



NOAA P-3 N43RF
TS Ingrid
14 Sept 2007



Flight ID: 070914I

Sensor or system

INE

Accelerometer

Temperature Probe

Dew Point Probe

Altitude (for vertical wind)

Static Pressure

Dynamic Pressure

Time Source

Dropsondes Deployed

Number or Name

inel

accil

ttl (Rosemount)

tdm2x (Edgetech Vigilant)

ra159 (GPS aided inertial alt)

psf (Rosemount Fuselage)

pqf1 (Rosemount Fuselage)

Micro 99

Good: 13 Bad: 0

Local Met Data:

Aircraft Static Pressure

Tower Pressure

Notes

Takeoff (1950Z)

1005.2 mb

1005.0 mb

Landing (0401Z)

1006.8 mb

1007.0 mb

No data gaps

Ashtech data spikes at: 002626Z-002644Z, 014722Z-014731Z, 022008Z-022826Z, 035956Z-040347Z

hdgi1 had a data spike at 224806Z-224809Z. Substituted data from hdgi2 and saved as hdgi1X

tt3 sensor not installed

tdm2 sensor balancing at 022210Z-030227Z. Substituted tdm1 data with 0 offset during this time and saved as tdm2X

The HG9550 radar altimeter data has a consistent 1% positive bias above 1,500 feet that was discovered after flight. The correction formula is:

$$(((\text{reported altitude} - 1,500) * 0.988) + 1,500) = \text{corrected altitude}$$

This formula should only be needed for this hurricane season's flight data as the problem should be corrected automatically during next season's flights.

There were periods where the dewpoint temperature exceeded the ambient temperature resulting in RH values > 100%. This was likely due to heavy rain, a wet-bulb effect on the total temperature sensor, and/or an artificial warming of the dewpoint sensor as it tried to burn off excess moisture. Corrections were not made to the data.

Flight Director:
Phone #:

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U.S. Dept. of Commerce / NMAO / NOAA / Aircraft Operations Center

Fit ID: 070914I	From: TBPB	To: TBPB
Fit No: 07-032	Blk In: 0405 z	Time On: 0401 z
ETD: 2000 z	Blk Out: 1940 z	Time Off: 1950 z
ETE: 8.5	Blk Time: 8hrs 25min (8.4 Hrs)	Fit Time: 8hrs 11min (8.2 Hrs)
Sponsoring Org: NOAA-HRD	Program: HUR 07	Purpose: Hurricane Research

AOC Flight Crew

Aircraft Commander: Choy, B	Data System: Lynch, T
Co-Pilot: Nelson, M	AVAPS: Smith, J
Navigator: Siegel, P	System Eng:
Flight Eng: Floyd, D Klippel, J	A A: Sans Souci, D
Flight Director: Almeida, J Shepherd, T	A A:
Avionics:	Crew Chief:

Participating Scientists / Visitors

Name (Last, First)	Activity on Aircraft	Affiliation
Rogers, R	P1	HRD
Black, B	Sci	HRD

Remarks (Storm Name, Mission ID, Recco Times, Fix Times)

Storm Name: Ingrid	Recco Times: TD 1 Not Working beginning of flight	Fix #	Fix Time
Mission ID: 0308A	Using TD3		

Penetration number and time

U.S. Dept. of Commerce / NMAO / NOAA / Aircraft Operations Center

Flight ID: 070914I Time Off: 1950 Z Time On: 0401 Z

	A/C Takeoff	Wx Station Takeoff	A/C Land	Wx Station Land
Pressure	<u>1005.2</u> mb	<u>1005.0</u> mb	<u>1006.8</u> mb	<u>1007.0</u> mb

ATIS	Time	Observation
Takeoff	<u>2000</u> Z	<u>09011 kt</u> <u>28/24</u> <u>Q1011</u>
Land	<u>0400</u> Z	<u>09008 kt</u> <u>27/23</u> <u>Q1013</u>

