

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

Flt ID: D40907I	From: TISX	To: TISX
Flt. No: 04	Blk In: 2129z	Time On: 2124z
ETD: 1400z	Blk Out: 1343z	Time Off: 1353z
ETE: 9+00	Blk Time: 7+46 7.8 Hrs	Flt Time: 7+31 7.5 Hrs
Sponsoring Org: NOAA/NHC	Program: Hurr 2004	Purpose: H. IVAN

AOC Flight Crew

Aircraft Commander: TEBEEST, R	Data System: LYNCH, T
Co-Pilot: SILAH, M CHOY, B	AVAPS: TONG, R
Navigator: SIEGEL, P ADLER, J	System Eng: SMITH, J
Flight Eng: FLOYD, D KUPPEL, J	AA: MC FADDEN, J
Flight Director: SHEPHERD, T	AA:
Avionics:	Crew Chief:

Participating Scientists / Visitors

Name (Last, First)	Activity on Aircraft	Affiliation
ROGERS, R	PI	NOAA/HRD
UHLORN, E	Sci	
LEIGHTON, P	Sci	

Remarks (Storm Name, Mission ID, Recco Times, Fix Times)	<u>Recco Times</u>	<u>Fix #</u> <u>Fix Time</u>
Storm Name: IVAN	1439	
Mission ID: NOAA3 0409A IVAN	1515	
Penetration number and time	1632	
1-1552		
2-1739		
3-1814		
4-1928		

(See reverse for additional remarks)

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Flight ID: 040907I Time Off: 1353 Z Time On: Z

	A/C - Takeoff	Wx Station - Takeoff	A/C - Land	Wx Station - Land
Pressure	<u>1011.6</u> mb	<u>29.91</u> mb	<u>1008.4</u> mb	<u>29.84</u> mb

ATIS	Time	Observation
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Takeoff	<u>Z</u>	
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Land	<u>H</u>	<u>1953Z 050/13 10sm SCT028 31/24 A2984</u>
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Number	Data Disposition / Date / Quality
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Flight Level Tapes

Radar Tapes

Cloud Physics Tapes / CDs

Video Tapes

Dropsondes	<u>13</u>	Good: <u>10</u> Bad: <u>3 - no launch</u> <u>HRD Sonden.</u>
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AXBT

AXCP

AXCTD

Remarks: ↑ 4305 TEAL 63
IP 1227 6253
EYE 1148 6006
- 1358 Radar up



**NOAA P-3 N43RF
CBLAST 2004
FLIGHT #7**

Flight ID: I040907

<u>Sensor or system</u>	<u>Number or Name</u>
INE.....	2
Accelerometer.....	2
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: 1353Z

Land: 2124Z

The RA-232 was substituted for the RA-159 during take off and landing due to spiking (T.O. 135001-135340; 210908-212700 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 (200249-210908).

Dew pointer #2 spiked and was replaced by dew pointer #1 (181129-181335).

There were data gaps noted: 144732-144759; 181638-181643; 181931-181938

The Johnson-Williams liquid water sensor was inoperative during the flight.

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	1008.8 mb
Corrected Tower Pressure	1012.9 mb	1010.5 mb

