

FLT ID: I960826 FM: TATSX TO: TATSX
 FLT NO: 96-052 BLK IN: 0138Z ATA: 0132
 ETD: 1600Z BLK OUT: 1606Z ATD: 1624
 ETE: BLK TIME: 9:44 9.8 FLT TIME: 9:08 9.2
 SPONSOR ORG: HRD PROGRAM: ~~WV~~ RESEARCH PURPOSE: H. EDUARD

ORO PERSONNEL

AC	KENNEDY	SYS ENG	McNAMARA
CP	KENUL	DATA SYS	LYNCH
NAV	KOZAK	RADAR	
FE	BAST / MOORE	BT/ODW	GONZALEZ
RADIO	SANS SOURCE	CLD PHYS	
FD	DAMIANO / CZYZYK	DOPPLER	

PARTICIPATING SCIENTIST/VISITORS/ORO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
BLACK, M	PI	HRD
MARKS	ASST PI	
ABERSON	ODW	
DODGE	RADAR	
LEIGHTON	ODW	
DORST	PMS	
HAGAN	OBS	

47
 PROPOSED/ACTUAL MISSION/REMARKS (RECCO, FIXES, STORM, PENET, NHOP #)
 T/O delayed due to clearance ~~problems~~ problems and giving
 N42RF 10 minute head start

185Z 195Z 2141Z 2228Z 2259Z
 939MB 938 930 934 1839N 1492N
 1826' 18°35' 18°42' 1844' 5500W
 5441' 54'49' 55'09' 5515' 934 935

2315Z
 1850N
 5526W
 935

NOAA • AOC • SED
N43RF DATA STATION LOG

Project : Hurricanes '96 Mission : Edouard #1 Flight ID : 960826I
 Operators : Lynch
 Take Off : 16:23 Landing : 01:32

RAMS DAT 1 On [8 9]: <u>16:03</u>	RAMS DAT 1 Off: <u>01:38</u>	CPU Selected: <u>A</u> B
RAMS DAT 2 On [8 9]:	RAMS DAT 2 Off:	VCR's Used: <u>N</u> <u>D</u> <u>R</u> <u>D</u>
RAMS DAT 3 On [8 9]:	RAMS DAT 3 Off:	
Printer On: <u>16:03</u>	Printer Off: <u>01:38</u>	
VCR's On: <u>16:05</u>	VCR's Off: <u>01:37</u>	VCR Count: <u>4872</u>
MARS DAT On:	MARS DAT Off:	
PMS DAT On:	PMS DAT Off:	

ASDL Messages							
Message	Time	Message	Time	Message	Time	Message	Time
<u>R</u> V S B	<u>16:27</u>	<u>R</u> V S B	<u>23:32</u>	R V S B		R V S B	
<u>R</u> V S B	<u>16:59</u>	<u>R</u> V S B	<u>00:03</u>	R V S B		R V S B	
<u>R</u> V S B	<u>17:29</u>	<u>R</u> V S B	<u>01:03</u>	R V S B		R V S B	
<u>R</u> V S B	<u>18:00</u>	R V S B		R V S B		R V S B	
R <u>V</u> S B	<u>19:21</u>	R V S B		R V S B		R V S B	
<u>R</u> V S B	<u>19:32</u>	R V S B		R V S B		R V S B	
<u>R</u> V S B	<u>20:01</u>	R V S B		R V S B		R V S B	
<u>R</u> V S B	<u>20:31</u>	R V S B		R V S B		R V S B	
<u>R</u> V S B	<u>21:20</u>	R V S B		R V S B		R V S B	
<u>R</u> V S B	<u>22:03</u>	R V S B		R V S B		R V S B	
<u>R</u> V S B	<u>22:31</u>	R V S B		R V S B		R V S B	
<u>R</u> V S B	<u>23:02</u>	R V S B		R V S B		R V S B	

R = Recco V = Vortex S = Sonde B = AXBT

Data Station Operator Notes

WXXA Edouard

HURRICANE EDOUARD 1996

FLIGHT #1 960826I

TYPE OF DATA -----	SENSOR OR OPTION -----
INE	2
Accelerometer	2
Temperature probe	1
Altitude change option (for vertical winds)	RA-159
Static pressure	Rosemount fuselage
Dynamic pressure	Rosemount fuselage
Time source	Micro 99
Constants file	CO3964.CON

Notes:

Downward spikes in radar altimeter output are a result of overflying land (St. Martin, 1650:30-1652:00).

Radar Altimeter, RA-159 was patched during takeoff due to spike (1623:30-1624:00).

There were 10 electronic spikes/glitches in the radar altimeter between 2100:00-2109:00, all were patched. There were 9 electronic spikes/glitches in the radar altimeter between 2143:00-2152:00, all were patched. Two additional spikes in the radar altimeter were patched between 2211:30-2212:00 and 2228:00-2229:00.

