

Flt ID: 030912I	From: T15X	To: T15X
Flt No: 03-77	Blk In: 2212 Z	ATA: 2208
ETD: 1500Z	Blk Out: 1459 Z	ATD: 1506Z
ETE: 8+00	Blk Time: 7.2	Flt Time: 7.0
Sponsor Org: NOAA HRO	Program: CBLAST DEATH RAYS	Purpose: HURR ISABEL

AOC Personnel

AC: TEBEST, R	Sys Eng: LYNCH, T ✓
CP: TENNESSE, D ✓ / STRONG, T	Data Sys: TONG, R ✓
Nav: NEWMAN, C ✓	Radar:
FE: FLOYD, D ✓ / EAST, G ✓	GPS/BT: SMITH, J ✓
FD: FLAHERTY, P ✓ / DAMIANO, AB	Cld Phys:
Avionics: SANS Succi, D ✓	

Participating Scientists / Visitors / AOC

Name (Last, First)	Activity on Aircraft	Affiliation
BLACK, M ✓	PI	HRO
LASWELL, J ✓	SCI	SCRIPS
WASH, E ✓	SCI	STL
ROGERS, R ✓	RADAR	HRO
ULTORN, E ✓	SCI	HRO
ZEHR, R ✓	SCI	CIRA / CSU
FRENCH, J ✓	SCI	NOAA ARL

Proposed/Actual Mission Remarks (Recco, Fixes, Storm, PENET, NHOP #)

IP ~~2009~~ 59410
 21415 42 GUNBOYS (9/13, 9) EACH W/ 43 (10/11/12) TK075
 1540 21205 746 EYE 1620Z
 12305 25 MILE EYE
 16202 TRACK AND CENTER

NOISE FROM TDL

17K ALT
 IAS 225
 GS 295

PENETRATIONS

1702
 2137 5806
 6
 1940
 2144 5828
 2028
 2144 5835

1902 1713
 2141 2139 N FIX
 5822 5808 W 920mly

IF 2236
 05816
 TK165

FP PR 05504
 2155
 5705

Flt ID: 0309124 Time Off: 1506Z Time On:

	A/C (Take Off)	Wx Station (Take Off)	A/C (Land)	Wx Station (Land)
Pressure	1012.9	29.96	1010.5	29.91

	Number	Data Disposition / Date / Quality
Flt Lvl Tapes	2	
Radar Tapes	1	
Cloud Physics Tapes		
Video Tapes	4	
AXBT		
AXCP		
AXCTD		
Dropsondes	18	
SOMBOUY'S	3	CH'S 10, 11, 12

Video					Remarks
	Forward	Left Side	Right Side	Down	
Time On					
Time Off					
Rate					

Remarks

RADAR BACK UP 1739 (DOWN ~ 10 min)

DROPPED 3 SOMBOUY'S
18 SONDES

DATE		SCHEDULED RX TIME		AIRCRAFT NUMBER		FLIGHT DIRECTOR	
WX MISSION IDENTIFIER						OB NUMBER	
VORTEX DATA MESSAGE							
A	12 / 1940 Z		DATE and TIME of FIX				
B	21 DEG 44 MIN N S		LATITUDE of FIX				
	58 DEG 28 MIN W E		LONGITUDE of FIX				
C	NA MB NA M		MINIMUM HEIGHT of STANDARD LEVEL				
D	10 / 10 KT		ESTIMATE of MAXIMUM SURFACE WIND OBSERVED				
E	NA DEG NA NM		BEARING and RANGE FROM CENTER of MAXIMUM SURFACE WIND				
F	78 DEG 147 KT		MAXIMUM FLIGHT LEVEL WIND NEAR CENTER				
G	350 DEG 18 NM		BEARING and RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND				
H	NA MB		MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.				
I	9 C 13682 M		MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE OUTSIDE EYE				
J	15 C 14161 M		MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE INSIDE EYE				
K	12 C / NA C		DEWPOINT TEMP / SEA SURFACE TEMP INSIDE EYE				
L	CLOSED WALL		EYE CHARACTER: Closed wall, poorly defined, open SW, etc.				
M	C25		EYE SHAPE/ORIENTATION/DIAMETER: Code eye shape as: C - Circular; CO - Concentric; E - Elliptical. Transmit orientation of the major axis in tens of degrees, i.e., 01-010 to 190; 17-170 to 350. Transmit diameter in nautical miles. <i>Examples:</i> C8= Circular eye 8 miles in diameter. E09/15/5=Elliptical eye, major axis 090-270, length of major axis 15 NM, length of minor axis 5 NM. CO8-14=Concentric eye, diameter inner eye 8 NM, outer eye 14 NM.				
N	12345 / 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; 1-1500 ft; 9-925mb; 8-850mb; 7-700mb; 5-500mb; 4-400mb; 3-300mb; 2-200mb; NA-Other				
O	1 / 1 NM		NAVIGATION FIX ACCURACY / METEOROLOGICAL ACCURACY				
P	REMARKS MAX FL WIND 147 KT NE QUAD 1936 Z						