Flight Director: Tom Shepherd
813-828-3310 x3053

Mission IUAN-SFMR

Flt ID 040907I

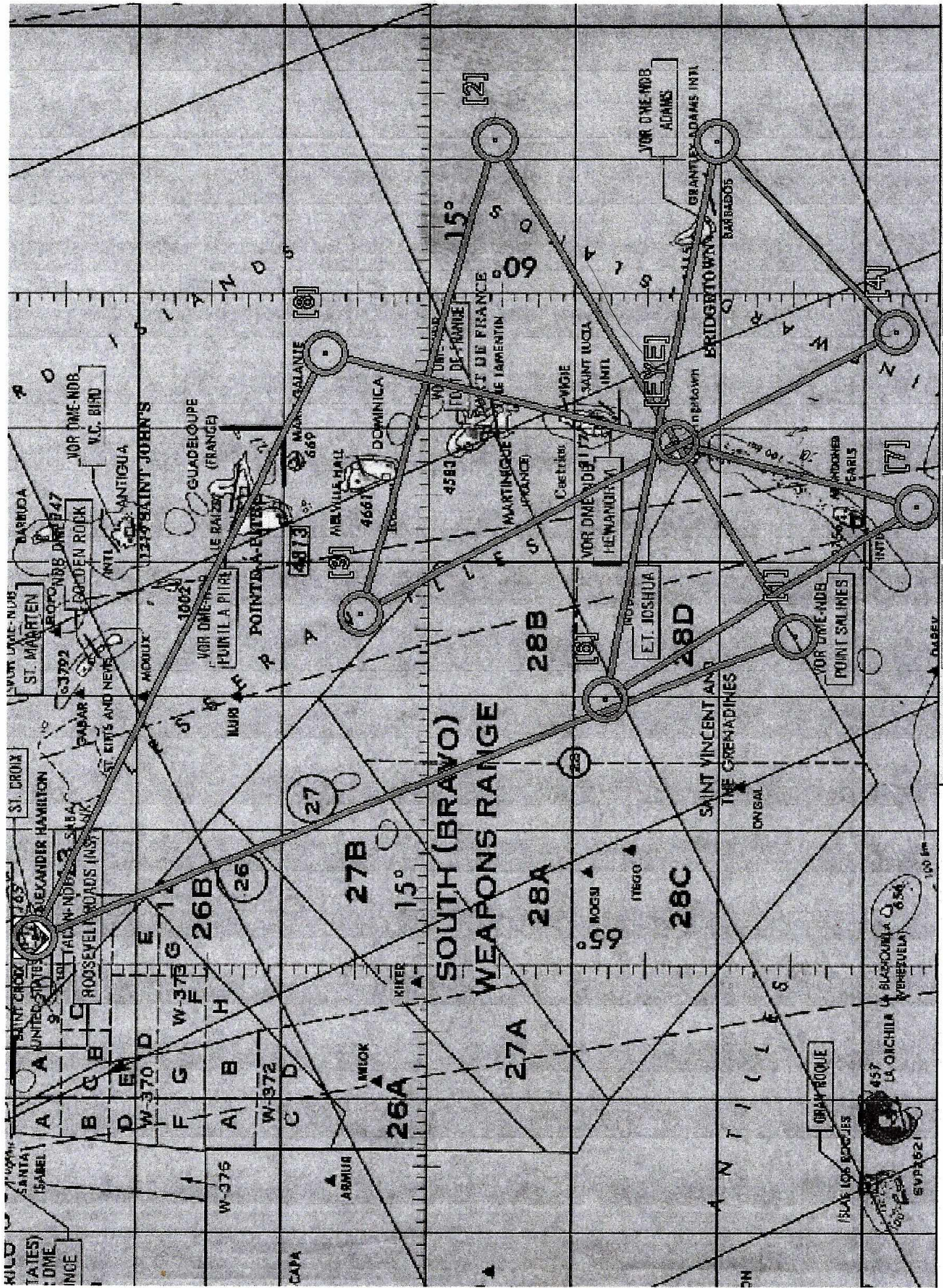
SED Crew Lynch, Smith, Tong

Pre-Flight 12:15 Take-Off 13:53 Landing 21:24

		System		Pre-Flight	In-Flight	Post-Flight				
NAV	GPS	FM: 1		TL		LAT	Lon	GS	RE	
	INE #1	Time On:	Aligned to: 1	TL		47.4	40.9	4	7	
	INE #2	Time On:	Aligned to: 0	TL		41.0	43.1	4	3	
	Diff GPS			TL						
RADAR	MARS Data	Start	Stop	Ready?	HRD?	# DATs ? 1 Given To: 256				
	MARS	13:53	20:55	TL	ON					
	MARS Data / Tape Status				LFRec	TARec	EOF's			
	MARS LU8	Clear		TL						
	MARS LU9	Clear		TL						
	RADAR R/T SN	Tail 202102LF	102	TL	Mod Switches	ON	Mod Switches OFF			
PMS	FSSP Ref VDC:	Covers	OFF	NU		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 / N			
TEMP		Cal High	Cal Low			Cal High	Cal Low			
	Temp #1	30.5	-30.4	TL		30.6	-30.2			
	Temp #2			TL		Power	OFF			
	Temp #3			NI		Power	OFF			
PRES	Dewpoint	#1 #2 #3 (DL)		TL		Power	OFF			
	Attack / Slip Angle	AP OAP BP OBP		TL	0	Power	OFF			
	Differential	P01 P02 P03 P04		TL		Power	OFF			
	Absolute	PST PS2 OAPS		TL		Power	OFF			
FLTLVL	Apn-159 SN:	66-024		JS		Power	OFF			
	Apn-232 SN:	1761		JS		Power	OFF			
	Liquid Water	J&W KJ NU		JS-NU	28V WOW: ON	Power	OFF			
	Radiometer	602 6ST		TL	28V WOW: ON?	Power	OFF			
RAMS	RAMS Data	Start	Stop	Ready?	Errors 8:	Errors 9:	# DATs ? 2 Given To: 2400			
	CPU: A	B	13:41	21:29	TL	0	1	Power OFF		