	Number	Data Disposition / Date / Quality
Flight Level Tapes	<u>2</u>	
Radar Tapes	<u>1</u>	
Cloud Physics Tapes / CDs		
Video Tapes		
Dropsondes	<u>13</u>	Good: <u>13</u> Bad: <u>0</u>
XBT		
XCP		
XCTD		

Remarks:

Block:
 out 1 in
 1940 0405
 T/O Land
 1950 0401

NOAA HURRICANE HUNTERS



Try get Radar fix 150 - 200nm out
to update IP

update	
2020	
14	30
51	50

@ 15z

15.2

5531-0031

50.8

50.0

~~2 14 53~~
~~51 25~~
$$\begin{array}{r} 4 \quad 16 \quad 03 \\ \hline 50 \quad 13 \end{array}$$
~~7 16 51~~
~~51 52~~~~11 14 52~~
~~49 48~~~~3 1516~~
~~5101~~

5 16 27
49 48

~~8 16 27~~
~~51 26~~~~12 14 29~~
~~R 49 211~~

4 15 40
CTR 50 37

0.02
← sex
interpolated
back

~~6 16 51~~
~~49 23~~

~~9 1603~~
~~5101~~

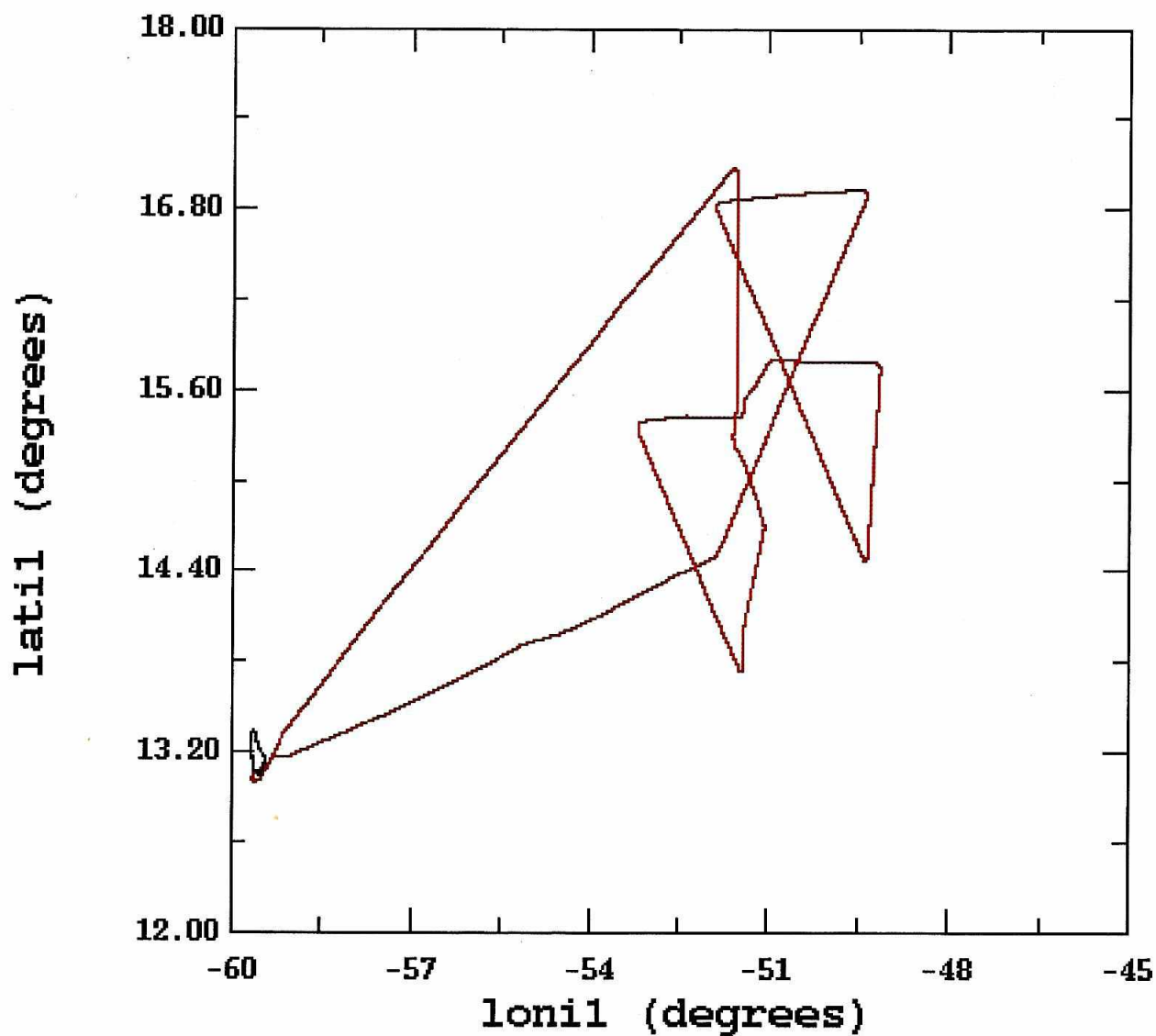
~~49 24~~

21573 1552N $\leftarrow$ 18kt
5026W 5pmR

~~10 15 16~~
~~50 12~~

070914I - TS Ingrid

09/14/2007 UTC, 19:37:51-28:06:00



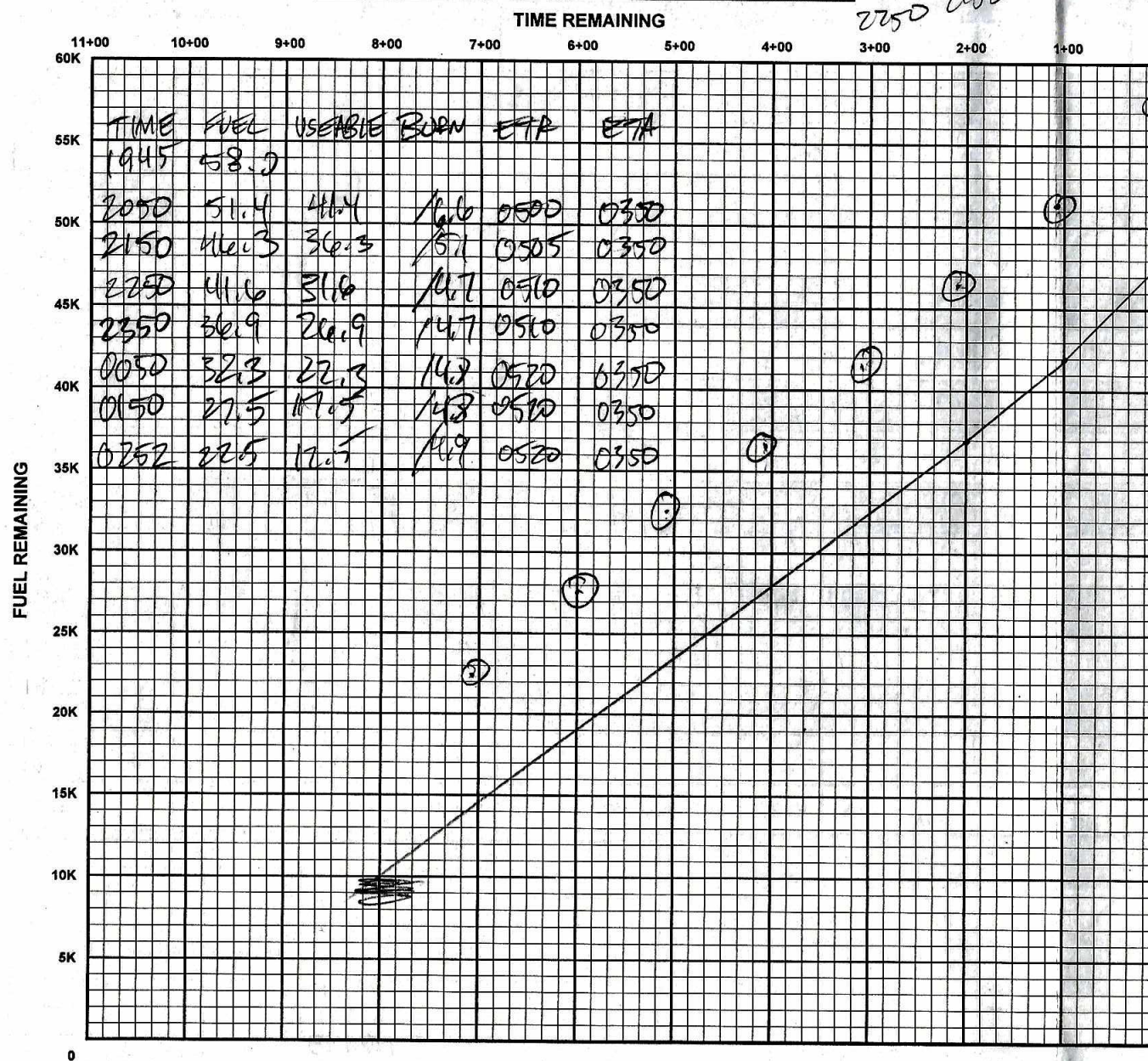
	mean	sigma	min	max
lat11 (degrees), 1 s/sec	15.00	1.17	13.00	17.06
lon11 (degrees), 1 s/sec	-53.25	3.13	-59.64	-49.13

