

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 E1
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: 0507061	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 SCT020TCU SCT035 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 1951Z
 58KT N Quad 1808Z 1549 7208
 1541 7156 987 804
 ATIS 2200Z 23013KT SCT020 035 27/22 2998
 OPEN NN
 2095/35/25



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

Mission

IFEX #2

Flt ID

0507007

SED Crew Bart, Lynne, Sans Souci, Olney

Pre-Flight

17:30

Take-Off

2156Z

Landing

0601Z

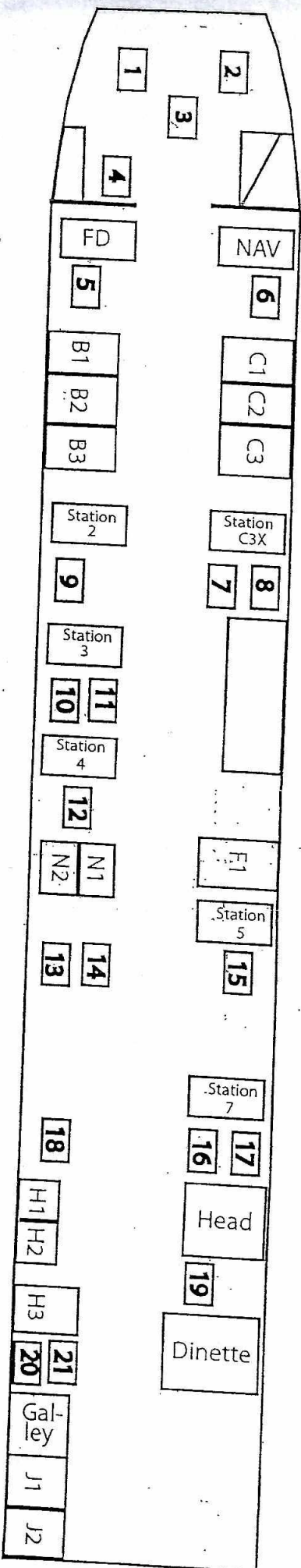
System				Pre-Flight	In-Flight	Post-Flight			
NAV	GPS	FM: 1		OK		LAT	LONG	GS	RE
	INE #1	Time On: 19:40	Aligned to:	OK		-20.7	+7.2	3	22
	INE #2	Time On: 19:40	Aligned to:	OK		+3.8	+3.6	1	5
	Diff GPS			OK					
RADAR	MARS Data	Start	Stop	Ready?	HRD?	# DATs ? Given To:			
	MARS	2210Z		Y	Y	Peter Dodge			
	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
PMS	Nose			OK		Power OFF			
	ETL DMT DAS								
	NCAR FSSP Ref VDC: Covers OFF			Y		Covers ON			
	NCAR PIP Covers OFF			Y		Covers ON			
TEMP	NCAR CIP Covers OFF			Y		Covers ON			
		Cal High	Cal Low			Cal High		Cal Low	
	Temp #1	30.6	-30.4	TL					
	Temp #2			TL				Power OFF	
PRE	Dewpoint	#1 (Vig) #2 (Vig) #3 (TDL)		TL				Power OFF	
	Attack / Slip Angle	BP BP BP BP		TL				Power OFF	
	Differential	PQ1 PQ2 PQ3 PQ4		TL				Power OFF	
	Absolute	PS1 PS2 OBPS		TL				Power OFF	
FLTLVL	Apn-159 SN: 101			TL				Power OFF	
	Apn-232 SN: 1761			TL				Power OFF	
	Liquid Water	J&W King			28V WOW: ON?			Power OFF	
	Radiometer	CS2 SST 0607Z		TL	28V WOW: ON?			Power 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 23:33				Slow Rec	Fast Rec	Disk Records:		
	RAMS	LUB	Clean 4	TL					
	RAMS	LU9	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			Y			Plugs Covers		
	SATCOM: W/S nmarsat			Y			Power OFF		
	AXBT Internal # Loaded: 1			Y			# Launched:		
	AXBT External # Loaded: 4			Y	28V WOW		# Launched:		
	AVAPS # On Board: 51			Y			# Dropped:		
	Video Cameras			Start	Stop	Ready?	Cameras	Mode	# Tapes ? Given To:
	VHS	GVH3	2131	0543	TL	N1100	2 / 12	Lens Cap ?:	
	FCU	A B C		Y			UPS OFF		
	SFMR: HRD AOC			Y					
	HRD Work Station						Accelerometers		
USER	NASA SRA			Y			#1 (2 G): 3205		
	ARL BAT Probe & SST			Y			#2 (2.5 G): 6687		
	RSMAS Licor			Y			#3 (3 G): 5967		
	AOML Teco Ozone			Y			#4 (3.5 G): 2892		
Chang Server			Y						

