



**NOAA P-3 N43RF
CBLAST 2004
FLIGHT #8**

Flight ID: I040909

Sensor or system

Number or Name

INE.....	1
Accelerometer.....	1
Temperature Probe.....	1
Dew Point Probe.....	2
Altimeter (for vertical wind).....	RA-159
Static Pressure.....	Rosemount (fuselage)
Dynamic Pressure.....	Rosemount (fuselage)
Time Source.....	Micro 99
Constants File.....	CO3043.con

Local Met. Data: Not copied at takeoff

Take off: 1451Z

Land: 2320Z

The RA-232 was substituted for the RA-159 during take off and landing due to spiking (T.O. 144801-150300; 231930-232300 Land).

The RA-159 had multiple spikes and dropouts during high altitude ferry from the storm. The RA-159 was replaced by the Collins GPS altitude in this region (202100-231632).

Dew pointer #2 had spikes and was replaced by dew pointer #1 (175503-175715; 231109-231826).

There were data gaps noted: 202426-202427; 202934-202936; 203953-204002; 211336-211356; 211531-211536; 211721-211728; 213351-213409; 222010-222015.

The Johnson-Williams liquid water sensor was inoperative after ~1652Z.

There were times during heavy precipitation events (e.g. eye wall penetrations) when the dew point exceeded ambient temperature yielding a RH of greater than 100%. This is probably due to a wet bulb effect on the total temperature probe and/or the dew pointer over heating while trying to remove excess moisture. In these instances, no corrections were attempted.

The aircraft INE positions were re-navigated with respect to GPS.

SPECIAL NOTE: Locations 80, 81, and 82 of record 5 in the standard data contain vertical ground speed, vertical air speed, and vertical wind speed computed using Dr. Dave Jorgensen's vertical wind algorithm. It is recommended that these values be used for vertical wind analysis.

	Take off	Land
Aircraft Static Pressure	1011.6 mb	1013.7 mb
Corrected Tower Pressure	1014.2 mb	1014.9 mb

Flight Director:

Tom Shepherd
813-828-3310 x3053

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

Flt ID: 040909 I	From: TISX	To: KMCF
Flt. No: 04-62	Blk In: 2331z	Time On: 2320z
ETD: 1500z	Blk Out: 1439z	Time Off: 1451z
ETE: 8+30	Blk Time: 8+52 8.9 Hrs	Flt Time: 8+29 8.5 Hrs
Sponsoring Org: NOAA/HRD	Program: HUR 2004	Purpose: H. IVAN

AOC Flight Crew

Aircraft Commander: TE BEEST, R ✓	Data System: LYNCH, T ✓
Co-Pilot: SILAH, M / CHOY, B	AVAPS: Smith, J ✓
Navigator: SIEGEL, P / ADLER, J ✓	System Eng:
Flight Eng: KLIPPEL, J / FLOYD, D ✓	A A:
Flight Director: SHEPHERD, T ✓	A A:
Avionics:	Crew Chief: MITCHELL, R ✓ ②

Participating Scientists / Visitors

Name (Last, First)	Activity on Aircraft	Affiliation
ROGERS, R ✓	PI	NOAA/HRD
ULHORN, E ✓	SFMR	
LEIGHTON, P ✓	RADAR	
WALSH, E ✓	Sci	NASA Goddard
LASWELL, J ✓	 	SCRIPPS

Remarks (Storm Name, Mission ID, Recco Times, Fix Times)

Storm Name: IVAN

Mission ID: NOAA3 WX09A IVAN

Penetration number and time

1-1643

2-1740

3-1844

Recco Times

**1-1509
2-1545
23-1958
25-2055**

Fix # Fix Time

**0312
TASK 02 1740**

**1844 1446 7159
921**
(See reverse for additional remarks)

**105
180
2-TEAL63**

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

Flight ID: 040909I	Time Off: 1451Z	Time On: 2320Z		
	A/C - Takeoff	Wx Station - Takeoff	A/C - Land	Wx Station - Land
Pressure	1011.6 mb	29.95 mb	1013.7 mb	29.97 mb
ATIS	Time	Observation		
Takeoff	Z			
Land	Z			
	Number	Data Disposition / Date / Quality		
Flight Level Tapes	2			
Radar Tapes	1	HRD		
Cloud Physics Tapes / CDs				
Video Tapes	4	HRD		
Dropsondes	23	Good: 21 Bad: 2 22 HRD 1-NHC		
AXBT	0			
AXCP	1			
AXCTD				

Remarks:

IP15566945

TEAL63

- NO JW @ T.O

- 1533 J.S. trying to cal JW; looks good

Mission IVAN - CBLASTFlt ID 040909TSED Crew Lynch, SmithPre-Flight 13:00Take-Off 14:51Landing 23:20

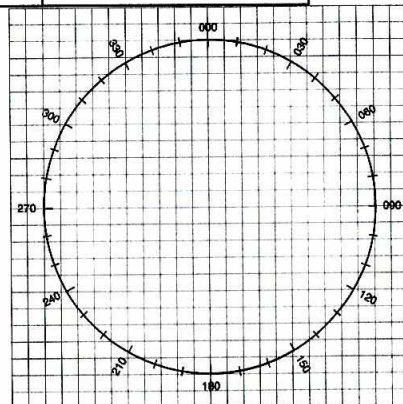
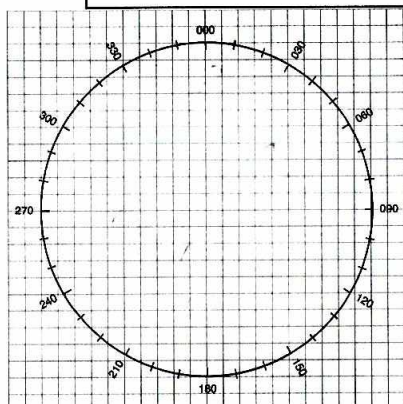
System		Pre-Flight		In-Flight		Post-Flight			
NAV	GPS	FM: 1	TL			LAT	LONG	GS	RE
	INE #1	Time On: 13:00	Aligned to: 1	TL		-1.6	72.2	1	2
	INE #2	Time On: 13:00	Aligned to: 1	TL		+1.9	+4.4	3	5
	Diff GPS			TL					
RADAR	MARS Data	Start	Stop	Ready?	HRD?			# DATs ?	Given To: Rob
	MARS	15:06	22:35	TL	Y/N				
	MARS Data / Tape Status				LFRec	TARec	EOF's		
	MARS LU8	Clean		TL					
PMS	MARS LU9	Clean		TL					
	RADAR R/T SN	Tail 202102LF	102	TL	Mod Switches	ON		Mod Switches	OFF
	Nose			JS				Power	OFF
	FSSP Ref VDC:	Covers	OFF	NY				Covers	ON
TEMP	Cloud Mono	Covers	OFF					Covers	ON
	CIP	Covers	OFF					Covers	ON
	SEA Data DAT	Start	Stop	Ready?	#DATS	Errors	Disk Write	Given To:	
	DAT	Clean?					Y / N		
PRE		Cal High	Cal Low					Cal High	Cal Low
	Temp #1	30.5	-30.4	TL				30.7	-30.2
	Temp #2			TL				Power	OFF
	Temp #3			NY				Power	OFF
FLTLVL	Dewpoint	#1 #2 #3 (DOL)	TL					Power	OFF
	Attack / Slip Angle	AP 30AP 30BP 30	TL					Power	OFF
	Differential	EO1 EO2 EO3 EO4	TL					Power	OFF
	Absolute	ES1 ES2 CBPS	TL					Power	OFF
RAMS	Apn-159 SN:	66-024	JS					Power	OFF
	Apn-232 SN:	1761	JS					Power	OFF
	Liquid Water	J&W King		28V WOW: ON?				Power	OFF
	Radiometer	CO2 3ST	TL	28V WOW: ON?				Power	OFF
MISC	RAMS Data	Start	Stop	Ready?	Errors 8:	Errors 9:	# DATs ?	Given To: Ship	
	CPU: A (B)	14:34	23:31	TL	1	4		Power	OFF
	RAMS Data / Tape Status				Slow Rec	Fast Rec	Disk Records:	3113	
	RAMS LU8	Clean		TL	3222	32149			
USER	RAMS LU9	Clean		TL	3222	32149			
	Flight Director Laptop			TL			Power	OFF	
	Network			NI					
	ASDL Mission #: 10X09A	Name: IVAN	TL	Freq: 30	Block: 10 (2)	Power	OFF		
MISC	C.I. Printer	Start	Stop	Ready?	Paper Bin Stores		Given To:		
	PRATE: 10	14:34	23:31	TL	0% (25%) 50% 75% 100%		Power	OFF	
	Exterior Walk Around	Plugs	Covers	JS			Plugs	Covers	
	SATCOM	WIS Inmarsat	GlobalStar	JS			Power	OFF	
MISC	AXBT Internal	# Loaded: 8		NY			# Launched:		
	AXBT External	# Loaded: 8		NY	28V WOW		# Launched:		
	AVAPS	# On Board: 43		JS			# Dropped: 23		
	Video Cameras	Start	Stop	Ready?	Cameras	Mode	# Tapes ?	Given To: Rob	
USER	VHS 6VH8	14:33	23:32	TL	NOV RD	2 / (2)	Lens Cap ?	JS	
	FCU	-B-C-D-		JS			UPS	OFF	
	SFMR (HRD) (OC)			TL			Accelerometers		
	NASA SRA			FW			#1 (2 G):	8203	
MISC	ARL CAT Probe, SST & IRGA			JS			#2 (2.5 G):	6687	
	UW PDA			NY			#3 (3 G):	5967	
	Scripps MASS, Laser Alt, IR Cam & Somp			TL			#4 (3.5 G):	2892	
	RSMAS Licor			TL					

DATE 9/9/04		SCHEDULED RX TIME 18Z		AIRCRAFT NUMBER N43RF		FLIGHT DIRECTOR SHEPHERD	
WX MISSION IDENTIFIER NOAA3 WX09A						OB NUMBER 12	
VORTEX DATA MESSAGE							
A	09111740Z			DATE and TIME of FIX			
B	14 DEG 40 MIN N S			LATITUDE of FIX			
	71 DEG 49 MIN W E			LONGITUDE of FIX			
C	700 MB 2420 M			MINIMUM HEIGHT of 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	199 DEG 132 KT			MAXIMUM FLIGHT LEVEL WIND NEAR CENTER			
G	114 DEG 10 NM			BEARING and RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND			
H	924 MB			MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.			
I	13 C 13058 M			MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE OUTSIDE EYE			
J	20 C 13039 M			MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE INSIDE EYE			
K	13 C 1 C			DEWPOINT TEMP / SEA SURFACE TEMP INSIDE EYE			
L	OPEN SE			EYE CHARACTER: Closed wall, poorly defined, open SW, etc.			
M	C 13			EYE SHAPE/ORIENTATION/DIAMETER: Code eye shape as: C - Circular; CO - Concentric; E - Elliptical. Transmit orientation of the 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	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; 9-925mb; 8-850mb; 7-700mb; 5-500mb; 4-400mb; 3-300mb; 2-200mb; NA-Other			
O	11 NM			NAVIGATION FIX ACCURACY / METEOROLOGICAL ACCURACY			
P	REMARKS MAX FL WIND 132 KT SE QUAD 1737Z SLP FROM DROP SONDE HAIL NW EYEWALL SECOND EYEWALL TRYING to form with Diameter of 45 mi 920 EX T 924						

INSTRUCTIONS: Items A thru 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 Flight Director's discretion for unscheduled

[illegible]

PAGE OF



1. POSITION
2. TIME
3. ALTITUDE
4. NEXT POSITION
5. ETA
6. NEXT POSITION

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

- 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 DESK
- PILOT INTENTIONS

- WE HAVE ENDURANCE REMAINING

[illegible]

[illegible]

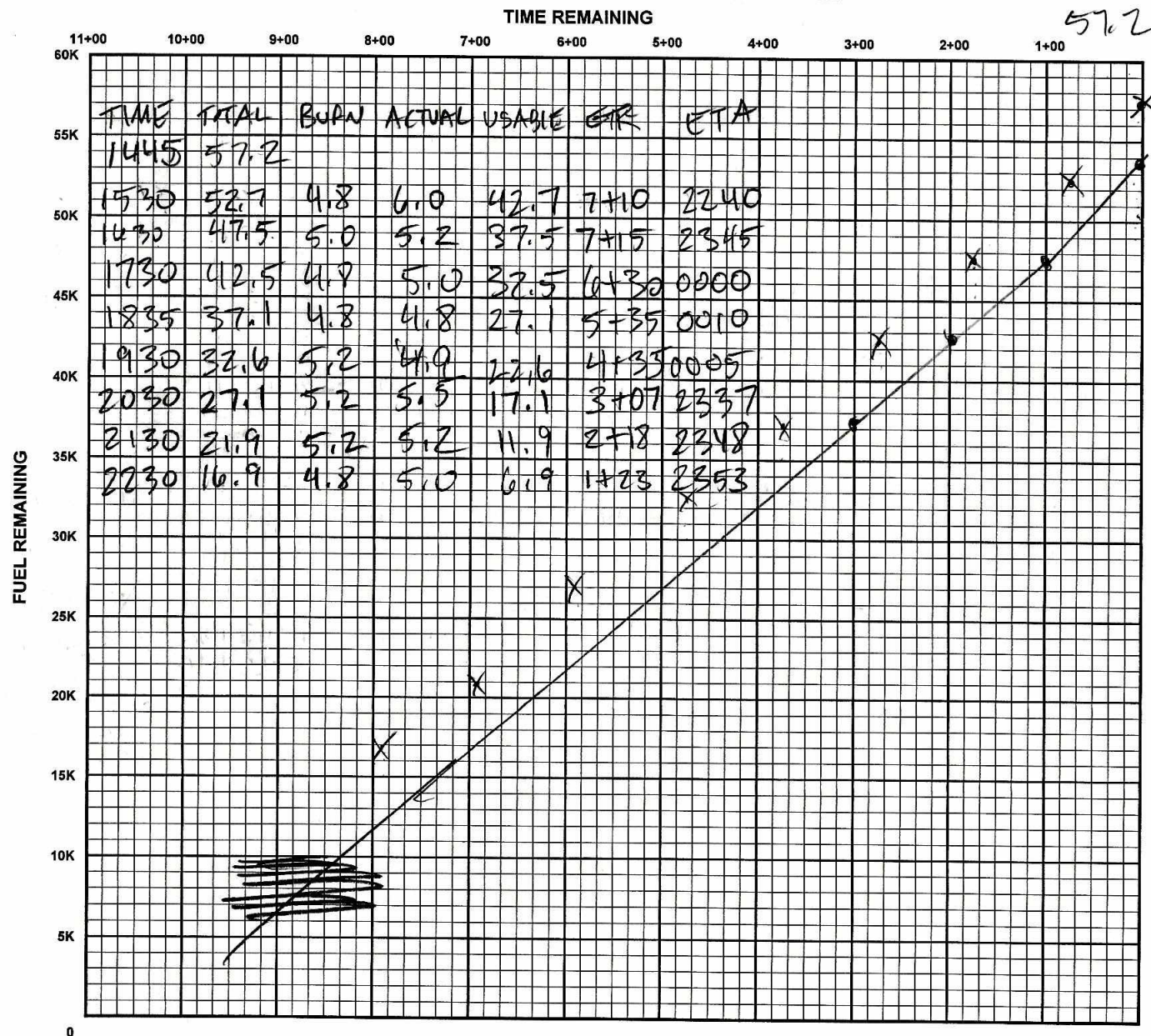
INS PERFORMANCE		
	INS 1	INS 2
BEGIN ALIGN TIME	1300	1300
ALIGN STATUS (0-5)	1	0
END NAV TIME	2320	2320
START NAV TIME	1425	1425
DELTA T	8455	8455

TERMINAL ERRORS		
	INS 1	INS 2
DELTA LAT	-1.6	+1.9
DELTA LON	+2.2	+4.4
RGS	1	3
RADIAL ERROR	2	5

[illegible]

[illegible]

RANGE CONTROL GRAPH



DISTANCE REMAINING

$$ETP = .5(TOTAL\ DISTANCE \times OUTBOUND\ WIND\ FACTOR)$$

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	8.5
ENROUTE FUEL (5K 5K 4.5K RULE)	43.5
RESERVE AT DESTINATION	10.0
REQUIRED RAMP	53.5
ACTUAL RAMP FUEL	57.2

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		

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
1530	208	150	X	X	+10	268	269

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	

