

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

Flt ID: 030916H	From: TISX	To: KMCF
Flt. No: 03-047	Blk In: 1931Z	Time On: 1922Z
ETD: 0930Z	Blk Out: 0954Z	Time Off: 1002Z
ETE: 9+00	Blk Time: 9+47 9.8 Hrs	Flt Time: 9+20 9.3 Hrs
Sponsoring Org: NOAA/NHC	Program: HURRICANE 2003	Purpose: ISABEL

AOC Flight Crew

Aircraft Commander: KENNEDY, P V	Data System: MC MILLAN, S V
Co-Pilot: HALVERSON, H, SILAH, M V	AVAPS: PEEK, B V
Navigator: BRAKOB, D V	System Eng: DELGADO, J V
Flight Eng: TORREY, R V, WADE, S V	AA: MC FADDEN, J V
Flight Director: SHEPHERD, T V, FLAHERTY, P V	AA:
Avionics: ROGERS, M V	Crew Chief: CURRY, J V

Participating Scientists / Visitors

Name (Last, First)	Activity on Aircraft	Affiliation
CHANG, P V	PI	NESDIS
ESTEBAN, D V	IWRAP	UMASS
KERR, B V	"	"
JELENAR, Z V	"	NESDIS
ROGERS, R V	RADAR	HRD
LEIGHTON, P V	HAPS	"

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

Storm Name: **ISABEL**
Mission ID: **NOAA2 1613A ISABEL**

KING LW INOP
J/LW LW FLAKY

12Z EYE 27.0 70.8
15Z EYE 27.2 71.1

Recco Times

1005 1612
1031 1637
1106 1710
1129 1733
1159 1753
1259 1817
1324 1839

Fix # Fix Time

6 1 1231
6 2 1500

1891
954 947
1424 1402
1543
(See reverse for additional remarks)

2515 6845

2306 1019

02 1216 50 1246

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

Flight ID: 030916H Time Off: 1002 Time On: 1922

XXXXXX	A/C - Takeoff	Wx Station - Takeoff	A/C - Land	Wx Station - Land
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Pressure	<u>1012.9</u>	<u>29.92</u>	<u>1012.7</u>	<u>29.93</u>
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	Number	Data Disposition / Date / Quality
Flight Level Tapes	2	<u>TRS</u>
Radar Tapes	1	<u>Paul Leighton HRD</u>
Cloud Physics Tapes / CDs	1	<u>HRD</u>
Video Tapes	4	
Dropsondes	6	Good: <u>6</u> Bad: <u>(6 NHC)</u>
AXBT		
AXCP		
AXCTD		

Remarks:



NOAA P-3 N42RF
CBLAST/RECCO- HURRICANE ISABEL
MISSION 4 (TISX-KMCF)



Flight ID: 030916H

<u>Sensor or system</u>	<u>Number or Name</u>
INE	2
Accelerometer	2
Temperature Probe	1
Dew Point Probe	1 (General Eastern)
Altitude (for vertical wind)	Radar Altimeter 159
Static Pressure	Rosemount Fuselage
Dynamic Pressure	Rosemount Fuselage 1281
Time Source	Micro 99
Constants File	CO2032.CON

Notes:

There were no time/data gaps during this flight.

RA-232 was substituted for RA-159 from 095901-101445 (take-off) and 190841-192500 (landing) due to spiking.

There were numerous times during the flight where the dewpoint temperature exceeded ambient temperature resulting in an RH>100%. These events were also reflected in the J-W liquid water sensor data. 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 remove excess moisture. No corrections were made during these times.

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	1012.9 mb	1012.7 mb
Corrected Tower Pressure	1010.8 mb	1013.1 mb

Flight Director:

Paul Flaherty (813) 828-3310 ext. 3094

030916H

MSX-KMCF

0959-1925

TDM 1

TT 1

INF 2

AZ 2

RA 159

SUB

RA 232-159

095901-~~101445~~
101445

190841-192500

1055	.5	.3
11 48	.5	.4
1250	2.0	.4
1340	1.8	.7
1440	2.7	.2
1500	3.4	.2
1550	5.1	-.8
1645	7.0	-1.6
1730	6.5	-1.2
1820	8.8	-3.3
1854	8.3	-2.3
1925	10.2	-4.0

