

# Hurricane 2000

## Pre-Storm Warm Pool Eddy

000913H

<u>Sensor or system</u>	<u>Number or Name</u>
INE	1
Accelerometer	1
Temperature Probe	1
Dew Point Probe	1
Altitude (for vertical wind)	RA-159
Static Pressure	Rosemount Fuselage
Dynamic Pressure	Rosemount Fuselage
Time Source	Micro 99
Constants File	CO2004.CON

**Notes:**

There were several small time gaps in the data, 2348:01-2348:20, 2348:31-2348:40, 2349:01-2349:20, 2349:31-2349:50, 2350:01-2350:20, 2350:51-2351:10, 2352:01-2352:10, 2352:41-2352:50, and 2353:01-2353:10.

Radar altitude (RA-159) was replaced by RA-232 at takeoff due to a spike (1620:01-1628:55). RA-159 was also replaced by RA232 just prior to landing due to a spike (0110:01-0124:00).

Several small spikes were removed and patched from the static pressure (PSF) (1919:31-1920:00, 1921:31-1922:00, 1924:01-1925:45, 1939:01-1941:30, 2042:00-2051:30, 2105:01-2108:30, 2114:30-2117:00, 2154:30-2158:00, 2211:31-2212:00, 2234:31-2235:00, 2241:01-2241:30, 2248:31-2249:30 and 2258:01-2259:00).

Dewpoint (DW1) was replaced by DW3 due to poor performance from 1647:58-1711:10 with an offset of -1.5, 1753:10-1804:02 with an offset of -1.6, and 2348:08-0104:30. DW1 was replaced by DW2 due to poor performance from 0104:30-0124:00. DW1 had spike removed and patched due to balancing from 1700:21-1702:30. DW1 had a spike removed and patched from 1921:31-1922:10. DW1 was replaced by DW3 due to several small spikes (1924:02-1925:46 with an offset of -2.0, 1939:20-1941:27 with an offset of -2.2, 2105:02-2108:33 with an offset of -2.1, 2114:37-2117:30 with an offset of -2.1, and 2154:36-2158:01 with an offset of -2.1). DW1 had several small spikes removed and patched from 2211:31-2212:00, 2234:31-2235:20, 2241:01-2241:30, and 2257:31-2259:00.

Dewpoint exceeds ambient temperature on a few occasions due to precipitation.

	<u>Takeoff</u>	<u>Landing</u>
Aircraft static pressure	1015.1	1012.2
Corrected tower pressure	1016.3	1013.2

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

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

AOCWF1

Flt ID: 000913H	From: KMCF	To: KMCF
Flt No.: 00-63	Blk In: 0129Z	ATA: 0121Z
ETD: 1600Z	Blk Out: 1610Z	ATD: 1625Z
ETE: 0130Z	Blk Time: 9:19 9.3	Flt Time: 8:56 8.9
Sponsor Org: HRD	Program: HURRICANE RESEARCH	Purpose: GULF EDDY

AOC Personnel

AC: TAGGART, B	Sys Eng: McMillan, S
CP: TEBEEST, R / O'MARA, T	Data Sys: McNAMARA, R.
Nav: RATHBUN, D	Radar:
FE: WADE, S	GPS/BT: CARPENTER, D
Avionics: ROGERS, M	Cld Phys:
FD: SHEPHERD, T / CZYZV, K, S	

Participating Scientists/Visitors/AOC

Name (Last, First)	Activity on Aircraft	Affiliation
BLACK, P	PI	HRD
JACOB, D	}	U of Miami
SHAY, N		U of Miami
CASTELLS, T		UMASS
WALSH, E		NASA

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

TEALID 18-00Z ?  
 1700 BAL DPT 3  
 ~1750 WORK ON DPT 2  
 ~1950 WORK ON DPT 1

During drops as IAS reduced (Δ flow angles) Dpt temps ↓↑



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

AOCWF2

Flt ID: <b>000913H</b>	Time Off: <b>1625Z</b>	Time On: <b>0121Z</b>
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	A/C (Take Off)	Wx Stn (Take Off)	A/C (Land)	Wx Stn (Land)
Pressure	<b>1015.1</b>	<b>30.01</b>	<b>1012.2</b>	<b>29.92</b>

