

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

19

Flt ID: 20111204I1	From: F50G	To: F50G
Flt. No: 12 -	Blk In: 1213 z	Time On: 1207 z
ETD: 022	Blk Out: 0146 z	Time Off: 0202 z
ETE: +	Blk Time: 10 ¹²⁷ + Hrs 10.5	Flt Time: + Hrs 10.1
Sponsoring Org:	Program: DYNAMO	Purpose: AIR-SEA X

AOC Flight Crew

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

Participating Scientists / Visitors

Name (Last, First)	Activity on Aircraft	Affiliation
WANG, QING		
KHELIF, DJAMAL		
BROWN, SCOTT		
ZIERVOGEL, CHARLES		
JORGENSEN, DAE		
JUDT, FARCO		
WITTE, MIKE		
BUTTS, DONNA		Supply Manager

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

Recco Times

Fix # Fix Time

Storm Name:

Mission ID: WSWKATRAN

(See reverse for additional remarks)

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

Flight ID: Time Off: 0202 Time On: 1207

	A/C - Takeoff	Wx Station - Takeoff	A/C - Land	Wx Station - Land
Pressure	1008.3	1007.5	1005.9	1004.8 1005.4

	Number	Data Disposition / Date / Quality	
Flight Level Tapes			
Radar Tapes			
Cloud Physics Tapes / CDs			
Video Tapes			
Dropsondes	43	Good:	Bad:
AXBT	52		
AXCP			
AXCTD	4		

Remarks:

A
1135Z 31/24 ~~A28.68~~ A29.70
02Z 27/25 A 29.76



N43RF ERROR SUMMARY

DYNAMO 4 Dec 2011

*Air Sea Interaction/Wind and thermodynamic
Variability in variable cloud conditions*



Flight ID: 20111204I1

Sensor or system

Inertial Selected (for wind derivation)
Accelerometer
Temperature Probe
Dew Point Probe
Static Pressure
Dynamic Pressure
Altitude (for vertical wind)
Flight Directory
Constants File

Number or Name

INE 1
AccZfilterI-GPS.1
TTM.1
TdM.2
PSF.1
PQF.1
AltI-GPS.1
acdata/MET/2011/20111204I1
AAMPSCConfig/core/n43.xml

Local Met Data:

Aircraft Static Pressure
Tower Pressure (corrected)

Takeoff (0202Z)

1008.3 mb
1007.5 mb

Landing (1207Z)

1005.9 mb
1005.4 mb

Notes:

There were no data gaps.

Takeoff/Landing data: Data during landing and takeoff are 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 AOC instruments worked properly.

There were 43 GPS dropsondes, 52 AXBT's and 4 CTD's deployed from the aircraft internally.

Flight Director:
Phone #:

Ian Sears/ Jess Williams
(813) 828-3310 ext. 3039/3140

P-3 Flight Plan For Boundary Layer Centric Flight

Dec 4, 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 and moderate wind conditions	DYNAMO domain	9.0	63	59	0	10

Item	Module	Time (min)	Altitude (ft)	Objective
1	T/O and Riegl boresighting, position to ~20 km upwind of DG	30	1000' or ALAP	Riegl boresighting
2	Island effect dropsonde	30	7000'	1st dropsonde 20 km upwind of DG, 2nd 6 km upwind (2 minutes from the 1st one and not landing on DG), 3rd dropsonde at the downwind edge of DG, 2 minutes DRI after for the next 3 sondes
3	Move to target region	45	10000'	dropsonde*+BT*, DRI: 7 min
4	DAS	80	10000'	dropsonde, DRI: 5 min
5	Descent from D to A AFAP to 6000' and then 500'/min to 100' and then back up to 200'	21	10000 to 100'	descent sounding, position for FFM
6	FFM	80	200'	Flux mapping, sst, surface wave, dip to 100' on cross legs, RA, ARI:7
7	Ascent from D to A to 100' below cloud base	21	100' below cloud base or inversion	Reposition and altitude change to starting point of Surface Imaging

10k

70NM

P-3 Flight Plan For Boundary Layer Centric Flight

Dec 4, 2011

Mission type: Wind and thermodynamics variability and air-sea interaction in variable cloud and moderate wind conditions

