

Hurricane 1999 Warm Pool Eddy

Flight #1: 990803H

<u>Sensor or system</u>	<u>Number or Name</u>
INE	1
Accelerometer	1
Temperature Probe	1
Dew Point Probe	2
Altitude (for vertical wind)	RA-159
Static Pressure	Rosemount Fuselage
Dynamic Pressure	Rosemount Fuselage
Time Source	Micro 99
Constants File	CO2991.CON

Notes:

There were two time gaps and 1757:31-1809:00 and 1811:11-1811:20.

The radar altimeter (RA159) had a spike at takeoff and was set to zero prior to takeoff, from 1320:01-1332:17. There were several spikes in RA159 that were removed and patched (1442:01-1442:30, 1502:30-1503:00, 1504:31-1505:30, 1521:31-1522:00, 1527:01-1527:30, 1550:01-1550:30, 1605:31-1606:30, 1616:31-1617:00, 1627:01-1627:30, 1629:31-1630:00, 1645:01-1646:00, 1647:01-1647:30, 1659:01-1659:30, 1714:01-1715:00, 1754:31-1755:00, 1756:31-1757:00, 1815:01-1815:30, 1832:31-1835:00 (3), 1837:31-1840:00 (2), 1842:01-1842:30, 1844:01-1845:00, 1850:31-1851:00, 1854:01-1854:30, 1902:01-1902:30, 1908:01-1909:00 (2), 1912:31-1913:00, 1918:31-1919:00, 1921:01-1922:30 (2), 1923:01-1924:00, 1941:31-1942:00, 1956:01-1956:30, 2001:31-2002:00 (2), 2010:01-2010:30, 2012:31-2013:00, 2020:01-2020:30, 2028:01-2028:30, 2038:01-2038:30, 2040:31-2041:30, 2045:31-2046:00, 2101:01-2101:30, 2122:01-2124:00 (2), 2130:01-2131:00 (2), 2136:01-2136:30, 2145:31-2146:00, 2155:31-2156:00, 2221:31-2222:00, 2234:00-2234:30 and 2245:01-2245:30. A spike also occurred at landing and RA159 was replaced by RA232 (2245:21-2253:00).

Dewpoint (DW2) exceeded ambient temperature (AT2) briefly due to heavy precipitation.

	<u>Takeoff</u>	<u>Landing</u>
Aircraft static pressure	1013.3	1012.1
Corrected tower pressure	1014.2	1012.5

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. COMM./NOAA/OAO - DATA SECTION WORK FORM NO.1 OAOWF1 FILE

FLT ID: 990803H	FM: KMCF	TO: KMCF
FLT NO: 99-	BLK IN: 2254Z	ATA: 2246Z
ETD: 1300Z	DLK OUT: 1320Z	RTD: 1332Z
ETE: 2130Z	BLK TIME: 9.3Y 9.6	FLT TIME: 9.14 9.2
SPONSOR ORG: NOAA/1	PROGRAM: HRD	PURPOSE: WARM POOL... EDDY AT

OAO PERSONNEL

AC TENNESSEN, D	SYS ENG McMillan, S ✓
CP KENUL, P / P+11, R ✓	DATA SYS RILES, J ✓
NAV RATHBUN, D ✓	RADAR
FE CAST, C / TURNER, R -	BT/ODW McNameara, R ✓
RADIO	CLD PHYS
FD C2424K, S -	DOPPLER CURRY, J ✓ / MCCANN, B -

PARTICIPATING SCIENTIST/VISITORS/OAO

LAST, FIRST NAME	ACTIVITY ON A/C	AFFILIATION
BLACK, P -	PI	HRD
LEONE, J -	SLY-115T	"
UHLHORN, E -	"	"
JACOB, D -	"	U OF MIAMI
DAVIES, P -	AUTHOR	PENGUIN BOOKS