	Number	Data Disposition/Date/Quality
Slow/Fast Fit Lvl Tapes	<b>2</b>	<b>TRS</b>
Radar Tapes	<b>1</b>	<b>TRS</b>
Cloud Physics Tapes		
Video Tapes	<b>1</b>	<b>P. Black</b>
AXBT	<b>20</b>	<b>18 good (ALL CADS fired OK)</b>
AXCP	<b>16</b>	<b>14 good</b>
AXCTD	<b>15</b>	<b>14 good</b>
Dropsondes		

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

Remarks



Time	Lat	Long	Trk	Hdg	Wind Dir	Wind Spd	T <sub>a</sub>	T <sub>d</sub>	Press. Alt.	Geo. Alt.	Sfc Press.	Press. Sfc	Dyn. Press	Remarks
162830	2753	8221			34	5.3	19.8	16.9				507	(LWS)	CLOUDBASE 3000
170609	2658	8500												DROP BT
171440	2629	8444	156	155	43	10.9	12.0	2.0	2421	2559	1014.3	754.3	75.9	Set B40
172110	2604	8433												D#2
173120	2525	8415	159	159	84	2.4	12.2	5.6	2422	2557	1014.3	754.3	81.0	BKN BLO CI ABV
173458	2510	8409												D3
174600	2425	8350	156	157	045	1.0	12.1	6.7	2422	2557	1013.8	754.2	81.5	
174857	2415	8345												D4
175849	2400	8422												D5
180015	2357	8430	244	244	118	8.4	12.9	6.6	2423	2551	1013.0	754.1	76.0	H2 CI ABV
180744	2344	8500												D6
181653	2416	8517												D7
181840	2422	8520	337	338	123	4.9	11.9	8.4	2423	2552	1013.4	754.1	74.1	BKN BLO CI ABV
182523	2447	8532												D8
183356	2518	8548												D9
184239	2549	8606			B404	4200	2	~ 15 miles	abeam to RIGHT					D10
184420	2555	8608	337	341	075	14.5	11.4	7.1	2423	2554	1014.5	754.1	80.5	CB to left
185059	2620	8620												D11
190147	2659	8638												D12
190807	2722	8651	335	336	47	3.8	11.2	8.1	2424	2561	1015.2	754.1	81.6	D13 BT
191639	2753	8709	333	334	0	0	11.3	8.5	2418	2557	1015.3	754.3	60.6	D14 CTD
192800	2741	8757	256	257	55	2.1	11.5	6.0	2421	2558	1015.3	754.2	71.7	D15 CP
193842	2736	8845	254	254	102	5.8	12.3	4.7	2420	2556	1014.4	754.4	63.5	D16 CTD
194710	2701	8831	156	155	78	7.4	12.9	-1.5	2422	2555	1014.0	754.3	79.8	D17 BT
195412	2634	8818	156	156	50	5.2	12.9	2.8	2420	2557	1014.2	754.1	61.2	D18 CTD
200402	2559	8802	163	161	67	9.1	11.8	6.9	2417	2546	1013.9	754.8	58.7	D19 CP <small>CELL JUST ABOVE</small>
200027	2536	8752	155	153	61	11.0	11.8	6.8	2419	2546	1013.8	754.2	64.5	D20 CTD
201813	2507	8738	156	155	75	8.5	11.7	8.2	2422	2548	1013.6	754.2	71.4	D21 CP
202115														W CELL (SMALL)
202608	2438	8725	158	159	111	4.0	11.7	7.8	2420	2546	1013.1	754.1	65.9	D22 CTD
203342	2410	8713	154	155	115	5.4	12.4	6.2	2419	2538	1012.0	754.2	67.2	D23 CP
204148	2380	8700	172	173	135	7.7	13.0	3.5	2461	2582	1011.3	754.4	65.3	D24 CTD
205301	2347	8747	207	208	113	2.4	12.5	6.5	2420	2532	1012.0	757.0	79.0	D25 BT
210350	2354	8836	274	275	103	6.8	11.9	6.2	2432	2552	1012.5	753.0	75.8	D26 BT
211426	2359	8924	308	310	009	9.4	11.9	7.5	2430	2549	1012.5	753.3	71.1	D27
212358	2437	8932	345	348	080	10.5	12.5	5.0	2431	2558	1012.1	752.9	77.9	D28
213309	2515	8938												D29
214220	2552	8946	343	346	109	5.7	12.6	5.3	2433	2560	1012.8	752.9	72.7	D30



