



NOAA P-3 N43RF

IFEX IOP 2 Hurricane Dennis



Flight ID: 0507061

<u>Sensor or system</u>	<u>Number or Name</u>
INE	2
Accelerometer	2
Temperature Probe	1
Dew Point Probe	2 (Edgetech)
Altitude (for vertical wind)	Radar Altimeter 159
Static Pressure	Rosemount Fuselage
Dynamic Pressure	Rosemount Fuselage 1281
Time Source	Micro 99
Constants File	CO3051.CON

Notes:

There were several time/data glitches during this flight which occurred between 225921Z-225930Z, 230121Z-230130Z, 230451Z-230500Z, 230751Z-230800Z, 230841Z-230850Z, 231041Z-231050Z, 231251Z-231300Z, 231711Z-233300Z, 233641Z-233650Z, 233711Z-233720Z, 234221Z-234230Z, 005251Z-005250Z, and 032401Z-032410Z.

Due to spikes in the data, values from radar altimeter 159 were replaced with 232 between 215301Z-215700Z, 220401Z-222630Z, 003930Z-004200Z, 011630Z-011730Z, 022645Z-022722Z, 023509Z-023612Z, 025901Z-030010Z, 032413Z-032500Z, 053830Z-054920Z, and 060030Z-060700Z.

There were numerous times during the flight where the dewpoint temperature exceeded ambient temperature resulting in an RH>100%. This was likely due to rain, a wet-bulb effect on the total temperature sensor, and/or an artificial warming of the dewpoint sensor as it tried to burn off excess moisture. No attempts were made to correct the data from dewpoint sensor 2 in order to bring the relative humidity values below 100%.

The King Liquid Water sensor was not operating during this flight.

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.

	Takeoff	Landing
Aircraft Static Pressure	907.5 mb	909.2 mb
Corrected Tower Pressure	908.3 mb	910.7 mb

Flight Director: Martin Mayeaux (813) 828-3310 ext. 3086

U.S. Dep't. of Commerce / NMAO / NOAA / Aircraft Operations Center

FLT ID: 050706I	From: MR02	To: MR02
Flt No: 05-031	In: 0606Z	On: 0606Z
ETD: 1900Z	Out: 2134	Off: 2156
ETE: 8 + 30 (8.5)	Blk Time: 8 + 26 (8.5) Hrs	Flt Time: 8 + 04 (8.1) Hrs
Sponsoring Org: HRO	Program: IFEX 1	Purpose: Dennis TK TOPZ

AOC Flight Crew

Aircraft Commander: Tebeest	Data System: Lynch
Co-Pilot: Nelson 1	AVAPS: Olney
Navigator: Brakob 1	System Engineer:
Flight Eng: Floyd 1	AA: Barr
Flight Director: Mayeaux 1 Shepherd	AA:
Avionics: San Souci	Crew Chief:

Participating Scientists / Visitors

Name (Last, First)	Activity on Aircraft	Affiliation
Cisneros, Jorge	Obs	Costa Rican Student
Musgrave, Kate	Obs	University of Colorado
Hennon, Paula	Obs	HRO
Murillo, S	Obs	HRO
Dodge, S	Obs	HRO
Hood, R	Obs	NASA
Black, m	PI	HRO
Willis, P	Sci	HRO

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

Storm Name:

NMAO Mission ID: WXX04A Dennis

7 minute + 30 seconds in storm

23-00Z Total 13

0038Z 1618"
73kt FF 73° 18N
975 WS 1kt
978 Sample

Recco Times

0241Z 16019 7331
2kt 67kt FI
972mb

Fix # Fix Time

2305 1612 7243

984 mb

79 KTS WC

0227
0855 0837 0243 0324

12 fix if possible

(See reverse for additional remarks)