Please Note any Discrepancies

[illegible]

NOAA AIRCRAFT OPERATIONS CENTER

Flight ID 050706L



1. Folger
PILOT

2. Nelson
COPILOT

3. Floyd
FLIGHT ENGINEER

4. Black
STATION 1

5. Mayer
FLIGHT DIRECTOR

6. Brake
NAVIGATOR

7. Musgrave
STATION C3X

8. Lynch
STATION C3X

9. Willis
STATION 2

10. Merille
STATION 3

11. Dodge
STATION 3

12. Bar
STATION 4

13. Henry
PROJECT SEAT

14. Cisneros
PROJECT SEAT

15. Gney
STATION 5

16. Shepherd
STATION 7

17. Hood
STATION 7

18. San Souci
STATION 8

19.
DINETTE

20.
GALLEY

21.
GALLEY

N43RF AVAPS DROP LOG

Project : Hurricane '05 / RAINEX

Mission : IFEX #3Flight ID : 05.0706T

Take Off : _____

Landing : _____

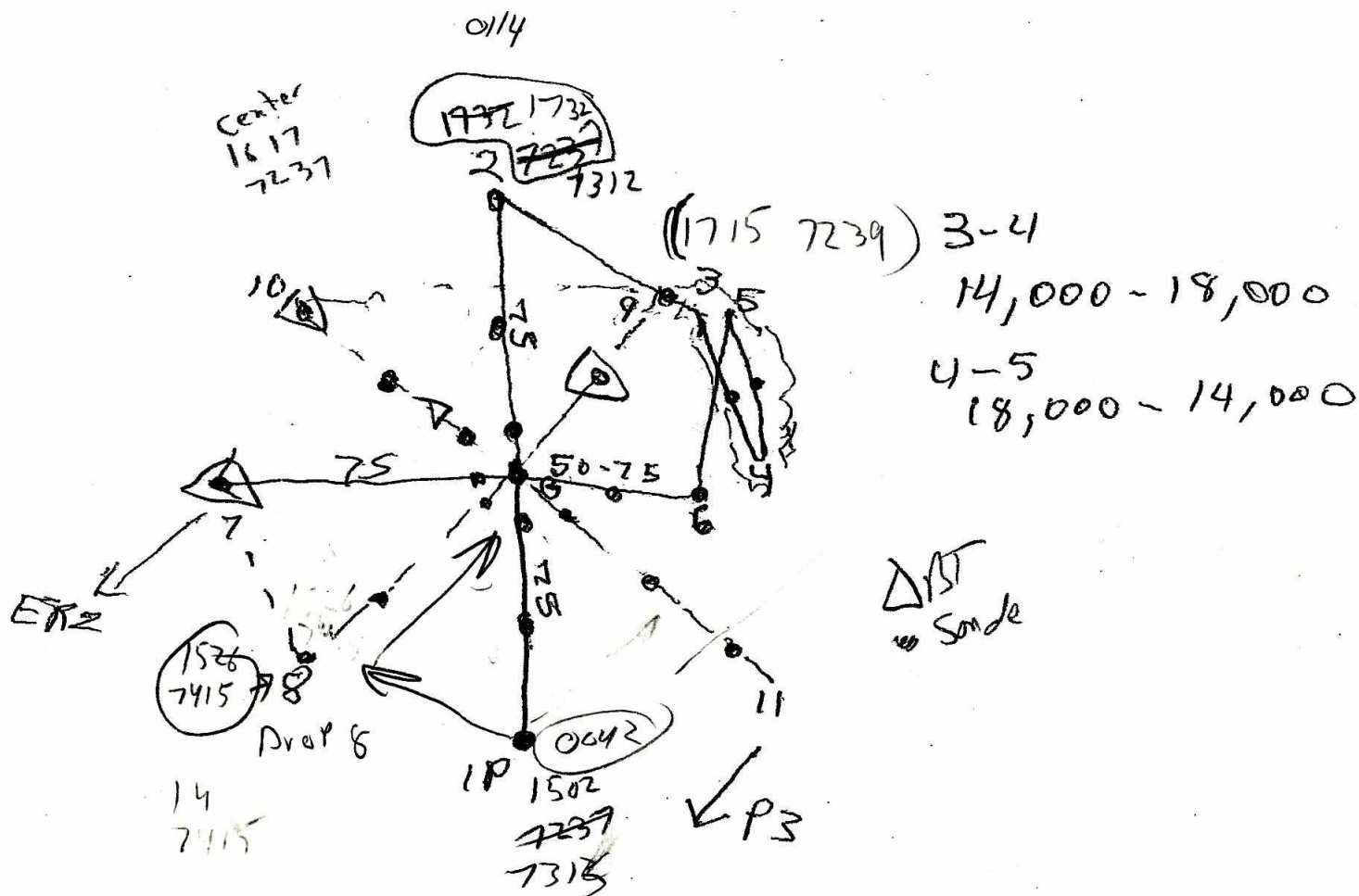
Flt Dir : _____

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 CATE NO DETECT	
5	040 925 137	2	0	0102	28			✓