Mission location: DYNAMO domain

Total flight time (hr) 9.0

drpsnds 63

AXBTs (int) 59

AXBTs (Ext) 0

AXCTDs 10

Item	Module	Time (min)	Altitude (ft)	Objective	
1	T/O and Riegl boresighting, position to ~20 km upwind of DG	30	1000' or ALAP	Riegl boresighting	0
2	Island effect dropsonde	30	7000'	1st dropsonde 20 km upwind of DG, 2nd 6 km upwind (2 minutes from the 1st one and not landing on DG), 3rd dropsonde at the downwind edge of DG, 2 minutes DRI after for the next 3 sondes	6 2
3	Move to target region	45	10000'	dropsonde*+BT*, DRI: 7 min	7 7
4	DAS cloud conv. SYS	80	6000'	dropsonde, DRI: 5 min	16 16
5	Descent from D to A AFAP to 6000' and then 500'/min to 100' and then back up to 200'	21	AHAP to 100'	flat descent for radiation, dip to 100', A/c weight set for FFM	

P-3 Flight Plan For Boundary Layer Centric Flight

Dec 4, 2011

6	FFM	80	200'	Flux mapping, sst, surface wave, dip to 100' on cross legs, RA, ARI:7	11
7	Ascent from D to A to 100' below cloud base	21	100' below cld base or inversion	Reposition and altitude change to starting point of Surface Imaging	
8	Surface Imaging (FFM)	80	100' below cld base or inversion	SST imagery mapping, flux mapping, RA, BTs ARI: 7 min	4
9	ascent AFAP to 10000' and set for DCE if any convective lines are identified	10	below cld base to 10000'		
10	DCE (if convective lines develop)	60	10,000'	fine mapping of spatial variability in and around convective systems, DRI:3 min, ARI: 7 min	4
10**	FVS (if no convective lines are near)	0	200' to 500' above cloud base	Cross wind Flux Vertical Stacks, 5 levels (3 below inversion, 100' and 500' above cloud base), RA, BT/CTD at top two levels	2
11	Ferry back to 20 km upwind of DG	45	10000'	dropsonde*+BT*, DRI: 7 min	7
12	Island effect dropsonde	30	7000'	1st dropsonde 20 km upwind of DG, 2nd 6 km upwind (2 minutes from the 1st one and not landing on DG), 3rd dropsonde at the downwind edge of DG, 2 minutes DRI after for the next 3 sondes	7
13	flat descent landing	5	7000' to 0		

Wind + thermodynamic variability
 air-sea interaction for variable cloud conditions + mod wind

Regle?

Island ~~of~~ Sand

Lot of Sonds + Boats 10CTDs

WX - W-WNW 15-30kts

Sc - Ben clouds 1501 shra

WNW 25kt 7k

WSE $\frac{2}{5}$

2 up wind + 3 downwind

FZLW 16kPa

to target 10k

1st + S. 7mm

DAS ?



crosswind

1026 APPP

then 500ft / min

100' then 200'

