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

Flt ID: 20111119I1	From: FJDG	To: FJDG
Flt. No: —	Blk In: 1235 Z	Time On: 1229 Z
ETD:	Blk Out: 0336 Z	Time Off: 0344 Z
ETE: +	Blk Time: + Hrs 9.0	Flt Time: 8+45 + Hrs 8.8
Sponsoring Org:	Program:	Purpose:

AOC Flight Crew

Aircraft Commander: NELSON	Data System: NAETHER
Co-Pilot: KIBBEY , KERNS	AVAPS: SMITH
Navigator: BRAKOB ,	System Eng:
Flight Eng: KLIPPEL , HEYSTEEK	A A: RICHARDS
Flight Director: SEARS , WILLIAMS	A A:
Avionics: GLNEY	Crew Chief:

Participating Scientists / Visitors

Name (Last, First)	Activity on Aircraft	Affiliation
WANG , QING	PI	
JUDT , FALCO		
KHELIF, DJAMAL	PI, flux	
BROWN , SCOTT		
CHERRETT, COREY		
JORGENSEN, DAVE		

Remarks (Storm Name, Mission ID, Recco Times, Fix Times) *Recco Times* *Fix # Fix Time*

Storm Name:

Mission ID: NOAA3 WXWXA TRAIN

(See reverse for additional remarks)

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

Flight ID: 20111191I	Time Off: 0344	Time On:

	A/C - Takeoff	Wx Station - Takeoff	A/C - Land	Wx Station - Land
Pressure	10103	2982		29.75

	Number	Data Disposition / Date / Quality
Flight Level Tapes		
Radar Tapes		
Cloud Physics Tapes / CDs		
Video Tapes		
Dropsondes	16	Good: Bad:
AXBT	5	
AXCP		
AXCTD	13	

Remarks: delayed T/O due to EDC

1255 01000 UNC 29/24 2982
03552 2984

1155 >7005 UNL FEW020 SCT080 BKN220 31/24
2975

94-312-968-3310

N43RF ERROR SUMMARY
DYNAMO 19 Nov 2011
Large Scale Moisture and Flux Variability

Flight ID: 20111119I1

Sensor or system	Number or Name
Inertial Selected (for wind derivation)	INE 1
Accelerometer	AccZfilterI-GPS.1
Temperature Probe	TTM.1
Dew Point Probe	TdM.2X
Static Pressure	PSF.1
Dynamic Pressure	PQF.1
Altitude (for vertical wind)	AltI-GPS.1
Flight Directory	acdata/MET/2011/20111119I1
Constants File	AAMPSConfig/core/n43.xml

Local Met Data:	Takeoff (0344Z)	Landing (1229Z)
Aircraft Static Pressure	1010.4 mb	1008.1 mb
Tower Pressure (corrected)	1010.1 mb	1007.6 mb

Notes:
There were no data gaps.

Dewpoint sensor 2, TdM.2 (EdgeTech) spiked on descent into FJDG from 122401Z – 122641Z. During this time, TdM.3 (TDL) was substituted in using the following equation: TdM.2X = TdM.3 + 6.02.

Takeoff/Landing data: Data during landing and takeoff are potentially suspect. It is recommended that ground data not be used for scientific analysis.

SPECIAL NOTE: The variable names GSZ_DPJ, ASZ_DPJ and WSZ_DPJ in the netCDF file represent vertical ground speeds vertical air speeds and vertical wind speeds, respectively, computed using Dave Jorgensen's vertical wind algorithm. It is recommended that these values be used for vertical wind analysis.

All other AOC instruments worked properly.
There were 16 GPS dropsondes, 5 AXBT's and 13 CTD's deployed from the aircraft internally.