The radar altimeter was set to zero after landing (0132:06-0138:00).

A dip in the radar altimeter from 1852:00-1854:30 was due to a downdraft.

After the 5th penetration into Edouard, the flightcrew flew a pressure altitude (2230:00-0138:00).

Dewpoint temperature #1, DW1, exceeded ambient several times throughout the flight when heavy precip was occurring.

There were 4 ODW dropsondes during the mission: 2059:00, 2316:11

	Takeoff -----	Landing -----
Aircraft static pressure:	1012.5 mb	1012.4 mb
Corrected airport pressure:	1014.6 mb	

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.

Flight Meteorologist: Stan Czyzyk: (813) 828-3310 ext. 3086

7960826

TIME	LAT	LONG	TRK	HD	WD	WS	TA	TD	PA	CA	PK	SP		Ro
170420	1808	6201	86	87	82	17	-6.5	-23.7	5822	6143	483.4	1005.8	ABV CLD	73.2
171500	1811	6111	86	87	83	21	-7.5	-22.9	5822	6139	483.5	1008.1	ABV CLD	74.9
173100	1817	5956	86	87	71	15	-7.5	-22.1	5822	6135	483.8	1008.0	TRW DST	73.1
174700	1822	5838	89	87	47	24	-6.7	-14.9	5817	6131	483.7	1005.1	HAZE	73.9
181600	1823	5647	90	85	22	30	-6.5	-10.6	5812	6106	484.0	1002.8	IN CLD	61.7
182140	descending				10K		feet (spiraling)							
182800	1820	5620	88	81	355	31	11.0	6.9	2930	3035	707.5	1004.9	IN CLD	62.9
184500	1823	5521	85	70	357	24	9.9	11.2	3015	3038	710.3	994.5	RWT	70.1
190030	1937	5458	185	167	90	64	10.5	10.1	3028	2962	704.5	999.5	HD SOUTH	
195600	1835	5449				.1							CENTER	
2015~													END FIX	4
203000	1743	5537	298	301	309	452	9.1	9.1	2945	3026	706.2	1004.1		
2059													DROP	
214100	1842	5509											FIX	
215045	1903	5449	50	74	130	103	9.6	10.2	3019	3058	988	695.8		
2158													TURN 285 TK	
221100	1941	5224	284	225	84	75.5	10.2	9.7	2977	3042	1000.8	702.7	TURN 165 TK	
222800	1845	5515	90	92	226	12	16.9	7.5	3644	3672	934.2	642.7	MARK UP TO 12	
223430					180	105							2ND WIND MAX	
224300													TURN NN	
224600	1855	5420	313	306	164	60.8	6.4	6.8	3667	3784	643.6	1000		
230005													TURN S	
230330	1938	5525	181	164	97	84	7.8	4.6	3671	3744	643.1	992.9		
231500	1850	5526				1.1							MARK	
231611	1846	5527	184	195	267	22	16.3	8.0	3647	3359	644		DROP	
232945													TURN CLIMB	
002900	1803	6014	270	272	63	18.7	-11.0	-23.0	6425	6791	444.7	1007.1		
005800													DESCENDING	
010030													LEVEL 16K	
010800													DESCENDING	
011300	1748	6411	257	258	63	11.9	17.5	12.6	1433	1480	858	1012	IN CLD	
011400													BELOW CLOUD	

DATE	SCHEDULED FIX TIME	AIRCRAFT NUMBER N43RF	ARWO D. AMIANO
MANOP HEADING (PRECEDENCE IMMEDIATE)			
MISSION IDENTIFIER AND OBSERVATION NUMBER NOAA3 WXWA EDUARD OB 06			
(ABBREVIATED) <u>(DETAILED)</u> VORTEX DATA MESSAGE			
A	26/1855 Z	DATE AND TIME OF FIX	
B	18 DEG 26 MIN (N) S	LATITUDE OF VORTEX FIX *	
	54 DEG 41 MIN (W)	LONGITUDE OF VORTEX FIX *	
C	700 MB 2570 M	MINIMUM HEIGHT AT 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	340 DEG 125 KT	MAXIMUM FLIGHT LEVEL WIND NEAR CENTER	
G	270 DEG 11 NM	BEARING AND RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND	
H	939 MB	MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM WITHIN 1500 FT OF SEA SURFACE	
I	12 C/ 3232 M	MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE OUTSIDE EYE	
J	17 C/ 3487 M	MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE INSIDE EYE	
K	9 C/ NA C	DEWPOINT TEMP/SEA SURFACE TEMP INSIDE EYE	
L	OPEN NE	EYE CHARACTER: Closed wall, poorly defined, open SW, etc.	
M	C22	EYE SHAPE/ORIENTATION/DIAMETER. Code eye shape as: C - Circular; CO - Concentric; E - Elliptical. Transmit orientation of 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 15NM, length of minor axis 5NM. CO8-14 - Concentric eye, diameter inner eye 8 NM, outer eye 14 NM.	
N	18 DEG 26 MIN (N) S	CONFIRMATION OF FIX: Coordinates and Time *	
	54 DEG 41 MIN (W)		
	26/1855 Z		
O	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 - 1500 ft; 8 - 850 mb; 7 - 700 mb; 5 - 500 mb; 4 - 400 mb; 3 - 300 mb; 2 - 200 mb; 9 - Other.	
P	2/4 NM	NAVIGATION FIX ACCURACY/METEOROLOGICAL ACCURACY	
Q	REMARKS MAX FL WIND 125 KT W QUAD AT 1854Z EXCELLENT RADAR PRESENTATION SLP FROM DROPSONDE AT 700 MB		

