

U.S. Dep't. of Commerce / NMAO / NOAA / Aircraft Operations Center

FLT ID: 2020907H2	From: KFUL	To: KFUL
FLT #:	Blk In: 0512 Z	Lnd Time(on): 0506 Z
ETD: 20 Z	Blk Out: 1956 Z	T/O Time (off): 2006 Z
ETE: 9	Total Blk: (9.3)	Total Flt: (9.0)
Sponsoring Org: HRO	Program: TOR	Purpose: TS LESLIE

AOC Flight Crew

Aircraft Commander: NELSON	Data System: Lynch
Co-Pilot: Sweeney, Kerns	Avaps: Warnecke
Navigator: Kidder, 1	System Engineer: Peck
Flight Eng: Klippel, 1	AA:
Flt Director: Williams, Parrish	AA:
Avionics: Newman	Crew Chief:

Participating Scientists, Visitors, & Add'l Aircrew on back. # of people listed on back:

	A/C - Takeoff	Wx Station - Takeoff	A/C - Land	Wx Station - Land
Pressure	1014.9	1013.9	1012.8	1013.5

ATIS - Takeoff 20Z 160046t 10sm faw026 sct 100 29/23 A2995

ATIS - Land 05Z CALM 10sm CLR 26/23 A2994

Data Source	Number	Data Disposition / Date / Quality / File Name(s)
Flight Level Tapes		
Radar Tapes		
Dropsondes	15	Good: 14 Bad: 1 Sent:
AXBT	10	3bad

List other data sources on back in Remarks section.

Remarks (Storm Name, Mission ID, Recco Times, Fix Times)	Recco Times:	Fix #	Fix Time
Storm Name: LESLIE	12 reccos		
Mission ID: WATRA	2 VDMs		
	14 temp drops		

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FLT ID: _____ T/O Time: _____ Z Lnd Time: _____ Z

Name (Last, First)	Activity on Aircraft	Affiliation
Jelenak, Zorana	PI	NESDIS
Sapp, Joe		UMASS
Uhlhorn, Eric	PI	HRD
Abersson, Sim		HRD
Annete, Bashir		ARD
Leonardi, Alan	Visitor	NHE AOML
Stewart, Stacey	↓	NHC
Shiwell, Ruth	↓	MIAMI ARTCC (FAA)

Remarks:



N42RF ERROR SUMMARY
TS LESLIE, KFLI-KFLL
07 Sep 2012



Flight ID: 20120907H2

<u>Sensor or system</u>	<u>Number or Name</u>
Inertial Selected (for wind derivation)	INE 1
Accelerometer	AccZfilterI-GPS.1
Temperature Probe	TTM.2
Dew Point Probe	TDM.2X
Static Pressure	PSM.2
Dynamic Pressure	PQM.2
Altitude (for vertical wind)	AltI-GPS.1
Flight Directory	acdata/MET/2012/20120907H2
Constants File	20120907H2/AAMPSCconfig/core/n42.xml

Local Met Data:	<u>Takeoff (2006Z)</u>	<u>Landing (0506Z)</u>
Aircraft Static Pressure (PSM.2)	1014.9 mb	1012.8 mb
Tower Pressure (corrected)	1013.9 mb	1013.5 mb

Notes:

There was a data gap in all parameters from 00:00:07Z – 00:00:50Z.

The Edgetech dewpoint, TDM.2, performed best and was used as default. However, it spiked erroneously twice from 00:20:09Z – 00:22:41Z and 03:52:42Z – 03:56:15Z, when TDM.1 did not. Because of this, during these times the following substitution was made: TDM.2X = TDM.1 Dew point values intermittently exceeded ambient temperature values during portions of flight where the aircraft was in precipitation, causing RH values greater than 100%.

The Pro-Sensing SFMR data was extremely sporadic and questionable from 00:56Z – 01:37Z due to improper auxiliary data getting to the instrument. This is an anomaly.