6	040 925 058	3	0	0110			NO TELE CATE	
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 TELEM 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.	TELEM LOST B.O. @ 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 CATE DET TIL 110 SEC	
20	042 115 156	3	0	0341		B.O.	LATE TELEM	
21								
22								
23								
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34								

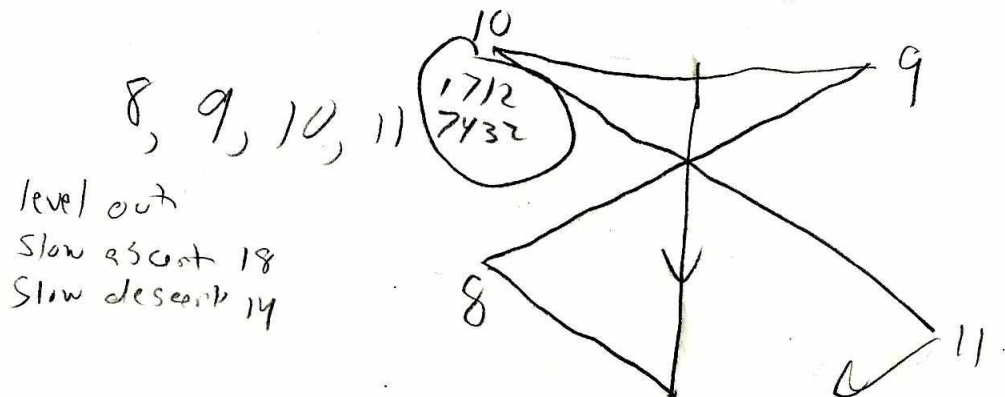
DATE 07/06/05	SCHEDULED RX TIME	AIRCRAFT NUMBER N43 RB	FLIGHT DIRECTOR M. Leaud
WX MISSION IDENTIFIER Wx 04A Dennis			OB NUMBER 25
VORTEX DATA MESSAGE			
A	07 / 0324Z	DATE and TIME of FIX	
B	16 DEG 24MIN N S	LATITUDE of FIX	
	73 DEG 38MIN W E	LONGITUDE of FIX	
C	NAMB NA M	MINIMUM HEIGHT of STANDARD LEVEL	
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 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



