NOAA P-3 N43RF
TS Ingrid
13 Sept 2007

Flight ID: 070913I

Sensor or system	*Number or Name*
Inertial	*ine1*
Accelerometer	*acci1*
Temperature Probe	*tt2X*
Dew Point Probe	*tdm2X*
Altitude (for vertical wind)	*alti1 (GPS aided inertial alt)*
Static Pressure	*psfX (Rosemount Fuselage)*
Dynamic Pressure	*pqf1X (Rosemount Fuselage)*
Time Source	*Micro 99*
Dropsondes Deployed	*Good: 9 Bad: 0 (7 sent to NHC/HRD)*

Local Met Data:	*Takeoff (1953 Z)*	*Landing (0410 Z)*
Aircraft Static Pressure	*1004.3 mb*	*1005.8 mb*
Tower Pressure	*1005 mb*	*1006 mb*

Notes

Total Temp 3 sensor not installed

9 dropsondes deployed. 9 good. Sent 7 of the dropsondes out the aircraft. Did not send drops 2 or 8 to HRD/NHC

Data Gaps: 003650Z-003654Z, 003810Z-003816Z, 003840Z-003845Z, 003850Z-003858Z, 023510Z-023521Z

Removed spikes in lati1 and loni1 data at the end of the data gaps at 003650Z-003654Z and 003850Z-003858Z

There were errors in the heading data on the South legs which were caused by a calculation error in the data processing box located on the aircraft. The following times were replaced with a constant of 180° due to data spikes on a south heading: 233128Z-233133Z, 233145Z-233150Z, 231943Z-231946Z, 234811Z-234825Z, 245054Z-245254Z, 010205Z-010208Z, 011151Z-01242Z, 011337Z-011342Z, 011455Z-011522Z, 012121Z-012148Z. The data was saved in the variable: hdgi1X

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

(((reported altitude - 1,500) * 0.988) +1,500) = 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.

Removed data spike in psf & pqf1 at 003859Z. Saved patched data in variables psfx & pqf1x respectively.

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: *LTJG Jackie Almeida*
Phone #: *(813) 828-3310 ext. 3075*

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

Flt ID: 070913I	From: TBPB	To: TBPB
Flt. No: 07 031	Blk In: 0415 z	Time On: 0410 z
ETD: 2000 z	Blk Out: 1944 z	Time Off: 1953 z
ETE: 9hrs+	Blk Time: 8 hrs 31 min (8.5) Hrs	Flt Time: 8 hrs 17 min (8.3) Hrs
Sponsoring Org: NOAA - HRD	Program: Hurr 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
BLACK, B	SCI	HRD
Rogers, R	SCI	HRD

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

Recco Times

Fix # Fix Time

torm Name: TD 8

lission ID: 0108A CYCLONE

enetration number and time

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

Flight ID: 070913I	Time Off: 1953 Z	Time On: 0410 Z

	A/C - Takeoff	Wx Station - Takeoff	A/C - Land	Wx Station - Land
Pressure	1010.0 Pstd 1004.3 mb	1005 mb	1005.8 mb	1006 mb

ATIS	Time	Observation
Takeoff	2000Z	10011 kt 29/22 Q1011
Land	0400Z	10014 kt 28/23 Q1012

	Number	Data Disposition / Date / Quality
Flight Level Tapes		
Radar Tapes		
Cloud Physics Tapes / CDs		
Video Tapes		
Dropsondes	9	Good: 9 Bad: Sent 7 sondes did not send drop 2 or 8
AXBT		
AXCP		
AXCTD		

Remarks:

Block out: 1944 T/O: 1953
Block in: 0415 Lnd: 0410

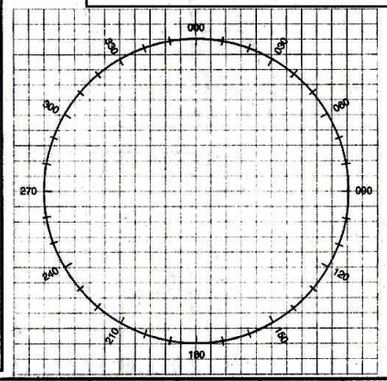
NO TT3

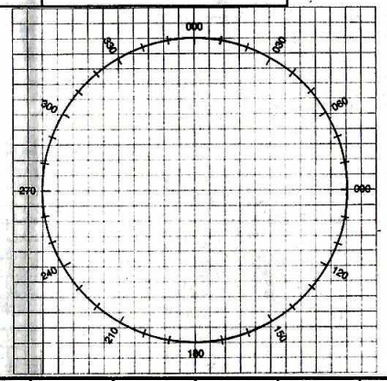
GPS Alt @ TBPB = 54m = 176ft

≈130 kts TAS

CLEARANCES			
FREQ	ALT	HDG	OTHER
			SQ 1036
			FL 140 R TWN OK
			Prod 128.4
			120 mi 13N 220 48W
			11309 > N4R
			+1396
			8825

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	VHF/VOICE	MF/VOICE	HF/CW	MF/CW
243.0	121.5	2182 KHZ	8364 KHZ	500 KHZ

MAYDAY, MAYDAY, MAYDAY
THIS IS NOAA _____, NOAA _____, NOAA 42

- 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 12 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
1937	START																				
1944	TAXI																				
1944	BLOCK																				
1953	T/O																				
2000	X✓	13 00.9 59 05.7	13 00.9 59 05.7	0 0	13 00.9 59 05.6	0 +.1	116	15W	101	2	099	232	122	6	↑140	238					100/23 ✓
2108	△	12 46.7 58 37.6	12 46.8 58 37.8	+.1 +.3	12 46.8 58 37.5	+.3 +.3	110	17W	093	0	093	290	278	1	140	288					
2200	△	12 16.1 49 32.3	12 15.3 49 31.5	+.8 +.8	12 15.8 49 31.3	+.3 +1.0	112	18W	094	4	090	262	226	23	120	245					
2300	△	14 41.8 47 14.1	14 40.8 47 13.9	+1.0 +.2	14 42.0 47 13.5	-.2 +.6	082	18W	064	4	360	293	149	34	120	264					
0000	△	12 58.2 48 11.3	12 55.5 48 11.0	+2.7 +.3	12 56.9 48 11.0	+1.3 +.3	282	18W	264	0	264	249	273	8	120	260					
0100	△	14 50.3 49 14.1	14 48.4 49 14.7	+1.9 -.6	14 50.3 49 13.9	0 +.2	197	18W	179	1	180	279	017	21	120	258					
0200	△	14 53.0 49 50.1	14 51.1 49 49.5	+1.9 +.6	14 53.9 49 49.1	-.9 +1.0	021	18W	003	2	001	248	039	16	120	259					
0500	△	14 31.8 54 07.4	14 27.6 54 07.9	+4.2 -.5	14 30.1 54 08.2	+1.7 -.8	274	17W	257	1	256	323	034	18	120	308					
0410	Land	13 04.6 59 29.3	12 59.4 59 30.9	+5.2 -1.6	13 01.3 59 30.5	+3.3 -1.2															
0415	Block																				

NOAA FORM 56-49
(2-95)

MISSION PREFLIGHT LOG

DESTINATION	MISSION	NAVIGATOR	AIRCRAFT COMMANDER	FLIGHT DIRECTOR	SCHEDULED / ACTUAL TAKEOFF Z	DATE OF TAKEOFF
TBPB	TD#8 #1	SIEGEL	CHOY	SHEPHERD	2000 / 1953	13SEP07

WP	LAT / LON	RTE	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	LEG / TOT DIST	LEG / TOT TIME	PROP ETA	ETA	ATA	REMARKS
TBPB	13 04.5 59 79.6																	
1	12 36.0 50 30.0																	
2	12 36.0 47 54.0																	
3	15 54.0 47 54.0																	
4	15 54.0 48 30.0																	
5	13 18.0 48 30.0																	
6	13 18.0 49 12.0																	
7	15 54.0 49 12.0																	
8	15 54.0 49 54.0																	
9	13 18.0 49 54.0																	
10	13 18.0 50 30.0																	
11	15 54.0 50 30.0																	