SPECIAL NOTE!!! The variable names GSZ_DPJ, ASZ_DPJ and WSZ_DPJ in the netCDF file represent vertical ground speeds, vertical air speeds and vertical wind speeds, respectively, computed using Dave Jorgensen's vertical wind algorithm. It is recommended that these values be used for vertical wind analysis.

All other AOC instruments worked properly.

There were 15 GPS dropsondes (14 good) and 10 AXBT's released from the aircraft. There were 6 hurricane penetrations.

During the last half hour of the flight, the transit back to KFLL, from 04:42:43Z until landing, several one second data gaps were observed in only some derived and reference parameters (with a .d or ref extension).

Flight Director:
Phone #:

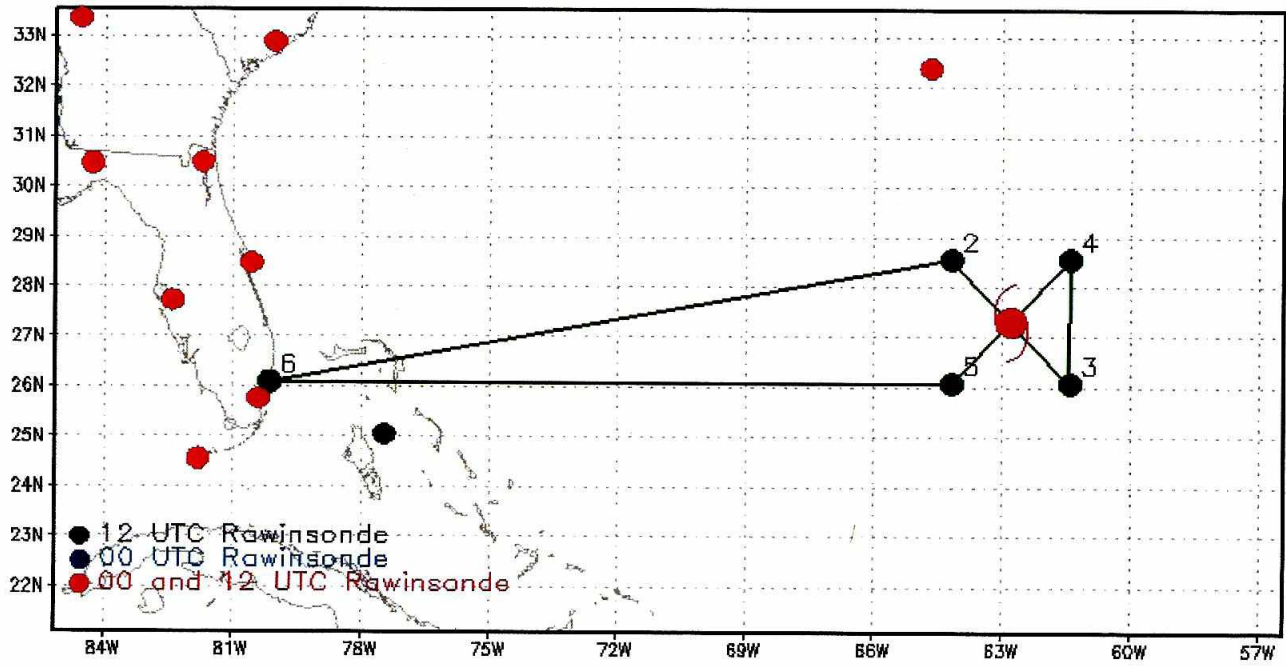
Jess Williams / Jack Parrish
(813) 828-3310 ext. 3140/3077