INSTRUCTIONS: Items A thru 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 for scheduled fixes and at the Flight Director's discretion for unscheduled (intermediate) fixes.

DATE 1		SCHEDULED RX TIME	AIRCRAFT NUMBER	FLIGHT DIRECTOR
WX MISSION IDENTIFIER				OB NUMBER
VORTEX DATA MESSAGE				
A	12 / 17 Z	DATE and TIME of FIX		
B	21 DEG 39 MIN (N) S	LATITUDE of FIX		
	58 DEG 06 MIN (W) E	LONGITUDE of FIX		
C	N/A MB N/A M	MINIMUM HEIGHT of STANDARD LEVEL		
D	N/A KT	ESTIMATE of MAXIMUM SURFACE WIND OBSERVED		
E	N/A DEG N/A NM	BEARING and RANGE FROM CENTER of MAXIMUM SURFACE WIND		
F	317 DEG 131 KT	MAXIMUM FLIGHT LEVEL WIND NEAR CENTER		
G	231 DEG 16 NM	BEARING and RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND		
H	N/A MB	MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.		
I	7 C / 3555 M	MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE OUTSIDE EYE		
J	15 C / 4140 M	MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE INSIDE EYE		
K	11 C / N/A C	DEWPOINT TEMP / SEA SURFACE TEMP INSIDE EYE		
L	(CLOSED) WALL	EYE CHARACTER: Closed wall, poorly defined, open SW, etc.		
M	C 25	EYE SHAPE/ORIENTATION/DIAMETER: Code eye shape as: C - Circular; CO - Concentric; E - Elliptical. Transmit orientation of the major axis in tens of degrees, i.e., 01-010 to 190; 17 - 170 to 350. Transmit diameter in nautical miles. Examples: C8= Circular eye 8 miles in diameter. E09/15/5=Elliptical eye, major axis 090-270, length of major axis 15 NM, length of minor axis 5 NM. CO8-14=Concentric eye, diameter inner eye 8 NM, outer eye 14 NM.		
N	12345 / N/A	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; 1-1500 ft; 9-925mb; 8-850mb; 7-700mb; 5-500mb; 4-400mb; 3-300mb; 2-200mb; NA-Other		
O	1 / 1 NM	NAVIGATION FIX ACCURACY / METEOROLOGICAL ACCURACY		
P	REMARKS MAX FL WIND 137 KT SW QUAD 1658 Z			

INSTRUCTIONS: Items A thru 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 for scheduled fixes and at the Flight Director's discretion for unscheduled intermediate) fixes.