Time	Lat	Long	Trk	Hdg	Wind Dir	Wind Spd	T <sub>a</sub>	T <sub>d</sub>	Press. Alt.	Geo. Alt.	Sfc Press.	Press. Sfc	Dyn. Press	Remarks
215148	2630	9054												D 31
215907	2630	9025												D 32
220555	2630	9056	271	270	152	9.0	12.0	6.2	2436	2563	1013.0	753.1	77.0	D 33
221246	2630	9127												D 34
221937	2629	9158												D 35
222645	2630	9230												D 36
223311	2630	9300												D 36A
223940	2615	9244	134	134	130	6.4	12.5	7.5	2436	2563	1012.9	752.9	88.8	
224427	2601	9229												D 37
225425	2530	9200												D 38
230419	2500	9130	126	124	096	4.7	12.5	6.1	2435	2559	1012.4	753.0	75.6	D 39
231408	2536	9131												D 40
232251	2611	9130												D 41
232550	2623	9130	359	000	188	5.8	12.4	5.0	2432	2560	1013.3	753.1	78.1	
233250	2662	9130												D 42
233644	2707	9130												D 43
234530	2727	9056												D 44
23562	2747	9015	061	063	199	11.6	-10.2	-27.0	6403	6785	1007.8	446.5	79.2	D 45
000229	2809	8930												D 46
001045	2830	8845	065	068	188	8.1	-9.5	-29.0	6399	6782	1005.4	446.3	86.8	D 47
001839	2826	8757												D 48
003428	2817	8619												D 49
003540	2816	8612	096	097	254	10.5	-10.0	-28.4	6402	6785	1007.7	446.4	88.4	
004144	2812	8535	097	099	247	10.7	-10.1	-26.8	6401	6787	1008.3	446.3	89.3	D 50
005730	2802	8359	097	098	288	9.6	-0.0	-30.8	5091	5353	1006.0	539.8	76.7	Descend to 10000 ft







