

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

FLT ID: 100528H	From: KMCF	To: KMCF
FLT #: 10-034	Blk In: 2236 Z	Lnd Time(on): 2226 Z
ETD: 1300 Z	Blk Out: 1305 Z	T/O Time (off): 1313 Z
ETE:	Total Blk: 9.4 9+21	Total Flt: 9.2 9+13
Sponsoring Org: RSMAS	Program: Deepwater Horizon	Purpose: Science

AOC Flight Crew

Aircraft Commander: Nelson, M	Data System: Bosko, J
Co-Pilot: Halverson, Kibbey	Avaps: Peek, B
Navigator: Kidder, /	System Engineer: Mascaro
Flight Eng: Klippel, /	AA: Warnecke
Flt Director: Parrish, Williams	AA: Paul, S
Avionics:	SEB Crew Chief: (17)

Participating Scientists, Visitors, & Add'l Aircrew on back. 2

of people listed on back: (5)

	A/C - Takeoff	Wx Station - Takeoff	A/C - Land	Wx Station - Land
Pressure	1010.5	29.84 1010.5	1008.0	1008.3 29.79

ATIS - Takeoff	1310Z 23003KT 10SM SCT019 SCT024 28/23 298V
ATIS - Land	2155Z 3007KT 10SM SCT130 30/21 A2979

Data Source	Number	Data Disposition / Date / Quality / File Name(s)
Flight Level Tapes		
Radar Tapes		
Dropsondes	10	Good: 10 Bad: 0 Sent:
AXBT	41	AXCP: 22 AXCTD: 2

List other data sources on back in Remarks section.

Remarks (Storm Name, Mission ID, Recco Times, Fix Times)	Recco Times:	Fix #	Fix Time
Storm Name: /			
Mission ID: WXWXA TRAIN			

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FLT ID:	T/O Time: Z	Lnd Time: Z
Name (Last, First)	Activity on Aircraft	Affiliation
Shay, Nick	PI	RSMA5 / Univ of Miami
Brewster, Jodi	Scientist	RSMA5 / Univ of Miami
Schrope, Mark	Media	Nature Mag
Masa, Peter	Media	WFLA TV
Alvarez,	Observer	Bill Nelson Staff

Remarks:

- FD Log freezing - restart it
- data monitor screens went blank ~1815Z
 - Graphics screens in and out



NOAA P-3 N42RF
Deepwater Horizon 04
28 May 2010



Flight ID: 100528H

<u>Sensor or system</u>	<u>Variable Name</u>
Inertial	INE1
Accelerometer	ACCI1
Temperature Probe	TT1
Dew Point Probe	TDM2X
Altitude (for vertical wind)	ALTI1X
Static Pressure	PSF
Dynamic Pressure	PQF1
Constants File	n42_hur09v1.adc
Project Directory	/acdata/2010/deepwater

Local Met Data:	<u>Takeoff (1313Z)</u>	<u>Landing (2226Z)</u>
Aircraft Static Pressure	1010.5 mb	1008.9 mb
Tower Pressure	1010.5 mb	1008.3 mb

Notes

There were 28 data gaps: 1431000Z – 143110Z, **143956Z – 144005Z**, 144124Z – 144130Z, 150833Z – 150845Z, **151247Z – 151257Z**, **155401Z – 155409Z**, **155506Z – 155518Z**, **161101Z – 161105Z**, **161916Z – 161923Z**, **163442Z – 163502Z**, 165311Z – 165316Z, 165411Z – 165417Z, 170430Z – 170436Z, 170606Z – 170614Z, **180318Z – 180326Z**, 183223Z – 183239Z, **185600Z – 185609Z**, 191427Z – 191440Z, 191821Z – 191922Z, 203443Z – 203450Z, 203535Z – 203545Z, 203801Z – 203809Z, 205259Z – 205303Z, 210712Z – 210726Z, **210842Z – 210847Z**, **211505Z – 211916Z**, 212240Z – 212245Z and **212344Z – 212354Z**. Those highlighted in bold occurred when an AXBT was transmitting causing a gap in AXBT data also.