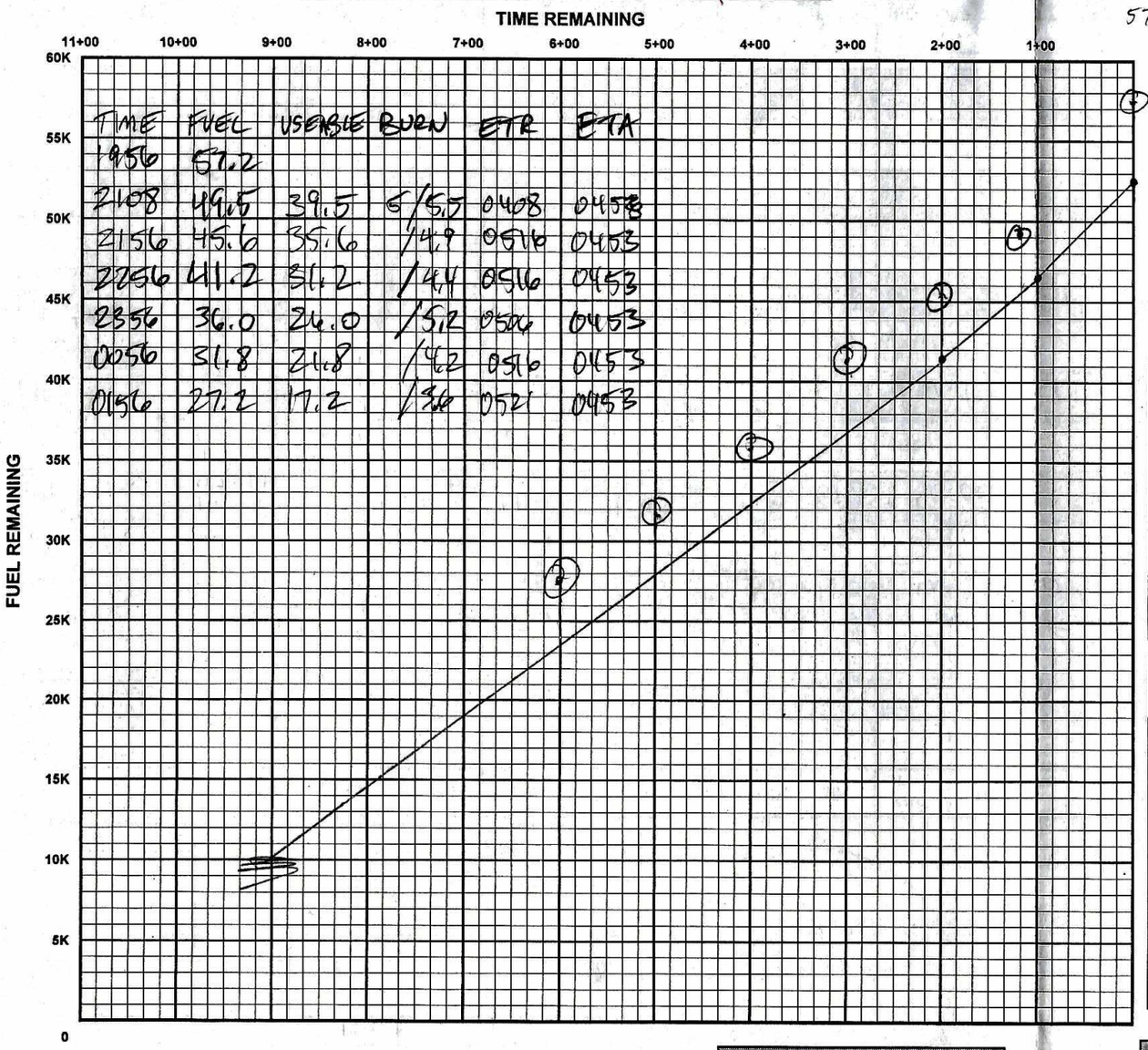
INS PERFORMANCE	INS 1	INS 2
BEGIN ALIGN TIME	/	/
ALIGN STATUS (0-5)	/	/
END NAV TIME	0415	0415
START NAV TIME	1944	1944
DELTA T	8+31	8+31

TERMINAL ERRORS	INS 1	INS 2
DELTA LAT	+5.2	+3.3
DELTA LON	-1.6	-1.2
RGS	/	/
RADIAL ERROR	5.4	3.5

REMARKS

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
AIRCRAFT OPERATIONS CENTER

RANGE CONTROL GRAPH



TIME	FUEL	USABLE BURN	ETR	ETA
1956	57.2			
2108	49.5	39.5	6/5.5 0408	0458
2156	45.6	35.6	/4.9 0516	0453
2256	41.2	31.2	/4.4 0516	0453
2356	36.0	26.0	/5.2 0520	0453
0056	31.8	21.8	/4.2 0516	0453
0156	27.2	17.2	/4.6 0521	0453

