N49RF ERROR SUMMARY
20200915N1

Flight ID: 20200915N1

Sensor or System	Number or Name
Static Pressure Probe	PSM.2
Dynamic Pressure Probe	PQM.2
Total Temperature Probe	TTM.1
Dewpoint Temp. Probe	TDM.2
Vertical Accelerometer	AccZI.1
Altimeter	AltGPS.3
INE Selection	1
Differential Attack Pressure Probe	PDALPHA.2
Differential Sideslip Pressure Probe	PDBETA.2
Dynamic Attack Pressure Probe	PQALPHA.2
Dynamic Sideslip Pressure Probe	PQBETA.2
Flight Directory	acdata/2020/MET/20200915N1

Local Met Data	Takeoff TISX (1609Z)	Landing TISX (0000Z)
Dynamic Corrections		Yes
AttackAngleIntercept		3.97801
AttackAngleSlope		3.86172
SlipAngleIntercept		1.258
SlipAngleSlope		6.69941
AttackAngleIntercept2		5.05753
AttackAngleSlope2		5.52397
SlipAngleIntercept2		0.931
SlipAngleSlope2		6.57562

Notes:
There were no edits made in the measured parameters used to calculate meteorological and navigational parameters.

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

Expendable Type	# deployed	# good	# transmitted	
Dropsondes	34	29	29	
Test sondes	0	0	0	
AXBTs	0	0	0	
AXCPs	0	0	0	
AXCTDs	0	0	0	
UAS	0	0	0	

Flight Director: Hathaway / Flaherty
Phone #: 863-500-3911

ACAT-4 Version = 7.3

U.S. Department of Commerce / NOAA / OMAO / Aircraft Operations Center - N49RF Manifest

FLIGHT INFORMATION

FLT ID:	20200915N1	FLT #:	
From:	TISX	ETD:	1600 ~ 8hrs
To:	TISX	ETA:	2400

Block Time		Flight Time	
In:	2350Z	Land:	2347Z
Out:	1603Z	T/O:	1609Z
Total:	7.9	Total:	7.8

Sponsoring Org:	HRD/ONR
Program:	Hurricane 2020-PRX
Purpose:	TS Teddy

CREW MANIFEST

AC:	Mansour	Scientists:
CP(s):	Nardi	
	Varwig	
Nav(s):		
FE(s)		
FD(s):	Hathaway	
	Flaherty	Visitors:
SEB:		
SSA:	Defeo	
AVAPS:	Hartberger	

MISSION INFORMATION

Pressure		Dropsondes ~34		
		Good	Bad	Sent
A/C Takeoff		29	5	29
ASOS Takeoff				
		BTs		
		Good	Bad	Sent
A/C Land		0	0	0
ASOS Land				

Storm Number ID: (ie: AL072012)	AL 202020
TCPOD/WSPOD Mission (ie: NOAA2 2418A SANDY)	NOAA9 WAZDA TEDDY

OBSERVATIONS

Fix Number	Obs Number	Fix Time	SLP

AS REQUIRED BY ORM	Y	N
VOLCANIC ASH		
SCIENCE MISSION WITHIN BDRY LAYER		
LACK OF PRECIPITATION		
RELATIVE HUMIDITY ≥ 80%		
LARGE AIR-SEA TEMP GRADIENT		
HIGH SURFACE WINDS		
LONG FETCH / DURATION OF SFC WND		
SEA SALT ACCRETION FORECAST		
SEA SALT ACCRETION OBSERVED		

REMARKS

Gmax: Gmin:

*Highlighted items must be completed before departure.

Remarks:

G-IV QC Checklist

Overall Assessment	Minor instrument issue(s) - minimal mission impact.

Flight ID:	20200915N1
Flight Director(s):	Hathaway / Flaherty
Mission:	Non-tasked Science Collection/Research
UWZ.d mean:	0.07