DATE	SCHEDULED FIX TIME	AIRCRAFT NUMBER	ARWO
WX MISSION IDENTIFICATION		STORM NUMBER IDENTIFIER	OB
VORTEX DATA MESSAGE			
A	07/035450	DATE AND TIME OF FIX	
B	07 DEG 19 MIN N S	LATITUDE OF VORTEX FIX	
B	002 DEG 20 MIN E W	LONGITUDE OF VORTEX FIX	
C	700 2982	MINIMUM HEIGHT AT STANDARD LEVEL	
D	54	ESTIMATE OF MAXIMUM SURFACE WIND OBSERVED	
E	327 74	BEARING AND RANGE FROM CENTER OF MAXIMUM SURFACE WIND	
F	044 deg 83	MAXIMUM FLIGHT LEVEL WIND NEAR CENTER	
G	327 73nm	BEARING AND RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND	
H	983	MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.	
I	14 C 2387	MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE OUTSIDE EYE	
J	166 2454	MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE INSIDE EYE	
K	14 C / NA	DEWPOINT TEMP/SEA SURFACE TEMP INSIDE EYE	
L	POORLY DEFINED	EYE CHARACTER: Closed wall, poorly defined, open SW, etc.	
M	NA	EYE SHAPE/ORIENTATION/DIAMETER. CODE EYE SHAPE AS: C -Circular; CO - Concentric; E- Elliptical. TRANSMIT ORIENTATION OF MAJOR AXIS IN TENS OF DEGREE (i.e., 01-010 to 190; 17-170 to 350). TRANSMIT DIAMETER IN NAUTICAL MILES. Examples: C8 - Circular eye 8 miles in diameter. EO9/15/5 - Elliptical eye, major axis 090-270, length of major axis 15 NM, length of minor axis 5NM. CO8-14 - Concentric eye, diameter inner eye 8 NM, outer eye 14 NM.	
N	12345/7	FIX DETERMINED BY/FIX LEVEL. FIX DETERMINED BY: 1 - Penetration; 2 - Radar; 3 - Wind; 4 - Pressure; 5 - Temperature. FIX LEVEL: Indicate surface center if visible; indicate both surface and flight level centers only when same: 0 - Surface; 1 - 1500ft; 9-925mb; 8 - 850 mb; 7 - 700 mb; 5 - 500 mb; 4 - 400 mb; 3 - 300 mb; 2 - 200 mb; NA - Other.	
O	1/1	NAVIGATION FIX ACCURACY/METEOROLOGICAL ACCURACY	
P	REMARKS MAX FL WIND <u>83</u> KT <u>MW</u> QUAD <u>23 35 20</u> Z MAX OUTBOUND FL WIND _____ KT _____ QUAD _____ Z SLP EXTRAP FROM (Below 1500 FT/ 925 MB/ 850 MB/ DROPSONDE) SFC CNTR _____ / _____ NM FROM FL CNTR MAX FL TEMP <u>C</u> / _____ NM FROM FL CNTR SURFACE WIND OBSERVED VISUALLY		
INSTRUCTIONS: Items A through G (and H when extrapolated) are transmitted from the aircraft immediately following the fix. The remainder of the message is transmitted as soon as available.			