ABT graph

3052294474

U.S. DEPT OF COMMERCE / NMAO / NOAA / AIRCRAFT OPERATIONS CENTER

FLT ID: 050706I

TIME OFF: 2156 Z

TIME ON: 0600 Z

A/C - Takeoff

WX Station - Takeoff

A/C - Land

WX Station - Land

Pressure

902.5

~~2996~~ 2996 1014.6

909.2

3004 1017.3

ATIS - Takeoff

2000 25010KT

Sc+020TCU Sc+035 27/22 2998

ATIS - Land

NA

Data Source

Number

Data Disposition / Date / Quality

Flight Level Tapes

Radar Tapes

Cloud Physics Tapes /
Cds

Video Tapes

Dropsondes

20

Good: 19

Bad: /

Total:

AXBT

AXCP

AXCTD

SONOBUOY

REMARKS:

1814Z 989mb

58KT N Quad 1808Z

1541 7156

Atis 2200Z 23013KT Sc+020 035 27/22 2998

1951Z

1549 7208

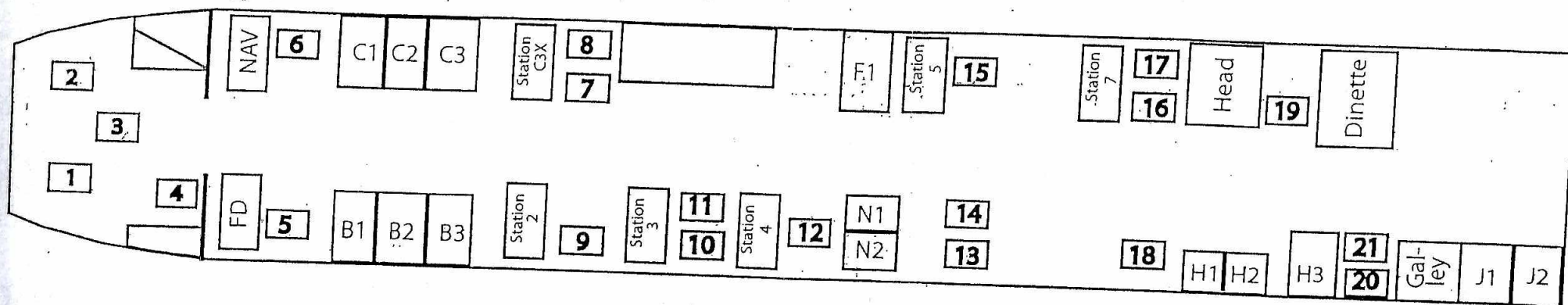
987 800

open NN

2095/35/25

NOAA AIRCRAFT OPERATIONS CENTER

Flight ID 0507061



1. Teleest

PILOT

2. Nelson

COPILOT

3. Floyd

FLIGHT ENGINEER

4. Black

STATION 1

5. Mayeaux

FLIGHT DIRECTOR

6. Brakob

NAVIGATOR

7. Musgrave

STATION C3X

8. Lynch

STATION C3X

9. Willis

STATION 2

10. Murillo

STATION 3

11. Dodge

STATION 3

12. Barr

STATION 4

13. Hennon, P

PROJECT SEAT

14. Cisneros

PROJECT SEAT

15. O'neil

STATION 5

16. Shepherd

STATION 7

17. Hood

STATION 7

18. San Souci

STATION 8

19.

DINETTE

20.

GALLEY

21.

GALLEY

Mission IFEX #2Flt ID 0507007SED Crew Bart, Lynch, Sans Souci, OlneyPre-Flight 17:30Take-Off 2156ZLanding 0601Z