DATE 030916		SCHEDULED RX TIME 12Z		AIRCRAFT NUMBER N42RF		FLIGHT DIRECTOR SHEPHERD	
WX MISSION IDENTIFIER NOAA 2 1613A ISABEL						OB NUMBER 8	
VORTEX DATA MESSAGE							
A	1611231 Z		DATE and TIME of FIX				
B	26 DEG 55 MIN N S		LATITUDE of FIX				
	70 DEG 57 MIN W E		LONGITUDE of FIX				
C	NA MB M		MINIMUM HEIGHT of STANDARD LEVEL				
D	NA KT		ESTIMATE of MAXIMUM SURFACE WIND OBSERVED				
E	NA DEG NM		BEARING and RANGE FROM CENTER of MAXIMUM SURFACE WIND				
F	205 DEG 88 KT		MAXIMUM FLIGHT LEVEL WIND NEAR CENTER				
G	117 DEG 57 NM		BEARING and RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND				
H	959 SONDE 958 EXTR MB		MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.				
I	16 C 1220 M		MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE OUTSIDE EYE				
J	20 C 12409 M		MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE INSIDE EYE				
K	16 C 1 NAC		DEWPOINT TEMP / SEA SURFACE TEMP INSIDE EYE				
L	Poorly Defined		EYE CHARACTER: Closed wall, poorly defined, open SW, etc.				
M	C 70		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 / 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 88 KT SE QUAD 1214 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

DATE 030916	SCHEDULED RX TIME 15Z	AIRCRAFT NUMBER N42RF	FLIGHT DIRECTOR FLAHERTY
WX MISSION IDENTIFIER NOAA2 1613A ISABEL			OB NUMBER
VORTEX DATA MESSAGE			
A	16 11500 Z	DATE and TIME of FIX	
B	27 DEG 13 MIN N S	LATITUDE of FIX	
	71 DEG 6 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	320 DEG 75 KT	MAXIMUM FLIGHT LEVEL WIND NEAR CENTER	
G	222 DEG 73 NM	BEARING and RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND	
H	959 MB	MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.	
I	14 C 12114 M	MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE OUTSIDE EYE	
J	18 C 12398 M	MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE INSIDE EYE	
K	16 C 1 N/A C	DEWPOINT TEMP / SEA SURFACE TEMP INSIDE EYE	
L	POORLY DEFINED	EYE CHARACTER: Closed wall, poorly defined, open SW, etc.	
M	C80	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 108 KT 10W QUAD 1251 Z 75 MH 2747 1251 7138 959 mb		

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

1.944

DATE 030916	SCHEDULED RX TIME 1200Z	AIRCRAFT NUMBER NOAA P2	FLIGHT DIRECTOR SHEPHERD
WX MISSION IDENTIFIER			OB NUMBER 8
VORTEX DATA MESSAGE			
A	1611231 Z	DATE and TIME of FIX	
B	260 DEG 55 MIN N S	LATITUDE of FIX	
	70 DEG 57 MIN W E	LONGITUDE of FIX	
C	NAMB M	MINIMUM HEIGHT of STANDARD LEVEL	
D	70 KT	ESTIMATE of MAXIMUM SURFACE WIND OBSERVED	
E	167 DEG 57 NM	BEARING and RANGE FROM CENTER of MAXIMUM SURFACE WIND	
F	205 DEG 88 KT	MAXIMUM FLIGHT LEVEL WIND NEAR CENTER	
G	167 DEG 57 NM	BEARING and RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND	
H	959 MB 2200	MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.	
I	1600 C 1240 M	MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE OUTSIDE EYE	
J	20 C 1240 M	MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE INSIDE EYE	
K	16 C 1 NAC	DEWPOINT TEMP / SEA SURFACE TEMP INSIDE EYE	
L	poorly defined	EYE CHARACTER: Closed wall, poorly defined, open SW, etc.	
M	C 70	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/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	/ / / NM	NAVIGATION FIX ACCURACY / METEOROLOGICAL ACCURACY	
P	REMARKS MAX FL WIND 88 KT SE QUAD 1214 Z SFMR SE WINDS		

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

DATE 030916		SCHEDULED RX TIME 12Z		AIRCRAFT NUMBER N42		FLIGHT DIRECTOR SHEPHERD	
WX MISSION IDENTIFIER NOAA2 1613A ISABEL						OB NUMBER 15	
VORTEX DATA MESSAGE							
A	16 11500 Z		DATE and TIME of FIX				
B	27 DEG 13 MIN N S		LATITUDE of FIX				
	71 DEG 06 MIN W E		LONGITUDE of FIX				
C	NAMB N A M		MINIMUM HEIGHT of STANDARD LEVEL				
D	64 KT KT		ESTIMATE of MAXIMUM SURFACE WIND OBSERVED				
E	222 DEG 30 NM		BEARING and RANGE FROM CENTER of MAXIMUM SURFACE WIND				
F	320 DEG 75 KT		MAXIMUM FLIGHT LEVEL WIND NEAR CENTER				
G	222 DEG 13 NM		BEARING and RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND				
H	959 MB		MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.				
I	14 C 12114 M		MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE OUTSIDE EYE				
J	18 C 12318 M		MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE INSIDE EYE				
K	16 C 1 N A C		DEWPOINT TEMP / SEA SURFACE TEMP INSIDE EYE				
L	Poorly Defined		EYE CHARACTER: Closed wall, poorly defined, open SW, etc.				
M	C80		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/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 108 KT NA QUAD 1251 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.