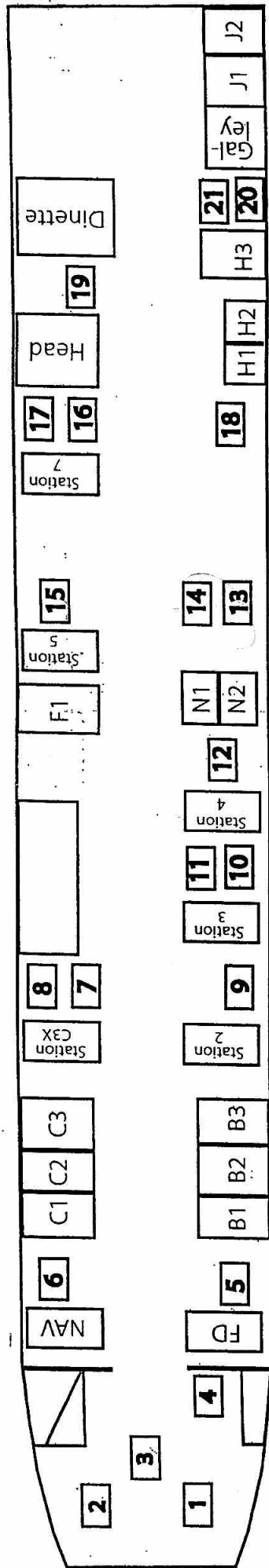
190R
1700

DATE		SCHEDULED RX TIME	AIRCRAFT NUMBER	FLIGHT DIRECTOR
WX MISSION IDENTIFIER				OB NUMBER
VORTEX DATA MESSAGE				
A	12 / 2028 Z	DATE and TIME of FIX		
B	21 DEG 44 MIN N S	LATITUDE of FIX		
	58 DEG 35 MIN W E	LONGITUDE of FIX		
C	N/A MB N/A M	MINIMUM HEIGHT of STANDARD LEVEL		
D	N/A KT	ESTIMATE of MAXIMUM SURFACE WIND OBSERVED		
E	N/A DEG N/A NM	BEARING and RANGE FROM CENTER of MAXIMUM SURFACE WIND		
F	160 DEG 137 KT	MAXIMUM FLIGHT LEVEL WIND NEAR CENTER		
G	82 DEG 17 NM	BEARING and RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND		
H	N/A MB	MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.		
I	14 C 14133 M	MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE OUTSIDE EYE		
J	15 C 14129 M	MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE INSIDE EYE		
K	12 C N/A C	DEWPOINT TEMP / SEA SURFACE TEMP INSIDE EYE		
L	CLOSED WALL	EYE CHARACTER: Closed wall, poorly defined, open SW, etc.		
M	C-C25	EYE SHAPE/ORIENTATION/DIAMETER: Code eye shape as: C - Circular; CO - Concentric; E - Elliptical. Transmit orientation of the major axis in tens of degrees, i.e., 01-010 to 190; 17 - 170 to 350. Transmit diameter in nautical miles. Examples: C8= Circular eye 8 miles in diameter. E09/15/5=Elliptical eye, major axis 090-270, length of major axis 15 NM, length of minor axis 5 NM. CO8-14=Concentric eye, diameter inner eye 8 NM, outer eye 14 NM.		
N	12345/N/A	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; 1-1500 ft; 9-925mb; 8-850mb; 7-700mb; 5-500mb; 4-400mb; 3-300mb; 2-200mb; NA-Other		
O	1 / 1 NM	NAVIGATION FIX ACCURACY / METEOROLOGICAL ACCURACY		
P	REMARKS MAX FL WIND 147 KT NE QUAD 1936 Z			

INSTRUCTIONS: Items A thru 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 for scheduled fixes and at the Flight Director's discretion for unscheduled (immediate) fixes.

NOAA AIRCRAFT OPERATIONS CENTER

Flight ID 030912I



1. TENNIS

PILOT

2. TENNISSEN

COPLOT

3. FLOYD

FLIGHT ENGINEER

4. BLACK, M

STATION 1

5. FLAHERTY

FLIGHT DIRECTOR

6. NEWMAN

NAVIGATOR

7. DAMIANO

STATION C3X

8. FRENCH

STATION C3X

9. ULHOLAN

STATION 2

10. ROGERS, R

STATION 3

11. SMITH, J

STATION 3

12. LYNCH

STATION 4

13. STRONG

PROJECT SEAT

14. ~~STRONG~~

PROJECT SEAT

15. TONG

STATION 5

16. ZEHR

STATION 7

17. WALSH

STATION 7

18. SANS SOCI

STATION 8

19. BAST, G

DINETTE

20.

GALLEY

21.

GALLEY



NOAA P-3 N43RF

CBLAST- HURRICANE ISABEL

INVESTIGATION FLIGHT 2



Flight ID: 030913I

Sensor or system

INE

Accelerometer

Temperature Probe

Dew Point Probe

Altitude (for vertical wind)

Static Pressure

Dynamic Pressure

Time Source

Constants File

Number or Name

2

2

1

1 (General Eastern)

Radar Altimeter 159

Rosemount Fuselage

Rosemount Fuselage 1281

Micro 99

CO3033.CON

Notes:

There were several time/data gaps during this flight which occurred during the times 195141-195150, 212651-212700, 212751-212800, 212821-212830, 212851-212900, 212921-212930, 212951-213000, 213021-213030, 213051-213100, 213121-213130, 213151-213200. Due to these data gaps, processing of the data terminated at 212600, 3 minutes before landing.

RA-232 was substituted for RA-159 from 145201-145558 (take-off), 200122-200201, and 211839-212600 (landing) due to spiking. Due to a large PQAF (Dynamic Attack Pressure) - PQF1 (Dynamic Pressure) separation caused by low-level flying, PQF1 was substituted into PQAF with an offset of 2.1 to minimize this difference from 181319-193256..