System				Pre-Flight	In-Flight	Post-Flight			
NAV	GPS	FM: 1		OK		LAT	Lon	GS	RE
	INE #1	Time On: 19:40	Aligned to:	OK		-20.7	+7.2	3	22
	INE #2	Time On: 19:40	Aligned to:	OK		+3.8	+3.6	1	5
	Diff GPS			OK					
RADAR	MARS Data	Start	Stop	Ready?	HRD?	# DATs ? Given To:			
	MARS	2210Z		Y	(Y)N	Peter Dodge			
	MARS Data / Tape Status				LFRec	TARec	EOF's		
	MARS	(LUB)	Clean 4	Y	2499	41571	51		
	MARS	LU9	Clean 11	Y					
	RADAR R/T SN	Tail 102/202LF	102	Y	Mod Switches	ON	Mod Switches (OFF)		
PMS	Nose			OK		Power OFF			
	ETL DMT DAS								
	NCAR FSSP Ref VDC:	Covers OFF		W/O		Covers ON			
	NCAR PIP	Covers OFF		W/O		Covers ON			
TEMP	NCAR CIP	Covers OFF		W/O		Covers ON			
		Cal High	Cal Low			Cal High		Cal Low	
	Temp #1	30.6	-30.4	TL					
	Temp #2			TL		Power (OFF)		(OFF)	
PRES	Dewpoint	(#1) (#2) (#3)	(Vig) (TDL)	TL		Power (OFF)		(OFF)	
	Attack / Slip Angle	(#1) (#2) (#3) (#4)	(BP) (BP)	TL		Power (OFF)		(OFF)	
	Differential	(PQ1) (PQ2) (PQ3) (PQ4)		TL		Power (OFF)		(OFF)	
	Absolute	(PS1) (PS2) (PS3)		TL		Power OFF			
FLTLVL	Apn-159 SN:	101		TL		Power OFF			
	Apn-232 SN:	1761		TL		Power (OFF)		(OFF)	
	Liquid Water	J&W King			28V WOW: (ON)?	Power (OFF)		(OFF)	
	Radiometer	(C82) SST	0607Z	TL	28V WOW: (ON)?	Power (OFF)		(OFF)	
RAMS	RAMS Data	Start	Stop	Ready?	Errors 8:	Errors 9:	# DATs ? Given To:		
	CPU: (A) B	2130	23:17	TL			Power OFF		
	RAMS Data / Tape Status				Slow Rec	Fast Rec	Disk Records:		
	RAMS	(LUB)	Clean 4	TL					
	RAMS	(U9)	Clean 4	TL					
	Flight Director Laptop			TL			Power OFF		
	Network: (Server1) (Server2) (Switches)			TL					
	ASDL Mission #: 0204A Name: DENNIS			TL	Freq:	Block:	Power (OFF)		
	C.I. Printer	Start	Stop	Ready?	Paper Bin Stores		Given To: M.M.		
	PRATE: 10	2130	0607	TL	0% 25% 50% 75% 100%		Power (OFF)		
MISC	Exterior Walk Around			Plugs / Covers	W/O			Plugs Covers	
	SATCOM: (W/S) (mmarsat)			TL				Power (OFF)	
	AXBT Internal # Loaded: 1			NA				# Launched:	
	AXBT External # Loaded: 4			W/O	28V WOW			# Launched:	
	AVAPS # On Board: 51			OK				# Dropped:	
	Video Cameras			Start	Stop	Ready?	Cameras	Mode	# Tapes ? Given To:
	VHS	(GVH3)	2131	0543	TL	(N1) (B1) (D1)	2 / (2)	Lens Cap ? :	
	FCU			(A) (B) (C)	W/O			UPS OFF	
	SFMR: (HRD) (AOC)			TL					
	USER	HRD Work Station							Accelerometers
NASA SRA			NY				#1 (2 G): 3205		
ARL BAT Probe & SST			NI				#2 (2.5 G): 6687		
RSMAS Licor			TL				#3 (3 G): 5967		
AOML Teco Ozone			NI				#4 (3.5 G): 2892		
Chang Server			NI						

Please Note any Discrepancies

[illegible]

