

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

FLT ID: 20120827H2	From: KJAX	To: KJAX
FLT #: 20	Blk In: 0342 Z	Lnd Time(on): 0333 Z
ETD: 20 Z	Blk Out: 1950 Z	T/O Time (off): 1958 Z
ETE: 7:50	Total Blk: 7.9	Total Flt: 7.6
Sponsoring Org: EMC/HRO	Program: TDR	Purpose: ISAAC

AOC Flight Crew

Aircraft Commander: <u>Harrison</u>	Data System: <u>Lynch, T</u>
Co-Pilot: <u>Kibbey, Martin</u>	Avaps: <u>Naehel</u>
Navigator: <u>Brakob, I</u>	System Engineer: <u>Paul</u>
Flight Eng: <u>Klippel, I</u>	AA:
Flt Director: <u>Williams, Flaherty</u>	AA:
Avionics: <u>Richards</u>	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	1012.8	1012.5	1012.0	1012.6

ATIS - Takeoff

ATIS - Land

Data Source	Number	Data Disposition / Date / Quality / File Name(s)
Flight Level Tapes		
Radar Tapes		
Dropsondes	33	Good: 33 Bad: Sent:
AXBT	8	

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: <u>A1092012</u>		1	
		2	
		3	
		4	36 0116Z
Mission ID: <u>2809A ISAAC</u>		5	46 0211Z

48 obs 48 h obs
5 vt

1543 H600

33 sandos

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FLT ID:	T/O Time: Z	Lnd Time: Z
Name (Last, First)	Activity on Aircraft	Affiliation
Runion, Jason		
Reasor, Paul		
Bucci, Lisa		

Remarks:

VT
EFG dis
B des

265

110 ~

bad wind on

hdob

234630

NOT in rest of data

5k

17 522

2607
8559

SLP 985
544

TEAL76

002

032 teal 77

813

828

4529



N42RF ERROR SUMMARY
TS ISAAC, KJAX - KJAX
27 Aug 2012



Flight ID: 20120827H2

<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/2012/20120827H2
Constants File	20120827H2/AAMPSCconfig/core/n42.xml

Local Met Data:	<u>Takeoff (1958Z)</u>	<u>Landing (0333Z)</u>
Aircraft Static Pressure (PSM.2)	1012.8 mb	1012.0 mb
Tower Pressure (corrected)	1012.5 mb	1012.6 mb

Notes:

There was a data gap in all parameters from 00:00:08Z – 00:00:50Z.

The Edgetech dewpoint, TDM.2, performed best and was used as default. However, during one erroneous spike caused by a quick increase in altitude, it was substituted with TDM.1 directly from 02:19:34Z – 02:19:49Z using TDM.2X = TDM2.1. 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 Novatel Alt, Lat and Lon (GPS.3) had 2 data spikes at 02:41:35Z and 03:02:40Z. The blended inertial-GPS solution Alt, Lat and Lon (I-GPS.1) is the default position source.

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 33 GPS dropsondes and 8 AXBT's released from the aircraft.

Flight Director:
Phone #:

Jess Williams / Paul Flaherty
(813) 828-3310 ext. 3140/3094

NW TO SE

~~2032Z RT~~

~~212 RZ, EPC~~

~~2127 MRC, W I, MTRC~~

~~21 RMTD OS~~

~~RMTD OS~~

~~RAW OS~~

2138 MRC

2152 EPC

R 3 EPC

27 49
87 46

SC

R

Position X
R

28 41
86 36

RTRC

MPC - 0104Z

RMTW

~~RMTW~~

MRC - 0130Z

EPC R

X C

26 54

86 38

W-E

~~RTRC~~

MPC

AC 28 18

85 32

44
26 30
88 60
6 C

26 26

86 10

1 C

1 C

1 C

1 C

1 C

1 C

1 C

1 C

26 47

84 30

7 C

7 C

7 C

7 C

7 C

7 C

7 C

7 C

7 C

6 00 0000
6 00 0000
6 00 0000

0359

25 13
87 33

26 27
86 17

25 15
86 34

980
1245

25 24
85 00

~~RTRC~~
~~230 MTRC~~
RMTW
RMTW
RMTW
MTRC
MTRC
EPC
R

22582

2

DATE	SCHEDULED FIX TIME	AIRCRAFT NUMBER	ARWO
WX MISSION IDENTIFICATION		STORM NUMBER IDENTIFIER	OB
VORTEX DATA MESSAGE			
A	21/22415	DATE AND TIME OF FIX	
B	26 DEG 34 MIN N S	LATITUDE OF VORTEX FIX	
	86 DEG 21 MIN E W	LONGITUDE OF VORTEX FIX	
C	700 2973	MINIMUM HEIGHT AT STANDARD LEVEL	
D	48	ESTIMATE OF MAXIMUM SURFACE WIND OBSERVED	
E	139 18 NM	BEARING AND RANGE FROM CENTER OF MAXIMUM SURFACE WIND	
F	212 deg 70 kt	MAXIMUM FLIGHT LEVEL WIND NEAR CENTER	
G	132 37 NM	BEARING AND RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND	
H	EXTRAP 981	MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.	
I	126/3054	MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE OUTSIDE EYE	
J	16 130563	MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE INSIDE EYE	
K	116 NA	DEWPOINT TEMP/SEA SURFACE TEMP INSIDE EYE	
L	POORLY DEFINED	EYE CHARACTER: Closed wall, poorly defined, open SW, etc.	
M	ROA	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	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	
REMARKS			
P	MAX FL WIND 70 kt SE QUAD 2234 Z MAX OUTBOUND FL WIND 52 KT NW QUAD 2251 Z SLP EXTRAP FROM (Below 1500 FT/ 925 MB/ 850 MB/ DROPSONDE) SFC CNTR / NM FROM FL CNTR MAX FL TEMP 16 C 145 / 7 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.			

020

Figure 5-4. Vortex Data Message Worksheet

NOAA • AOC • SED N42RF AVAPS DROP LOG

Lead Tech: Joe Bosko

Project: Hurricane 2012
Take Off: 1958Z

Mission: ISAAC
Landing: 0533Z

Flight ID: 2012082742
Flt Dir: WILLIAMS / PRIORITY

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge \$\$ To	NWS/Comments	Good ?
1	122 715 003	1/8	⊗	2100	SCP	NWS	IP2 combo	✓
2	122 715 013	2/8	⊗	2111	SCP	NWS	MP2A	✓
3	122 715 190	1	⊗	2121	SCP	NWS	RMW ^{Good} ^{EB} ^{2800ft}	✓
4	122 715 252	3	⊗	2125	SCP	NWS	Center Combo	✓
5	122 715 184	4	⊗	2128	SCP	HRD	Triple	✓
6	122 715 044	5	⊗	2129	SCP	NWS	↓ RMW	✓
7	122 455 019	2	⊗	2130	SCP	HRD	↓	✓
8	122 715 024	1	⊗	2140	SCP	NWS	MP2B	✓
9	122 715 007	2	⊗	2152	SCP	NWS	EP 3 combo	✓
10	122 715 017	3/8	⊗	2220	SCP	NWS	IP4 combo	✓
11	122 455 012	1	⊗	2230	SCP	NWS	MP4A combo	✓
12	122 455 132	2	⊗	2236	SCP	NWS	RMW	✓
13	112 115 382	3/8	⊗	2250	SCP	HRD	Triple	✓
14	112 065 277	4	⊗	2251	SCP	NWS	↓ RMW	✓
15	112 115 165	1	⊗	2252	SCP	HRD	↓	✓
16	112 065 029	2	⊗	2258	SCP	NWS	MP4B combo	✓
17	112 115 136	3/8	⊗	2308	SCP	NWS	EP5 combo	✓
18	112 115 388	1	⊗	2324	DAW	NWS	IP6 combo	✓
19	112 115 335	2	⊗	2341	DAW	NWS	MP Combo	✓
20	112 115 157	1/8	⊗	2353	DAW	NWS	Eye / Max Wind Field	✓
21	112 115 018	2	⊗	0000	DAW	NWS	MP	✓
22	111 755 197	1/8	⊗	0006	DAW	NWS	-	✓
23	112 115 301	2	⊗	0019	DAW	NWS	End point 7	✓
24	111 755 016	1/8	⊗	0052	DAW	NWS	IP8 Combo	✓
25	112 115 332	2	⊗	0103	DAW	NWS	MP Combo	✓
26	111 755 009	1/8	⊗	0112	DAW	NWS	Max Winds	✓
27	111 755 200	2	⊗	0131	DAW	NWS	OMP Combo	✓
28	112 115 303	1/8	⊗	0144	DAW	NWS	EP9	✓
29	111 755 203	2	⊗	0159	DAW	NWS	IMP ^{sonde only}	✓
30	112 115 289	1/8	⊗	0207	DAW	NWS	Max winds	✓
31	112 115 064	2	⊗	0211	DAW	NWS	CP Combo	✓
32	112 215 153	4	⊗	0227	DAW	NWS	MP ^{sonde only}	✓
33	112 065 050	1/8	⊗	0237	DAW	NWS	EP ^{sonde only}	✓
34	111 755 014	2	⊗				No Drop tech	