All other instruments worked optimally during the flight. However, several times during the flight, the dewpoint temperature exceeded the ambient temperature resulting in a RH >> 100%. This was likely due to heavy rain (as reflected in the J-W Liquid Water Sensor data), a wet-bulb effect on the total temperature sensor, and/or an artificial warming of the dewpoint sensor as it tried to remove excess moisture. For times where the RH% was consistently greater than 120%, corrections were made to the dewpoint data (175330-181800).

The aircraft INE positions were renavigated with respect to GPS.

SPECIAL NOTE!!! Locations 80, 81 and 82 of record five on the standard tape contain vertical ground, vertical air and vertical speeds, respectively, computed using Dave Jorgensen's vertical wind algorithm. It is recommended that these values be used for vertical wind analysis.

	Takeoff	Landing
Aircraft Static Pressure	1012.5 mb	1008.9 mb
Corrected Tower Pressure	1011.1 mb	1009.5 mb

Flight Director:

Paul Flaherty (813) 828-3310 ext. 3094

Drop #

Flight ID : 0309/21

Landing : _____

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Winds Time	Operator	Comments	
1	023 235 082	1	Ø	1659	15	RT	90 m/s	✓
2	023 235 055	2	Ø	1659	12			✓
3	022 945 189	3	Ø	1659	20	-	21 37N 92omb 58°08'W	✓
4	023 235 084	4	Ø	1700	17			✓
5	023 235 169	1	+3	1724	84			✓
6	022 815 126	2	Ø	1725	39			✓
7	023 235 079	3	Ø	1725	30			✓
8	023 235 052	4	Ø	1726	30			✓
9	023 235 112	1	+4	1935	27	OS		✓
10	022 815 120	2	0	1935	55			✓
11	023 235 081	3	0	1936	33			✓
12	022 945 191	4	0	1936	48			✓
13	022 945 186	1	Ø	1953	19			✓
14	022 815 123	2	Ø	1953	27			✓
15	023 235 076	3	-5	1954	22			✓
16	023 235 057	4	Ø	1954	15			✓
17	023 235 248	1	-5	2024	33			✓
18	23 235 118	2	Ø	2031	38			✓
19		3						
20		4						

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N43RF AXBT DROP LOG

Project : Hurr '03 / CBLAST

Mission : Hurr. Isabel Flight ID : 030912i

Operators : _____

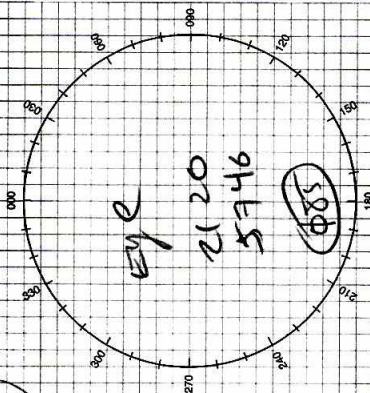
Take Off : _____ Landing : _____

[illegible]

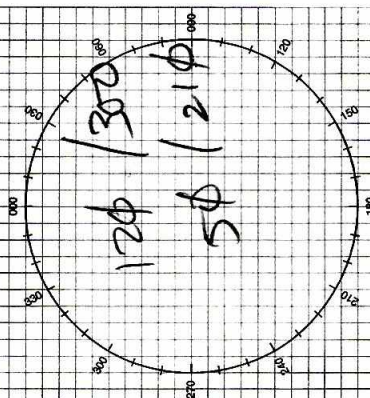
$$\frac{2}{\phi}$$

MISSION LOG

PAGE ____ OF ____



A circular diagram with a scale from 0 to 360 degrees. The scale is marked every 30 degrees (0, 30, 60, 90, 120, 150, 180, 210, 240, 270, 300, 330, 360). The word "eye" is written in the center. To the right of "eye" are the numbers "2120" and "5746". To the right of these numbers is a circled "5000".



A circular diagram with a scale from 0 to 360 degrees. The scale is marked every 30 degrees (0, 30, 60, 90, 120, 150, 180, 210, 240, 270, 300, 330, 360). The text "120/300" is written in the center. To the right of "120/300" is the text "50/210".

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	MIF/VOICE	HF/ICW	MF/ICW
243.0	121.5	2182 KHZ	8364 KHZ	500 KHZ

MAYDAY, MAYDAY, MAYDAY

THIS IS NOAA _____, NOAA _____, NOAA _____

- POSITION _____ N / S _____ E / W AT _____ Z

- HEADING _____ TRUE/MAG _____

- AT _____ 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 _____

[illegible]