N43RF AVAPS DROP LOG

Project : Hurricane '05 / RAINEX

Mission : IFEX #3Flight ID : 05.0706T

Take Off : _____

Landing : _____

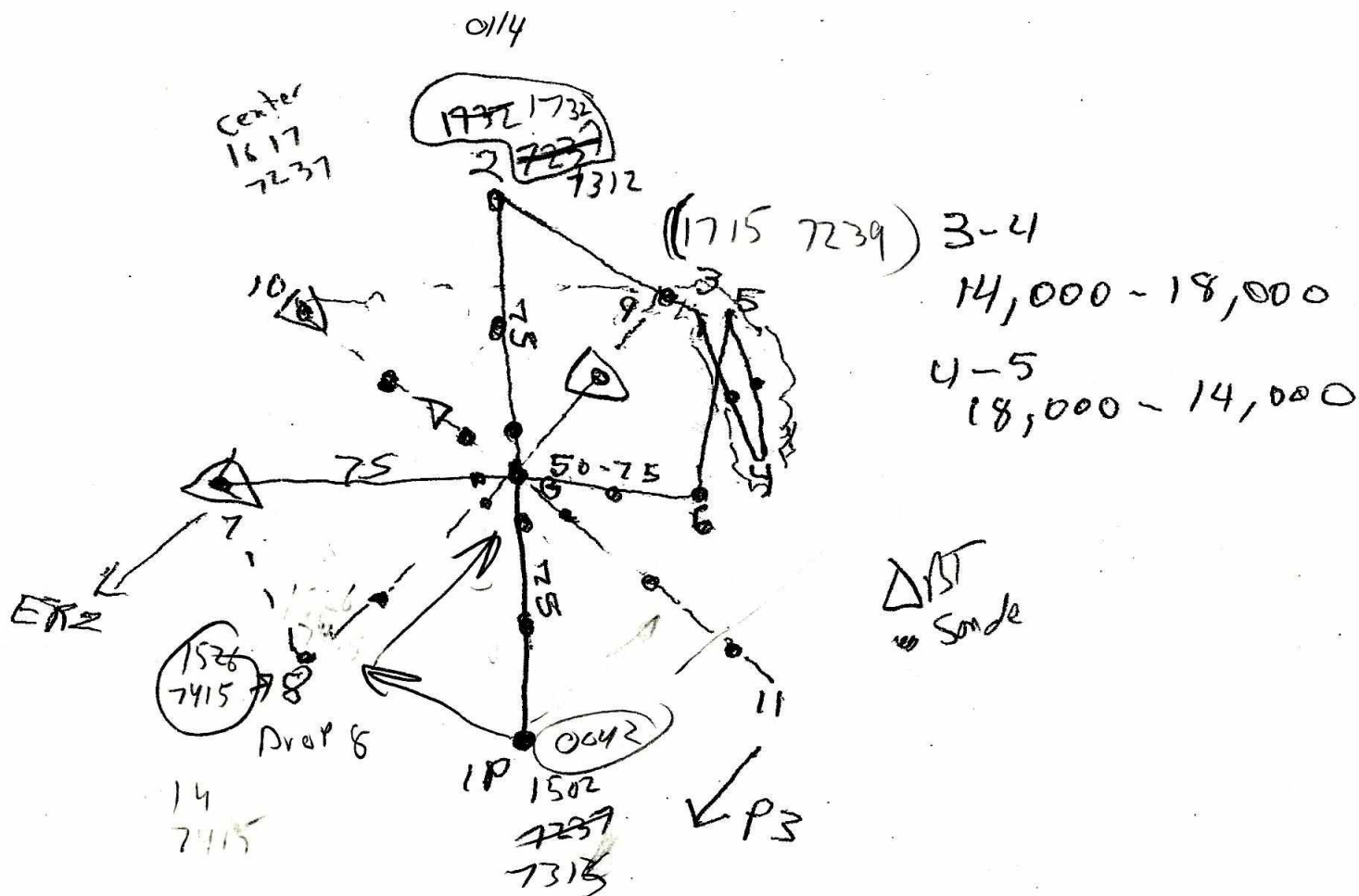
Flt Dir : _____

Launcher S/N: _____

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Winds Time	Operator	Comments	Good ?
1	042 115 153	1	0	0040	28	CANNON		✓
2	040 925 118	2	-0.6	0046	27			✓
3	042 115 161	3	0	0057	40			✓
4	035 135 048	1	+0.6	0010			NO ^{LATE} DETECT	
5	040 925 137	2	0	0102	28			✓
6	040 925 058	3	0	0110			NO TELE LATE	
7	040 925 135	1	0	0116	33			✓
8	040 925 093	1	0	0138	28			✓
9	040 925 158	1	0	0140	60			✓
10	042 415 290	1	0	0212	26	B.O.		✓
11	042 415 133	2	0	0218	42	B.O.		✓
12	042 115 017	3	0	0225	58	B.O.	NO TELEMAN UNTIL THEN	✓
13	042 415 135	4	0	0239	24	B.O.		✓
14	040 925 258	1	0	0245	54	B.O.		✓
15	042 415 310	2	0	0254	24	B.O.	TELEMAN LOST BACK @ 103 SEC	
16	042 815 050	3	0	0258	84	B.O.		✓
17	034 615 133	4	0	0324	28	B.O.	LOST WINDS	✓
18	042 815 055	1	0	0326	40	B.O.		✓
19	042 115 005	2	0	0336	148	B.O.	NO CANNOT DET TIL 110 SEC	
20	042 115 156	3	0	0341		B.O.	LATE TELEMAN	
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								

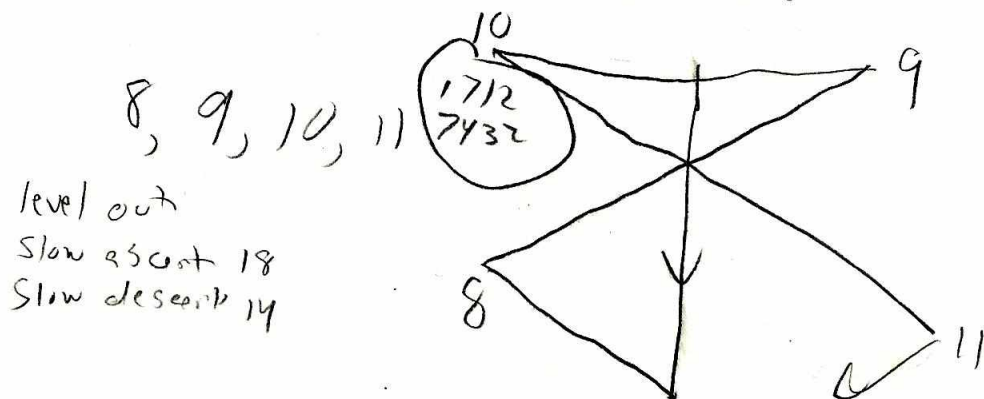
DATE 07/06/05	SCHEDULED RX TIME	AIRCRAFT NUMBER N43 RB	FLIGHT DIRECTOR M. Leaud