Flight Director: *Ian Sears/ Jess Williams*
Phone #: *(813) 828-3310 ext. 3039/3140*

20111119 I 1

0344 -1229

1010.9
1010.1

1008.1
1008.1 - 1007.1 1007.6

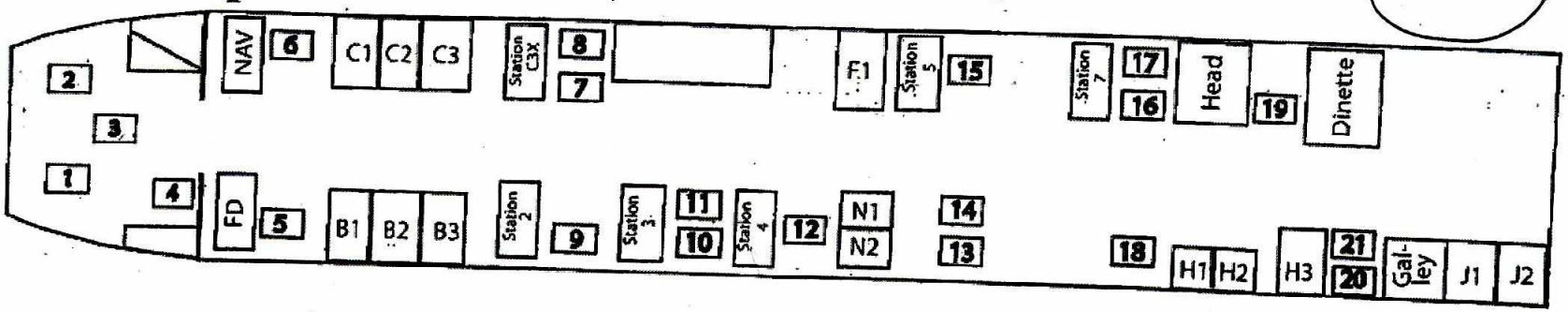
tlm, 2 outliers 1224Hz - 1264 Hz

19.66 ~~21.44~~ 20.48
-14.35 -13.75
5.31 6.02 6.73

NOAA AIRCRAFT OPERATIONS CENTER

Flight ID 20111119I1

18



1. NELSON — PILOT
2. KIBBEY — COPILOT
3. HEYSTEEK — FLIGHT ENGINEER
4. WANG — STATION 1
5. ~~SR~~ WILLIAMS — FLIGHT DIRECTOR
6. BRAICB — NAVIGATOR
7. JUDT — STATION C3X
8. ICHELF — STATION C3X
9. CHERRETT — STATION 2
10. JORGENSEN — STATION 3
11. SEARS — STATION 3
12. NAEHER — STATION 4
13. ~~DET~~ KERNS — PROJECT SEAT
14. [illegible] — PROJECT SEAT
15. SMITH — STATION 5
16. OLNEY — STATION 7
17. BROWN — STATION 7
18. RICHARDS — STATION 8
19. KLIPPEL — DINETTE
20. — GALLEY
21. — GALLEY

10m 1hr tme

P-3 Flight Plan
Nov 13, 2011

Mission type:	Mission location:	Total flight time (hr)	# drpsnds	# AXBTs (Int)	# AXBTs (Ext)	# AXCTDs
Large-scale SST/Moisture gradient and air-sea interaction close to Revelle	**DYNAMO domain**	**8.6**	**55**	**44**	**0**	**9**

Item	Module	Time (min)	Altitude (ft)	Objective				
1	T/O, dropsonde to Mirai	114	10000'	Ferry and dropsonde* and AXBT* towards Mirai, DRI: 7 min, ARI: 7 min	17	17		
2	Quick ascent to AHAP enroute to NE ship	15	10000' to AHAP	dropsonde, DRI: 7 min	2			
3	dropsonde from Mirai to NE ship	83	AHAP	dropsonde towards NE ship, DRI: 7 min	12			
4	descent to west of ship to position for FFM, fast descent to 6000', then 500'/min to 100'	20		dip to 100', dropsonde* and AXBT* at 6000', set for 200' mapping	1	1		
5	FFM	60	ALAP	Flux mapping, sst, surface wave, dip to 100' on cross legs, RA				6
6	FVS	60	200' to 300' above inv	Cross wind or cross SST gradient (if exist), Flux Vertical Stacks, four levels (3 below inversion, one above. RA		3		3
7	Ascent to 10000' and ferry home	164	10000'	dropsonde* & AXBT*, DRI: 7 min	23	23	0	