PPM 200' 100 on X legs

Surface imagers (APPN) 10017 + cloud base

IF CONV ↑ 10k DCE

FVS -5105

if time both

210

10.5



0228
0235
0242
0249
0256
0303

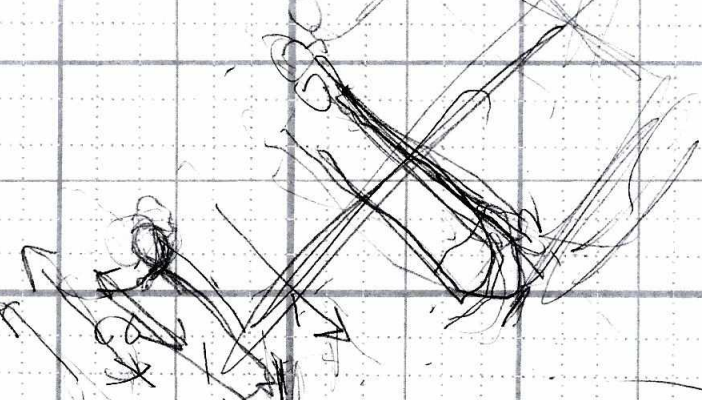
U-S
blu
clid
bs

5.5

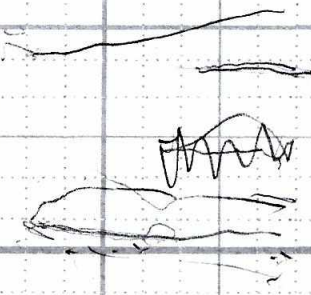
174

17350

200
500
1300
1600
1000



7 DB
72 14



P-3 Flight Plan For Boundary Layer Centric Flight

Dec 4, 2011

8	Surface Imaging	80	100' below cld base or inversion	SST imagery mapping, flux mapping, RA, BTs ARI: 7 min	7	4
9	ascent AFAP to 10000' and set for DCE if any convective lines are identified	10	below cld base to 10000'			
10	DCE (if convective lines develops)	60	10,000'	fine mapping of spatial variability in and around convective systems, DRI:3 min, ARI: 7 min	20	6
10**	FVS (if no convective lines are near)	0	200' to 500' above cloud base	Cross wind Flux Vertical Stacks, 5 levels (3 below inversion, 100' and 500' above cloud base), RA, BT/CTD at top two levels	3	2
11	Ferry back to 20 km upwind of DG	45	10000'	dropsonde*+BT*, DRI: 7 min	7	7
12	Island effect dropsonde	30	7000'	1st dropsonde 20 km upwind of DG, 2nd 6 km upwind (2 minutes from the 1st one and not landing on DG), 3rd dropsonde at the downwind edge of DG, 2 minutes DRI after for the next 3 sondes	7	
13	flat descent landing	5	7000' to 0			

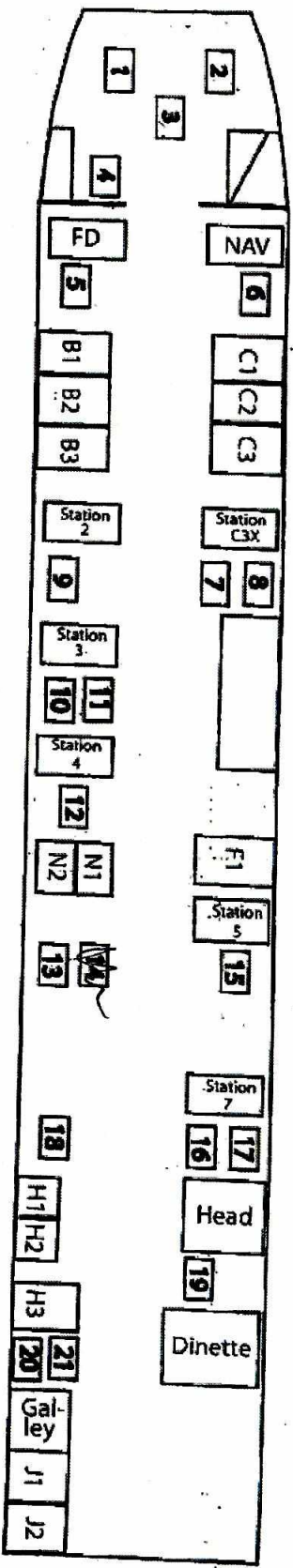
* means dropsonde and AXBTs are preferably co-located

** only if no convective lines develops, then replace 10

NOAA AIRCRAFT OPERATIONS CENTER

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Flight ID 2011130T1



1. Nelson
PILOT
2. Kibbey
COPILOT
3. Klippel
FLIGHT ENGINEER
4. Flaherty
STATION 1
5. Williams
FLIGHT DIRECTOR
6. Grakob
NAVIGATOR
7. Lee
STATION C3X
8. Rice-Placarte
STATION C3X
9. Tamp
STATION 2
10. Jorgensen
STATION 3
11. Chen
STATION 3
12. Neelher
STATION 4
13. Kelms
PROJECT SEAT
14. [Signature]
PROJECT SEAT
15. Smith
STATION 5
16. Olney
STATION 7
17. Brown
STATION 7
18. Heistek
STATION 8
19. [Blank]
DINETTE
20. [Blank]
GALLEY
21. [Blank]
GALLEY