070914I	LAT	LON	TA	TD	TK	SHD	RA	PS	SP	WD	WS	WZ	SFWS	COMMENTS
071114	17.42.00	-64.47.94	25.8	19.0	90.0	175.2	1.0	1013.8	1015.2	170.7	1.4	.1	0.0	Hi Paul
190137	13. 4.80	-59.28.92	39.8	23.6	90.0	344.5	1.0	1005.3	1010.7	342.9	3.2	.0	0.0	TD1 errors...turned off then on.
190345	13. 4.80	-59.28.92	39.7	24.1	90.0	344.5	1.0	1005.3	1010.9	275.3	1.5	.0	0.0	Turned Td1 off due to errors in data
193930	13. 4.80	-59.28.92	29.6	24.0	90.0	344.5	1.0	1005.0	1010.2	255.1	1.5	.1	0.0	Block Out
194953	13. 4.44	-59.29.64	28.6	24.5	76.0	76.5	1.0	1006.3	1011.6	116.1	3.2	2.4	0.0	takeoff
200100	13.12.30	-58.48.78	9.5	-9.1	83.2	82.3	3363.0	687.5	1010.2	34.3	2.6	1.8	2.0	Radar tape started at 200000z
201111	13.19.74	-58. 5.88	.6	-24.4	79.9	82.2	4892.0	570.7	1009.3	127.2	3.5	2.3	1.8	Turned off TD1
201135	13.20.04	-58. 4.08	.6	-23.7	80.0	82.2	4900.0	570.7	1009.2	124.2	3.4	2.1	1.8	Recco1 sent at 1954
203540	13.40.86	-56.12.42	1.2	-37.4	79.0	79.5	5060.0	560.0	1006.2	34.4	2.3	2.1	0.0	Recco2 sent
204307	13.48.00	-55.37.32	1.2	-37.6	77.2	79.3	5050.0	560.1	1006.0	130.9	2.9	2.1	0.0	TD1 finally finished balancing
204404	13.49.02	-55.32.82	1.1	-37.7	77.0	79.2	5050.0	560.1	1006.3	136.2	2.9	2.1	0.0	TD2 showing warm
205822	13.59.76	-54.24.96	.2	-6.5	80.4	80.9	5071.0	560.1	1007.3	42.8	2.6	2.2	0.0	Recco3 Sent
213119	14.31.20	-51.49.44	6.4	8.0	45.3	45.0	3901.0	644.8	1006.9	334.3	3.7	2.0	5.2	At IP Drop 1 Away. Recco 4 sent
213900	14.55.08	-51.24.42	7.0	5.1	45.9	44.8	3930.0	642.6	1006.2	307.4	5.4	1.6	13.5	Drop 2 away
214641	15.17.94	-51. 0.66	7.6	4.2	44.0	43.7	3911.0	643.9	1005.0	308.5	3.7	1.3	3.1	Drop 3 away
215518	15.45.36	-50.32.88	8.3	5.2	45.0	52.9	3916.0	644.0	1003.6	131.8	15.9	2.1	16.8	Passed fcst center
220138	16. 4.38	-50.12.84	7.1	2.0	49.1	59.3	3916.0	643.8	1007.0	133.0	21.0	2.1	13.9	Drop 4 away
220924	16.27.84	-49.47.64	7.4	1.2	45.5	53.6	3931.0	643.9	1008.5	135.9	16.3	1.8	10.6	Drop 5 away
221651	16.50.34	-49.23.58	6.5	1.9	46.0	52.6	3936.0	643.9	1010.7	131.6	13.0	1.7	1.9	Drop 6
222235	16.55.14	-49.44.52	6.8	1.4	267.1	265.0	3944.0	643.8	1009.9	119.9	14.3	1.9	10.6	Recco4 sent
224857	16.46.02	-51.50.40	8.4	.3	131.5	129.3	3930.0	643.8	1006.1	95.6	14.1	2.1	10.6	Drop 7 away
224946	16.43.80	-51.47.88	8.3	.9	133.2	130.7	3924.0	643.8	1006.0	100.0	15.4	2.2	10.3	Recco5 sent