During 5 of the data gaps, there were spikes in the following 6 default variables at the last second of the gap: alti1, gsui1, hdgi1, lati1, loni1, wsi1. The spikes were fixed using substitution methods with the novatel for alti1 and with INE2 for the other variables. This occurred at 145254Z, 155518Z, 161923Z, 203554Z and 211916Z.

Two spikes occurred in the RINU1550 Altitude, ALTI1. The first spike, from 194914Z – 194924Z, was removed using statistical methods. The second spike was from 204312Z – 204321Z where ALTI1 was replaced using substitution with the Novatel altitude (ALTINV1) ALTI1 = ALTINV1 – 5.95.

Flight Director:
Phone #:

Jack Parrish / Jess Williams
(813) 828-3310 ext. 3041



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The Edge Tech Dewpoint probe TDM2 was chosen as the default since the Buck TDM1 was much noisier. TDM1 was substituted for TDM2 when TDM2 values went out to lunch from 181718Z – 182039Z, and also during minor spikes where TDM2 exceeded ambient temp but TDM1 did not, from 165848Z – 165854Z, 200815Z – 200822Z and 201108Z – 201120Z.

All other instruments appeared to work optimally.

There were 10 GPS dropsondes launched, 10 were good 0 were bad.
41 AXBT's, 22 AXCP's and 2 AXCTD's were also launched.

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Phone #:

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5 WE spikes

100528H
t/o 1313Z - land 2226Z

make aa-int

2.35788

Accelerometer

✓ acci1 (m/s2)
Inertial 1 Vertical
Acceleration

acc2 (m/s2)
Inertial 2 Vertical
Acceleration

Vertical Speed

✓ vsi1 (m/s)
Inertial 1 Vertical
Speed

vs2 (m/s)
Inertial 2 Vertical
Speed

Altitude

✓ alti1 (meters)
Inertial 1 Altitude (GPS
aided)

✓ alti2 (meters)
HG9550 Radar Altitude
(rounded)

✓ altash (meters) → no data
Ashtech GPS Altitude

ra159 (meters) → no data
ra159 Radar Altitude

ra202 (meters) → ra 9550-1
HG9550 Radar Altitude ra 9550-1 (COR) ?

Ground Speed

gsui1 (m/s)
Inertial 1 East/West
Ground Speed

gsui2 (m/s)
Inertial 2 East/West
Ground Speed

gs1 (m/s)
Inertial 1 North/South
Ground Speed

gs2 (m/s)
Inertial 2 North/South
Ground Speed

Heading

hdgi1 (deg)
Inertial1 heading
hdgi2 (deg)
Inertial2 heading

Roll

rolli1 (deg)
Inertial 1 roll
rolli2 (deg)
Inertial 2 roll

Differential Sideslip Pressure

pdsf (mb)
Rosemount Fuselage Diff'l Sideslip
Press.
pdsr (mb)
Rosemount Radome Diff'l Sideslip
Press.

Latitude

✓ latash (deg)
Ashtech GPS Latitude
✓ lati1 (deg)
Inertial 1 Latitude
✓ lati2 (deg)
Inertial 2 Latitude

Longitude

✓ lonash (deg)
Ashtech GPS Long.
✓ loni1 (deg)
Inertial 1 Longitude
✓ loni2 (deg)
Inertial 2 Longitude

Dynamic Pressure

✓ pqf1 (mb) - J. Kelly
Rosemount Fuselage
✓ Dynamic Pressure 1
pqf2 (mb)
Rosemount Fuselage

pqw (mb)
Rosemount Wingtip
Dynamic Pressure

alti 2 noisier than
alti 1

Dynamic Pressure 2

Static Pressure

_____ psf (mb)
Rosemount Fuselage
Static Pressure
_____ psw (mb)
Rosemount Wingtip
Static Pressure

Pitch

_____ ptchi1 (deg)
Inertial 1 pitch
_____ ptchi2 (deg)
Inertial 2 pitch

Differential Attack Pressure

_____ pdaf (mb)
Rosemount Fuselage
Diff'l Attack Pressure
_____ pdar (mb)
Rosemount Radome
Diff'l Attack Pressure

Dewpoint Temperature

_____ tdm1 (°c)
General Eastern Dewpt
Measurement
_____ tdm2 (°c)
Edgetech Vigilant
Dewpt Measurement
_____ tdm3 (°c)
Edgetech/Maycomm
Dewpt Measurement

