	5.2	126	0.0339	1.748
.			27.3		27.0	26.7	5.3	126	0.0342	1.754
.										
.	12.30		30.3		30.0	29.7	6.5	126	0.0424	1.952
.			30.2		29.9	29.6	6.5	126	0.0421	1.946
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER ☒ 6' BENCHMARK ROUTINE ☒

OMEGA STATION: REUNION SITE NUMBER: / DATE: 19 AUG 1978
 Distance: 25.8 km., $K_1 = 0.98$ $K_2 = 0.99$ $K_3 = 1.00$
 (If constant) I_a/I_{as} Loop Factor Vehicle Factor

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	24.6	392	24.4	24.0	4.2	123	0.0276	1.577
.			24.9		24.7	24.3	4.4	125	0.0283	1.596
.										
.	13.60		34.0		33.7	33.4	8.2	128	0.0535	2.195
.			34.0		33.7	33.4	8.2	128	0.0535	2.195
.										
.	11-1/3		26.6		26.3	26.0	5.0	120	0.0325	1.711
.			27.2		26.9	26.6	5.2	123	0.0340	1.749
.										
.	11.05		26.7		26.4	26.1	5.0	124	0.0327	1.716
.			27.0		26.7	26.4	5.1	125	0.0335	1.735
.										
.	12.30		30.1		29.8	29.5	6.4	125	0.0418	1.939
.			30.4		30.1	29.8	6.6	127	0.0426	1.959
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER 1,000' BENCHMARK ROUTINE X

OMEGA STATION: REUNION SITE NUMBER: 1 DATE: 19 AUG 1978

Distance: 25.8 km., $K_1 = \frac{I_a}{I_{as}} = \frac{0.98}{0.99}$ $K_2 = \frac{P_r}{\text{Loop Factor}} = \frac{1.00}{1.00}$
(If constant)

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_q (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	24.7	392	24.5	24.1	4.3	124	0.0279	1.584
.			24.5		24.3	23.9	4.2	123	0.0274	1.571
.										
.	13.60		34.5		34.2	33.8	8.5	130	0.0551	2.227
.			34.3		34.0	33.6	8.4	130	0.0545	2.215
.										
.	11-1/3		27.4		27.1	26.8	5.3	124	0.0345	1.762
.			27.4		27.1	26.8	5.3	124	0.0345	1.762
.										
.	11.05		27.0		26.7	26.4	5.1	125	0.0335	1.735
.			27.0		26.7	26.4	5.1	125	0.0335	1.735
.										
.	12.30		30.2		29.9	29.6	6.5	126	0.0421	1.946
.			29.7		29.4	29.1	6.3	124	0.0407	1.914
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER ~~2000~~ 2,000'

BENCHMARK _____

ROUTINE X

OMEGA STATION: REUNION SITE NUMBER: 1 DATE: 19 AUG 1978

Distance: 25.8 km., $K_1 = \frac{I_a}{I_{as}} = \frac{0.98}{0.99}$ $K_2 = \frac{0.99}{\text{Loop Factor}}$ $K_3 = \frac{1.00}{\text{Vehicle Factor}}$

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	25.5	392	25.2	24.8	4.6	128	0.0297	1.635
.			25.6		25.3	24.9	4.6	128	0.0299	1.641
.										
.	13.60		35.2		34.8	34.5	8.8	133	0.0574	2.273
.			35.5		35.1	34.8	9.0	134	0.0584	2.292
.										
.	11-1/3		28.5		28.2	27.8	5.7	129	0.0373	1.833
.			28.3		28.0	27.7	5.7	128	0.0368	1.820
.										
.	11.05		27.8		27.5	27.1	5.4	129	0.0355	1.787
.			27.9		27.6	27.2	5.5	129	0.0357	1.793
.										
.	12.30		31.3		31.0	30.6	6.9	130	0.0452	2.017
.			30.6		30.3	30.0	6.6	128	0.0432	1.972
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER 3000. BENCHMARK ROUTINE X