* means dropsonde and AXBTs are preferably co-located

P-3 Flight Plan
Nov 13, 2011

Mission type:		**Mission location:**		**Total flight time (hr)**	**# drpsnds**	**# AXBTs (int)**	**# AXBTs (Ext)**	**# AXCTDs**
Large-scale SST/Moisture gradient and air-sea interaction close to Revelle		**DYNAMO domain**		**8.6**	**55**	**44**	**0**	**9**
Item	Module	Time (min)	Altitude (ft)	Objective				
1	T/O, dropsonde to Mirai	114	10000'	Ferry and dropsonde* and AXBT* towards Mirai, DRI: 7 min, ARI: 7 min	17	17		
2	Quick ascent to AHAP enroute to NE ship	15	10000' to AHAP	dropsonde, DRI: 7 min	2			
3	dropsonde from Mirai to NE ship	83	AHAP	dropsonde towards NE ship, DRI: 7 min	12			
4	descent to west of ship to position for FFM, fast descent to 6000', then 500'/min to 100'	20		dip to 100', dropsonde* and AXBT* at 6000', set for 200' mapping	1	1		
5	FFM	60	ALAP	Flux mapping, sst, surface wave, dip to 100' on cross legs, RA				6
6	FVS	60	200' to 300' above inv	Cross wind or cross SST gradient (if exist), Flux Vertical Stacks, four levels (3 below inversion, one above. RA		3		3
7	Ascent to 10000' and ferry home	164	10000'	dropsonde* & AXBT*, DRI: 7 min	23	23	0	

* means dropsonde and AXBTs are preferably co-located

P-3 Flight Plan For Boundary Layer Centric Flight

Nov 28, 2011

Mission type:	Mission location:	Total flight time (hr)	# drpsnds	# AXBTs (int)	# AXBTs (Ext)	# AXCTDs
Wind and thermodynamics variability and air-sea interaction in variable cloud conditions during active phase	**DYNAMO domain**	**9.1**	**49**	**26**	**0**	**16**

Item	Module	Time (min)	Altitude (ft)	Objective				
1 0206	T/O and moving to SP (A) of designated region	60 [30] -30	AHAP	Ferry and dropsonde	-30			
2 0236	DAS	105 [88] -17	AHAP	dropsonde, DRI: 5 min	21 -47			
3 0404	Flat descent from D to A AFAP to 6000' and then 500'/min to 100' and then back up to 200'	21 [27] +6	AHAP to 100'	flat descent for radiation, dip to 100', set for FFM	-41			
0431 4	FFM	105 [102] -3	200'	Flux mapping, sst, surface wave, dip to 100' on cross legs, RA	-44	3		3
0613 5	Ascent from D to A to 100' below cloud base	21 [3]	100' below cld base or inversion -18	Reposition and altitude change to starting point of Surface Imaging	-1:02			
0616 6	Surface Imaging	105	100' below cld base or inversion	SST imagery mapping, flux mapping, RA, BTs ARI: 7 min		8		7

Mission type:		**Mission location:**		**Total flight time (hr)**	**# drpsnds**	**# AXBTs (int)**	**# AXBTs (Ext)**	**# AXCTDs**
Spatial variability in precipitating convective systems		**Near DYNAMO domain, including northern or southern ITCZ**		**8.8**	**74**	**6**	**19**	**6**
Item	Module	Time (min)	Altitude (ft)	Objective				
1	T/O, look for target*	80	AHAP	Target searching, quick ascent, DRI: 10 min	8			
2	DCS	120	13,000'	Survey of large convective systems, DRI: 5 min	30		10	2
3	Look for target	20	AHAP					
4	DCE	90	13,000'	Spatial variability in convective systems, DRI: 5 min	18		9	2
5	Look for target	20	AHAP					
6	RCE/FLX	120	3000' to 10000'	dropsonde DRI 3 min at 10000', BT during RCE spread evenly in time, ~ ARI 10 min. 2 CTD at 400' leg (1/3 and 2/3 of leg), MP module (1 path)	10	6		2
7	Ferry back**	80	AHAP	Target searching, quick ascent, DRI: 10 min	8			