Total Temperature

_____ tt1 (°c)
Rosemount Total
Temp1 FWD
_____ tt2 (°c)
Rosemount Total
Temp2 AFT

psw psf*	pqw pqf1* pqf2	ine1 ine2
tt1 tt2	tdm1 tdm2* tdm3	acci1 acci2
pa1 *ra159 ra232	Notes: ra232 = HG9550	
* denotes default/typical selection		

NO ALTASH
NR 159

100528H
t/o 1313Z - land 2226Z

psw
psf

pqw
pqf1
pqf2

INE1
INE2

lines

+452 - alt1 w/ alt2 +12.06
1751.06 - 1758.12

tt1 -
tt2 -

tdm1
tdm2
tdm3

pal
ral59
alt1
alt2

Data Gap 143100-143102, 143956-14405, 144124-144130, 150833-150845, 151247-151257

just b/c t/o psw ↑ 1 mb + is 2-3mb ↑ then psw

psf jumps up 3mb t/o From 131256-137303

1 BT has 2 gaps

155401-155409, 155506-155518, 161101-161105, 161916-161923, 163442-163502,
165311-165316, 165411-165417, 170430-170436, 170606-170614, 180318-180326,
183223-183239, 185600-185609, 191427-191440, 191821-191922, 203443-203450,
203535-203545, 203801-203809, 205259-205303, 210710-210724, 210842-210847,
211905-211916, 212240-212245, 212347-212354

11 BT'S w/ GAPS 1 w/ 2 GAPS

Ex @ 145254-145255 lon1 w/ lon2 +.8013, lat1 w/ lat2 +.233, alt1 w/ alt2 +12.06
155518-155519 lon1 w/ lon2 +.7949, lat1 w/ lat2 +.2258, alt1 w/ alt2 +10.35
161923-161924 lat1 w/ lat2 +.2258, lon1 w/ lon2 -.7853, alt1 w/ alt2 +12.06
203545-203546 lat1 w/ lat2 +.2635, lon1 w/ lon2 -.8029, alt1 w/ alt2 +12.06
211916-211917 lat1 w/ lat2 +.2582, lon1 w/ lon2 -.8029, alt1 w/ alt2 +12.06

100528H
t/o 1313Z - land 2226Z

Slip Angle

_____ sa (deg)
_____ Calculated Slip Angle

Dynamic Sideslip Pressure

_____ pqs (mb)
_____ Rosemount Fuselage
_____ Dynamic Sideslip

Differential Sideslip Pressure

_____ pdsf (mb)
_____ Rosemount Fuselage
_____ Diff'l Sideslip Press.

Roll

_____ amr (grams)
_____ Calc'd Mixing Ratio

Attack Angle

_____ aa (deg)
_____ Attack Angle

Dynamic Attack Pressure

_____ pqaf (mb)
_____ Rosemount Fuselage
_____ Dynamic Attack Pressure

Differential Attack Pressure

_____ pdaf (mb)
_____ Rosemount Fuselage
_____ Diff'l Attack Pressure

Pitch

_____ ee (mb)
_____ Calc'd Vapor Pressure

_____ Td

145254

155518

161923

203545

211916

alt1 → alt1

-8.09

-2.5

-6.67

-9.28 -NUT

gsu1 → gsu2 -0.82 ✓

+0.95

+1.02

+1.58

+1.16

hdg1 → hdg2 ✓

+1.2

+0.74

+0.32

+0.81

lat1 → lat1 ✓

+0.22 ✓

+0.23

+0.23

+0.26

+0.25

lon1 → lon1 ✓

-0.79 ✓

-0.79

Ⓢ -0.79

-0.8

-0.79

ws1 → ws2 -3.14 ✓

-0.77

-0.43

-0.74

-1

alt1 sub w1 nvl 204312

204321

-5.95

alt1

194914 - 194924

td2 is off 181716 - 182036 - manual - 0.6

replace tdm1 w1 165828 - 165835 - subs.