OMEGA STATION: REUNION SITE NUMBER: 1 DATE: 19 AUG 1978
 Distance: 25.8 km., $K_1 = \frac{I_a}{I_{as}} = \frac{0.98}{0.99}$ $K_2 = \frac{0.99}{1.00}$ $K_3 = \frac{1.00}{\text{Vehicle Factor}}$
 (If constant)

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	26.1	392	25.8	25.4	4.8	131	0.0311	1.673
.			25.8		25.5	25.1	4.7	129	0.0304	1.654
.										
.	13.60		35.5		35.1	34.8	9.0	134	0.0584	2.292
.			35.5		35.1	34.8	9.0	134	0.0584	2.292
.										
.	11-1/3		29.5		29.2	28.8	6.1	133	0.0400	1.897
.			29.1		28.8	28.4	6.0	131	0.0389	1.871
.										
.	11.05		28.4		28.1	27.7	5.7	131	0.0370	1.825
.			28.4		28.1	27.7	5.7	131	0.0370	1.825
.										
.	12.30		31.3		31.0	30.6	6.9	130	0.0452	2.017
.			31.4		31.1	30.7	7.0	131	0.0455	2.023
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER ~~4000~~ 4000

BENCHMARK

ROUTINE X

DATE: 19 AUG 1978

SITE NUMBER: 1

OMEGA STATION: REUNION

Distance: 25 km., $K_1 = \frac{I_a}{I_{as}} = \frac{0.98}{1.00}$ $K_2 = \frac{P_r}{\text{Loop Factor}} = \frac{0.99}{1.00}$ $K_3 = \frac{R_r}{\text{Vehicle Factor}} = \frac{1.00}{1.00}$

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	26.4	392	26.1	25.7	4.9	132	0.0318	1.693
.			26.4		26.1	25.7	4.9	132	0.0318	1.693
.										
.	13.60		35.8		35.4	35.1	9.1	135	0.0594	2.311
.			36.2		35.8	35.5	9.3	137	0.0607	2.337
.										
.	11-1/3		29.1		28.8	28.4	6.0	131	0.0389	1.871
.			29.1		28.8	28.4	6.0	131	0.0389	1.871
.										
.	11.05		28.7		28.4	28.0	5.8	133	0.0378	1.844
.			28.5		28.2	27.8	5.7	132	0.0373	1.831
.										
.	12.30		31.5		31.2	30.8	7.0	131	0.0458	2.030
.			31.6		31.3	30.9	7.1	132	0.0461	2.036
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER ☒ L. 3,000' BENCHMARK ROUTINE X
 HEIGHT LIMITED BY WIND.

OMEGA STATION: REUNION SITE NUMBER: 2 DATE: 19 AUG 1978
 Distance: 19.2 km., $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$ $K_2 = \frac{P_r}{\text{Loop Factor}} = \underline{0.99}$ $K_3 = \frac{R_r}{\text{Vehicle Factor}} = \underline{1.00}$
 (If constant)

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	36.6	392	36.2	35.2	5.1	135	0.0330	1.724
.			36.6		36.2	35.2	5.1	135	0.0330	1.724
.			36.9		36.5	35.5	5.2	136	0.0336	1.738
.	13.60		47.6		47.1	46.4	8.8	133	0.0573	2.270
.			48.8		48.3	47.5	9.3	136	0.0602	2.328
.			48.7		48.2	47.4	9.2	136	0.0600	2.323
.	11-1/3		39.1		38.7	37.8	5.9	130	0.0381	1.852
.			40.4		40.0	39.1	6.3	134	0.0407	1.913
.			40.9		40.5	39.6	6.4	136	0.0417	1.937
.	11.05		38.6		38.2	37.3	5.7	132	0.0370	1.824
.			39.6		39.2	38.2	6.0	135	0.0390	1.873
.			40.1		39.7	38.7	6.1	137	0.0400	1.897
.	12.30		45.3		44.8	44.0	7.9	139	0.0515	2.153
.			45.0		44.6	43.7	7.8	138	0.0508	2.139
.			45.2		44.7	43.9	7.9	139	0.0513	2.148
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER ~~BL~~. 2000' BENCHMARK _____ ROUTINE X

HEIGHT LIMITED BY WIND.

