NOAA P-3 N42RF
Ocean Winds 2004 Hurricane Ivan #1
KMCF - KMCF

Flight ID: H040912

Sensor or system	*Number or Name*
Inertial	*2*
Accelerometer Data	*2*
Temperature Probe	*1*
Dew Point Probe	*1*
Altitude (for vertical wind)	*Radar Altitude*
Radar Altitude	*RA-159*
Static and Dynamic Pressure	*Rosemount Fuselage*
Time Source	*Micro 99*
Constants File	*CO2042.CON*

Local meteorological data:

Observation taken at 1255Z, by KMCF. Wind ENE (070 deg) at 11 knots. Visibility 7 miles. Temperature 26 degrees C, Dewpoint 23 deg C. Surface Pressure 29.98 in (1015 mb).

Observation taken at 2155Z, by KMCF. Wind NNW (340 deg) at 9 knots. Temperature 28 deg C, Dewpoint 26 deg C. Surface pressure 29.89 in (1012 mb).

Notes:

The data from this flight was collected on three DATs, with significant time breaks between the tapes. The time gaps were 171140Z – 171431Z, and 173400Z – 175101Z. There was another short time gap 184638Z – 184700Z

RA-232 was substituted for RA-159 during the following times: 135401-135702Z (take off), and 220721-221100Z (landing) due to spiking.

There were several instances when the dew point temperature exceeded the ambient temperature resulting in a RH% above 100%. TD2 was substituted for TD1 161541Z – 161700Z. These times were during heavy precipitation events and were likely due to a wet-bulb effect on the total temperature sensor, and/or an artificial warming of the dew point sensor as it tried to burn off excess moisture. These periods are typically reflected in the J/W liquid water data. No corrections were made during these events unless noted above.

All other instruments worked optimally during the flight.

The aircraft INE positions were renavigated with respect to GPS.

Due to AOC equipment/printer failure, the last step of our Quality Control process (visual QC) was not able to be performed. While other measures were taken to ensure there were no problems with the data, questions concerning questionable data should be brought to the attention of the Flight Director ASAP.

Flight Director:	Contact Jack Parrish
Phone #:	(813) 828-3310 ext. 3077

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AOCWF-1

Flt ID: 040912H	From: KMCF	To: KMCF
Flt No: 04 — 042	Blk In: 2308	ATA: 2258
ETD: 14Z	Blk Out: 1402	ATD: 1419 ~~1413~~ (about)
ETE: 9	Blk Time: 9:06 (9.1)	Flt Time: 8:39 (8.7)
Sponsor Org: NESDIS	Program: Ocean Winds	Purpose: SFMR Wind Mapping

AOC Personnel

AC: Kennedy	Sys Eng: McMillan
CP: Silah	Data Sys: Reeb
Nav: Gallagher	Radar:
FE: Bait / Wade	GPS/BT:
FD: Parrish	Cld Phys:
Avionics: Rogers	

Participating Scientists / Visitors / AOC

Name (Last, First)	Activity on Aircraft	Affiliation
Paul Chang	~~OC~~ PI	NESDIS
Suzy Broeb		
Skip O'Hanb		
Dan Conan		
Beth Kerr		
Ian Adams		
Fernando Tobon	Last Ride	

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

1 box drops. Aborted T.O., low power #2. TT2 dead, H. IVAN

1014.1 80/12 — 1647Z 1901N 81.55W 920mb 99°/146kt

1819Z 1906N 8207W 919mb 209°/137kt

SP 1015.3 FM 1.5K — 1945Z 1911N 8215W 917mb

CB 1.6K RA — 2040Z 1915N 8220W 915mb 84°/147kt

4 eye penetrations.