Figure 5-3. Vortex Data Message Worksheet

DATE	SCHEDULED FIX TIME	AIRCRAFT NUMBER	ARWO
WX MISSION IDENTIFICATION		STORM NUMBER IDENTIFIER	OB
VORTEX DATA MESSAGE			
A	08/012530	DATE AND TIME OF FIX	
B	27 DEG 23 MIN N S	LATITUDE OF VORTEX FIX	
B	62 DEG 20 MIN E W	LONGITUDE OF VORTEX FIX	
C	NA	MINIMUM HEIGHT AT STANDARD LEVEL	
D	57	ESTIMATE OF MAXIMUM SURFACE WIND OBSERVED	
E	046 76nm	BEARING AND RANGE FROM CENTER OF MAXIMUM SURFACE WIND	
F	148 80	MAXIMUM FLIGHT LEVEL WIND NEAR CENTER	
G	047 74	BEARING AND RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND	
H	EXTRA 984	MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.	
I	76 2429	MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE OUTSIDE EYE	
J	16 2489	MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE INSIDE EYE	
K	13 C / NA	DEWPOINT TEMP/SEA SURFACE TEMP INSIDE EYE	
L	NA	EYE CHARACTER: Closed wall, poorly defined, open SW, etc.	
M	NA	EYE SHAPE/ORIENTATION/DIAMETER. CODE EYE SHAPE AS: C -Circular; CO - Concentric; E- Elliptical. TRANSMIT ORIENTATION OF MAJOR AXIS IN TENS OF DEGREE (i.e., 01-010 to 190; 17-170 to 350). TRANSMIT DIAMETER IN NAUTICAL MILES. Examples: C8 - Circular eye 8 miles in diameter. EO9/15/5 - Elliptical eye, major axis 090-270, length of major axis 15 NM, length of minor axis 5NM. CO8-14 - Concentric eye, diameter inner eye 8 NM, outer eye 14 NM.	
N	1234 / NA	FIX DETERMINED BY/FIX LEVEL. FIX DETERMINED BY: 1 - Penetration; 2 - Radar; 3 - Wind; 4 - Pressure; 5 - Temperature. FIX LEVEL: Indicate surface center if visible; indicate both surface and flight level centers only when same: 0 - Surface; 1 - 1500ft; 9-925mb; 8 - 850 mb; 7 - 700 mb; 5 - 500 mb; 4 - 400 mb; 3 - 300 mb; 2 - 200 mb; NA - Other.	
O	1/1	NAVIGATION FIX ACCURACY/METEOROLOGICAL ACCURACY	
P	REMARKS MAX FL WIND <u>83</u> KT <u>NW</u> QUAD <u>233520</u> Z MAX OUTBOUND FL WIND _____ KT _____ QUAD _____ Z SLP EXTRAP FROM (Below 1500 FT/ 925 MB/ 850 MB/ DROPSONDE) SFC CNTR _____ / _____ NM FROM FL CNTR MAX FL TEMP _____ C _____ / _____ NM FROM FL CNTR SURFACE WIND OBSERVED VISUALLY		
INSTRUCTIONS: Items A through G (and H when extrapolated) are transmitted from the aircraft immediately following the fix. The remainder of the message is transmitted as soon as available.			

Figure 5-3. Vortex Data Message Worksheet



GrADS: COLA/IGES

2012-09-06-11:26

X = GPS Soudes (14)

⊗ = Combo (10)