FLIGHT ABORTED - FUEL FILTER CLOGGED.

OMEGA STATION: REUNION SITE NUMBER: 8 DATE: 19 AUG 1978Distance: 15 . 2 km., $K_1 = \frac{I_a}{I_{as}} = \frac{0.98}{0.99}$ $K_2 = \frac{0.99}{1.00}$ $K_3 = \frac{1.00}{\text{Vehicle Factor}}$

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	48.5	392	48.0	45.9	5.4	139	0.0352	1.779
.			47.4		46.9	44.8	5.2	136	0.0336	1.739
.										
.	13.60		60.4		59.8	58.3	8.7	132	0.0567	2.259
.			60.5		59.9	58.4	8.7	132	0.0569	2.263
.										
.	11-1/3		52.4		51.9	50.0	6.4	134	0.0418	1.938
.			52.3		51.8	49.9	6.4	134	0.0416	1.935
.			54.1		53.6	51.6	6.8	141	0.0445	2.001
.	11.05		51.0		50.5	48.6	6.1	136	0.0394	1.883
.			50.6		50.1	48.2	6.0	135	0.0388	1.868
.			49.8		49.3	47.4	5.8	132	0.0376	1.839
.	12.30		57.6		57.0	55.3	7.8	139	0.0510	2.142
.			56.6		56.0	54.3	7.6	136	0.0492	2.105
.			57.5		56.9	55.2	7.8	138	0.0508	2.139
.										
.										

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OMEGA LA REUNION ANTENNA SYSTEM: MODIFICATION AND VALIDATION TE--ETC(U)

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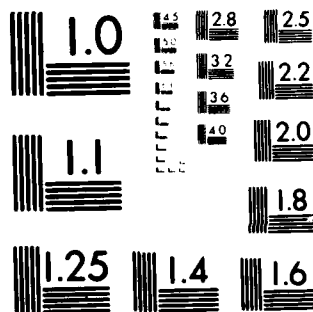
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X *

* HEIGHT-GAIN AT 5,000 FT. NOISEY.

DATE: 20 AUG 1978

SITE NUMBER: 1

OMEGA STATION: REUNION

Distance: 25 . 8 km., $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$ $K_2 = \frac{P_r}{\text{Loop Factor}} = \underline{0.99}$ $K_3 = \frac{R_r}{\text{Vehicle Factor}} = \underline{1.00}$
(If constant)

SLANT RANGE BELOW.

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_g (m)	R_r (Ohm)	E_{pd}/I_a (Units)
25.8	10.20	400	27.1	392	26.8	26.4	5.2	136	0.0335	1.737
.										
.										
.	13.60		36.7		36.3	36.0	9.6	139	0.0624	2.369
.										
.										
.	11-1/3		29.3		29.0	28.6	6.1	132	0.0394	1.884
.										
.										
.	11.05		29.1		28.8	28.4	6.0	135	0.0389	1.870
.										
.										
.	12.30		33.2		32.9	32.5	7.8	138	0.0508	2.139
.										
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X *

* HEIGHT-GAIN AT 6,000 FT. NOISEY.

OMEGA STATION: REUNION SITE NUMBER: 1 DATE: 20 AUG 1978

Distance: 25.8 km., $K_1 = \frac{I_a}{I_{as}} = \frac{0.98}{0.99}$ $K_2 = \frac{0.99}{\text{Loop Factor}}$ $K_3 = \frac{1.00}{\text{Vehicle Factor}}$
(If constant)

SLANT RANGE BELOW

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
25.9	10.20	400	28.1	392	27.8	27.4	5.6	141	0.0364	1.809
.										
.										
.	13.60		37.1		36.7	36.4	9.9	141	0.0643	2.405
.										
.										
.	11-1/3		29.5		29.2	28.8	6.2	134	0.0403	1.905
.										
.										
.	11.05		29.7		29.4	29.0	6.3	138	0.0408	1.916
.										
.										
.	12.30		33.8		33.5	33.1	8.2	141	0.0531	2.186
.										
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X *

* HEIGHT-GAIN AT 7,000 FT, NOISEY.