200823 - 200856

td2 sub tdl

165848 165854

181718 - 182039

200815 - 200822

201108 - 201120

1	-85	24.25	BT 1			Ch 12
2	-85.5	24.25	CP 1	BAD		Ch 14
3	-86	24.25	BT 2			Ch 12
4	-86.5	24.25	CP - 2 (16)	BT 3 (18)	Sonde 1	46/12
5	-87	24.25	CP - 3			Ch 12
6	-87.5	24.25	CP - 4	Sonde 2		
7	-88	24.25	BT 4			
8	-88.5	24.25	BT 5			
9	-89	24.5	CP - 5	BT 6		
10	-89	25	CP - 6	Sonde 3	BAD CP	
11	-88.5	25	CP - 7	4 CH 14		
12	-88	25	BT 7			
13	-87.5	25	CP - 8	Sonde 4	Ch 16	
14	-87	25	BT 8		Ch 12	
15	-86.5	25	BT 9	CTD - 1		
16	-86	25	CP - 9		Ch 16	
17	-85.5	25	CP - 10			
18	-85	25	BT 10	Sonde 5		
19	-85	25.5	CP - 11	BT 11		
20	-85	26	CP - 12	Sonde 6		
21	-85.5	26	CP - 13			
22	-86	26	BT 12			
23	-86.5	26	BT 13	CTD - 15		
24	-87	26	BT 14			
25	-87.5	26	CP - 14	BT 15	Sonde 7	
26	-88	26	CP - 15			
27	-88.5	26	CP - 16			
28	-89	26	BT 16			
29	-89	26.5	BT 17			
30	-89	27	BT 18			
31	-88.5	27	BT 19			
32	-88	27	CP - 17	Sonde 8		
33	-87.5	27	BT 20			
34	-87	27	BT 21 16	CP 18 12	BAD CP	
35	-86.5	27	BT 22	Good		
36	-86	27	BT 23	Good		
37	-85.5	27	CP - 19			
38	-85	27	CP - 20			
39	-85	27.5	BT 24			
40	-85.5	27.5	BT 25	-BAD BT		
41	-86	27.5	BT 26 (16)	-BAD BT		
42	-86.5	27.5	CP 27 21 ¹²	BT 27	BAD BT?	
43	-87	27.5	BT 28	Sonde 9	BAD BT	
44	-87.5	27.5	BT 29			
45	-88	27.5	BT 30			
46	-88.5	27.5	CP 22			
47	-89	27.5	BT 30 3 100			