27.97

62.34

002 27.8 62.2W

C

28 46.2
63 34.7

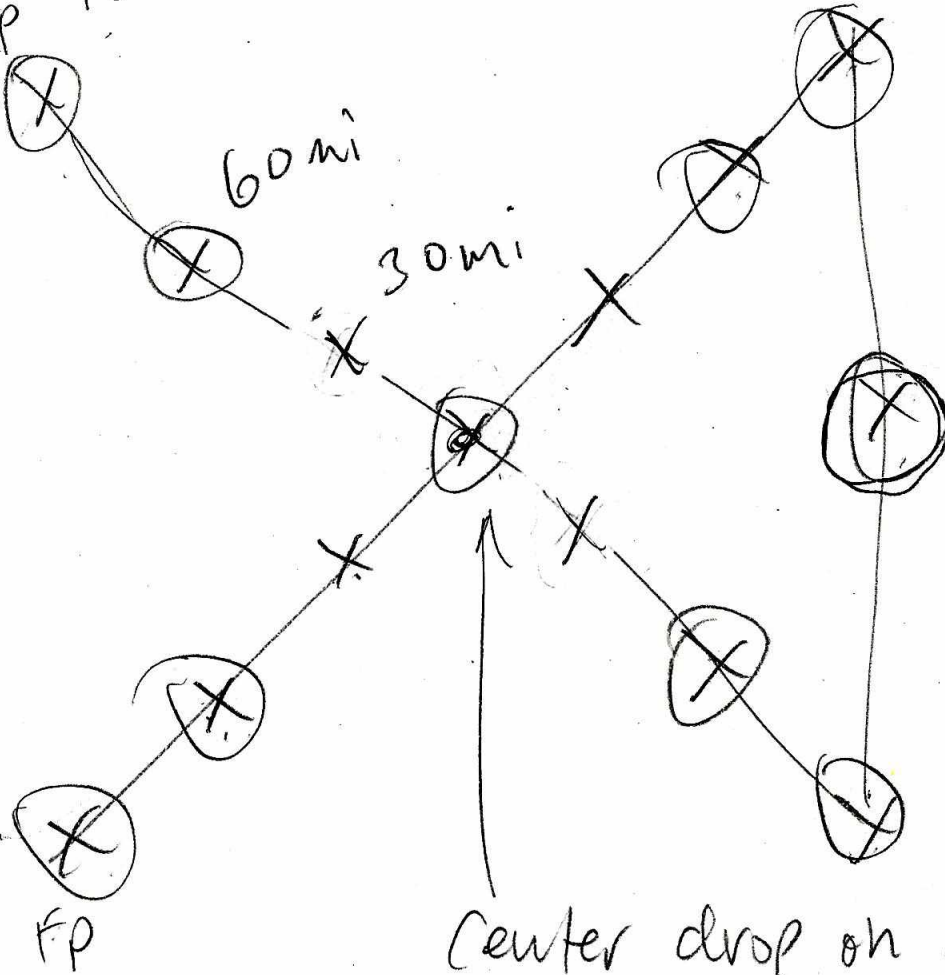
IP 105 mi

60 mi

30 mi

28 33
60 57.3

1WG PORT
10545
RPL



43
00502

26 04
60 59

Center drop on first pass

23202

26 06
63 45

15 sondes, 1 RF (1957) start telos
14 sondes
10 BFS

80kts

NW-SE

~~Recor Combo EP 23262~~

~~Start VI~~

Wedge

60 mi C ~~2334~~

30 mi S ~~2344~~, backup Sonde

CNTR C 2354

30 mi S ~~00072~~

60 mi C ~~00152~~ ~ circled

EP C, ~~00272~~

982.6

RALLO

Wedge

open S

50

NE-SW

COMBO EP 0111

COMBO MD 0118

S RMW 0115

CNTR 01252

2719

6220

SONDE 34

COMBO 44

COMBO EP 0152

01112

03242

RECCO

URNT11 KWBC 26|11|05

97779 11|05|4 6|0|221 783|0|0 320|0|0 04|025 05|56|7 /|3|315 4|28|65

j=0 Extrap sfc pressure j=6 300 mb, hgt in decameters
 j=9 925 mb j=7 250 mb, hgt in decameters
 j=2 850 mb, hgt in geo meters j=1 200 mb, hgt in decameters
 j=3 700 mb, hgt in geo meters j=8 D-value in decameters with 1000's digit omitted
 j=4 500 mb, hgt in geo decameters (1000's omitted if necessary)
 j=5 400 mb, hgt in geo decameters

Example remarks (the only mandatory remark is the LAST REPORT):
 DPTD KMCF AT 26/0900Z ETA 25.5N 90.0W 26/1130Z.
 ETA KMCF 26/1735Z. LAST REPORT OBS 01 THRU 15 TO KNHC VIA KWBC.

Temp Drop

ZCZC
UZPN13 KWBC 06|04|36

(Mandatory levels group - XXAA)

XXAA 56|04|5 99|562 7|1481 195|6|8 99|013 034|33 12|525 00|102 026|31 13|028
 Day of month Hour of obs Octant of globe Longitude Marsden sq. Units of Lat. Sfc indicator Sfc press. T_s Dwpt Depression Wind dir
 Highest mand. lvl reported +50 for wind Hour of obs reported Latitude Longitude Longitude Units of Lon. Sfc indicator Sfc press. T_s Dwpt Depression Wind dir
 1000 mb mand lvl Hgt of mand lvl Dwpt Depression Wind dir

Mandatory levels: 99=Sfc, 00=1000, 92=925, 85=850, 70=700, etc.