OMEGA STATION: REUNION SITE NUMBER: 1 DATE: 20 AUG 1978
 Distance: 25.8 km., $K_1 = \frac{0.98}{I_a/I_{as}}$ $K_2 = \frac{0.99}{\text{Loop Factor}}$ $K_3 = \frac{1.00}{\text{Vehicle Factor}}$
 (If constant)

SLANT RANGE BELOW

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
25.9	10.20	400	28.7	392	28.4	28.0	5.8	144	0.0379	1.847
.										
.										
.	13.60		37.7		37.3	37.0	10.2	143	0.0663	2.444
.										
.										
.	11-1/3		30.1		29.8	29.4	6.4	136	0.0420	1.943
.										
.										
.	11.05		29.6		29.3	28.9	6.2	138	0.0405	1.910
.										
.										
.	12.30		34.1		33.8	33.4	8.3	143	0.0541	2.206
.										
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

7,000 FT.

OMEGA STATION: REUNION SITE NUMBER: 2 DATE: 20 AUG 1978

Distance: 19.2 km., $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$ $K_2 = \frac{P_r}{E_r} = \underline{0.99}$ $K_3 = \frac{R_r}{E_{rd/I_a}} = \underline{1.00}$
(If constant) Loop Factor Vehicle Factor

SLANT RANGE BELOW.

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd/I_a} (Units)
19.3	10.20	400	37.9	392	37.5	36.5	5.5	140	0.0358	1.795
.			38.9		38.5	37.4	5.8	144	0.0377	1.843
.			39.4		39.0	37.9	5.9	146	0.0387	1.866
.	13.60		51.1		50.6	49.8	10.3	143	0.0667	2.451
.			51.5		51.0	50.2	10.4	145	0.0678	2.470
.			51.4		50.9	50.1	10.4	144	0.0675	2.465
.	11-1/3		42.5		42.1	41.1	7.0	142	0.0455	2.024
.			43.2		42.8	41.8	7.2	144	0.0470	2.057
.			42.8		42.4	41.4	7.1	143	0.0462	2.038
.	11.05		42.2		41.8	40.8	6.9	145	0.0448	2.007
.			42.4		42.0	41.0	6.9	145	0.0452	2.017
.			42.1		41.7	40.7	6.8	144	0.0446	2.002
.	12.30		47.6		47.1	46.2	8.8	147	0.0575	2.275
.			48.5		48.0	47.1	9.2	150	0.0597	2.318
.			47.6		47.1	46.2	8.8	147	0.0575	2.275
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

7,000 FT.

OMEGA STATION: REUNION SITE NUMBER: 8 DATE: 20 AUG 1978

Distance: 15 . 2 km., $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$ $K_2 = \underline{0.99}$ $K_3 = \underline{1.00}$
(If constant) Loop Factor Vehicle Factor

SLANT RANGE BELOW.

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
15.3	10.20	400	50.9	392	50.4	48.2	6.0	147	0.0393	1.881
.			51.1		50.6	48.4	6.1	147	0.0396	1.888
.			51.2		50.7	48.5	6.1	148	0.0398	1.892
.	13.60		65.8		65.1	63.5	10.5	145	0.0682	2.478
.			66.3		65.6	64.0	10.6	146	0.0693	2.497
.			66.4		65.7	64.1	10.7	146	0.0695	2.501
.	11-1/3		55.6		55.0	53.1	7.3	145	0.0477	2.071
.			55.8		55.2	53.3	7.4	146	0.0480	2.079
.			55.7		55.1	53.2	7.4	146	0.0478	2.075
.	11.05		55.6		55.0	53.0	7.3	149	0.0475	2.068
.			54.5		54.0	51.9	7.0	146	0.0456	2.027
.			54.9		54.4	52.3	7.1	147	0.0463	2.042
.	12.30		61.6		61.0	59.1	9.1	149	0.0591	2.307
.			60.9		60.3	58.4	8.9	148	0.0578	2.281
.			61.8		61.2	59.3	9.1	150	0.0595	2.315
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

7,000 FT.