*** If multiple targets available, top priority will be given to target near Gan for multi-radar analysis and multiple aircraft analysis**

**** If near SPol, dropsondes close to 12 nm outside Gan**

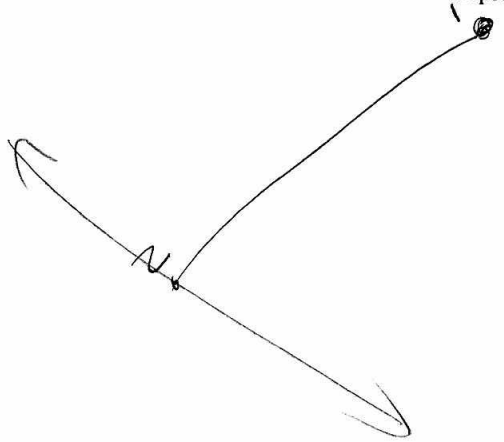
Flight Plan Nov 19, 2011
Plan A

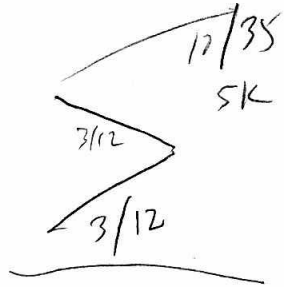
Mission type:	Mission location:	Total flight time (hr)	# of drpsnds	# AXBTs (Int)	# AXBTs (Ext)	# AXCTDs
large scale moisture and flux variability	Near DGAR	8.3	11	16	0	12

Item	Module	Time (min)	Altitude (ft)	Objective			
1	t/o to 3000', then down to 200'	10	0-3000'	AFAP, toward CP			
2	200' turbulence leg	30	200'	level leg at 200' diagnolly towards CP, BT/CTD 7 min		2	2
3	ascent to 6000'	12	200' to 6000'	500'/min			
4	descent to 200'	6	6000'-200'	1000'/min			
5	crosswind FVS	45	ALAP to cloud layer	1st vertical stack crosswind starting from the top level, 1 BT 1 CTD at top FVS level, each 8 min		1	1
6	Ascent to 500' above average cloud top then descent to 100' towards 2nd stack	15	100' to 6000'	ascent AFAP to 500' above cloud, then descnd at 500'/min to 100' towards 2nd stack location, 60 km towards CP			
7	200' turbulence leg	10	200'	from 2nd stack location to 1st stack location at 200'		2	2
8	400' level leg towards CP	10	400'	lidar/imaging/flux		1	
9	crosswind FVS	45	ALAP to cloud layer	2nd vertical stack crosswind, 2 AXBT at top FVS level, each 8 min		1	1
10	Ascent to 500' above average cloud top then descent to 100' towards CP	15	100' to 6000'	ascent AFAP to 500' above cloud, then descnd at 500'/min to 100' towards 3rd stack location, 60 km towards CP			
11	200' turbulence leg	10	200'	from 3rd stack location to 2nd stack location at 200'		2	2
12	400' level leg towards CP	10	400'	lidar/imaging/flux		1	
13	crosswind FVS	45	ALAP to cloud layer	3rd vertical stack crosswind, 2 AXBT at top FVS level, each 8 min		1	1