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

U.S. DEPT. COMM./NOAA/OAO - DATA SECTION WORK FORM NO. 2 OAOWF2 F

FLT ID: 9908034

TIME OFF: 1332Z

TIME ON: 2246Z

	A/C T/O	WX STN	A/C LAND	WX STN
PRESSURE	1013.3	29.95	1012.1	29.90

NO DATA DISPOSITION/DATE/QUALITY

1/SEC FLT LVL TAPES	2	
FAST FLT LVL TAPES		
RADAR TAPES	1	
DOPPLER TAPES		
ODW CASSETTES		
HARD COPIES	2	
AXBT	46	
AXCP	2	
ODW		
GTO	2	
GPS	1	

PHOTOGRAPHY

	FWD	LS	RS	VERT	
ON					
OFF					
RATE					

REMARKS

990803H

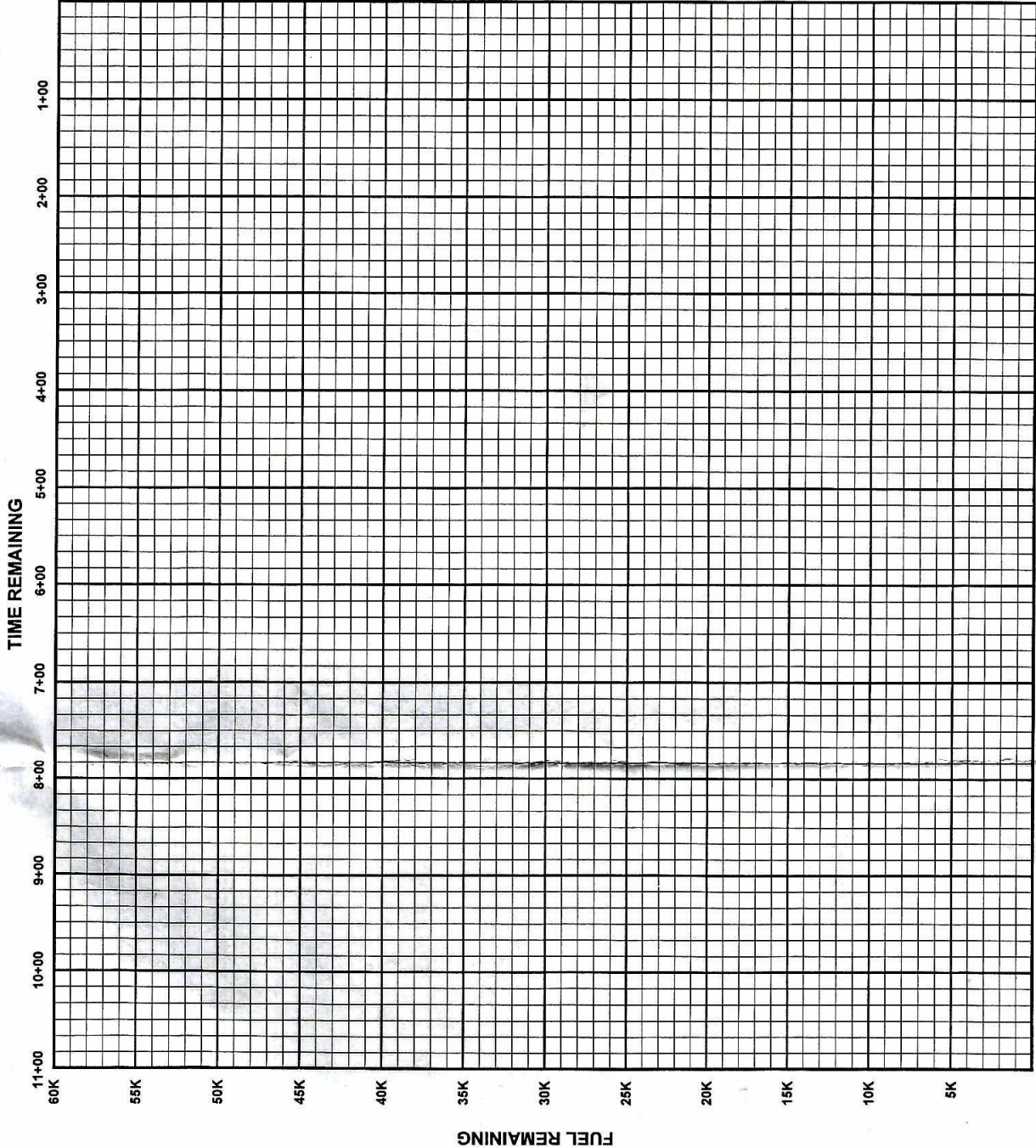
TIME	LOT	LOW	TIC	HD	TA	TD	WD	WS	RA	GA	PS	SP	REMARKS
34300	2742	8248	264	267	7.4	4.6	319	11.3	3057	3243	685.5	1017.2	LECL 10K
34445													IN CLOUD TOPS
40650	2759	8439	292	294	7.2	6.2	322	8.7	3074	3262	694.6	1016.9	IN RAIN + TSTORM
41845	2814	8529											BT 1 IN CLEAR
42520	2815	8600											BT 2
42900	2815	8617	271	273	9.8	1.4	23	4.7	3056	3253	696.1	1015.1	THIN LAYER ABOVE
43333	2815	8640	271	273									BT 3
44136	2816	8720	271	273	10.2	0.2	31	5.1	3056	3257	696.0	1015.4	BT 4 DIED HALFWAY
45106	2816	8806	271	272	9.9	-0.8	5	2.9	3056	3257	696.1	1015.9	BT 5
50210	2816	8900	269	270	9.6	0.6	56	3.8	3056	3259	696.2	1016.5	BT 6
51840	2814	9022	270	270	9.2	0.9	137	7.4					BT 7
52922	2839	9014	163	162	9.6	-2.1	111	9.6	3054	3254	696.3	1016.1	BT 8
53525	2715	9005	163	161	9.5	-1.0	114	9.9	3055	3251	696.2	1016.3	BT 9
54802	2644	8954	162	163	8.6	2.6	142	2.8	3053	3254	696.3	1017.0	BT 10
55009	2615	8944	164	164	9.2	1.1	72	4.1	3054	3254	696.2	1016.7	BT 11 DUD
55625	2548	8935	163	164	8.8	0.9	204	1.7	3054	3254	696.2	1016.8	BT 12
55628													DROP
60433	2515	8924	163	164	9.1	4.5	189	1.5	3055	3253	696.3	1016.7	BT 13
62238													PT 2
62350	2400	8856	57	57	8.1	4.9	295	4.9	3054	3249	696.3	1016.9	BT 14
63210	2420	8824	63	63	8.8	-0.5	253	2.1	3053	3251	696.4	1017.1	BT 15
63749	2431	8801	63	63	8.7	1.4	260	4.8	3052	3249	696.4	1016.5	BT 16