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 for scheduled fixes and at the ARWO's discretion for unscheduled (intermediate) fixes.

* CHECK SUM REQUIRED IN WESTPAC.

DATE	SCHEDULED FIX TIME	AIRCRAFT NUMBER	ARWO
		N43RF	HANIZANO
MANOP HEADING (PRECEDENCE IMMEDIATE)			
MISSION IDENTIFIER AND OBSERVATION NUMBER			
N0A03 WXWA EDUARD OB #6			
(ABBREVIATED) <u>(DETAILED)</u> VORTEX DATA MESSAGE			
A	26/1855 Z	DATE AND TIME OF FIX	
B	18 DEG 26 MIN (N) S	LATITUDE OF VORTEX FIX *	
	54 DEG 41 MIN (E) W	LONGITUDE OF VORTEX FIX *	
C	700 MB 2570 M	MINIMUM HEIGHT AT 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	340 DEG 125 KT	MAXIMUM FLIGHT LEVEL WIND NEAR CENTER	
G	270 DEG 11 NM	BEARING AND RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND	
H	939 MB	MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM WITHIN 1500 FT OF SEA SURFACE	
I	12 C/232 M	MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE OUTSIDE EYE	
J	17 C/487 M	MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE INSIDE EYE	
K	9 C/NA C	DEWPOINT TEMP/SEA SURFACE TEMP INSIDE EYE	
L	OPEN NE	EYE CHARACTER: Closed wall, poorly defined, open SW, etc.	
M	C22	EYE SHAPE/ORIENTATION/DIAMETER. Code eye shape as: C - Circular; CO - Concentric; E - Elliptical. Transmit orientation of 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	18 DEG 26 MIN (N) S	CONFIRMATION OF FIX: Coordinates and Time *	
	54 DEG 41 MIN (E) W		
	26/1855 Z		
O	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 - 1500 ft; 8 - 850 mb; 7 - 700 mb; 5 - 500 mb; 4 - 400 mb; 3 - 300 mb; 2 - 200 mb; 9 - Other.	
P	2/4 NM	NAVIGATION FIX ACCURACY/METEOROLOGICAL ACCURACY	
Q		REMARKS	
MAX FL WIND 125 KT W QUAD 1854Z EXCELLENT RADAR PRESENTATION SLP FROM DROPSONDE AT 700 MB			

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NOAA • AOC • SED Flight Performance Log