14	Ascent to 500' above average cloud top then descent to 100' towards 4th stack	15	100' to 6000'	ascent AFAP to 500' above cloud, then descnd at 500'/min to 100' towards 4th stack location, 60 km towards CP			
15	200' turbulence leg	10	200'	from 4th stack location to 3rd stack location at 200'		2	2
16	400' level leg towards CP	10	400'	lidar/imaging/flux		1	
17	crosswind FVS	45	ALAP to cloud layer	4th (last) vertical stack crosswind, 2 AXBT at top FVS level, each 8 min		1	1
18	fast ascent	1[illegible]	6000'-20000'	AFAP			
19	Flat landing gear descent	1[illegible]	20000-200'	Radiation descent			
20	200' turbulence leg	1[illegible]	200'	level leg at 200' diagonally towards CP		2	2
21	staircase ascent	20	200'-24000'	500'/min for 3 minutes slant climb, turn 180, stay level for 1 minute, then climb reverse heading from previous climb for 3 min. Then ascent AFAP to CP at 24000'			
22	T/O, Ferry to CP (-3.4oS, 76.75E)	75	AHAP	ascent quickly to AHAP, BT at 10000', go towards CP at AHAP, dropsondes, DRI: 7 min	11	1	

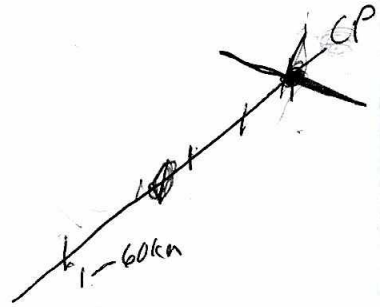
* Simultaneous AXBT and CTD drops are planned for sensor evaluation purpose
Dropsonde to be deployed in cloud close to aircraft ascent/descent for dropsonde evaluation