64551	2450	8728	59	59	8.9	-0.6	254	3.6	3053	3249	696.4	1016.5	BT 17
65550													PT 3
65651	2515	8649	285	285	9.0	-2.6							BT 18 DESCEND
70130													LECL 5K
70637	2530	8729	294	296	18.6	12.6	331	8.2	1519	1632	843.6	1016.4	BT 19
71752	2548	8811	296	298	18.7	12.9	318	9.6	1523	1636	843.2	1016.6	BT 20
72420	2558	8835	296	296	18.3	14.3	319	7.6	1523	1635	843.2	1016.4	CP #1
73047	2608	8900	292	294	18.7	12.9	330	9.0	1521	1637	843.3	1016.4	BT 21
74111	2613	8945	276	278	18.9	12.7	316	5.4	1524	1637	843.1	1016.2	BT 22
75339	2645	9025	294	295	19.6	11.0	311	3.9	1524	1638	843.1	1016.1	BT 22A
80315	2700	9100											CP #2
81140	2705	9131	172	173	18.6	14.7	344	8.1	1524	1636	843.2	1016.3	BT 23
82407	2615	9123	172	173	18.0	14.2	340	16.2	1524	1636	843.6	1016.8	BT 24
83635	2533	9112	45	44	18.3	12.3	325	9.7	1524	1636	843.1	1016.4	CTD
83640													BT 25
84338	2551	9050	52	50	18.4	12.8	339	12.1	1523	1634	843.2	1016.3	BT 26
85341	2616	9016	51	49	18.9	12.9	325	9.8	1523	1631	843.1	1015.6	BT 27
90042	2633	8953	51	50	19.2	11.5	318	8.0	1519	1628	843.7	1016.0	CTD
91118	2658	8916	53	52	19.3	10.9	318	5.7	1523	1626	843.2	1015.0	BT 28
92121	2722	8841	53	53	20.1	9.7	320	2.8	1522	1625	843.2	1014.6	BT 29
93543	2754	8750	185	114	19.9	12.6	345	7.3	1524	1626	843.1	1014.5	BT 30
94429	2737	8716	175	175	19.1	13.5	11	8.8	1523	1625	843.2	1014.8	BT 31
95211	2705	8712	171	178	18.1	14.8	11	10.8	1524	1625	843.1	1015.2	BT 32
95755	2705	8710	41										BT 32
100755	2630	8708	177	176	18.3	13.5	15	15.4	1522	1620	843.2	1014.7	BT 33
101506	2600	8705	173	174	18.0	14.5	359	15.9	1523	1619	843.2	1015.0	BT 34
													BT 35 SKIP
10362	2430	8656	175	177	17.8	12.7	330	11.5	1523	1620	843.1	1015.0	BT 36
104840	2342	8649	56	54	18.6	5.2	307	12.4	1524	1620	843.1	1015.8	BT 37
110040	2409	8605	61	59	17.4	14.2	322	12.0	1522	1615	843.3	1014.7	BT 38
111459	2434	8516	294	297	17.7	14.1	339	9.6	1524	1620	843.1	1014.9	BT 39