39 BT's
(5 extra)

22 CP's

2 CTD's

9 Sondes
(1 extra)

With Changes from This morning 28 May 8am

01 L
BT34

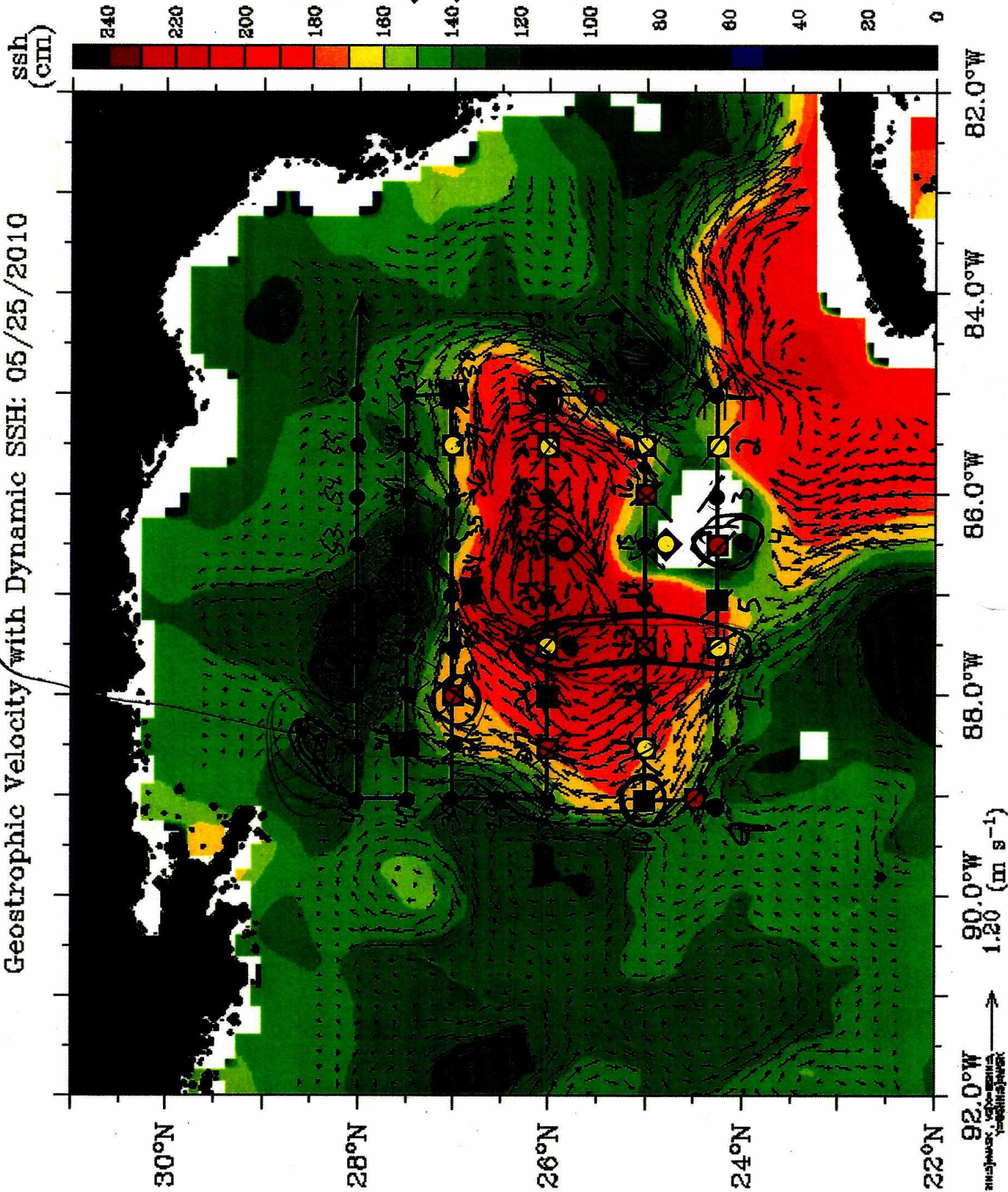
48	89	51.28	BT 31 32			
49	88.5	71.28	BT 33	> 34	QAS	
50	88	28	BT 35			
51	87.5	28	BT 36	Sonde 10		
52	87	28	BT 37 37		Good	
53	86.5	28	BT 38 38		Good	
54	86	28	BT 39 39		Good	
55	85.5	28	BT 40 40		Good	
56	-85	28	BT 41 41		Good	