225727	16.22.44	-51.25.32	9.8	-.6	134.1	129.9	3926.0	644.0	1003.5	83.0	16.1	1.7	12.5	Drop 8 away
230516	16. 1.32	-51. 2.04	9.3	2.9	134.3	132.3	3925.0	643.6	1003.3	110.0	17.8	2.4	11.7	Drop 9 away
231249	15.40.80	-50.40.08	7.5	3.4	134.5	135.0	3912.0	643.9	1006.0	130.1	15.7	1.9	10.7	Pilots report loss of Attitude from INE 2
about a minute ago														
231417	15.36.72	-50.35.76	8.9	2.7	135.1	134.6	3908.0	643.8	1003.7	123.8	17.8	3.0	11.6	Pass fcst ctr
232243	15.14.04	-50.11.52	7.9	.9	133.9	133.0	3925.0	644.3	1006.8	109.2	12.1	.1	13.5	Drop 10 away
233053	14.51.84	-49.47.94	4.4	3.8	133.1	135.7	3925.0	643.8	1011.5	152.6	9.1	1.8	12.5	Drop 11 away
233856	14.29.40	-49.24.24	4.3	3.4	133.1	138.0	3923.0	643.9	1012.9	181.1	11.2	1.5	5.6	Drop 12 away
233956	14.28.50	-49.20.52	3.7	3.2	51.3	58.2	3936.0	643.7	1013.7	158.2	18.1	2.0	.9	Recco5 sent
000044	15.47.10	-49.28.02	10.5	5.3	269.6	264.2	3293.0	695.3	1010.6	154.4	16.3	2.0	10.2	Sent Recco6 at 2356
000146	15.47.04	-49.32.76	10.1	5.6	270.3	263.9	3290.0	695.6	1010.8	162.8	17.5	1.5	8.2	at 10k ft
002341	15.39.54	-51.10.50	11.3	7.1	235.2	231.4	3270.0	695.5	1006.8	146.7	10.9	1.7	0.0	Rough est sfc ctr sfmr
003443	15.24.96	-51.51.96	10.7	8.4	270.6	274.9	3272.0	695.4	1007.5	19.6	8.0	2.0	8.9	marked ctr at 0027Z
012541	13.46.74	-51.24.12	9.2	-3.6	1.4	.5	3283.0	695.0	1012.5	229.9	7.0	1.6	0.0	Recco7 sent start northbound leg
012909	14. 1.80	-51.23.04	9.7	7.6	25.6	26.1	3287.0	694.7	1010.1	212.8	5.0	2.2	0.0	turned to 025deg
013543	14.27.78	-51. 9.78	9.4	7.8	28.5	28.5	3296.0	694.0	1010.3	17.0	4.1	2.9	12.1	lost flight data at fd station repeater
021328	17. 3.72	-51.33.06	11.6	2.6	291.5	291.6	3297.0	695.5	1008.7	110.0	18.6	2.0	9.6	Recco8 sent turning to go home.
024855	15.44.10	-54.20.28	-9.3	-33.5	243.4	246.2	6737.0	455.3	1007.5	13.4	6.8	2.3	6.6	TD2 malfunctioning.
025328	15.33.12	-54.43.02	-9.1	-30.7	243.6	246.1	6724.0	455.3	1006.7	27.3	7.4	2.6	0.0	Balanced td2
030353	15. 7.62	-55.35.10	-8.8	-29.9	243.0	245.1	6724.0	455.3	1005.6	34.2	6.7	2.0	0.0	Recco9 sent - Last Ob
040039	13. 4.32	-59.30.12	28.2	23.9	76.0	75.8	1.0	1008.4	1013.7	113.6	2.0	1.1	0.0	Landed
040524	13. 4.80	-59.28.92	27.4	25.5	90.0	345.7	1.0	1006.9	1012.3	347.3	1.5	.2	0.0	Block In