9908034

Time	Lat	Lon	TIC	HD	TM	TD	WD	WS	PA	CA	PJ	SP	REMARK
12350	24 52	85 48	305	307	17.6	15.6	351	11.1	1523	1614	842.5	1013.8	BT40
13507	25 14	86 28	19	18	17.2	14.9	348	14.5	1551	1645	840.3	1014.7	BT41
14119	25 36	86 18	53	51	19.3	10.6	357	13.7	1550	1644	840.3	1012.4	BT42
14926	25 55	85 50	56	53	21.1	8.4	348	16.7	1550	1644	840.4	1012.7	BT43 42003
15232	26 02	85 39											BT43A
20150	26 23	85 06	55	52	20.4	8.2	332	17.9	1551	1644	840.3	1013.1	BT44
21023	27 00	84 05	55	53	18.7	10.1	294	11.0	1550	1640	840.3	1013.5	BT45

2532.9 183633 912.3

RANGE CONTROL GRAPH



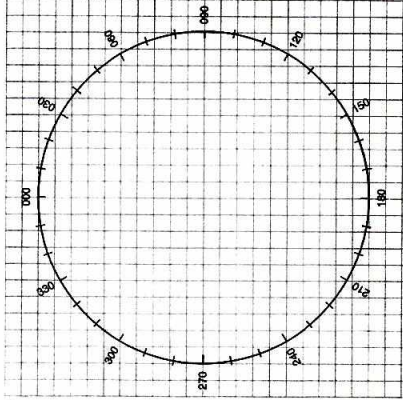
ENROUTE FUEL	
ENROUTE TIME	
ENROUTE FUEL (6K 9K 45K RULE)	
RESERVE AT DESTINATION	
REQUIRED RAMP	
ACTUAL RAMP FUEL	

TACTICAL (OFFSTA TO DESTINATION)	
DISTANCE (OFFSTA TO DEST)	4 ENG 3 ENG
ENROUTE TIME (OFFSTA TO DEST)	
BURN RATE (LBS/HR)	4500 5500
ENROUTE FUEL REQUIRED	
RESERVE AT DESTINATION	
FUEL AT OFFSTA	

POINT OF SAFE RETURN	
ETP DISTANCE (TO DEPARTURE)	4 ENG 3 ENG
ENROUTE TIME (TO DEPARTURE)	
BURN RATE (LBS/HR)	4500 5500
FUEL REQUIRED	
RESERVE AT DEPARTURE	
PSR FUEL	