ETP = .5(TOTAL DISTANCE x 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

1956
57.2

ENROUTE FUEL	
ENROUTE TIME	9+00
ENROUTE FUEL (6K 5K 4 5K RULE)	42.5
RESERVE AT DESTINATION	10.0
REQUIRED RAMP	52.8
ACTUAL RAMP FUEL	57.2

6
5
31.5
42.5

34.5
3
31.5

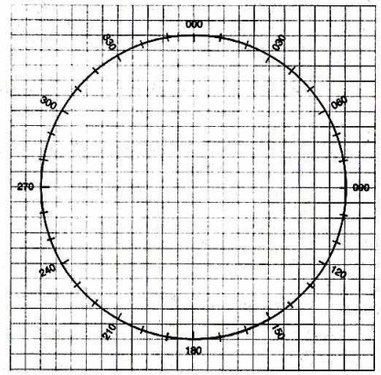
TACTICAL (OFFSTA TO DESTINATION)	4 ENG	3 ENG
DISTANCE (OFFSTA TO DEST)		
ENROUTE TIME (OFFSTA TO DEST)		
BURN RATE (LBS/HR)	4500	5500
ENROUTE FUEL REQUIRED		
RESERVE AT DESTINATION		
FUEL AT OFFSTA		

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		

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			

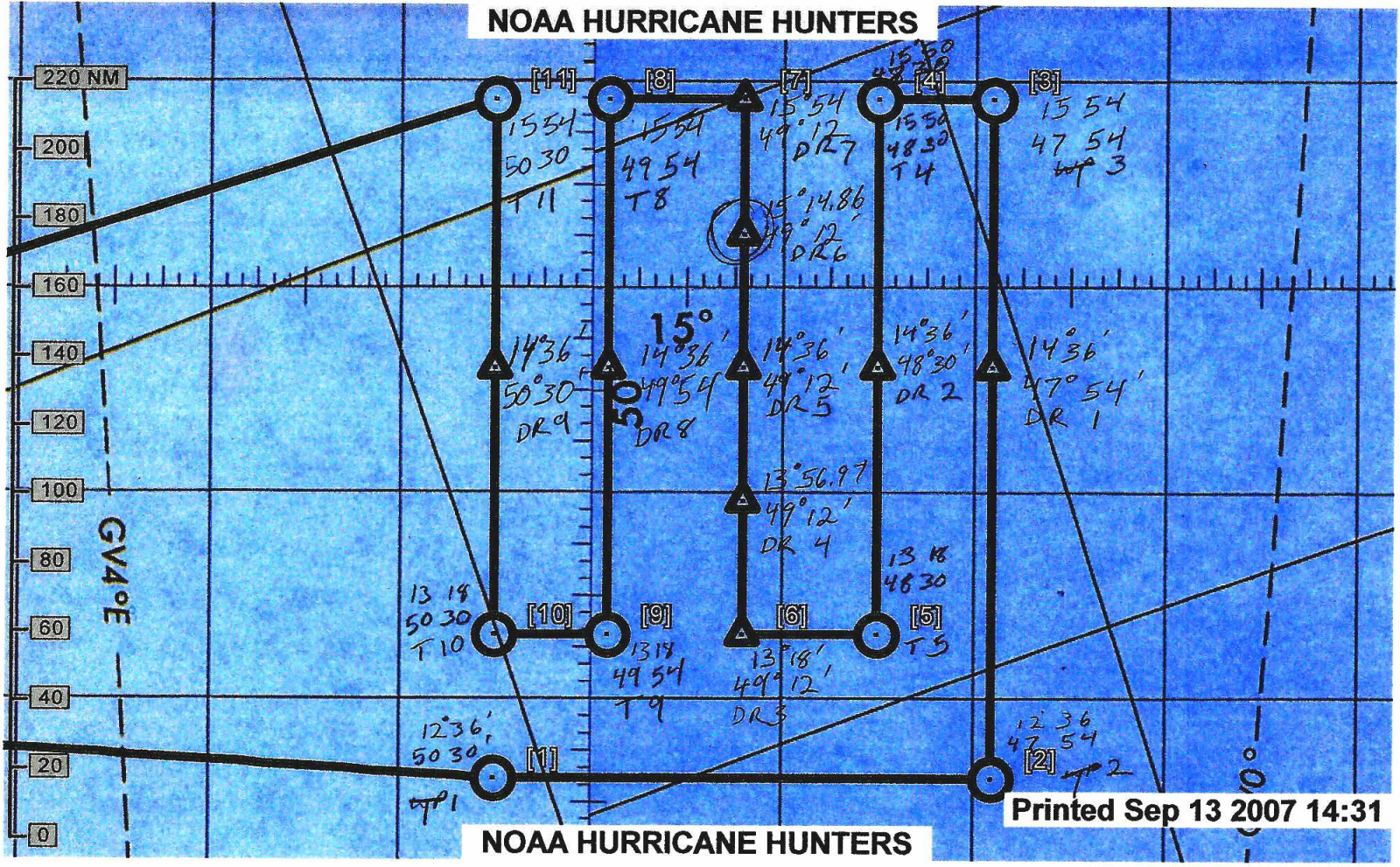
CEX SIGHT	
GMT	
GHA	
CORR	
GHA	
LONG +W -E	
EXACT LHA	
LAT	
BODY	
DEC	
HC / D	
CORR	
HC	
Z	
ZN	