H. D.

37/15
1010.7

29/22

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

AOCWF2

Flt ID:	Time Off:	Time On:
04091214	1419Z	

	A/C (Take Off)	Wx Station (Take Off)	A/C (Land)	Wx Station (Land)
Pressure	1014.1	29.98 (1015)		1012

	Number	Data Disposition / Date / Quality
Flt Lvl Tapes		
Radar Tapes		
Cloud Physics Tapes		
Video Tapes		
AXBT		
AXCP		
AXCTD		
Dropsondes	20	6 failed

Video

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

Remarks

12552
070/16
7mi
Few 3K
26/23
29.98
(1015
T.O

21552
340/9kt
28/26
29.89

19 07
82 W

19 02
81 55
1647Z

9 22
1C 20Z

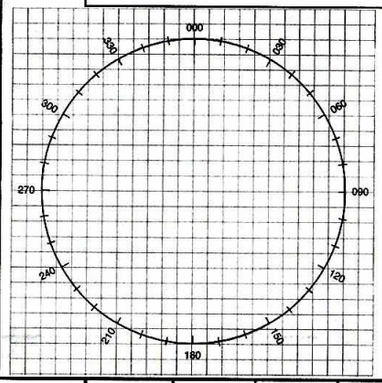
Flight ID: 04091217 H. Ivan Ocean Winds

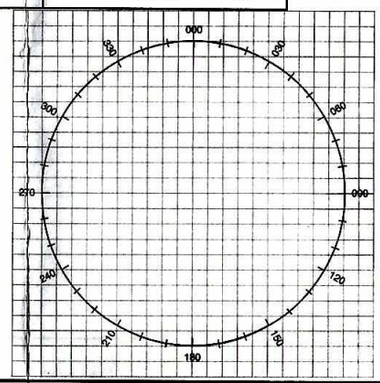
U.S. Dept. of Commerce / NOAA / Aircraft Operations Center Form 413-50

Time	Lat	Long	Trk	Hdg	Wind Dir	Wind Spd	T_a	T_d	Press. Alt	Geo. Alt	Sfc Press.	Press. Sfc	Dyn. Press	Remarks
140845	2751	82 30					28.9	24.1	-15	-9	1014	1015	.2	Taxi
142245	2754	82 22	90	93	90	16	21	14.9	1069	1138	1014.5	887	59	↑
144844	26 20	82 55	Start Buoy Leg				20 mi to the North							
145324	26 03	83 05	207	~~088~~	~~098~~	14	18.0	-0.1	~~1053~~		~~1047.3~~	1013.3		Drop at buoy-Bad
145800	2545	83 15	End of buoy leg											
152830	23 50	82 20	137	135	91	21.9	1.5	-1.1	4260	4495	1010.9	59.9	—	14K
1609	21 20	81 53	192	178	101	64	15.1	13.2	2114	2162	1005			21 m/s Drop
162630	20 12	82 00	179	159	91	80	16.1	13.4	2153	2116	993	780		
163811	19 32	81 57		163840	- Drop 2									
164425	Inner eye Drop													
164646	19 01	81 55	179	182	240	14					920		6	
170018	18 10	81 55	179	197	269	70	14.4	14.6	2213	2151	991	774	77.3	Drop W. Winds SSE
1712	Turning down system for debugging													
174030	1801	80 32	255	245	206	61.5	14.6	12.8	2117	2134	1001.6	783	83.7	Orbit SE side
1752	1801	80 39	306	292	211	58	14.0	13.0	218	2127	1001	783		Inbound to SE
180514	18 35	81 20	311	293	204	84	15.1	13.8						Drop No land det
181130	18 30	81 41	Drop 1					181947	19 06N	82 07W				
182430	19 16	82 27	Drop 2					919 m/s						
1850	Orbiting to fix SFMR.													
191020	19 37	82 59	125	106	42	83	16.4	13.4	2215	2117	985	774		Dry WND
191824	Drop 1													
1945	19 11	82 15									917		5	
195	Drop 1			194030	Drop 2						917			
2003	20 00	81 25	↑	Rough down lower.										
200630	20 10	81 40	300	298	130	85	9.9	—	3082	3092	992	694	—	10K
2014	20 19	82 18	Inbound fm N											
202415	2002.5	8222.4	~	~	98	91.3	10.0	11.3	3066	3021	987	695	Orbit to fix SFMR	
2040	19 15	82 20					15	15			915		6	
205630	18 55	81 37	1	355	198	92	10.1	10.3	3062	3000	985	695.6	68.8	ESE of storm
220830	24 34	83 06	356	1	105	22	-3.6	-6.5	5178	5463	1008.9	527.4	75	
23308	27 51.0	82 29.6	—	—	—	—	28	22.2	2	—	1011.7	1013.0	0.1	Blk

CLEARANCES			
FREQ	ALT	HDG	OTHER
119.9	16000	270	KMCF 3725
133.7	135.1		

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
- PILOT INTENTIONS
- WE HAVE _____ ENDURANCE REMAINING

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
1401 1403	CHG TAXI																				
1402 1420	BLK T/OFF																				
1425	△	27-46.9 082-18.2	27-46.8 082-18.1	+.1 +.1	27-46.7 082-18.2	+.2 —	173	4W	169	1C	170	224	140	7	12000	224	BOOY	98	+24	1449	INS #2 PRI
1625	△	20-28.2 082-00.0	20-28.2 081-59.4	— +.6	20-27.6 081-59.9	+.6 +.1	166	4W	162	19L	181	213	090	70	7000	232	EYE	69	+20	1640	
1725	△	17-43.1 080-58.3	17-42.9 080-57.6	+.2 +.7	17-42.4 080-56.1	+.7 +.2	008	3W	015	4L	060	298	226	67	7000	233	2	15	+05	1730	
1825	△	19-35.4 083-12.5	19-34.9 083-11.0	+.5 +1.5	19-33.6 082-17.3	+1.6 +.2	106	3W	103	15L	118	228	025	70	7000	235	EYE	65	+17	1842	
1925	△	19-00.0 082-19.7	18-59.2 082-17.6	+.8 +2.1	18-57.7 082-20.0	+2.3 +.3	053	3W	050	109	060	237	271	50	7000	239	EYE	10	+02	1927	
2025	△	20-02.1 082-22.6	20-01.0 082-20.2	+1.1 +2.4	20-00.1 082-22.5	+2.1 +.1	148	3W	145	68	171	225	076	92	10000	238	EYE	42	+11	2038	
2125	△	21-29.6 082-16.5	21-27.0 082-14.1	+2.6 +2.4	21-27.2 082-16.8	+2.4 -.3	360	3W	357	11L	346	266	108	66	FL170	238	CANOA	149	+30	2155	
2225	△	26-11.0 082-8.9	26-08.4 082-5.6	+2.6 +2.8	26-08.9 082-5.3	+2.1 -.9	021	4W	017	3L	014	281	165	22	FL170	256	KMCF	98	+21	2246	
2259	LAND KMCF	27-51.0 082-29.5	27-47.8 082-25.6	+3.2 +4.0	27-48.9 082-29.8	+2.1 -.2															FLT ⇒ 8+39 ⇒ 8.7
2328	BLK																				BLK ⇒ 9.1

1921 081 50.5

OVR 2050 8200 26-20.9 082-54.2 39/10 94/11

NOAA FORM 56-49
(2-95)

MISSION PREFLIGHT LOG

DESTINATION	MISSION	NAVIGATOR	AIRCRAFT COMMANDER	FLIGHT DIRECTOR	SCHEDULED / ACTUAL TAKEOFF Z	DATE OF TAKEOFF
KMCF	IVAN #1 (42)	ENS Gallagher	CDR Kennedy	Parrish	1400 / 1420	12 SEP 04

WP	N/W 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
KMCF	27-51.0 / 082-31.3														1400	1420		
Buoy 42023	26-03.5 / 083-04.35	D→	200	4W	196	—	196	280	L	J	16000	280	111 / 111	+24 / +24	1424	1444		
MAXIM	24-00.0 / 082-31.1	↓	170	4W	166	—	166	↓	↓	↓	↓	↓	127 / 238	+27 / +51	1451	1511		
IP	20-48.0 / 082-00.0	↓	175	4W	171	—	171	240	↺	100+	7000	240	193 / 431	+42 / 1+33	1533	1553		
Eye	19-05 / 081-40	↓	173	3W	170	—	170	↓	↓	↓	↓	↓	104 / 535	+26 / 1+59	1559	1619		
Delay	IVO Eye	↓						↓	↓	↓	↓	↓		5+00 / 6+59	2059	2119		
CANOA	24-00.0 / 083-03.0	↓	349	3W	346	—	346	280	L	J	170	280	295 / 830	1+03 / 8+02	2202	2222		
EYW	24-35.2 / 081-48.0	V225	066	3W	063	—	063	↓	↓	↓		↓	77 / 907	+17 / 8+19	2219	2239		
KMCF	27-51.7 / 082-30.8	↓	353	4W	349	—	349	↓	↓	↓	↓	↓	200 / 1107	+43 / 9+02	2302	2322		

22 8624
1452 1858 8129

INS PERFORMANCE

	INS 1	INS 2
BEGIN ALIGN TIME	1200	1200
ALIGN STATUS (0-5)	0	0
END NAV TIME	2315	2315
START NAV TIME	1355	1355
DELTA T	9+20	9+20

TERMINAL ERRORS

	INS 1	INS 2
DELTA LAT	+3.2	+2.1
DELTA LON	+4.0	-.2
RGS	3	0
RADIAL ERROR	5	2

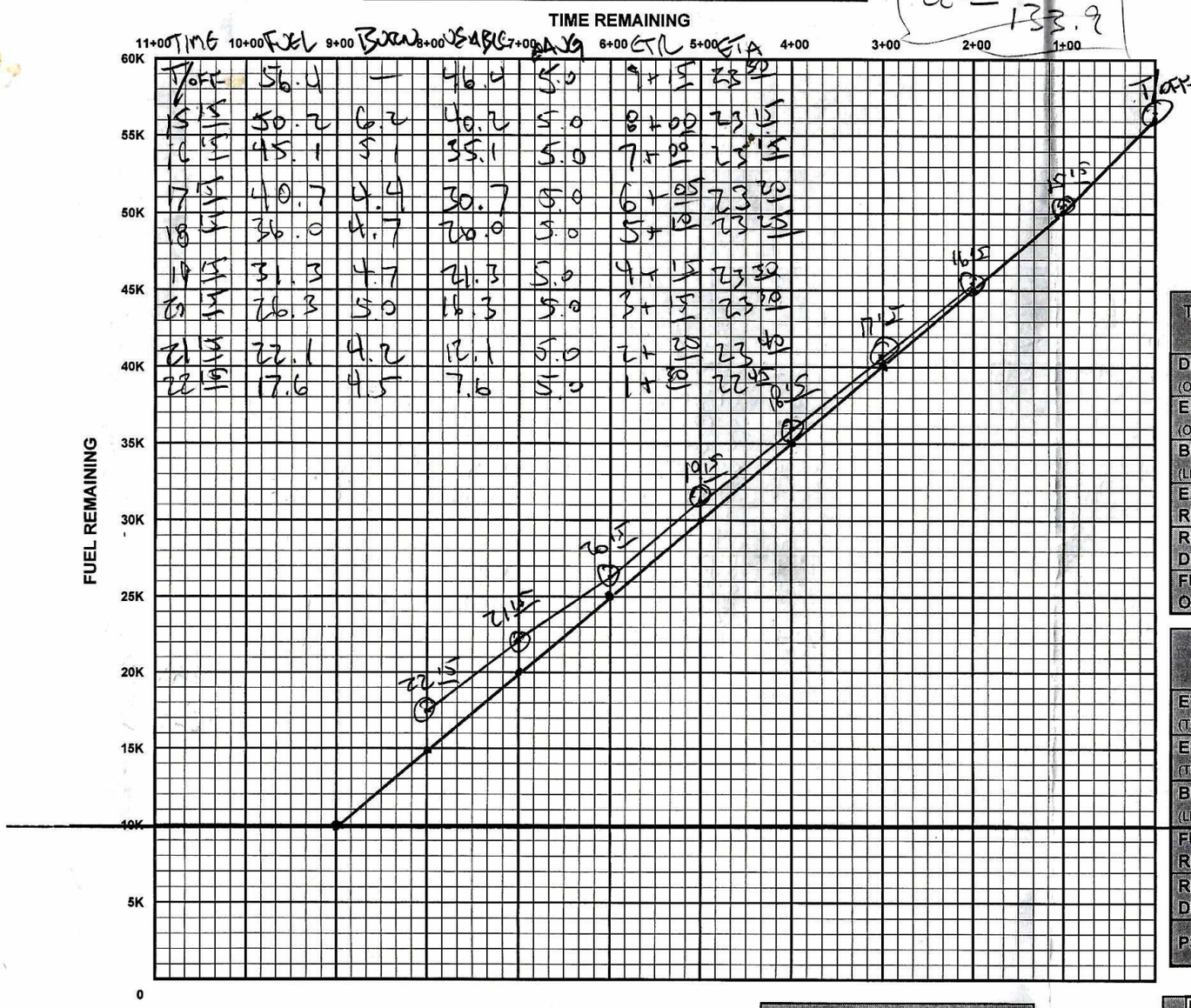
REMARKS

	MISSION LOG		PAGE ___ OF ___

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

	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
	6 20	Ivan	19 01 081-50.5																			
1	16 42	Ivan	19-02.046 081-54.893																			
2	18 19	IVAN	19-05.842 082-06-961																			
3	19 45	IVAN	19-10.938 082-15.218																			
4	20 40	IVAN	19-14.692 082-20.304																			

RANGE CONTROL GRAPH



TIME	FUEL	BURN	USABLE	RANGE	ETL	ETA
T/OFF	56.4	—	46.4	5.0	9+15	23 30
15 15	50.2	6.2	40.2	5.0	8+00	23 15
16 15	45.1	5.1	35.1	5.0	7+00	23 15
17 15	40.7	4.4	30.7	5.0	6+00	23 15
18 15	36.0	4.7	26.0	5.0	5+00	23 15
19 15	31.3	4.7	21.3	5.0	4+15	23 30
20 15	26.3	5.0	16.3	5.0	3+15	23 30
21 15	22.1	4.2	12.1	5.0	2+00	23 45
22 15	17.6	4.5	7.6	5.0	1+00	22 45

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

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

ENROUTE FUEL	
ENROUTE TIME	9+00
ENROUTE FUEL (6K, 5K,4 5K RULE)	47.
RESERVE AT DESTINATION	10K
REQUIRED RAMP	56.0
ACTUAL RAMP FUEL	56.4

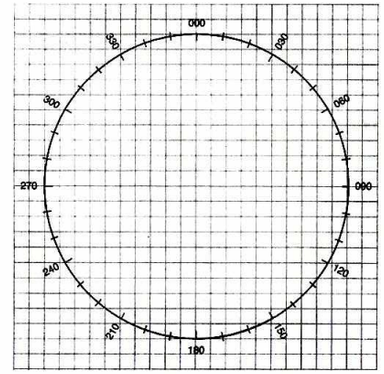
TACTICAL (OFFSTA TO DESTINATION)	4 ENG	3 ENG
DISTANCE (OFFSTA TO DEST)		
ENROUTE TIME (OFFSTA TO DEST)		
BURN RATE (LBS/HR)	4500	5500
ENROUTE FUEL REQUIRED		
RESERVE AT DESTINATION		
FUEL AT OFFSTA		

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

CEX - TRUE BEARING METHOD			
COMPASS TYPE	INS1	INS2	WET
MCH (READING)			
- MTH (SEXTANT)			
CE			
- VAR			
DEV			

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

CEX SIGHT	
GMT	
GHA	
CORR	
GHA	
LONG +W -E	
EXACT LHA	
LAT	
BODY	
DEC	
HC / D	
CORR	
HC	
Z	
ZN	



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

TRUE AIRSPEED CROSS-CHECK							
TIME	IAS	PRESS ALT	"F" FACTOR	EAS	OAT	TAS	ITAS
23 32	208	170	-99	206	-3	270	256