(Temperature group for the significant levels - XXBB)

XXBB 56|04|8 99|562 7|1481 195|6|8 00|013 034|33 11|988 020|36 22|978 040|65 etc.
 First signif. lvl (sfc) Pressure (sfc) T_s Dwpt depression Next sig. lvl. Pressure T_s Dwpt depression Next sig. lvl. Pressure T_s Dwpt depression

(Wind group for significant levels of XXBB - 21212)

21212 00|013 12|525 11|988 13|030 22|978 14|538 33|924 14|533 etc.
 First sig. lvl (sfc) Pressure Wind dir Wind spd Next sig. lvl. Pressure Wind dir Wind spd Next sig. lvl. Pressure Wind dir Wind spd Next sig. lvl. Pressure Wind dir Wind spd

Note: If wind speed is preceded by "5", then wind speed is the LAST two digits, and the wind direction is to the closest 5 degrees. If the wind speed is preceded by "6", then the wind speed is 100 plus the last two digits, and the wind direction is to the closest 5 degrees. If the wind speed is preceded by "0", then the wind speed is the last two digits and the wind direction is to the closest 10 degrees.

MinOB

HHMMSS L_aL_aL_amm L_oL_oL_omm PPPPP +/-DDDD VVVVSSS +/-TTT +/-ddd wwwsss sss rrr

17|20|30 26|13 086|16 7676 +0316 206|043 +126 +126 204|044 051 000
 Hour Min Sec Lat. (deg) Lat. (min) Long. (deg) Long. (min) Press. alt. (feet) D-value GA-PA Wind dir Wind spd T_s T_a Wind dir (peak) Wind spd (peak) Sfc wind spd (SFMTR) Rain rate mm/hr

8k RA

0111z

0324z

813 828 4529

BO

1956

B/O

2006

off

0312A

AL12

- Rella
- ~~print manifest~~
- copies of HS3
- lat lon grid
- copy drops to AVAPS
- ~~print water sheets~~

MTA Fax - 305 716 1511/1577

NJ Fax 631 468 4224

MTA Cell - 305 716 1589/1588

Cell 631 468 1427/1080

APPENDIX L

MISSION COORDINATION SHEET

1. Aircraft Call Sign: N42RF (NOAA 42)
 2. TOPOD Number: 0312A LESLIE
 3. Departure & Planned Recovery Airfields: KFLL / KFLL
 4. Route of Flight: FLLZ. PREDZ ZFP HAANA GRATX DJPOZ 2832N 6412W
2700N 6230W // R DELAY ZF30 2700N 6230W // DJPAN VESRA MILLE BARTS KFLL
 5. Storm Center Coordinates: 2700 N / 6230 W
 6. Radius of Operation from Center Coordinates: 150 NM
- Note: This area excludes the terminal areas (Class D Airspace) and any other airspace within 50 NM of the CONUS shoreline until radio contact is established with ATC.
7. Expected Entry & Exit Times for Operating Area: 2300 Z / 0145 Z
 8. Requested Operating Area Altitude/Block: 7000-9000
 9. Aircraft SATCOM #: 813-283-7942
 10. HF SELCAL: LMBF
 11. NORAD Transponder Code: As assigned by ATC
 12. POC Contact Information: CDR NELSON 813-541-5679

2833 6412W 27N 6230W

6-1V

1st ✓.