WX MISSION IDENTIFIER Wx 04A Dennis			OB NUMBER 25
VORTEX DATA MESSAGE			
A	07 / 0324Z	DATE and TIME of FIX	
B	16 DEG 24MIN N S	LATITUDE of FIX	
	73 DEG 38MIN W E	LONGITUDE of FIX	
C	NAMB NA M	MINIMUM HEIGHT of STANDARD LEVEL	
D	NA KT	ESTIMATE of MAXIMUM SURFACE WIND OBSERVED	
E	NA DEG NA NM	BEARING and RANGE FROM CENTER of MAXIMUM SURFACE WIND	
F	173 DEG 77 KT	MAXIMUM FLIGHT LEVEL WIND NEAR CENTER	
G	355 DEG 12 NM	BEARING and RANGE FROM CENTER OF MAXIMUM FLIGHT LEVEL WIND	
H	975 MB	MINIMUM SEA LEVEL PRESSURE COMPUTED FROM DROPSONDE OR EXTRAPOLATED FROM FLIGHT LEVEL. IF EXTRAPOLATED, CLARIFY IN REMARKS.	
I	9 C 14269M	MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE OUTSIDE EYE	
J	9 C 14274M	MAXIMUM FLIGHT LEVEL TEMP / PRESSURE ALTITUDE INSIDE EYE	
K	8 C 1 NA C	DEWPOINT TEMP / SEA SURFACE TEMP INSIDE EYE	
L	000P SW NW	EYE CHARACTER: Closed wall, poorly defined, open SW, etc.	
M	E10/30/20	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	123/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 NM	NAVIGATION FIX ACCURACY / METEOROLOGICAL ACCURACY	
P	REMARKS MAX FL WIND 177 KT N QUAD 0320 Z SLP from dropsonde Eye open SW-NE 25 miles from Center fix from 600 mb * Circular elliptical 095/20/30		

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 (intermediate) fixes.



