

19930828H1-FDIR

Hurricane Emily 93, Flight 2

Flight 930828H N42RF (Bermuda - Miami)

<u>Type of data</u>	<u>Sensor or option</u>
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 29
Constants file	CO2931.CON

Notes:

Vertical winds were calculated using the radar altitude source, causing spurious values while the aircraft crossed mountainous islands (not much of a problem on this flight). This problem does not occur over the water.

INE2 positions were corrected with reliable GPS positions.

A new algorithm for dynamically correcting Dynamic and Static Pressure (PQ and PS) is in place for Hurricanes 93, and is described in the Record 2 section of the Standard Tape Format Sheet. The net result is a slightly higher PS and PQ than is found on the 10-second real-time printout.

Special Note: Locations 80, 81, and 82 of Record 5 on the AOC Standard Tape contain Vertical Groundspeed, Vertical Airspeed and Vertical Winds, respectively, computed using Dave Jorgensen's vertical wind algorithm.

	<u>Take Off</u>	<u>Landing</u>
Aircraft static pressure	1019.0 mb	1014.5 mb
Corrected tower pressure	1020.5 mb	1016.2 mb

Flight Meteorologist: Jack Parrish

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TITLE (MAX 21 CHARACTERS) -- EX HURRICANE PAINE
1. EMILY #2
MYMMDDL FLIGHT ID EX: 930316H
030828H
IHMMSS START TIME -99999 DEFAULT TO START OF DATA FOR PRINTOUT ONLY
175101
IHMMSS END TIME 999999 DEFAULT TO END OF DATA FOR PRINTOUT ONLY
010930
IHMMSS TAKE OFF TIME
175800
* NUMBER OF TAPE (I2) ... FOR STANDARD TAPE OUTPUT ONLY
01
* -----LOGICAL UNIT OF INPUT DATA (I1) 4, 8 OR 9 FOR TAPE DRIVE
1 1 FOR READ FROM DISK
* -----LOGICAL UNIT OF OUTPUT TAPE DRIVE (I1) [FOR STANDARD TAPE ONLY]
1
* -----LOGICAL UNIT OF PRINTER (I1)
5
* -----DATE OF PROGRAM (MMDDY)
04092
* -----STATIC PRESSURE PROBE (I1)
* 1 = PSW (WINGTIP)
* 2 = PSF (CO-PILO/FUSELAGE)
* 3 = FUTURE USE
2
* -----DYNAMIC PRESSURE PROBE (I1)
* 0 = PQW (WINGTIP)
* 1 = PQF1 (FUSELAGE 1281)
* 2 = PQF2 (FUSELAGE 1221)
* 3 = FUTURE USE
1
* -----INE SELECTION (I1)
* 1 = INE 1
* 2 = INE 2
2
* -----ACCELEROMETER (I1) - USUALLY THE SAME AS YOUR INE SELECTION
2
* -----TOTAL TEMPERATURE PROBE (I1) [1 OR 2]
1
* -----DEWPOINT TEMPERATURE PROBE (I1) [1 OR 2]
1
* -----ALTIMETER OPTION (I1) - FOR VERTICAL WIND COMPUTATION
* 0 = PRESSURE ALTITUDE (OVER LAND)
* 1 = RADAR ALTITUDE APN-159 (OVER WATER)
* 2 = RADAR ALTITUDE APN-232 (OVER WATER)
1
* -----PRINTOUT RATE, SECONDS (I2)
10
* -----WINDSPEED/DIRECTION RUNNING AVERAGE TIME, SECONDS (I2)
10 ! FOR STANDARD TAPE OUTPUT ONLY
* -----TIME OPTION (I1)
* 1 = MICRO 29
* 2 = TIME BASE GENERATOR #1
* 3 = TIME BASE GENERATOR #2
1
* -----NAME OF CONSTANTS FILE EX CO3863.CON
CO2931.CON
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U.S. DEPT. COMM./NOAA/OAO - DATA SECTION WORK FORM NO.1 OROWF1 FILE

FLT ID: 930828N	FM: BERMUDA	TO: MIA
FLT NO: 93-069	BLK IN: 0110Z 010930	ATA: 0105
ETD: 18Z	BLK OUT: 1751	RTD: 1758
EYE: 9+	BLK TIME: 7:19(7.3)	FLT TIME: 7:07(7.1)
SPONSOR ORG: ITRD	PROGRAM: EMILY 83	PURPOSE: Env. Interact on

OAO PERSONNEL

AC Tucknor ✓	SYS ENG Roles ✓
CP Player ✓	DATA SYS Bur ✓
NAV Strong ✓	RADAR Gonzales ✓
FE Wade Torrey ✓	BT/ODW →
RADIO Amazon ✓	CLD PHYS
FD Parrish ✓	DOPPLER Kinney ✓

PARTICIPATING SCIENTIST/VISITORS/OAO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
Carmach, J. ✓	P.I.	ITRD
Black, M. ✓	Radar	h
De Maria, M. ✓	ODW	h
Paler, A. ✓	C-Seat	U Mass
BERMUDA 11 FT		

PROPOSED/ACTUAL MISSION/REMARKS (RECCO, FIXES, STORM, PENET, NHOP #)

FIX 1921Z 28 05N, 67 45W 975 mb
 FIX 2129Z 28 22N, 68 01W 976 mb
 FIX 2234Z 28 35N, 68 08W 976 mb.