2nd - 27 27 06 59 23492

3rd - 27 06 62 11 2356

4th - 27 25 06 20 2

5 28 06 61 08 27 36 62 01

6 28 48 61 23 ✓

29 00 62 22 ✓

27 03 60 57

27 40 60 41 W NE

30 33 63 27

28 04 60 48

30 33 60 47

28 04 63 36

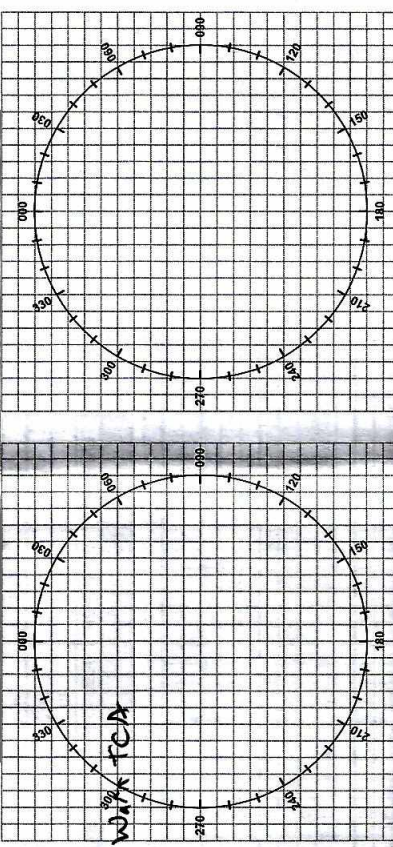
27.3 63.3

2124 632W

21 3018

FREQ	ALT	HDG	OTHER
			MSA 2100' - Fort L... R... 109
			3T Trans 4 IP
			N. Le... - South... 1000
			Comms 6-1V 304.8 HF
			FD 414 1000 NH
			FMS FLL In... Storm
1130	✓ NY	HF CHC 1857	
			1423

MISSION LOG PAGE ___ OF ___



POSITION REPORT	
1. POSITION	
2. TIME	
3. ALTITUDE	
4. NEXT POSITION	
5. ETA	
6. NEXT POSITION	

EMERGENCY MESSAGE
 TRANSMIT THE FOLLOWING MESSAGE TO ANY AGENCY ON THE AIR-GROUND FREQUENCY IN USE. IF UNABLE TO ESTABLISH COMMS, ATTEMPT CONTACT ON ANY OF THE FOLLOWING EMERGENCY FREQUENCIES:
 UHF/VOICE 2182 KHZ MF/VOICE 243.0 HF/VOICE 2182 KHZ MF/VOICE 243.0
 MAYDAY, MAYDAY, MAYDAY
 THIS IS NOAA 42, NOAA 43, NOAA 44
 - POSITION _____ N/S _____ E/W AT _____ Z
 - HEADING _____ TRUE/MAG
 - AT _____ KTS TRUE/INDICATED
 - FLIGHT LEVEL OR ALTITUDE _____
 - WE ARE A P-3 AIRCRAFT WITH _____ SOULS ON BOARD
 - NATURE OF EMERGENCY _____
 - ASSISTANCE DESIRED _____
 - PILOT INTENTIONS _____
 - WE HAVE _____ ENDURANCE REMAINING

TIME	FIX TYPE	POSITION	INS 1 POSITION	K ERR	INS 2 POSITION	K ERR	MH	VAR +E=>	TH	DR +R=>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
1946	STRT																				
1954	TRANS	R-7 94 A	As filed 2V																		
2005	T/O	1423	1423																		
2010	Δ	050/D 256 7956	061A 7956	0	2612 7981	0	063	6W	057	2L	061	268	207	10	191K	255	RUEDA	1800		4 min	
2021	C	154.2	8918 1730																		
2105	Δ	2650 7515	2651 7515	1	2653 7515	0	097	9W	088	2L	095	298	239	19	17K	282	600PX	2900		408	
2108	C	FL 170	FL 170		2832 6412																
2158	C	DUPOX 2028	DUPOX 2219																		
2205	Δ	274A 6958	2743 6959	0	2745 6958	0	091	11W	79	0	091	286	227	10	17K	286	DUPOX	7000		+14	
2221	C	DUPOX 2221	FL 170-180		2832 05412																
2231	C	1500M 27N 6200W	FL 170-180																		
2227	C	2809 6108	ARC	7K	2805 2840 CLR 5	5		2805	263	20											
2205	Δ	2830 6450	2830 6450	0	2834 6449	4															
2209	C	OPS MORIS 2832 6438																			
2226	C	ARC																			

1552

02 P3