Aircraft : N43RF

Project: Hurricane '96

Mission : Edouard #1

SED Crew: Lynch, Gonzalez, McNamee

Flight ID : 960826I

Pre-Flight: 14:00 z

Take-Off: 16:23

Landing: _____

System		Pre-Flight	In-Flight	Post-Flight			
N A V	INE #1	Aligned to : 1	✓ TL		413.2	-1.7	5
	INE #2	Aligned to : 1	✓ TL		45.1	-1.8	2
	GPS		✓ TL		Lat	Long	GS
R A D A R	Nose		✓ TL				
	L/F	R/T SN : 103	✓ TL				Mod Switch Off? RDM
	Tail	R&T SN : 2021 201	✓ TL				Mod Switch Off? RDM
	ASAU's & RCU		✓ TL				
	MARS Data System		✓ TL				# DATs : 1
P M S	2DG-C	Ch 1/64: 1	✓ TL				
	2DG-P	Ch 1/64: 1	✓ TL				
	FSSP	Ref VDC: 8.4	✓ TL				
	SEA Data System		✓ TL				# DATs : 1
T E M P		Cal High	Cal Low		Cal High	Cal Low	
	Temp #1	+30.7	-30.3	RDM	30.6	-30.2	
	Temp #2			RDM			
	Temp #3	(Starboard)		NI			
	Dewpoint #1			RDM			
	Dewpoint #2	(AOC)		RDM			
P R E S S	Attack Angle (AP/DAP)		RDM				
	Slip Angle (BP/DBP)		RDM				
	Differential (PQ1/PQ2/PQ3)		RDM				
	Absolute (PS1/PS2)		RDM				
	Radome Transducers		Plugs? JG ①				
	Cabin Transducer (Station 5)		RDM				
F L T L V L	Apn-159	SN: 71-01	✓ TL		Off? : ✓		
	Apn-232	SN: 1699	✓ TL		Off? : ✓		
	King Liquid Water		NU				
	J&W Liquid Water		✓ TL				
	Down PRT-5 (SST)		RDM				
	Side PRT-5 (CO ²)		RDM				
	RAMS Data System		✓ TL				# DATs : 1
M I S C	ASDL		✓ TL		Off? : ✓ TL		
	Eppl Radiometers (PSP / PIR)		NI				
	Exterior Walk Around		✓ JG				
	Video	① ② ③ ④	✓ TL				
	AXBT Receivers		NI				
	AXBT Sonobouys		#On Board : 0	# Dropped : 0	# Good : —		
	ODW System		✓ JG	③	# Tapes : 2		
	ODW Dropsondes		#On Board : 32	# Dropped : 4	# Good : 3		
	FCU	C D A	✓ TL		UPS Off? :		
		Charge Probe		NU			
U S E R	HRD Workstation		✓		#1 (2G) : 8154		
	Field Mills	① ② ③ ④	✓ TL		#2 (2.5G) : 608A		
	Lawrence Water Collector		✓		#3 (3G) : 5907		
	Formvar		NU		#4 (3.5G) : 2892		

DATE	SCHEDULED FIX TIME	AIRCRAFT NUMBER	ARWO
08/26/96			
MANOP HEADING (PRECEDENCE IMMEDIATE)			
MISSION IDENTIFIER AND OBSERVATION NUMBER			
N0AA3 WXXXA EDOLARD 08 11			
(ABBREVIATED) (DETAILED) VORTEX DATA MESSAGE			
A	26059	Z	DATE AND TIME OF FIX
B	19 DEG 39 MIN (N) S		LATITUDE OF VORTEX FIX *
B	55 DEG 00 MIN E (W)		LONGITUDE OF VORTEX FIX *
C	700 MB 2552	M	MINIMUM HEIGHT AT 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	285 DEG 112	KT	MAXIMUM FLIGHT LEVEL WIND NEAR CENTER
G	225 DEG 11	NM	BEARING AND RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND
H	937: EXT RAP?	MB	MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM WITHIN 1500 FT OF SEA SURFACE
I	12 CI 3330	M	MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE OUTSIDE EYE
J	17 CI 3485	M	MAXIMUM FLIGHT LEVEL TEMP/PRESSURE ALTITUDE INSIDE EYE
K	7 CI NA	C	DEWPOINT TEMP/SEA SURFACE TEMP INSIDE EYE
L	OPEN SE		EYE CHARACTER: Closed wall, poorly defined, open SW, etc.
M	E09/25/20		EYE SHAPE/ORIENTATION/DIAMETER. Code eye shape as: C - Circular; CO - Concentric; E - Elliptical. Transmit orientation of 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	18 DEG 39 MIN (S)		CONFIRMATION OF FIX: Coordinates and Time *
N	55 DEG 00 MIN E (W)		
N	2059	Z	
O	1234 # 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 - 1500 ft; 8 - 850 mb; 7 - 700 mb; 5 - 500 mb; 4 - 400 mb; 3 - 300 mb; 2 - 200 mb; 9 - Other.
P	1 (12)	NM	NAVIGATION FIX ACCURACY/METEOROLOGICAL ACCURACY
Q	REMARKS		
Q	MAX FL WIND 130 KI - N QUAD 1953Z SLP FROM DROPSONDE AT 700 MB		

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* CHECK SUM REQUIRED IN WESTPAC.

DATE : 8/26/96

TO : Chief, AOC Flight Operations

FROM : Pilot/Flight Director, Aircraft N43RF ON 0138 BLOCKTIME
OFF 1606 9.8

SUBJECT: Hazardous Duty

PURPOSE OF FLIGHT: HURRICANE RESEARCH IN EDOUARD

Hazardous Duty Pay is required for flight made on 8/26/96
(DATE)

Request based on HURRICANE RESEARCH IN EDOUARD CAT 4
HURRICANE, 6 PENETRATIONS

Personnel on board authorized Hazard Pay:

- BAST, G _____
- MOORE, B _____
- CZYZYK, S _____
- DAMIANO, B _____
- SANS SOU.I, D _____
- McNAMARA, R _____
- LYNCH, T _____
- GONZALEZ, J _____

PILOT/FLIGHT DIRECTOR: [Signature]

APPROVED: X DISAPPROVED: _____

CHIEF, AOC FLIGHT OPERATIONS: [Signature]