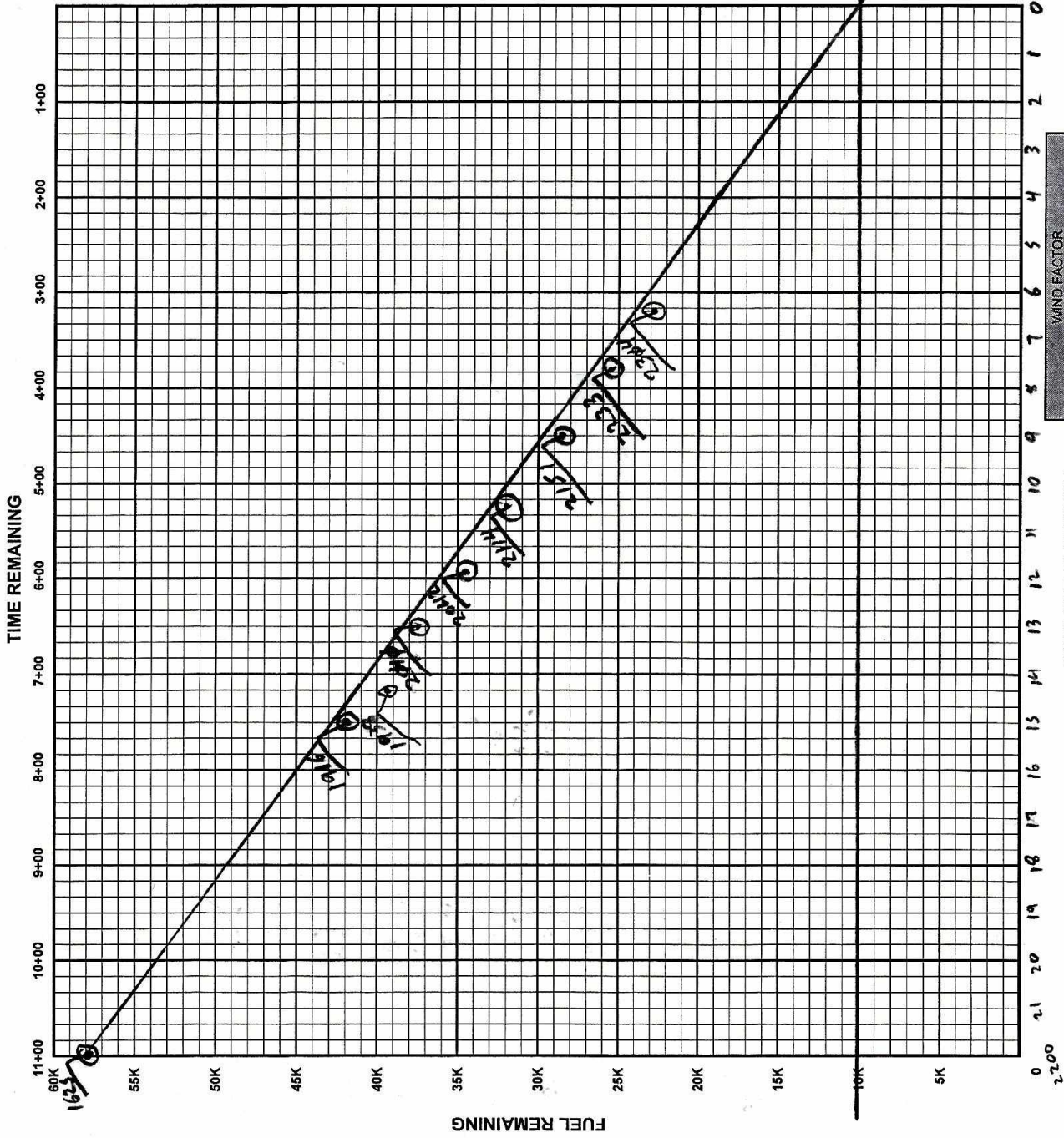








**RANGE CONTROL GRAPH**



WINDSPEED	WIND FACTOR	
	HEADWIND	TAILWIND
10	1.03	.97
20	1.06	.94
30	1.10	.92
40	1.14	.89
50	1.18	.87
60	1.22	.85

**DISTANCE REMAINING**

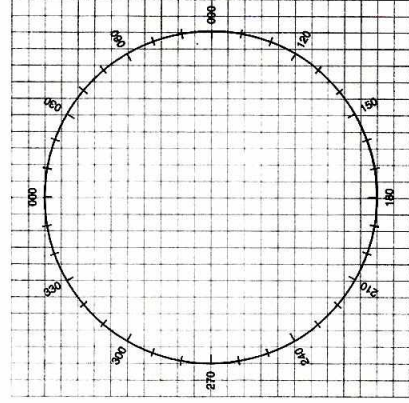
ETP = .5(TOTAL DISTANCE x OUTBOUND WIND FACTOR)

ENROUTE FUEL	
ENROUTE TIME	
ENROUTE FUEL (6K 5K 4.5K RULE)	
RESERVE AT DESTINATION	
REQUIRED RAMP	
ACTUAL RAMP FUEL	

TACTICAL (OFFSTA TO DESTINATION)	
DISTANCE (OFFSTA TO DEST)	
ENROUTE TIME (OFFSTA TO DEST)	
BURN RATE (LBS/HR)	4500
ENROUTE FUEL REQUIRED	
RESERVE AT DESTINATION	
FUEL AT OFFSTA	5500

POINT OF SAFE RETURN	
ETP DISTANCE (TO DEPARTURE)	
ENROUTE TIME (TO DEPARTURE)	
BURN RATE (LBS/HR)	4500
FUEL REQUIRED	
RESERVE AT DEPARTURE	
PSR FUEL	5500

CEX - TRUE BEARING METHOD		CEX SIGHT	
COMPASS TYPE	INS1	INS2	WET
MCH (READING)			
MTH (SEXTANT)			
CE			
VAR			
DEV			
CEX - ERB METHOD		CEX SIGHT	
COMPASS TYPE	INS1	INS2	WET
MERB (DIAL 000)			
ZN			
MTH			
MCH (READING)			
CE			
VAR			
DEV			
GMT			
GHA			
CORR			
GHA			
LONG +W -E			
EXACT LHA			
LAT			
BODY			
DEC			
HC/D			
CORR			
HC			
Z			
ZN			



PRESS ALT	WIND FACTOR					
	200	250	300	350	400	450
10,000	1.0	1.0	.99	.99	.99	.99
20,000	.99	.98	.97	.97	.97	.97
30,000	.97	.96	.95	.95	.94	.94
40,000	.96	.94	.92	.92	.90	.90

TRUE AIRSPEED CROSS-CHECK						
TIME	IAS	PRESS ALT	"IF" FACTOR	EAS	OAT	ITAS