	RAMS Data / Tape Status				Slow Rec	Fast Rec	Disk Records: 2822			
	RAMS LU8	Clear		TL	2822	28092				
	RAMS LU9	Clear		TL	2822	28042				
	Flight Director Laptop			TL			Power	OFF		
MISC	ASDL Mission #:	0409A Name: IUAN			Freq: 30	Block: 10	Power OFF			
	C.I. Printer	Start	Stop	Ready?	Paper Bin Stores		Given To:			
	PRATE: 10	13:40	21:29	TL	0%	25%	60%	75%	100%	Power OFF
	Exterior Walk Around	Plugs	Covers	RT			Plugs Covers			
	SATCOM	W/S	Amarsat	GlobalStar	JS			Power OFF		
	AXBT Internal	# Loaded:	0	NU			# Launched: -			
AXBT External	# Loaded:	0	NU	28V WOW		# Launched: -				
AVAPS	# On Board:	36	JAS			# Dropped: 13				
USER	Video Cameras	Start	Stop	Ready?	Cameras	Mode	# Tapes ? 4 Given To: 256			
	VHS (SVHS)	13:40	21:29	TL	W D G O	2 / 12	Lens Cap ?:			
	FCU	-B-C-D-		TL			UPS OFF			
	SFMR (HRD) AOD			TL			Accelerometers			
NASA SRA			TL			#1 (2 G): 0203				
ARL BAT Probe, SST & IRGA			TL			#2 (2.5 G): 02057				
UW PDA			TL			#3 (3 G): 6907				
Scripps MASS, Laser Alt, IR Cam & Sono			TL			#4 (3.5 G): 2892				
RSMAS Licor			TL							

Please Note any Discrepancies

Item #	Zulu Time	Problem Description	Initials	Status
1	Pre	Manually blew out DAP + DBP	RT	OK
	PRE	* INCLUDE LINE PRESSURE KIT IN DEPLOYMENT KIT *	RT	
3	14:42	Switched to QSFME - adjusted cuts for Q41 + ADC * 2 Free	TL	—
4	14:58	Set test 'Hus' setup file to 2400/1800 prf + .25 us Pwidth - per Paul Leighton	TL	—
*		TT-700 Terminal needs new paper	TL	OK