P-3 Flight Plan For Boundary Layer Centric Flight

Dec 4, 2011

Mission type:

Mission location:

Total flight time (hr)

Wind and thermodynamics
variability and air-sea
interaction in variable cloud
and moderate wind
conditions

DYNAMO domain

Item Module

Time (min) Altitude (ft)

Objective

1 T/O and Riegl
boresighting,
position to ~20 km
upwind of DG

30 1000' or
ALAP

Riegl boresighting

2 Island effect
dropsonde

30 7000'

1st dropsonde 20 km upwind of DG, 2nd
6 km upwind (2 minutes from the 1st
one and not landing on DG), 3rd
dropsonde at the downwind edge of DG,
2 minutes DRI after for the next 3
sondes

Move to target
region

45 10000'

dropsonde*+BT*, DRI: 7 min

DAS

80 10000'

dropsonde, DRI: 5 min

Descent from D to
A AFAP to 6000'
and then 500'/min
to 100' and then
back up to 200'

10000 to 100'

descent sounding, position for FFM

FFM

80 200'

Flux mapping, sst, surface wave, dip to
100' on cross legs, RA, ARI:7

Ascent from D to A
to 100' below cloud
base

100' below cld
base or
inversion

Reposition and altitude change to
starting point of Surface Imaging

8400

AXBTs

AXBTs

AXBTs

drpsnds

Total flight time (hr)

Mission location:

Mission type:

AXBTs

AXBTs

AXBTs

drpsnds

Total flight time (hr)

Mission location:

Mission type:

AXBTs

AXBTs

AXBTs

drpsnds

Total flight time (hr)

Mission location:

Mission type:

AXBTs

AXBTs

AXBTs

drpsnds

Total flight time (hr)

Mission location:

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Total flight time (hr)

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Mission type:

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Total flight time (hr)

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Mission type:

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Total flight time (hr)

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Total flight time (hr)

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drpsnds

Total flight time (hr)

Mission location:

Mission type:

AXBTs

AXBTs

AXBTs

drpsnds

Total flight time (hr)

Mission location:

Mission type:

AXBTs

AXBTs

AXBTs

drpsnds

Total flight time (hr)

P-3 Flight Plan For Boundary Layer Centric Flight

Dec 4, 2011

5	8	Surface Imaging	80	100' below cld base or inversion	7	4
57			0752			
10	9	ascent AFAP to 10000' and set for DCE if any convective lines are identified	100	below cld base to 10000'		
10			0752			
10	10	DCE (if convective lines develops)	60	10,000'	20	6
10			0910			
10**		FVS (if no convective lines are near)	0	200' to 500' above cloud base	3	2
11		Ferry back to 20 km upwind of DG	45	10000'	7	7
12		Island effect dropsonde	30	7000'	7	
13		flat descent landing	5	7000' to 0		

* means dropsonde and AXBTs are preferably co-located

** only if no convective lines develops, then replace 10

300 ————— 1000

W

N43RF AVAPS DROP LOG

Lead Tech: Dana Naehner

Project: Dynamo 2011 Mission:

Flight ID: 2011204I

Take Off: _____

Landing: _____

Flt Dir: J. Williams

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Comments	Good ?
1	110 355 098	1	.6	0209	TMR	Combo	✓
2	111 625 086	2	.8	0211			✓
3	111 445 136	3	.3	0214			✓
4	110 745 212	4	.1	0217		Combo	✓
5	111 055 055	5	.2	0219			✓
6	111 445 268	6	.2	0221			✓
7	110 355 042	7	.2	0228		Combo	✓
8	110 155 461	8	.7	0235		Combo	✓
9	110 155 462	1	.5	0242		Combo	✓
10	111 445 141	2	0	0249		Combo	✓
11	111 945 321	3	.4	0254		Combo	✓
12	103 125 405	4	.4	0259		Combo	✓
13	110 355 019	5	.4	0305		Combo	✓
14	110 355 053	6	.2	0312		Combo	✓
15	110 355 051	7	.5	0317		Combo	✓
16	110 355 033	8	.7	0326		Combo	✓
17	110 355 025	1	.3	0331		Combo	✓
18	110 355 040	2	0	0336		Combo	✓
19	110 155 470	3	.4	0341		Combo	✓
20	110 355 043	4	.6	0346		Combo	✓
21	110 355 035	5	.4	0351		Combo	✓
22	110 355 052	6	.2	0356		Combo	✓
23	110 355 062	7	0	0400		Combo	✓
24	110 355 055	8	.4	0405		Combo	✓
25	110 355 038	1	.6	0411		Combo	✓
26	110 355 041	2	.4	0416		Combo	✓
27	110 355 050	3	0	0421		Combo	✓
28	110 355 054	1	.2	0418		Combo / Early Launch Detect	✓
29	110 155 469	2	.4	0423		Combo	✓
30	110 355 037	3	0	0428		Combo	✓
31	110 355 045	4	0	0433		Combo	✓
32	110 355 046	5	.5	0438		Combo	✓
33	110 745 215	6	0	0443		Combo	✓
34	110 745 217	7	.2	0448		Combo	✓

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Comments	Good ?
35	110 355 090	1	0	1118	TMR	Combo	✓
36	110 355 091	2	.6	1125		Combo	✓
37	110 745 220	3	0	1132		Combo	✓
38	111 445 077	4	.5	1143		Combo	✓
39	110 745 218	5	0	1145			✓
40	110 745 224	6	.2	1148			✓
41	110 745 227	7	0	1150		Combo	✓
42	110 355 026	8	.3	1152			✓
43	110 355 104	1	.5	1154			✓
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							
57							

Drop Station Operator Notes

AVAPS Pre-Flight Check:

- Start AVAPS., then start Soundings and set the Project Name and full Flight ID (example 20110823i2).
- Update the Frequency band allocation as required:
Band A - W53rd, Band B - N42RF, Band C - N43RF, Band D - N49RF, Band E - not allocated
- Perform a prelaunch check on each channel, look for reasonable data and no CRC error status lights. Verify data is available on Remote AVAPS at the FD Station, then terminate the sonde by selecting **Abort** to cancel the sonde initialization. Verify the AVAPS Data mission folder has been created.

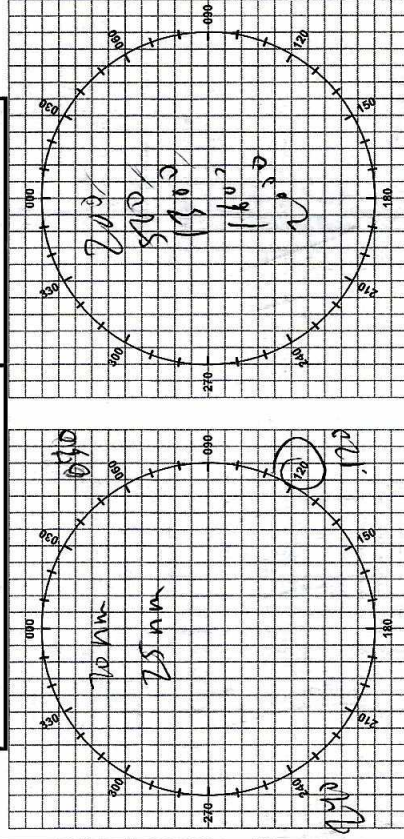
AVAPS Launch:

- Select a sonde frequency in the Green band and away from other sondes
- Enter sonde pressure error offset if 0.4mB or greater
- Select "begin data collection" and verify good data (including Winds) prior to putting sonde in launch tube
- Below 10,000', cut off about 1/2 of ribbon
- Loosen ribbon and extend end of ribbon to near, but not over, the sensor end of the sonde
- Place the sonde in the launch tube, sensor arm up, with the power pin socket facing starboard
- Verify the sonde is actively tracking GPS data prior to launch and no Early Launch detect

[illegible]

PAGE 1 OF 2

POSITION REPORT	
1. POSITION	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: EMERGENCY MESSAGE 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
2. TIME	
3. ALTITUDE	
4. NEXT POSITION	
5. ETA	
6. NEXT POSITION	

[illegible]

5.5 736 74

77-08.3 77-13.6

7-13.9 681-22 591-185