[illegible]

[illegible]

RANGE CONTROL GRAPH



DISTANCE REMAINING

$$ETP = .5(TOTAL\ DISTANCE \times OUTBOUND\ WIND\ FACTOR)$$

WIND FACTOR		
WINDSPEED	HEADWIND	TAILWIND
10	1.03	.97
20	1.06	.94
30	1.10	.92
40	1.14	.89
50	1.18	.87
60	1.22	.85

ENROUTE FUEL	
ENROUTE TIME	8+00
ENROUTE FUEL (6K 5K 4.5K RULE)	38.0
RESERVE AT DESTINATION	10.0
REQUIRED RAMP	48.0
ACTUAL RAMP FUEL	58.0

TACTICAL (OFFSTA TO DESTINATION)		
	4 ENG	3 ENG
DISTANCE (OFFSTA TO DEST)		
ENROUTE TIME (OFFSTA TO DEST)		
BURN RATE (LBS/HR)	4500	5500
ENROUTE FUEL REQUIRED		
RESERVE AT DESTINATION		
FUEL AT OFFSTA		

POINT OF SAFE RETURN		
	4 ENG	3 ENG
ETP DISTANCE (TO DEPARTURE)		
ENROUTE TIME (TO DEPARTURE)		
BURN RATE (LBS/HR)	4500	5500
FUEL REQUIRED		
RESERVE AT DEPARTURE		
PSR FUEL		

PRESS ALT	200	250	300	350
10,000	1.0	1.0	.99	.99
20,000	.99	.98	.97	.97
30,000	.97	.96	.95	.94
40,000	.96	.94	.92	.90

TRUE AIRSPEED CROSS-CHECK							
TIME	IAS	PRESS ALT	"F" FACTOR	EAS	OAT	TAS	ITAS
2051	217	155	X	X	0	276	274/282

CEX - TRUE BEARING METHOD			
COMPASS TYPE	INS1	INS2	WET
MCH (READING)			
MTH (SEXTANT)			
CE			
VAR			
DEV			

CEX - ERB METHOD			
COMPASS TYPE	INS1	INS2	WET
MERB (DIAL 000)			
+ ZN			
= MTH			
MCH (READING)			
CE			
VAR			
DEV			

CEX SIGHT	
GMT	
GHA	
CORR	
GHA	
LONG +W -E	
EXACT LHA	
LAT	
BODY	
DEC	
HC/D	
CORR	
HC	
Z	
ZN	