15 QAS
in 45 s

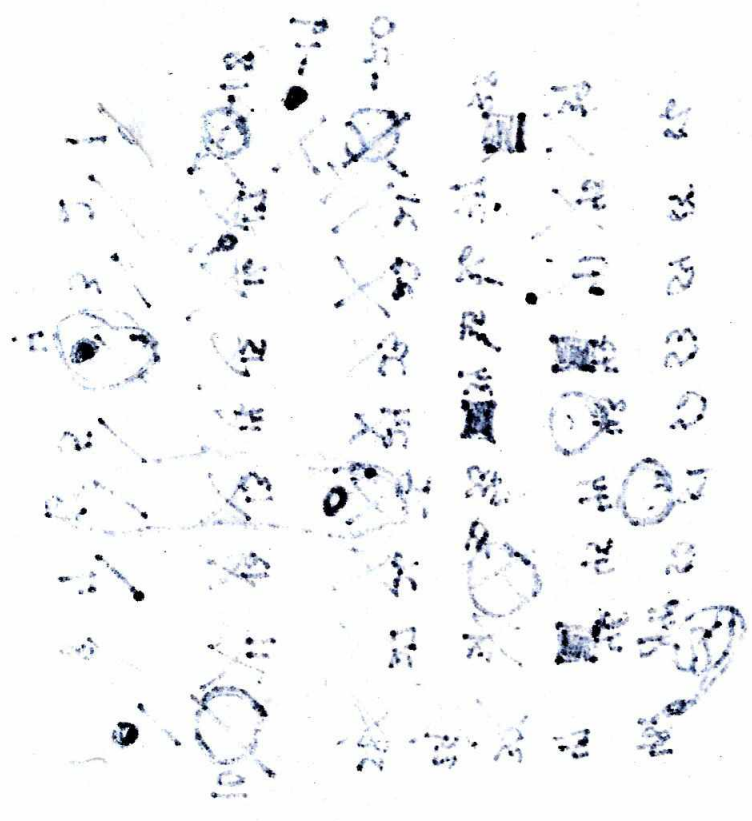
Geostrophic Velocity with Dynamic SSH: 05/25/2010

as low as possible

10
0 = sande



2/11/2009 21.11.01 24.0



0=2009

100528H

1	-85	24.25	BT			
2	-85.5	24.25	CP - 14			
3	-86	24.25	BT			
4	-86.5	24.25	CP - 16	BT	Dropsonde	
5	-87	24.25	CP - 12			
6	-87.5	24.25	CP - 14	Dropsonde		
7	-88	24.25	BT			
8	-88.5	24.25	BT			
9	-89	24.5	CP - 16	BT		
10	-89	25	CP - 12	Dropsonde		
11	-88.5	25	CP - 14			
12	-88	25	BT			
13	-87.5	25	CP - 16	Dropsonde		
14	-87	25	BT			
15	-86.5	25	BT	CTD - 14		
16	-86	25	CP - 16			
17	-85.5	25	CP - 14			
18	-85	25	BT	Dropsonde		
19	-85	25.5	CP - 16	BT		
20	-85	26	CP - 12	Dropsonde		
21	-85.5	26	CP - 14			
22	-86	26	BT			
23	-86.5	26	BT	CTD - 16		
24	-87	26	BT			
25	-87.5	26	CP - 14	BT	Dropsonde	
26	-88	26	CP - 12			
27	-88.5	26	CP - 16			
28	-89	26	BT			
29	-89	26.5	BT			
30	-89	27	BT			
31	-88.5	27	BT			
32	-88	27	CP - 16	Dropsonde		
33	-87.5	27	BT	CP		
34	-87	27	BT	CP		
35	-86.5	27	BT			
36	-86	27	BT			
37	-85.5	27	CP - 14			
38	-85	27	CP			
39	-85	27.5	BT			
40	-85.5	27.5	BT			
41	-86	27.5	BT			
42	-86.5	27.5	CP			
43	-87	27.5	BT	Dropsonde		
44	-87.5	27.5	BT			
45	-88	27.5	BT			
46	-88.5	27.5	CP			
47	-89	27.5	BT			