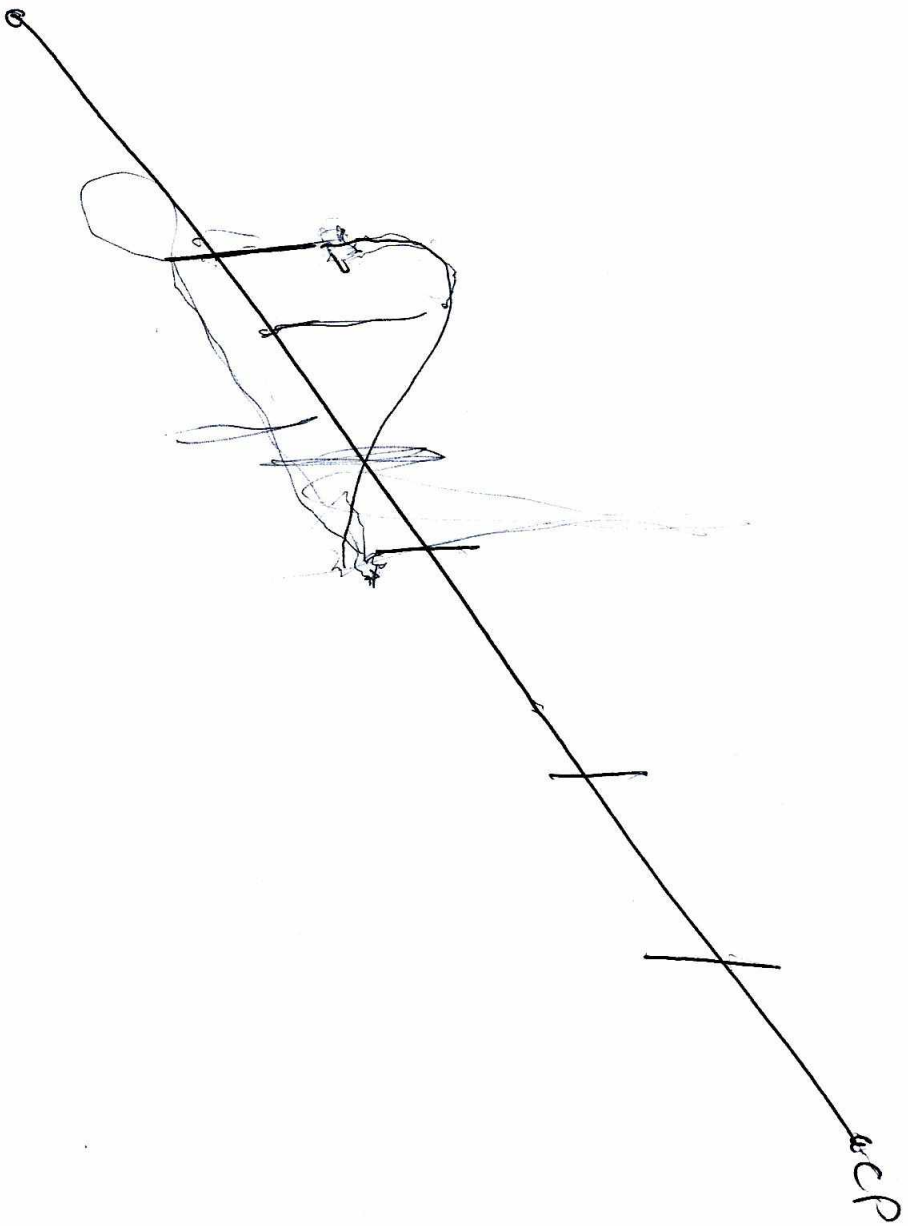




Mission type:	Mission location:	Total flight time (hr)	# of drpsnds	# AXBTs (Int)	# AXBTs (Ext)	# AXCTDs
large scale moisture and flux variability	Near DGAR	8.3	11	16	0	12

Item	Module	Time (min)	Altitude (ft)	Objective			
1	t/o to 3000', then down to 200'	10	0-3000'	AFAP, toward CP			
2	200' turbulence leg	30	200'	level leg at 200' diagnolly towards CP, BT/CTD 7 min		2	2
3	ascent to 6000'	12	200' to 6000'	500'/min			
4	descent to 200'	6	6000'-200'	1000'/min			
5	crosswind FVS	45	ALAP to cloud layer	1st vertical stack crosswind starting from the top level, 1 BT 1 CTD at top FVS level, each 8 min		1	1
6	Ascent to 500' above average cloud top then descent to 100' towards 2nd stack	15	100' to 6000'	ascent AFAP to 500' above cloud, then descnd at 500'/min to 100' towards 2nd stack location, 60 km towards CP			
7	200' turbulence leg	10	200'	from 2nd stack location to 1st stack location at 200'		2	2
8	400' level leg towards CP	10	400'	lidar/imaging/flux		1	
9	crosswind FVS	45	ALAP to cloud layer	2nd vertical stack crosswind, 2 AXBT at top FVS level, each 8 min		1	1
10	Ascent to 500' above average cloud top then descent to 100' towards CP	15	100' to 6000'	ascent AFAP to 500' above cloud, then descnd at 500'/min to 100' towards 3rd stack location, 60 km towards CP			
11	200' turbulence leg	10	200'	from 3rd stack location to 2nd stack location at 200'		2	2
12	400' level leg towards CP	10	400'	lidar/imaging/flux		1	




WCP

13	crosswind FVS	45	ALAP to cloud layer	3rd vertical stack crosswind, 2 AXBT at top FVS level, each 8 min	1	1
14	Ascent to 500' above average cloud top then descent to 100' towards 4th stack	15	100' to 6000'	ascent AFAP to 500' above cloud, then descnd at 500'/min to 100' towards 4th stack location, 60 km towards CP		
15	200' turbulence leg	10	200'	from 4th stack location to 3rd stack location at 200'	2	2
16	400' level leg towards CP	10	400'	lidar/imaging/flux	1	
17	crosswind FVS	45	ALAP to cloud layer	4th (last) vertical stack crosswind, 2 AXBT at top FVS level, each 8 min	1	1
18	fast ascent	14	6000'-20000'	AFAP		
19	Flat landing gear descent	15	20000-200'	Radiation descent		
20	200' turbulence leg	20	200'	level leg at 200' diagonally towards CP	2	2
21	staircase ascent	20	200'-24000'	500'/min for 3 minutes slant climb, turn 180, stay level for 1 minute, then climb reverse heading from previous climb for 3 min. Then ascent AFAP to CP at 24000'		
22	T/O, Ferry to CP (-3.4oS, 76.75E)	75	AHAP	ascent quickly to AHAP, BT at 10000', go towards CP at AHAP, dropsondes, DRI: 7 min	11	1