4 penetrations.

930828H N. EMILY ENVI. INT

21 34
67 33
2547
8847
17032
979

Time	LAT	LONG	TK	WD	WS	PA	GA	TA	TD	SP	PS			
1803	32123	6449.6	231	153	19	1532	1678	16.5	12.3	1018.7	832.4	T		
809	3158	6512	233	122	20	3321	3558	6.7	-5.5	1018.5	667.5	1		
181730	3135.4	6548.1	234	113	23	4266	4534	0.1	-9.3	1018.6	595.1	-	141K	
84145	3015.5	6731.7	201	81	35	4266	4499	-0.2	-2.1	1014.3	555.2			
1854	V	40 5K												
1904	28334	6812.6	198	44	65	1554	1536	15.2	-	1002.8	841.8	-	51K	
1912	2801.0	6822.1	93	319	64	→ 70 FTL								
1921	2805	6745						23.5	16.3	974				
1947	2836	6731	117	122	74	1525	1462	18.4	16.6	996.5	8425		MILLINO (ND DE QUAT)	
201215	2838.0	6729.3	107	123	78	1529	1468	17.6	16.4	997.5	843.1		70 FIX TA 2100R	
2042	2924.2	6719.5	~	114	59	1524	1558	17.0	14.8	1008.7	843.2			
2189	2822	6801						21.1	16.7	976			5 212 FIX	
2154	2823	6800								977				
222545	28523	6733.3	239	132	75	1553	1498	17.3	17.1	997.3	846.0			
2234	2835	6808								976				
230245	2742	7013.1	250	322	28	6109	6444	-10.8	78.8	1011.2	464.9		- 20K PA	
235345	26208	7442.8	246	0	8	10107	6467	-10.8	-32.8	1015.1	465.1			
242015	2541.4	7709.9	262	160	2	10108	6460	-9.9	-14.7	1011.1	464.9			
2458	2543.3	8017.1	270	248	7	2106	2221	13.6	10.1	1014.3	786			
0110	25482	8017.8											25208 8015.1 131K	

0105

A/C COMMANDER		NAVIGATOR		A/C NO.		MISSION NO.		TIME AIRBORNE		LOCATION TXKF		DATE		PROJ. NAME	
TICKNOR		STRONG		N42		93-069		1758		BDA		28 Aug 93		EMILI 93	
TIME OF ENTRY	POSITION	TYPE INE USED	INE #1 POSITION	LAT LON COR'S	INE #2 POSITION	LAT LON COR'S	ALT GS	TH TK	REMARKS						
1745	32-21.6 64-39.9	4 2	✓		✓				CHOCKS						
1856	29-9.0 68-1.5	6PS 2	29-09.5 68-01.5	-5 0	29-10.0 68-02.0	-1.0 -5	290	186 R7	2.2						
1920-18	28-05.0 67-44.9	6PS 2	28-05.8 67-44.2	-8 +1.2	2805.8 67-44.6	-8 +3	5K 230		28-05 N 67-45 W						
2042	29-24.0 67-18.7	6PS 2	29-25.2 67-18.2	-1.2 +1.5	29-25.5 67-18.4	-1.5 +3	5K 280		PDOP 4.0						
2128.4	28-21.9 68-00.6	6PS 2	28-22.3 68-00.4	-4 +2	28-24.0 67-59.6	-2.1 +1.0	5K 200		28-22 N 68-01 W						
2154.30	28-17.0 68-05.0	6PS 2	28-18.1 68-04.2	-1.1 +8	28-19.3 68-04.0	-2.3 +1.0	5K 260	159 145	28-19 N 68-05 W						
2234	28-34.8 68-6.8	6PS 2	28-35.3 68-07.0	-5 -2	28-36.6 68-04.9	-1.8 +1.9	5K 250	244 239	28-35 N 68-08 W						
2340	26-42.8 73-25.7	6PS 2	26-44.1 73-24.5	-1.3 +1.2	26-45.3 73-23.9	-2.5 +1.8	20K 303	256 253	PDOP 2.5						
0051	25-28.4 79-47.8	6PS 2	25-30.3 79-45.6	-1.9 +2.2	25-32.1 79-45.5	-3.7 +2.3	8K 275	302 302	PDOP 2.3						
0110	25-48.2 80-17.8	4 2	25-49.7 80-16.3	-1.5 +1.5	25-50.8 80-15.0	-2.6 +2.8		4 3	CHOCKS						
									701						

ATC CLEARANCE:

ENROUTE CLEARANCES:

TYPE OF FIX: (1) DE (2) RADIO (3) CELESTIAL (4) VISUAL (5) LORAN (6) RADAR (7) DOPPLER - INERTIAL

FLIGHT PLAN

TEAL 60 10K

PROPOSED T.O.

18007

ACTUAL T.O.

1758

[illegible]

SYS	BEGIN ALIGN TIME	NCS CONN	Ω AID	TIME OUT OF COARSE	ALIGN STS 0-5	(1) TIME INTO NAV.	(2) TIME OUT NAV.	ΔT (2)(1)	TERMINAL ERRORS		
				ELAPSE ALIGN POST TIME					LAT	LONG	G S
INS 1	1445				0	1744	0110	7426	-1.5	+1.5	4
INS 2 IMU	✓				5	✓	✓	✓	-2.6	+2.8	3

ALIGN REMARKS:

NORMAL, NO ERRORS

OTHER REMARKS: