

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 ✓ (C)

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#2 1740 105 180 2 TEAL63	
	1844 1446 7159 921 (See reverse for additional remarks)		

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Flight ID: 040909T Time Off: 1451Z Time On: 2320Z

	A/C - Takeoff	Wx Station - Takeoff	A/C - Land	Wx Station - Land
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Pressure	1017.6 mb	29.95 mb	1013.7 mb	29.97 mb
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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
Drosondes	23	Good: 21 Bad: 2 22 HRD 1-NHC
AXBT	0	
AXCP	1	
AXCTD		

Remarks: TEAL63

IP15566945

- NO JW @ T.O

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



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

Flight ID: I040909

<u>Sensor or system</u>	<u>Number or Name</u>
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

Mission IUAN-CBLAST

Flt ID 040909I

SED Crew Lyncky Smith

Pre-Flight 13:00

Take-Off 14:51

Landing 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: 6	TL			-1.6	72.2	1	2
	INE #2	Time On: 13:00	Aligned to: 6	TL			+1.9	+4.4	3	5
	Diff GPS		TL							
RADAR	MARS Data	Start	Stop	Ready?	HRD?		# DATs ? 1 Given To: Rob			
	MARS	15:06	22:35	Y	Y/N					
	MARS Data / Tape Status				LFRec	TARec	EOF's			
	MARS LU8	Clean		TL						
	MARS LU9	Clean		TL						
	RADAR R/T SN	Tail 202/102LF	102	TL	Mod Switches	ON	Mod Switches OFF			
	Nose		JS				Power	OFF		
PMS	FSSP	Ref VDC:	Covers	OFF			Covers ON			
	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			Y / N			
TEMP		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			NU			Power	OFF		
	Dewpoint	#1 #2 #3 (PDL)		TL			Power	OFF		
PRESES	Attack / Slip Angle	AP AP AP AP		TL			Power	OFF		
	Differential	CO1 CO2 CO3 CO4		TL			Power	OFF		
	Absolute	CS CS CBS		TL			Power	OFF		
FLTLVL	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 CST		TL	28V WOW: ON?		Power	OFF		
RAMS	RAMS Data	Start	Stop	Ready?	Errors-8:	Errors-9:	# DATs ? 2	Given To: Shup		
	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				
	RAMS LU9	Clean		TL	3222	32149				
	Flight Director Laptop			TL			Power	OFF		
	Network			NI						
	ASDL Mission #:	10X09A	Name: IUAN	TL	Freq: 30	Block: 10 (2)	Power	OFF		
	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
MISC	Exterior Walk Around	Plugs	Covers	JS			Plugs	Covers		
	SATCOM	WIS Inmarsat	GlobalStar	JS			Power	OFF		
	AXBT Internal	# Loaded:	8	NU			# Launched:	-		
	AXBT External	# Loaded:	8	NU	28V WOW		# Launched:	-		
	AVAPS	# On Board:	~ 43	JS			# Dropped:	23		
	Video Cameras	Start	Stop	Ready?	Cameras	Mode	# Tapes ? 4	Given To: Rob		
	VHS SVHS	14:33	23:32	TL	NOV RD	2 / (2)	Lens Cap ?	JS		
	FCU	-B-C-D-		JS			UPS	OFF		
USER	SFMR (HRD) (OC)			TL			Accelerometers			
	NASA SRA			EW			#1 (2 G):	8203		
	ARL CAT Probe, SST & IRGA			JS			#2 (2.5 G):	6687		
	UW PDA			NU			#3 (3 G):	5967		
	Scripps MASS, Laser Alt, IR Cam & Semp			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
	<p>MAX FL WIND 132 KT SE QUAD 1737z</p> <p>SLP FROM DROP SONDE</p> <p>HAIL NW EYEWALL</p> <p>SECOND EYEWALL TRYING to form with diameter of 45 mi</p> <p style="text-align: right;">920 EST 924</p>

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

MISSION PREFLIGHT LOG

NAVIGATOR
ADLER/SIEGEL

AIRCRAFT COMMANDER
TEBERT

FLIGHT DIRECTOR
SHEPHERD

SCHEDULED / ACTUAL TAKEOFF Z DATE OF TAKEOFF
1500 / 1451 09SEP04

DESTINATION
KMCF

MISSION
LVAN # 2

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	
TRIX	N 17 42.1 W 64 47.9		257	14W	243														
ALASK	16 50.2 66 32.3		269	12W	257														
FIRK	16 30.0 68 00.0		263	11W	252														
IP	15 56.4 69 45.2																		
GELO	18 33.7 75 10.7																		
GELO	14 48.0 70 11.2																		
EYE	14 42.0 72 00.0																		
EYE	15 40.9 73 18.5																		
BENET	18 15.0 74 39.7																		
JOSIS	20 08.8 75 15.1																		
ZIN	20 57.6 73 40.7																		
HODG	24 09.6 77 23.7	+1.3 -3.0	24 77	10.9 20.7															GELO
ZBV	25 42.5 79 17.7	+1.3 -3.0	25 79	43.8 14.7															
PB1	26 40.8 80 05.2																		
LBV	26 49.7 81 23.5																		
PIE	27 54.5 82 41.1																		
KMCF	27 51.7 82 30.8																		
JSTPM	28																		

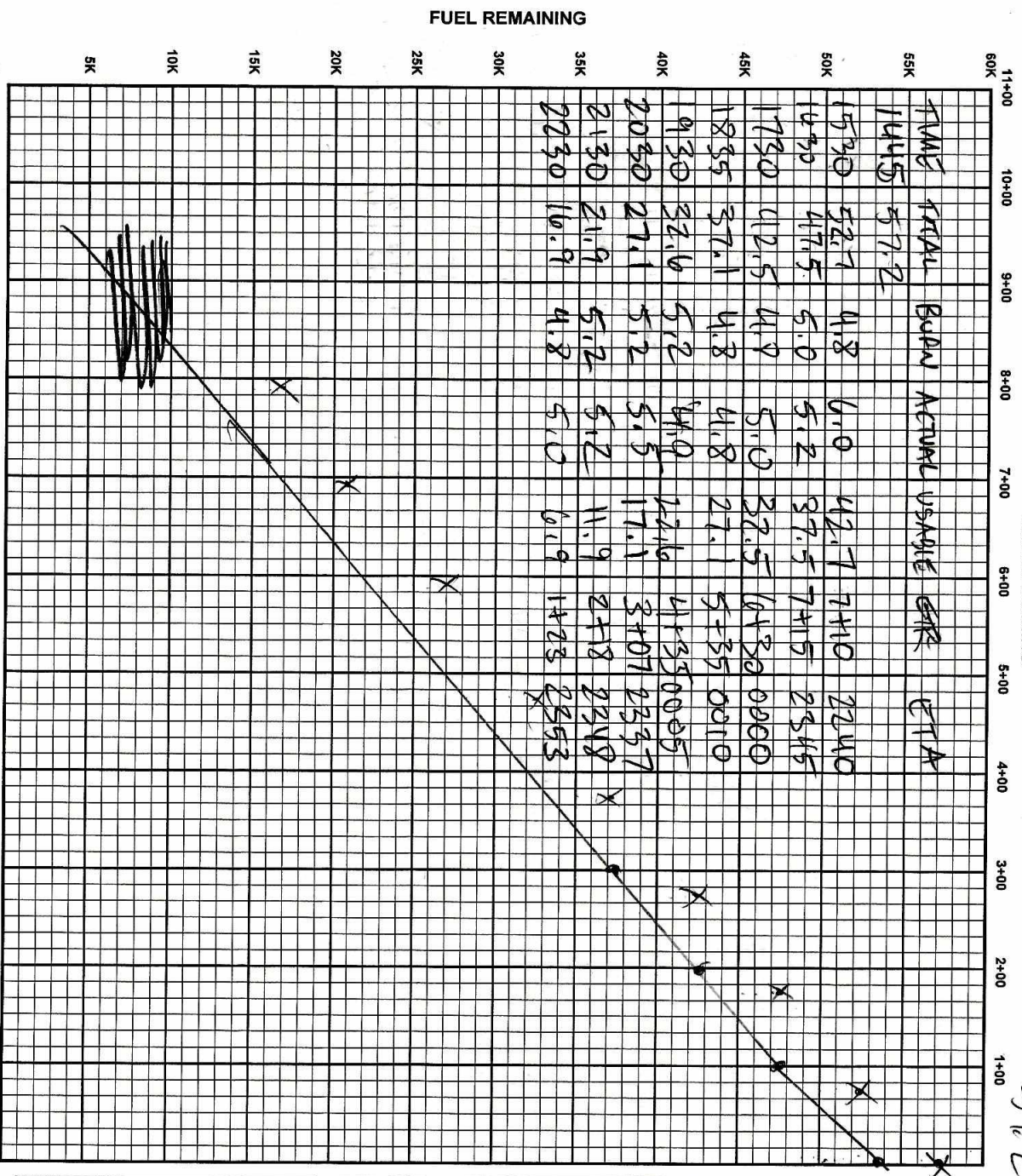
INS PERFORMANCE	
INS 1	INS 2
BEGIN ALIGN TIME	1300 1300
ALIGN STATUS (0-5)	1 0
END NAV TIME	2320 2320
START NAV TIME	1425 1425
DELTA T	8155 8155

TERMINAL ERRORS	
INS 1	INS 2
DELTA LAT	-1.6 +1.9
DELTA LON	+2.2 +4.1
RGS	1 3
RADIAL ERROR	2 5

REMARKS

RANGE CONTROL GRAPH

TIME REMAINING



1837 1444
7158
57.2

DISTANCE REMAINING
ETP = .5(TOTAL DISTANCE X OUTBOUND 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 (6K-5K/4.5K RULE)	43.5
RESERVE AT DESTINATION	10.0
REQUIRED RAMP	53.5
ACTUAL RAMP FUEL	57.2

35
6
2.5
43.5

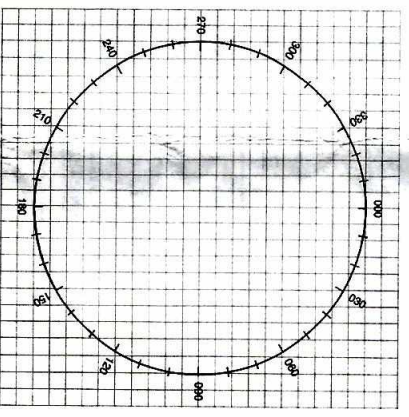
TACTICAL (OFFSTA TO DESTINATION)	
DISTANCE (OFFSTA TO DEST)	
ENROUTE TIME (OFFSTA TO DEST)	
BURN RATE (LBS/HR)	4500
ENROUTE FUEL REQUIRED	5500
RESERVE AT DESTINATION	
FUEL AT OFFSTA	

POINT OF SAFE RETURN	
ETP DISTANCE (TO DEPARTURE)	4 ENG 3 ENG
ENROUTE TIME (TO DEPARTURE)	
BURN RATE (LBS/HR)	4500
FUEL REQUIRED RESERVE AT DEPARTURE	5500
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
MERR (DIAL 000)			
+ZN			
=MTH			
MCH (READING)			
CE			
-VAR			
=DEV			

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



WIND 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
1530	208	150			410	268	265