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

CEX - ERB METHOD			
COMPASS TYPE	INS1	INS2	WET
MERB (DIAL 000)			
+ ZN			
= MTH			
MCH (READING)			
CE			
- VAR			
= DEV			



WIND FACTOR		
WINDSPEED	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

PRESS ALT		PRESS ALT		PRESS ALT		PRESS ALT		PRESS ALT	
10,000	1.0	20,000	.99	30,000	.97	40,000	.96	50,000	.94
10,000	1.0	20,000	.99	30,000	.97	40,000	.96	50,000	.94
10,000	1.0	20,000	.99	30,000	.97	40,000	.96	50,000	.94
10,000	1.0	20,000	.99	30,000	.97	40,000	.96	50,000	.94

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

DISTANCE REMAINING

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

MISSION PREFLIGHT LOG

MISSION		NAVIGATOR		AIRCRAFT COMMANDER		FLIGHT DIRECTOR		SCHEDULED / ACTUAL TAKEOFF Z		DATE OF TAKEOFF								
WP	LAT / LON	RTE	MH	VAR +E=>	TH	DR +R=>	TRK	GS	WD	WS	ALT	TAS	LEG / TOT DIST	LEG / TOT TIME	PROP ETA	ETA	ATA	REMARKS
1	27 50.9 82 29.6							255					50					
2	27 52.7 82 24.3												405	413	1416		1403	
3	28 15 83 20												270	1404	1520		1417	
4	28 15 83 20												425	1403	1623		1520	
5	24 00 89 00												265	1403	1657			
6	27 10 86 45							235					145	1413	1810			
7	27 10 86 45												835	1410	1835			
8	27 55 87 50												240	1401	1930			
9	27 55 87 50												35	1409	1945			
10	27 55 87 50												1400	1401	1945			
11	27 55 87 50												240	1401	2040			
12	27 55 87 50												1405	1405	2113			
13	27 55 87 50												1745	1405	2113			
14	27 55 87 50												90	1405	2135			
15	27 55 87 50												1835	1405	2135			
16	27 55 87 50												1805	1405	2222			
17	27 55 87 50												2015	1405	2246			
18	27 55 87 50												95	1405	2246			
19	27 55 87 50												2110	1405	2246			
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99	27 55 87 50																	
100	27 55 87 50																	

11396
13297

INS PERFORMANCE		INS 1	INS 2
BEGIN ALIGN TIME		1220Z	1145Z
ALIGN STATUS (0-5)		0	0
END NAV TIME		2250Z	→
START NAV TIME		1315Z	1220Z
DELTA T		9135	10130

TERMINAL ERRORS		INS 1	INS 2
DELTA LAT		-2.2	-7.3
DELTA LON		+4.9	+9.2
RGS		4	1
RADIAL ERROR		5	11

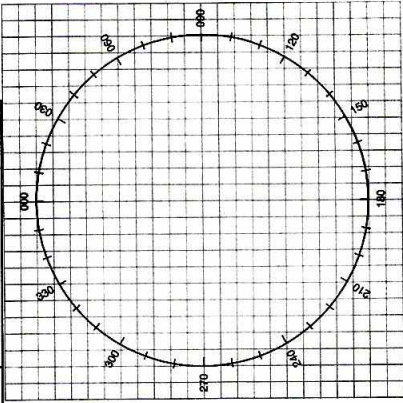
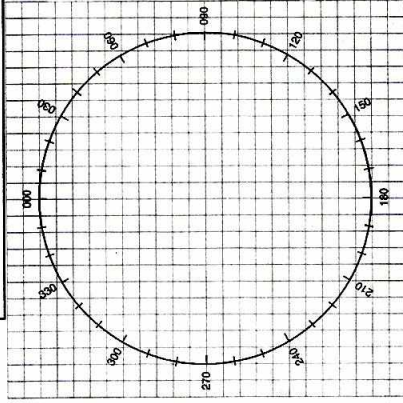
REMARKS	

CLEARANCES

[illegible]

MISSION LOG

PAGE _____ **OF** _____



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:

UHF/VOICE	VHF/VOICE	MF/VOICE	HF/CW	MF/CW
243.0	121.5	2182 KHZ	8364 KHZ	500 KHZ

MAYDAY, MAYDAY, MAYDAY
THIS IS NOAA . NOAA . NOAA

- 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

- ASSISTANCE DESIR
- PILOT INTENTIONS

ENDURANCE REMAINING

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[illegible]