"E" FACTOR	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
2019	215	160			-1	277	273/281

070913I	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
193758	13. 4.80	-59.29.04	45.2	22.7	90.0	346.8	1.0	1004.6	1009.2	329.8	1.5	-.2	0.0	test
194426	13. 4.80	-59.29.04	32.8	22.4	345.0	346.6	1.0	1004.5	1009.6	52.0	1.4	.4	0.0	block out
195300	13. 4.44	-59.29.64	28.9	22.7	75.9	76.1	1.0	1005.7	1011.4	110.8	4.3	2.0	0.0	takeoff
202538	12.56.28	-57. 6.30	-.9	-34.5	91.6	93.3	5235.0	548.0	1008.0	242.3	2.2	2.3	2.3	Recco 1 sent
205802	12.49.26	-54.29.28	-1.1	-23.5	92.5	92.9	5234.0	548.3	1008.1	330.8	2.6	2.3	2.6	Recco 1 sent (forgot sm in 1st msg)
211515	12.45.12	-53. 4.62	-1.6	-25.8	92.5	92.6	5229.0	548.5	1009.1	36.0	3.4	2.0	0.0	TD2 looks warm
211701	12.44.76	-52.55.98	-2.0	-27.4	92.1	92.2	5219.0	548.5	1010.0	27.3	3.4	2.4	.8	Balancing TD2
212604	12.42.18	-52.12.00	-2.2	-15.7	93.7	94.1	5208.0	548.5	1010.2	51.8	3.6	2.2	0.0	recco 2 sent
213626	12.34.26	-51.21.84	-1.3	-8.7	101.3	100.9	5219.0	548.5	1008.0	26.6	4.5	2.3	0.0	radar tape started 2136
214709	12.24.12	-50.29.64	-1.6	-2.9	101.5	100.6	5121.0	556.6	1009.1	352.8	5.8	1.8	0.0	descending to FL120
215600	12.16.50	-49.50.16	5.2	3.5	97.7	100.0	3918.0	643.4	1010.0	257.1	7.0	1.8	2.9	Recco 3 Sent At IP
222900	12.16.14	-47.16.02	4.7	2.2	67.5	68.8	3935.0	643.0	1012.0	199.8	5.6	1.5	0.0	Starting 1st turn to the North
224501	13.30.12	-47.13.92	4.6	3.6	.3	358.7	3927.0	643.1	1010.3	208.5	14.1	1.8	4.4	sent Recco 4 at 2238Z
225445	14.16.26	-47.14.16	7.5	1.9	359.4	1.7	3918.0	643.0	1005.5	170.2	15.4	1.7	14.5	Drop 1 away sent
232037	15.22.26	-47.50.10	8.4	1.2	180.1	176.6	3926.0	642.8	1005.3	126.3	14.2	1.8	11.6	Turned to south
233356	14.27.54	-47.49.80	6.7	5.3	180.5	181.5	3920.0	642.9	1005.8	175.1	9.6	2.1	17.2	LF Radar froze @ 2331Z
233654	14.15.60	-47.49.80	6.4	5.4	179.8	183.0	3923.0	642.9	1006.7	204.7	10.3	1.9	16.5	Drop 2 away not sending out of plane
234013	14. 2.04	-47.49.74	6.4	6.7	179.2	183.7	3930.0	643.1	1006.8	230.9	9.5	1.7	14.2	Recco 5 sent
234836	13.26.76	-47.49.92	6.1	4.4	178.3	181.4	3944.0	642.8	1008.3	238.9	6.1	2.4	9.6	LF Radar froze @ 2346Z