* Simultaneous AXBT and CTD drops are planned for sensor evaluation purpose
Dropsonde to be deployed in cloud close to aircraft ascent/descent for dropsonde evaluation

Flight ID 20111119 I1

Page

0419

~~0359~~ B
~~0406~~ C
~~0413~~ B
0420 C

0425

600m 1700ft

2 FVS

- ↑ to 3k
- ↓ to 200ft 30min (BT, CT, 7min)

- ↑ to 6k (500/min), touch
- ↓ to 200' 1kft/min
- 1st FVS -4.95 75.07
  - 200
  - 1000
  - 1600
  - 1900
  - 2100 (1BT, 1CTD)

200 — 0450
400 —
1200 — 0512
1600 — 0523
2200 — 0536 BT, CTD

- ↑ to 500' Abv C.T. (3kft) AFAP
- ↓ to 100' (200) 500ft/min

> to 60km fm 1st start 32NM

- 200 ft leg back to 1st FVS, 90 270
- 400 ft leg back to FVS turn (L)

3rd FVS

2nd FVS

-4.7 — 200 - 0616
- 400 - 0628
75.3 — 1200 - 0640
- 1600 - 0652
- 2200 - 0703

200
400 - 0754
1300 - 0806
1500 < 2 CTD - 0820
~~2000~~ — 2CTD (90) - 0830

~~200~~ - 09114
~~300~~
~~700~~
1500 0846

1023 1031
1117
~~1122~~
~~1127~~
~~1132~~
~~1136~~
~~1140~~
~~1144~~
~~1148~~
~~1152~~
~~1156~~
~~1200~~
1204
1207
~~1212~~
1216
1220