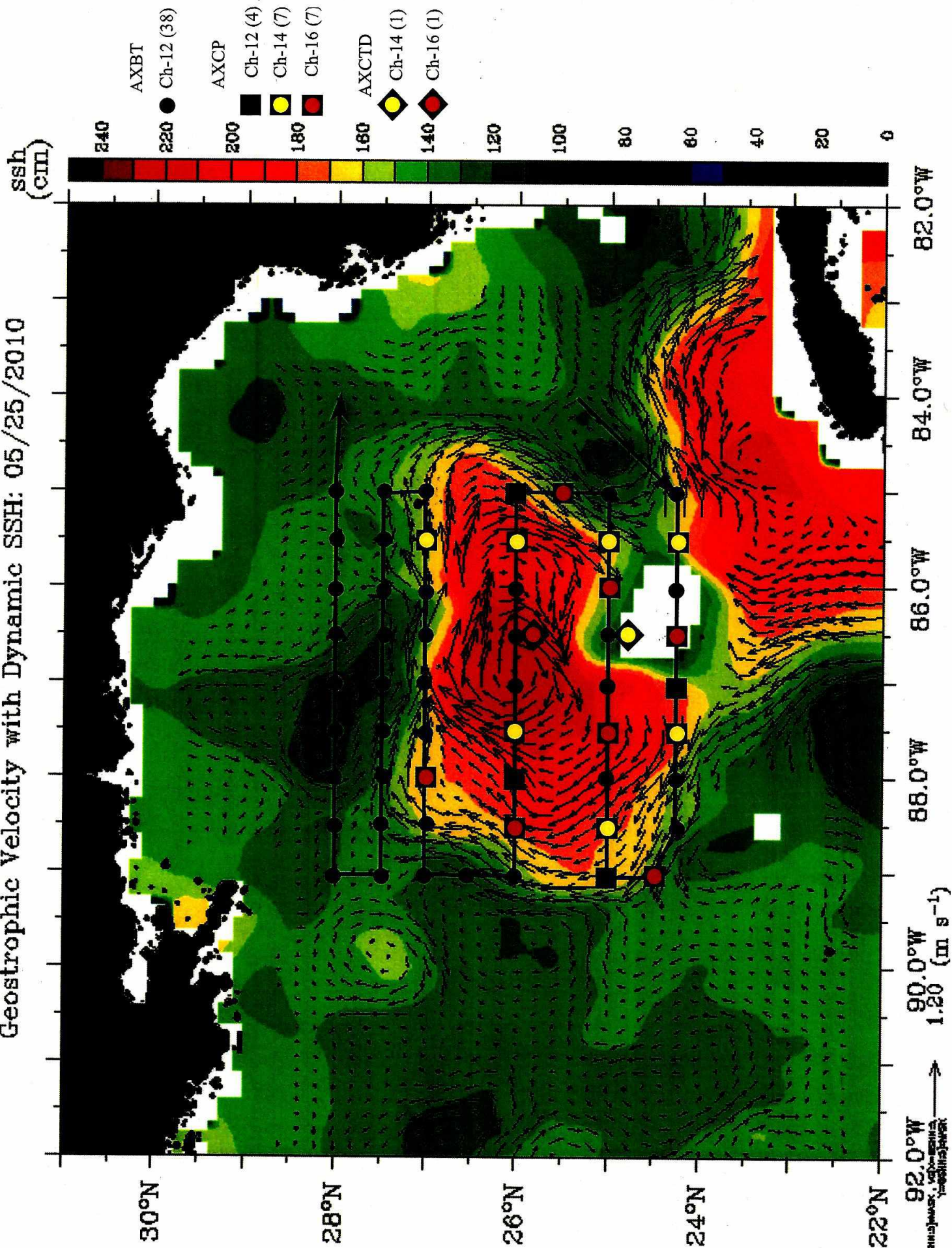
48	-89	28	BT			
49	-88.5	28	BT			
50	-88	28	BT			
51	-87.5	28	BT	Dropsonde		
52	-87	28	BT			
53	-86.5	28	BT			
54	-86	28	BT			
55	-85.5	28	BT			
56	-85	28	BT			

39 BT's (5 extra)
 22 CP's

2 CTD's

9 Dropsondes (1 extra)

Geostrophic Velocity with Dynamic SSH: 05/25/2010



1850050

AS of now 38 AXBT's + 6 NICK
10 dropsondes 18 AXCP's 2 AXCTD's

t/o wx:

metar:

taf:

VRBOS UNL SICL 2979

Climb Turb/ice:

Flight:

Cloud tops ~~3000ft~~ 3000ft, 15-2000ft

↙

Precip/lightning:

NoF
track

moving S(E) @ 10kt @ 5-10kt

jet:

wind:

@ 060 N 5-10kt

turb:

landing wx:

descent turb/ice:

taf:

VRBOS 9999 VCSH SCT030CB
SCT050

local conditions:

Sea Salt:

B.L. ~ 2500ft

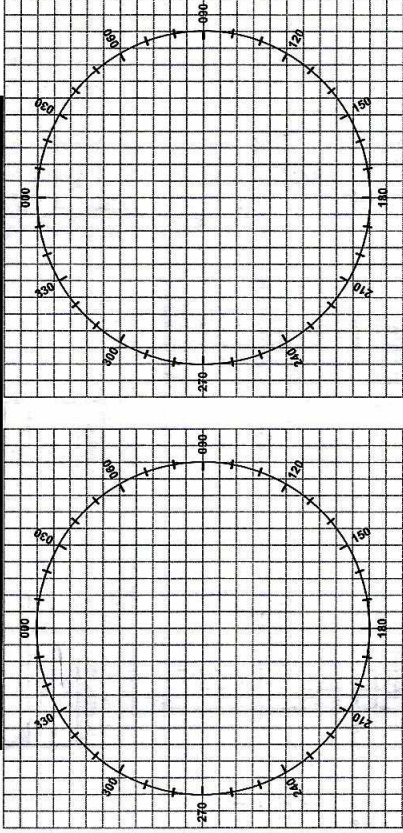
Volcanic Ash:

CLEARANCES

FREQ	ALT	HDG	OTHER
11000	Callie	0-11512	5"
			22 Rwy 29.82 MSA 2700'
			715 1985m
			TFR-3000' W-168 1000' L
			W-174414 Surf 50K
			FDEH 405nm Radio 126.4
			TMS Setup
			As Filed Rwy Left 190 1600
			1411 10m/n 119.65 2176

MISSION LOG

PAGE 1 OF 1



POSITION REPORT

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 42, NOAA 42, NOAA 42

- 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

TIME	FIX TYPE	POSITION	INS 1 POSITION	KERR	INS 2 POSITION	KERR	MH	VAR +E=>	TH	DR +R=>	TRK	GS	WD	WS	ALT	TAS	NEXT PT	DIST	TIME	ETA	REMARKS
1258	STRT	CLARK As Filed																			
1305	TAXI	Rwy 24																			
1308	IV																				
1311	T/O																				
1320	SPRV IV TO	404040 Rt 270	210/15		27.18 8539	0		130.7	11336		8846		NY	631-0414	2493						
1323	C	2415 8540																			
1325	Δ ⁶	2710 08329	2710 08329	0	27.10 08340	-1	224	40	270	12	223	250	307	10	14	251	N37 28 089				
1339	C	2415 8540																			
1430	Δ ⁶	2415 8540	2415 8540	-1	24.15 8540	0	272	20	270	0	270	205	300	7	5.5	206					
1533	Δ ⁶	2501 8530	2501 8530	-2	2501 8530	-1	002	00	002	0	002	187	314	41	5.5	192					
1630	Δ ⁶	2501 8530	2501 8530	-2	2501 8530	-1	092	20	090	0	091	203	290	7	5.5	197	Initial Update @ 17012				
1723	Δ ⁶	2601 8533	2601 8533	0	2601 8534	-1	270	20	268	27	269	195	317	8	5.5	201					
1818	C	2501 8530					0861	100	085	38	089	205	340	11	5.5	203					
1822	Δ ⁶	2701 8530	2701 8530	-2	2701 8530	-2															
1924	Δ ⁶	2710 8531	2710 8531	-4	27.12 8531	0	273	30	270	12	272	216	319	6	5.5	217	Initial Update				
1925	Δ ⁶	2801 8539	2801 8539	-2	2801 8539	-2	039	0	039	28	040	224	327	4	3.5	211					

PAGE _____ **OF** _____

FIX TYPES

FIX TYPES
(G) - GPS (I) - INS (R) - RADIO (V) - VISUAL (C) - CELESTIAL (D) - DR

[illegible]