1

DATE	SCHEDULED FIX TIME	AIRCRAFT NUMBER	ARWO
WX MISSION IDENTIFICATION			STORM NUMBER IDENTIFIER
			OB 08
VORTEX DATA MESSAGE			
A	27/212541	DATE AND TIME OF FIX	
B	26 DEG 27 MIN N S	LATITUDE OF VORTEX FIX	
	86 DEG 12 MIN E W	LONGITUDE OF VORTEX FIX	
C	NA	MINIMUM HEIGHT AT STANDARD LEVEL	
D	49	ESTIMATE OF MAXIMUM SURFACE WIND OBSERVED	
E	036 19	BEARING AND RANGE FROM CENTER OF MAXIMUM SURFACE WIND	
F	120 52	MAXIMUM FLIGHT LEVEL WIND NEAR CENTER	
G	33 32	BEARING AND RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND	
H	981	MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.	
I	16 / 2456	MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE OUTSIDE EYE	
J	20 / 2446	MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE INSIDE EYE	
K	14C / NA	DEWPOINT TEMP/SEA SURFACE TEMP INSIDE EYE	
L	Poorly defined	EYE CHARACTER: Closed wall, poorly defined, open SW, etc.	
M	C35	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 / 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		NAVIGATION FIX ACCURACY/METEOROLOGICAL ACCURACY	
P	REMARKS 0	MAX FL WIND 36 KT SW QUAD Z MAX OUTBOUND FL WIND 56 KT SW QUAD 2146 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.			

981.4
7.22/5

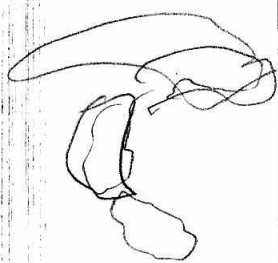
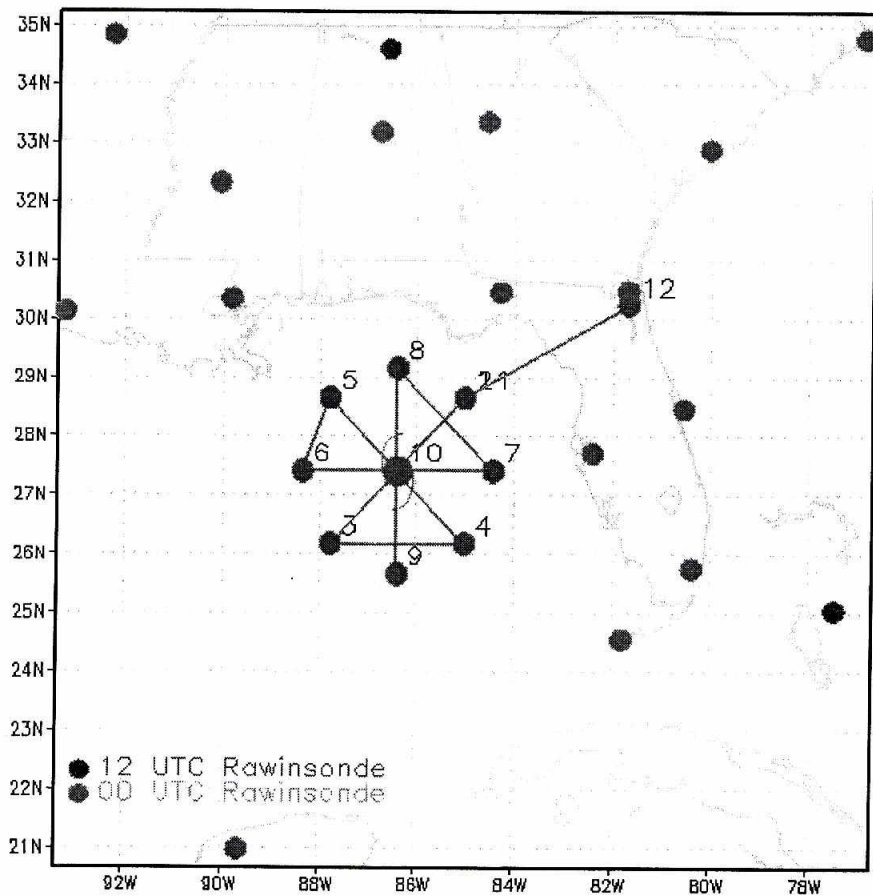


Figure 5-3. Vortex Data Message Worksheet



FIX TYPES
 (G) GPS (I) INS (R) RADIO (V) VISUAL (C) CELESTIAL (D) DR

MISSION LOG PAGE ___ OF ___

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
0225	G	26-28 86-12			315/20																25-50 N
0240	Z	26-36 86-24			310/10																86-46 W
0354	Z	26-48 86-28			340/10																
0117	Z	27-50 86-40			320/10																
0200	Z	27-55 86-54			290/16																
0201	Δ	N 26-27 W 86-46	N 26-29 W 86-43	-2 +3	N 26-29 W 86-43	-2 +1		2W			001	265	248	33	16K	254					
0235	C	CINUP	with WNA		11342																
0300	Δ	29-20 83-50	29-19 83-50	+1 0	29-21 83-48	-1 +2		4W			059	316	164	36	13K	311					
0353	LAND																				
0342	BUC																				

26-54 86-38 port

26-3

88-30