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
MROC	1 ✓ 9-59.6 34-12.5						289				180	290	15 15	+10 +10				→ 2LAmun
2LAmun	10-09.1 84-25.3						055				✓	✓	45 60	+10 +20				→ 716ACE
716ACE	10-29.6 83-48.1						044				✓	✓	95 105	+20 +20				→ Amun 1
Amun 1	11-37.1 82-43						077				✓	✓	260 230	1400 1450				→ 12N
12N	12-00 81-00						065				✓	✓	490 230	1450 1450				→ Rotor
Rotor	13-38.1 77-25						062				✓	✓	665 665	1435 1435				→ EDKAD
EDKAD	15-00 74-44						052				✓	✓	725 725	1435 1435				→ ITR
ITR	15-36 73-57						045				140	250	75 800	1420 1455				→ EYE
EYE	16-30 73-00						045				✓	✓	875 875	1415 1415				→ 2
2	17-25 72-05						220				✓	✓	105 980	1405 1410				→ 3
3	17-25 73-54						135				✓	✓	75 1055	1400 1400				→ EYE
4	15-36 72-05						135				✓	✓	1130 75	1420 1420				→ 4
5	16-30 72-05						360				✓	✓	55 1185	1415 1435				→ 5
6	16-30 74-00						220				✓	✓	1205 1350	1405 1415				→ 6
NDRAN	16-30.5 74-58.3						241				✓	✓	180 1530	1435 1450				→ NDRAN
4ASOR	15-00 71-11.7						228				✓	✓	205 1795	1455 1445				→ 12N
12N	12-00 81-00						287				✓	✓	105 1900	1405 1405				→ Amun 1
Amun 1	11-37.1 82-43						223				✓	✓	135 2035	1400 1405				→ MROC
MROC	9-59.6 84-12.5																	

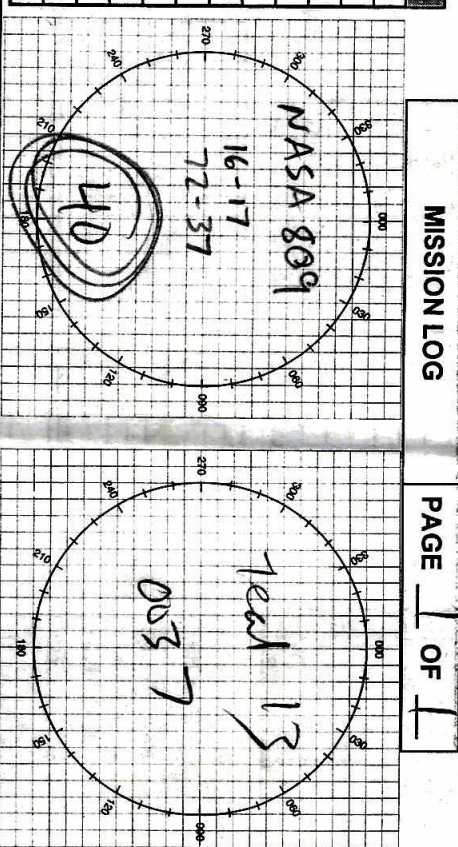
INS PERFORMANCE			
INS 1		INS 2	
BEGIN ALIGN TIME	1948	BEGIN ALIGN TIME	1948
ALIGN STATUS (0-5)	0	ALIGN STATUS (0-5)	0
END NAV TIME	0600	END NAV TIME	0600
START NAV TIME	2120	START NAV TIME	2120
DELTA T	8440	DELTA T	8440

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

REMARKS	

2500Z: " SC1 243.5K 29.96 ZLS 07 050913 27122 2300 EAT

CLEARANCES			
FREQ	ALT	HDG	OTHER
120.5	12K		RAMON. 716K 4612
124.1			



POSITION REPORT					
1. POSITION	6020L				
2. TIME	2350				
3. ALTITUDE	150				
4. NEXT POSITION	down				
5. ETA	6025				
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	8384 KHZ	500 KHZ					
MAYDAY, MAYDAY, MAYDAY					43				
THIS IS NOAA					NOAA NOAA 43				
- POSITION					- N/S				
- HEADING					- E/W				
- AT					- TRUE/MAG				
- FLIGHT LEVEL OR ALTITUDE					- KTS TRUE/INDICATED				
- WE ARE A P-3 AIRCRAFT WITH					- SOULS ON BOARD				
- NATURE OF EMERGENCY					- ASSISTANCE DESIRED				
- PILOT INTENTIONS					- ENDURANCE REMAINING				
WE HAVE					230 24				

TIME	FIX TYPE	POSITION	INS 1 POSITION	K ERR	INS 2 POSITION	K ERR	MH	VAR	TH	DR	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
2128	2406	N																			
2134	74X1	W																			
2134	91K																				
2156	710																				
2202	XV																				
2210	A																				
2340	A																				
0017	A																				
0146	A																				
0246	A																				
0350	A																				
0440	A																				
0535	A																				
0600	Land																				
0607	BLK																				

15-16 73-23 17-03 71-32 12 17 min 28 0058 0091 2300 EAT

6551



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

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