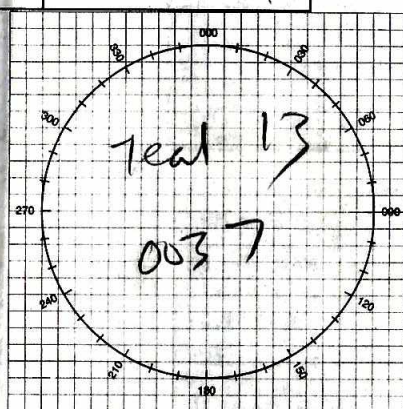
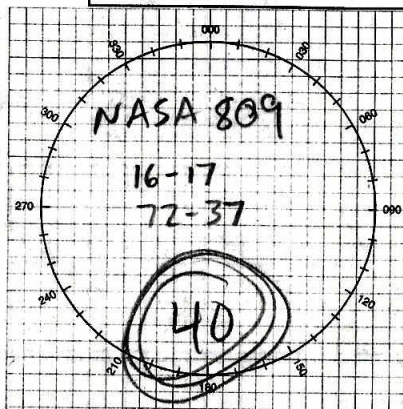
2338
1:10 to 0104

5 ascent to 18 (4 mins) descend to 14 from 18



2300 EAT

MISSION LOG PAGE 1 OF 1



POSITION REPORT

1. POSITION ROPUL

2. TIME 2350

3. ALTITUDE 150

4. NEXT POSITION DAND

5. ETA 0025

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 43

- 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

10
9
3
2730
224

[illegible]

120
050

15-16 73-23 17-03 71-32 12 17 m/h 28 0091
0058

MISSION PREFLIGHT LOG		NAVIGATOR	AIRCRAFT COMMANDER	FLIGHT DIRECTOR	SCHEDULED / ACTUAL TAKEOFF Z	DATE OF TAKEOFF
DESTINATION MROC	MISSION TFEX #2	LT BRAKOB	LCDR TERREST	SHEPHERD	2100	6 JUL 05

[illegible]

INS PERFORMANCE		
	INS 1	INS 2
BEGIN ALIGN TIME	1948	1948
ALIGN STATUS (0-5)	0	0
END NAV TIME	0600	0600
START NAV TIME	2120	2120
DELTA T	8+40	8+40