OMEGA STATION: REUNION SITE NUMBER: 3 DATE: 20 AUG 1978

Distance: 15 km., $K_1 = \frac{I_a}{I_{as}} = \frac{0.98}{0.99}$ $K_2 = \frac{0.99}{\text{Loop Factor}}$ $K_3 = \frac{1.00}{\text{Vehicle Factor}}$
(If constant)

SLANT RANGE BELOW

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_T (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
15.2	10.20	400	49.4	392	48.9	46.7	5.6	141	0.0365	1.812
.			48.7		48.2	46.1	5.5	139	0.0355	1.787
.										
.	13.60		66.6		65.9	64.2	10.6	146	0.0689	2.491
.			65.8		65.1	63.5	10.3	144	0.0673	2.461
.										
.	11-1/3		53.7		53.2	51.2	6.7	139	0.0438	1.987
.			54.0		53.5	51.5	6.8	140	0.0443	1.998
.										
.	11.05		51.5		51.0	49.0	6.2	137	0.0402	1.902
.			52.7		52.1	50.2	6.5	140	0.0421	1.946
.										
.	12.30		60.5		59.9	58.0	8.6	146	0.0563	2.250
.			60.5		59.9	58.0	8.6	146	0.0563	2.250
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

7,000 FT.

OMEGA STATION: REUNION SITE NUMBER: 4 DATE: 20 AUG 1978

Distance: 18 km., $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$ $K_2 = \frac{P_r}{\text{Loop Factor}} = \underline{0.99}$ $K_3 = \frac{R_r}{\text{Vehicle Factor}} = \underline{1.00}$
(If constant)

SLANT RANGE BELOW.

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
18.8	10.20	4.00	39.6	39.2	39.2	38.0	5.7	142	0.0370	1.824
.			39.7		39.3	38.1	5.7	143	0.0372	1.829
.										
.	13.60		51.7		51.2	50.3	9.9	141	0.0647	2.413
.			50.9		50.4	49.5	9.6	139	0.0627	2.376
.										
.	11-1/3		43.5		43.1	42.0	6.9	142	0.0451	2.015
.			42.3		41.9	40.9	6.6	138	0.0427	1.960
.										
.	11.05		42.6		42.2	41.1	6.6	142	0.0432	1.971
.			42.4		42.0	40.9	6.6	141	0.0428	1.962
.										
.	12.30		48.6		48.1	47.1	8.7	146	0.0567	2.260
.			48.1		47.6	46.6	8.5	145	0.0556	2.237
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK _____ ROUTINE X

7,000 Ft.

OMEGA STATION: REUNION SITE NUMBER: 5 DATE: 30 AUG 1978

Distance: 22.9 km., $K_1 = \frac{I_a}{I_{as}} = \frac{0.98}{0.99}$ $K_2 = \frac{0.99}{\text{Loop Factor}}$ $K_3 = \frac{1.00}{\text{Vehicle Factor}}$

SLANT RANGE BELOW.

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
23.0	10.20	400	32.5	392	32.2	31.5	5.8	144	0.0380	1.850
.			32.7		32.4	31.7	5.9	145	0.0385	1.861
.										
.	13.60		42.7		42.3	41.8	10.3	143	0.0668	2.452
.			42.8		42.4	41.9	10.3	144	0.0671	2.458
.										
.	11-1/3		35.5		35.1	34.6	7.0	142	0.0457	2.028
.			34.7		34.4	33.8	6.7	139	0.0437	1.983
.										
.	11.05		35.2		34.8	34.2	6.9	145	0.0449	2.009
.			34.7		34.4	33.8	6.7	143	0.0436	1.981
.										
.	12.30		40.2		39.8	39.2	9.1	149	0.0589	2.303
.			39.9		39.5	39.0	8.9	148	0.0580	2.285
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK X ROUTINE _____

OMEGA STATION: REUNION SITE NUMBER: 9B DATE: 22 AUG 1978

Distance: 24 . 4 km., $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$ $K_2 = \frac{P_r}{\text{Loop Factor}} = \underline{0.99}$ $K_3 = \frac{R_r}{\text{Vehicle Factor}} = \underline{\quad}$