000554	13. 2.28	-48.31.68	5.1	5.3	355.4	351.7	3922.0	643.0	1009.7	295.5	12.1	.7	13.3	Drop 3 Away sent
001154	13.28.14	-48.32.16	4.9	5.1	358.3	358.9	3928.0	642.4	1009.5	203.4	4.9	1.5	12.5	Recco 6 Sent
001414	13.38.58	-48.32.04	5.7	6.9	359.6	357.6	3915.0	642.6	1007.8	267.9	7.0	2.4	11.7	drop 4 away sent
002251	14.16.02	-48.31.98	6.9	7.1	358.7	357.6	3918.0	643.2	1005.2	238.9	6.6	1.8	14.0	Drop 5 Away sent
003219	14.56.76	-48.31.74	9.2	2.6	54.3	61.1	3942.0	642.8	1002.9	81.2	11.6	1.3	13.3	started 45deg turn
003342	14.56.82	-48.32.64	9.1	2.7	355.8	2.7	3909.0	643.1	1002.7	85.9	13.0	1.8	14.4	Drop 6 Away sent
003812	8.53.10	-28.14.28	8.6	1.9	.2	3.7	2281.0	643.3	837.6	5.7	54.3	3.7	18.6	Error 113
004217	15.33.66	-48.33.54	7.8	3.4	296.2	297.2	3939.0	643.2	1005.9	105.6	14.6	16.0	12.5	Drop 7 away sent
010720	14.15.72	-49.13.98	5.6	3.0	179.3	182.1	3918.0	643.2	1008.9	342.6	12.7	1.9	5.3	drop 8 away
014308	13.40.62	-49.49.86	5.4	3.9	.8	360.0	3925.0	643.1	1009.1	340.9	12.2	2.0	11.4	Carcah reported peak FL winds in HDOB were being reported at 75kts. Times were: 0115 and 0112. Data system listed no errors at those times.
015207	14.16.62	-49.49.92	6.1	2.5	360.0	1.3	3909.0	643.5	1008.5	1.9	8.4	1.9	0.0	Drop 9 away sent
021046	15.33.36	-49.52.86	6.9	1.8	268.0	271.3	3926.0	643.2	1007.5	51.8	13.1	1.6	9.7	finished with pattern. climbing to FL140 and heading back to TBPB
022611	15.15.60	-51. 8.40	-10.0	28.6	255.2	257.9	6736.0	455.4	986.0	33.2	6.8	.6	11.3	TD2 balancing itself
035352	13.17.10	-58.51.54	-8.0	-47.6	255.1	256.4	6715.0	455.6	1003.7	80.4	4.1	2.5	1.0	descending to FL050
040146	13. 4.50	-59.25.80	12.3	-5.2	228.7	226.6	2743.0	741.2	1011.4	105.1	8.2	1.4	1.5	Flight reported INE2 giving bad attitude data at about 0358
040949	13. 4.32	-59.30.06	27.9	38.6	76.0	77.4	1.0	1007.3	1012.3	157.0	3.7	.5	1.5	landed
041520	13. 4.80	-59.28.92	27.6	25.1	52.6	344.5	1.0	1005.8	1011.1	.1	1.5	.2	1.5	Block In



△ = Drops

Dest

Leg 7-6 or 4-5 45° turn + drop

Send Recco's
No vortex

Ps 2 - Ps 1 difference √ in Post Processing

00Z fcst

14.2°

49.9°