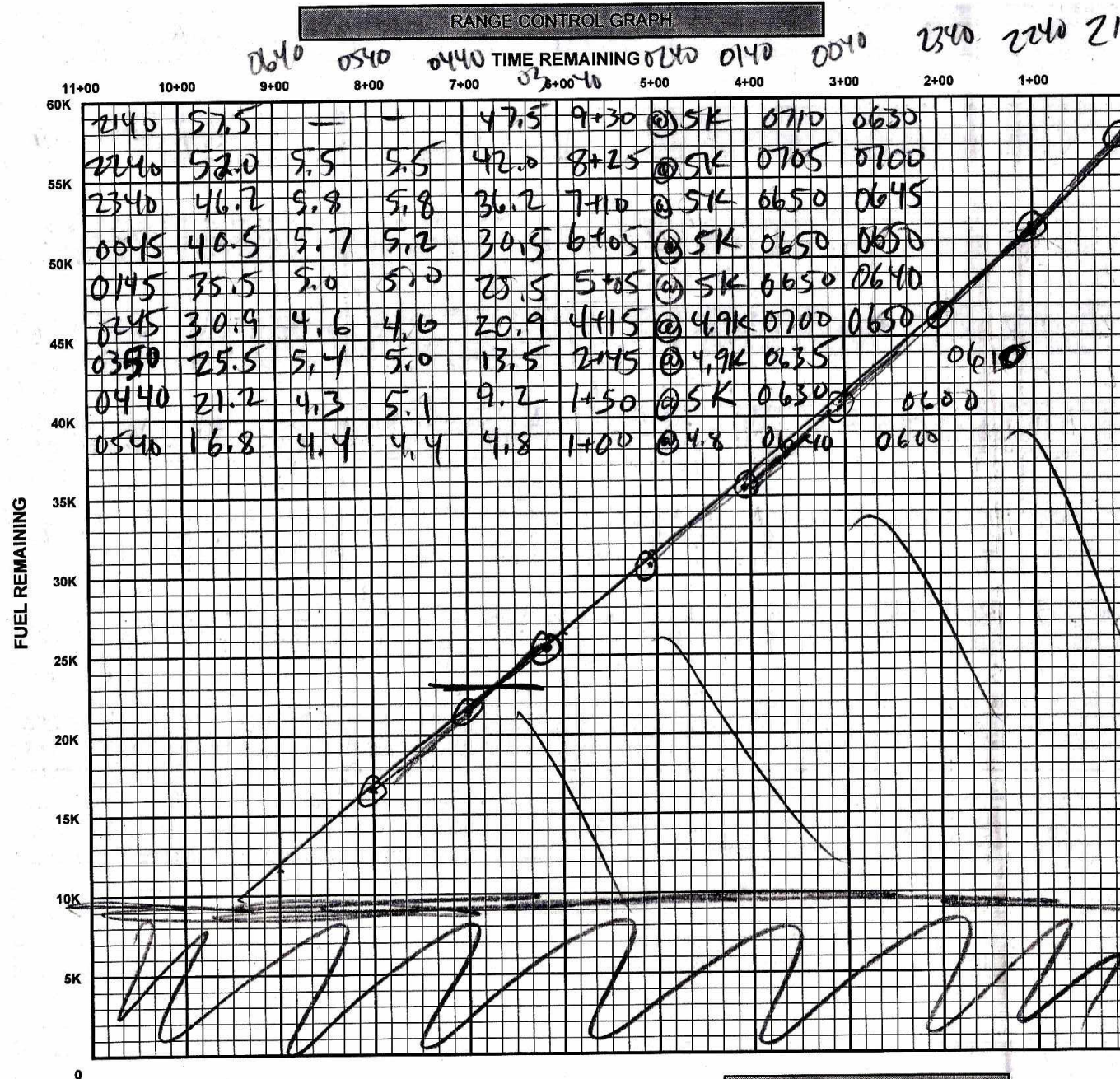
TERMINAL ERRORS		
	INS 1	INS 2
DELTA LAT	-20.7	+3.8
DELTA LON	+7.2	+3.6
RGS	3	1
RADIAL ERROR	22	5

[illegible]

0652

[illegible]

0030 4+20 36+3=40



ENROUTE FUEL	
ENROUTE TIME	8+45
ENROUTE FUEL (6K 5K 4 5K RULE)	45K
RESERVE AT DESTINATION	10K
REQUIRED RAMP	55K
ACTUAL RAMP FUEL	57.5

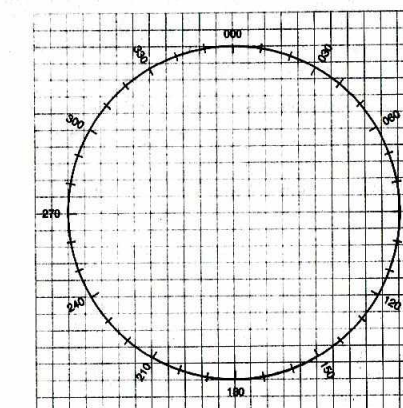
TACTICAL (OFFSTA TO DESTINATION)		
	4 ENG	3 ENG
DISTANCE (OFFSTA TO DEST)		
ENROUTE TIME (OFFSTA TO DEST)		
BURN RATE (LBS/HR)	4500	5500
ENROUTE FUEL REQUIRED		
RESERVE AT DESTINATION		
FUEL AT OFFSTA		

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	



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

DISTANCE REMAINING

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	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
			X	X			