N42RF AVAPS DropSonde Log

N42RF Project: _____ Flight ID: 030916H

Mission: _____ Flight #: _____ System Status: _____

Drop #	Sonde Serial Number	Time (Z)	Chn #	Press. offset	Winds time	Operator Init.	Comments Drop Status	BAD <input checked="" type="checkbox"/>	GOOD <input checked="" type="checkbox"/>
1	020 215 063		1			MEP			
2	020 215 318	1216	1	-1.3	35				✓
3	026 215 319								
4	026 215 061	1231	2		16				✓
5	020 215 316	1246	3						✓
6	022 945 270	1500	1	+1.1	20				✓
7	022 945 134	1517	2		15				✓
8	023 318 004								
9	020 215 063	1622	1		20				✓
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
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26									
27									
28									
29									
30									
31									

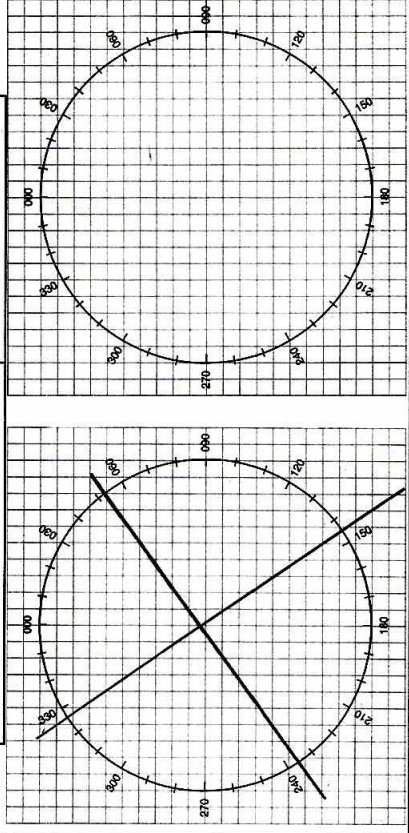
1800Z

0900Z

POS, OMAY

CLEARANCES			
FREQ	ALT	HDG	OTHER
128.65	10K	RWY	37715Q CAP
132.3			
135.2			

MISSION LOG PAGE 1 OF 2



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:

UHFVOICE 121.5 2182 KHZ 8364 KHZ 500 KHZ

HF/CW 2182 KHZ 8364 KHZ 500 KHZ

MAYDAY, MAYDAY, MAYDAY 42, NOAA 42

THIS IS NOAA 42, 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 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	VAR +E=>	TH	DR +R=>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
0949	ENG																			
0954	TAXI																			
1002	BLK																			
1005	XV	17-43.2 65-00.0	19-45.2 64-59.9	0 +1.1	17-45.1 65-00.0	+1.1 0		352	3L	349	233	160	15	4K	230					COY 270/M ✓
1100	Δ	20-58.7 67-22.4	20-58.2 67-22.3	+1.5 +1.1	20-58.0 67-22.2	+1.7 +1.2		318	1L	317	248	130	10	18K	237					NMR 11390 S/S 2200
1200	Δ	25-25.8 69-02.8	25-25.9 69-01.3	-1.1 +1.5	25-25.5 69-02.4	+1.3 +1.4		292	12R	304	267	200	55	16.5K	262					
1300	Δ	28-12.3 71-58.0	28-11.2 71-56.2	+1.1 +1.8	28-10.7 71-57.5	+1.0 +1.5		346	20L	326	210	055	85	7K	229					11396 PRZ
1400	Δ	26-57.0 73-07.1	26-55.2 73-05.1	+1.8 +2.0	26-54.0 73-07.1	+3.0 0		188	0	188	303	010	75	7K	233					8846 sec
1500	Δ	27-32.7 70-34.1	27-28.2 70-34.2	+1.5 +2.5	27-28.4 70-34.2	+1.3 +1.2		076	22L	054	209	140	85	7K	228					
1600	Δ	29-05.5 68-04.0	29-00.8 68-03.2	+4.7 +1.8	29-00.5 68-04.7	+5.0 -1.7		068	13L	055	225	145	55	7K	229					
1700	Δ	29-05.1 73-37.1	28-59.3 73-36.3	+5.8 +1.8	28-58.5 73-38.5	+6.6 -1.4		232	1L	231	290	045	53	7K	236					
1800	Δ	27-05.6 76-33.2	26-58.5 76-31.8	+7.1 +1.4	26-57.4 76-35.9	+8.2 -2.7		283	6L	277	274	010	25	12200	261					
1907	Δ	27-58.2 82-06.1	27-41.8 82-05.2	+7.8 +1.9	27-43.2 82-08.9	+9.0 -2.8		236	1L	235	256	050	20	4.5K	231					
1922	LAND	27-51.0 82-21.2	27-43.4 82-30.1	+7.6 +1.1	27-41.0 82-35.0	+10.0 -3.8														

225 150 2700 70-18

OP OMAY D- PBT BRDGE 12200

1758Z

R3

134.8