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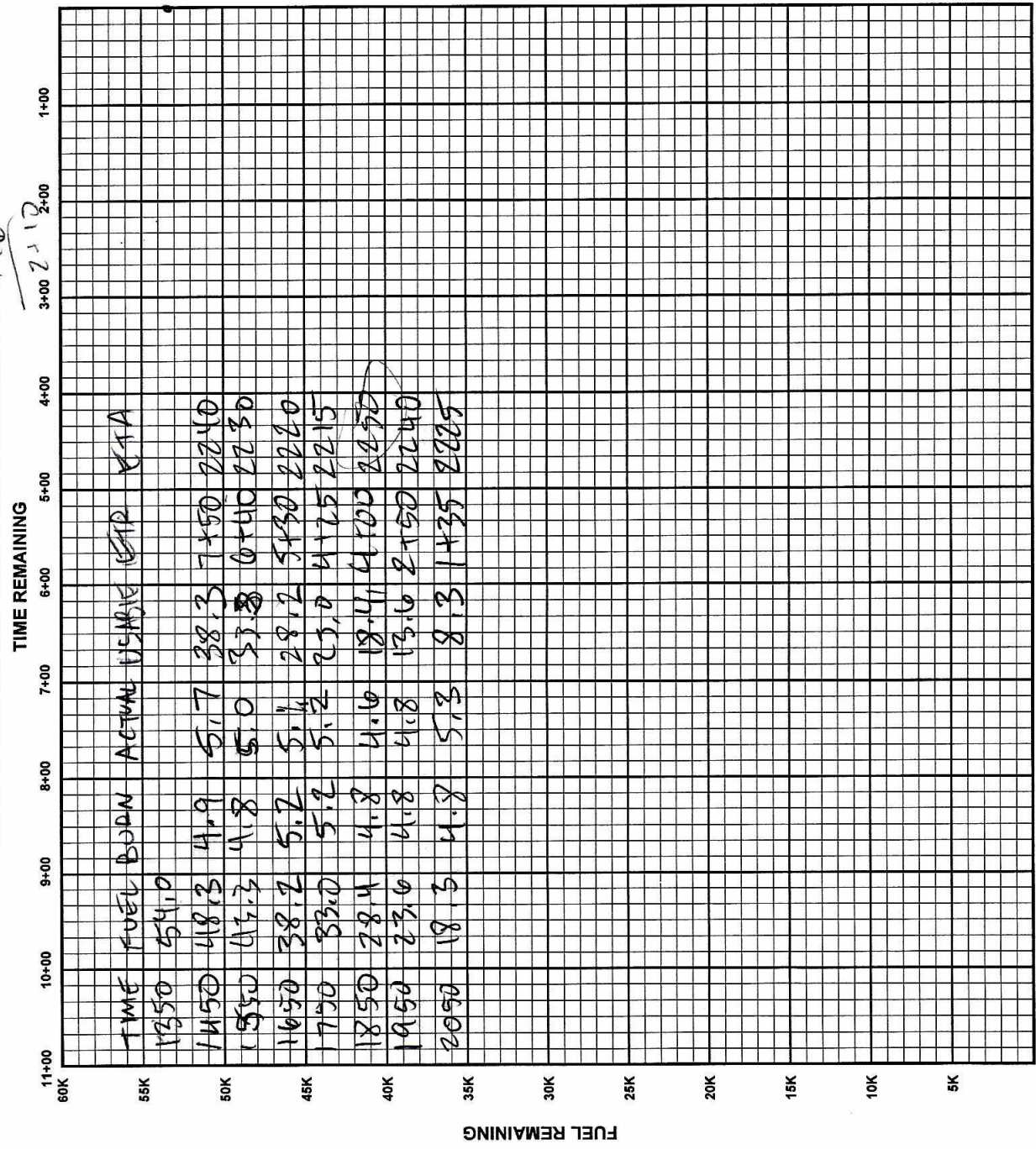
DATE	9/7/04	SCHEDULED RX TIME	NONE	AIRCRAFT NUMBER	N43RF	FLIGHT DIRECTOR	Shepherd
WX MISSION IDENTIFIER						OB NUMBER	
NOAA3						IVAN	
VORTEX DATA MESSAGE							
A	071155Z	DATE and TIME of FIX					
B	11 DEG 44 MIN N	LATITUDE of FIX					
	60 DEG 36 MIN W	LONGITUDE of FIX					
C	NA MB	M	MINIMUM HEIGHT 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	024 DEG 116	KT	MAXIMUM FLIGHT LEVEL WIND NEAR CENTER				
G	298 DEG 7	NM	BEARING and RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND				
H	959	MB	MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.				
I	14 C 12450	M	MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE OUTSIDE EYE				
J	21 C 12443	M	MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE INSIDE EYE				
K	15 C 1 NA C		DEWPOINT TEMP / SEA SURFACE TEMP INSIDE EYE				
L	OPEN E		EYE CHARACTER: Closed wall, poorly defined, open SW, etc.				
M	E 03/20/15		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/NA		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	1 1 1	NM	NAVIGATION FIX ACCURACY / METEOROLOGICAL ACCURACY				
P	REMARKS						
	MAX FL WIND 116 KT W QUAD 1548 Z						
	SLP EXTRAP from FL data						

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

16
35
7-8
2.5
43.5

320
1724
-140
-78 172
80 2125

RANGE CONTROL GRAPH

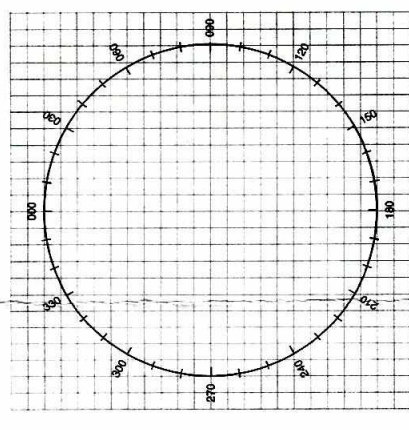


ENROUTE FUEL	
ENROUTE TIME	8+30
ENROUTE FUEL (6K-5K 4.5K RULE)	43.5
RESERVE AT DESTINATION	10
REQUIRED RAMP	53.5
ACTUAL RAMP FUEL	51.0

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)	
ENROUTE TIME (TO DEPARTURE)	
BURN RATE (LBS/HR)	4500
FUEL REQUIRED	5500
RESERVE AT DEPARTURE	
PSR FUEL	

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



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

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

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

DISTANCE REMAINING

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