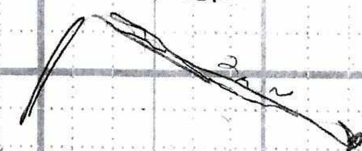
1224

200ft 1011 2
300
700
1500

12

0456
0501

CP



-10

-4.5

few low

T/O 030 · 9kt UNL BKN220 -2973

C.P. 3.40S 76.75E

DG 7.3 72.4

MCPN make W SW 10kt isol tops to -50C (35k

Winds ESE 10-20kts W tops to -70

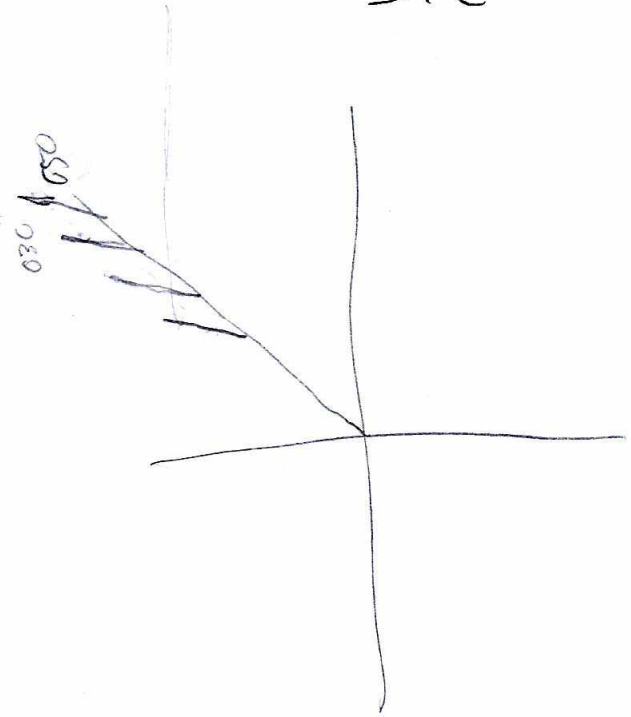
FZLVL

550mb

ICE on last leg thru line

turb IN + around CONV

SS Neg winds 10-15kt on SPC

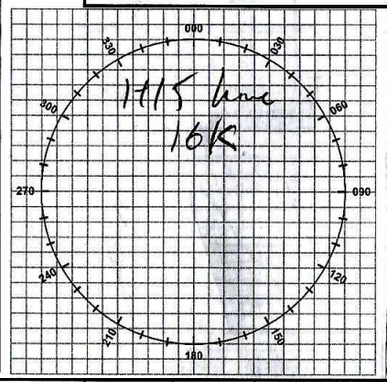


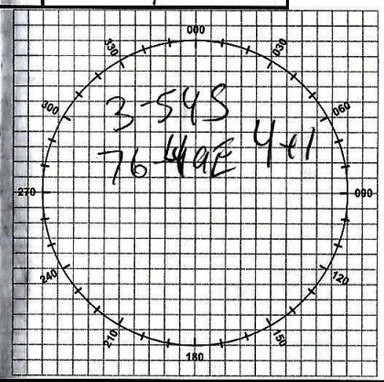
29.75 +8:15 +8:30 1240

MISSION LOG

PAGE 1 OF 2

CLEARANCES			
FREQ	ALT	HDG	OTHER
6544	3K		MMMA
11285			





POSITION REPORT

1200/1215

1. POSITION
2. TIME
3. ALTITUDE
4. NEXT POSITION
5. ETA
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 43, NOAA _____, NOAA _____

- POSITION _____ N / S _____ E / W AT _____ Z
- HEADING _____ TRUE/MAG
- AT _____ KTS TRUE/INDICATED
- FLIGHT LEVEL OR ALTITUDE 18
- WE ARE A P-3 AIRCRAFT WITH _____ SOULS ON BOARD
- NATURE OF EMERGENCY
- ASSISTANCE DESIRED
- PILOT INTENTIONS
- WE HAVE _____ ENDURANCE REMAINING

TIME	FIX TYPE	POSITION	INS 1 POSITION	K ERR	INS 2 POSITION	K ERR	MH	VAR +E==>	TH	DR +R==>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
0330 0336	ENG TAXI	S E	S E		S E																
0336 0343	BLK T/O																				
0347	XV	7-10.9 72-18.5	7-10.9 72-18.4	0 +.1	7-10.9 72-18.5	0 0					003	228	042	13	3K	240					NKW 323/10 10.3 17.9 ✓ ✓
0451	△	4-31.8 75-07.5	4-31.6 75-09.4	+.2 -1.9	4-33.5 75-09.1	-1.7 -1.6					278	220	351	2	.4	220					
0609	△	4-33.8 75-19.2	4-32.7 75-19.5	+1.1 -.3	4-36.7 75-21.0	-2.9 -1.8					031	224	250	8	.2	219					
0653	△	4-41.7 75-13.9	4-42.2 75-13.0	-.5 +.9	4-45.5 75-16.5	-3.8 -2.6					285	231	048	7	2.0	228					
0755	△	4-19.7 75-41.2	4-17.8 75-43.2	+1.9 -2.0	4-24.6 75-43.1	-4.9 -1.9					256	226	014	9	1.3	228					
0858	△	4-12.1 75-55.7	4-09.2 75-56.3	+2.9 -.6	4-17.2 75-57.9	-5.1 1.8					060	221	190	11	.4	214					
0953	△	3-50.5 76-14.0	3-50.0 76-11.7	+.5 +2.3	3-56.2 76-13.7	-5.7 -1.7					030	225	176	8	1.9	220					
1054	△	3-43.7 76-51.1	3-41.8 76-51.8	+1.9 +.7	3-50.2 76-53.5	-6.3 2.4					028	221	200	5	.2	217					
1146	△	5-08.6 74-45.4	5-06.7 74-45.7	+1.9 -.3	5-14.5 74-47.4	-5.9 -2.0					227	313	048	11	250	302					
1229	LND																				
1235	BLK																				

354
346-49

0441 MMMA FL380