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	31.2	392						
.										
.										
.	13.60		40.0							
.										
.										
.	11-1/3		33.2							
.										
.										
.	11.05		32.9							
.										
.										
.	12.30		37.2							
.										
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____

BENCHMARK X
MONITOR SITE

ROUTINE _____

DATE: 22 Aug 1978

9A

SITE NUMBER:

REUNION

Distance: 24 km., $K_1 = \frac{I_a}{I_{as}} = \frac{0.98}{4}$ $K_2 = \frac{0.99}{\text{Loop Factor}}$ $K_3 = \frac{\text{Vehicle Factor}}{\text{Loop Factor}}$
(If constant)

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	31.4	392						
.			31.7							
.			31.5							
.	13.60		40.1							
.			40.6							
.			40.3							
.	11-1/3		33.1							
.			32.7							
.			33.2							
.	11.05		32.9							
.			33.0							
.			32.3							
.	12.30		37.3							
.			37.0							
.			37.0							
.										
.										

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____

BENCHMARK X

ROUTINE _____

OMEGA STATION: REUNION SITE NUMBER: 9C DATE: 22 AUG 1978Distance: 24 . 4 km., $K_1 = \frac{I_a}{I_{as}}$ $K_2 = \frac{0.98}{\text{Loop Factor}}$ $K_3 = \frac{\text{Vehicle Factor}}{\text{Vehicle Factor}}$
(If constant)

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	31.0	392						
.										
.										
.	13.60		39.9							
.										
.										
.	11-1/3		32.7							
.										
.										
.	11.05		33.5							
.										
.										
.	12.30		36.7							
.										
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____ BENCHMARK X ROUTINE _____

OMEGA STATION: REUNION SITE NUMBER: 9 D DATE: 22 AUG 1978
 Distance: 24 . 4 km., $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$ $K_2 = \frac{P_r}{\text{Loop Factor}} = \underline{0.99}$ $K_3 = \frac{\text{Vehicle Factor}}{\text{Vehicle Factor}} = \underline{\quad}$
 (If constant)

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_q (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	30.9	392						
.										
.										
.	13.60		39.9							
.										
.										
.	11-1/3		32.7							
.										
.										
.	11.05		32.8							
.										
.										
.	12.30		36.7							
.										
.										
.										
.										

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. _____

BENCHMARK X

ROUTINE _____

(PROBABLY BEST)

OMEGA STATION: REUNION SITE NUMBER: 10 DATE: 22 AUG 1978

Distance: 32.5 km., $K_1 = \frac{0.98}{I_a/I_{as}}$ $K_2 = \frac{0.99}{\text{Loop Factor}}$ $K_3 = \frac{1.00}{\text{Vehicle Factor}}$
(If constant)

Dist. (km.)	Freq. (kHz)	I_{as} (A)	E_g (mV)	I_a (A)	E_m (mV/m)	E_r (mV/m)	P_r (kW)	h_e (m)	R_r (Ohm)	E_{rd}/I_a (Units)
.	10.20	400	23.7	392	23.5	23.2	6.3	150	0.0412	1.925
.			23.5		23.3	23.0	6.2	149	0.0405	1.909
.			23.5		23.3	23.0	6.2	149	0.0405	1.909
.	13.66		32.2		31.9	31.7	11.8	154	0.0767	2.628
.			32.1		31.8	31.6	11.7	153	0.0762	2.619
.			32.1		31.8	31.6	11.7	153	0.0762	2.619
.	11-1/3		25.4		25.1	24.9	7.3	145	0.0475	2.068
.			25.4		25.1	24.9	7.3	145	0.0475	2.068
.			25.3		25.0	24.8	7.2	145	0.0471	2.059
.	11.05		25.2		24.9	24.7	7.2	148	0.0467	2.050
.			25.3		25.0	24.8	7.2	148	0.0471	2.058
.			25.2		24.9	24.7	7.2	148	0.0467	2.050
.	12.30		29.0		28.7	28.5	9.5	153	0.0621	2.363
.			29.1		28.8	28.6	9.6	153	0.0625	2.372
.			29.2		28.9	28.7	9.7	154	0.0629	2.380
.										
.										