Pressure Comparison		
	T/O	Land
Aircraft	1015.6	1012.9
Tower	1013.3	1011.2

	Raw 1Hz Mean File Parameters				C File Parameters	
☐ Accelerometer	☑ AccAXI.1	☑ AccAYI.1	☑ AccAZI.1	☑ AccZI.1	☑ AccZref	
	☑ AccAXI.2	☑ AccAYI.2	☑ AccAZI.2	☑ AccZI.2		
	☑ AccAXI.3	☑ AccAYI.3	☑ AccAZI.3	☑ AccZI.3		
☐ Altitude	☑ AltGPS.1	☑ AltI.1	☑ AltPaADDU.1	☑ AltBCADDU.1	☑ ALTref	
	☑ AltGPS.2	☑ AltI.2	☑ AltPaADDU.2	☑ AltBCADDU.2	☑ ALTPA.d	
	☑ AltGPS.3	☑ AltI.3	X AltRA.1		☑ ALTGA.d	
☐ Ground Speed	☑ GsXI.1	☑ GsYI.1	☑ GsZI.1	☑ GsGPS.1	☑ GSXref	
	☑ GsXI.2	☑ GsYI.2	☑ GsZI.2	☑ GsGPS.2	☑ GSYref	
	☑ GsXI.3	☑ GsYI.3	☑ GsZI.3		☑ GSZref	
	☑ GsXGPS.1	☑ GsYGPS.1	☑ GsZGPS.1			
	☑ GsXGPS.2	☑ GsYGPS.2	☑ GsZGPS.2			
☐ Lat / Lon	☑ LatGPS.1	☑ LatI.1	☑ LonGPS.1	☑ LonI.1	☑ LATref	
	☑ LatGPS.2	☑ LatI.2	☑ LonGPS.2	☑ LonI.2	☑ LONref	
	☑ LatGPS.3	☑ LatI.3	☑ LonGPS.3	☑ LonI.3		
☐ Pressure	☑ PDALPHA.1	☑ PQALPHA.1	☑ PQM.1	☑ PSM.1	☑ PDLAPHAref	☑ PQMref
	☑ PDALPHA.2	☑ PQALPHA.2	☑ PQM.2	☑ PSM.2	☑ PDBETAref	☑ PQ.c
	☑ PDBETA.1	X PQBETA.1			☑ PQALPHAref	☑ PSMref
	☑ PDBETA.2	X PQBETA.2			X PQBETAref	☑ PS.c
☐ Air Speed	☑ CasADDU.1	☑ CasADDU.2	☑ TasADDU.1	☑ TasADDU.2	☑ IAS.d	☑ TAS.d
☐ Pitch / Roll	☑ PitchI.1	☑ PitchRateI.1	☑ RollI.1	☑ RollRateI.1	☑ PITCHref	
	☑ PitchI.2	☑ PitchRateI.2	☑ RollI.2	☑ RollRateI.2	☑ ROLLref	
	☑ PitchI.3	☑ PitchRateI.3	☑ RollI.3	☑ RollRateI.3		
☐ Temp / Dewpt	☑ TTM.1	☑ TTM.4	X TDM.1		X TD.c	☑ TTMref
	☐ TTM.2		X TDM.2		X TDMref	☑ TA.d
	☑ TTM.3					
☐ Misc. (Must check)					☑ UWZ.d	☑ WS.d
					☑ DPJ_WSZ	☑ WD.d
					X HUM	

FLID_Mission_Documents.pdf:
☑ Error Summary
☑ Crew Manifest
☑ QC Checklist
☑ Dropwindsonde Log(s) - AVAPS and FD if completed
☑ Flight Track
☑ Miscellaneous FD Notes

QC Key	
Not checked	☐
Valid	☑
Errors (note)	X

NOTES:

Occasional Spikes in multiple sensors in CDO due to turbulence.
PQBeta.1 and PQBeta.2 are unrepresentative with unusual drop outs.
AltRA.1 has multiple significant dropouts and should not be used as absolute altitude.
When examined at high resolution, data from the three inertials shows "stairstepping" for all parameters for brief intervals (generally less than 15 seconds).
TDM.1 & TDM.2 were unrepresentative for the cruise portion of the mission above 41K and also for intervals at low altitudes.
Consider all relative humidity values to be considered suspect.
TTM.3 has a small amplitude (magnitude 0.2 – 0.3 deg C) unnatural oscillation with a period of roughly 30 seconds.
TTM.1 was used for calculation of Ambient Temperature (TA) and other derived parameters.
There were no edits made in the measured parameters used to calculate meteorological and navigational parameters.
Takeoff/Landing data: Data during landing and takeoff are potentially suspect...
It is recommended that ground data not be used for scientific analysis.

AOC GPS Dropwindsonde Log (updated Mar 2019)

Flight ID: 20200915N1 ASPEN Operator/Flight Director(s): FLAHERTY / HATHAWAY

Mission ID: NOAA9 WAZOA TEDDY Storm Name/Track: TS TEDDY RESEARCH PG ___ of ___

Sonde #	Ob #	Launch Time HHMMSS (Z)	Sonde ID (m-n last 5)	Ch # used	Lat (°N)	Lon (°E)	Prominent Wx Cond.	SFC Prs (mb)	Comments / Issues / QC / ASPEN Edits	KWBC #	Sonde Issues?
1	1	1739	40414	1	16.5	-53.9	FEWBLW	1010.8		1800	N
2	2	1747	30172	2	16.5	-53.0	"	1010.6		1806	N
3	3	1759	40388	3	17.9	-52.6	"	1011.4		1857	N
4	4	1811	40375	4	19.4	-52.3	"	1011.7		1859	N
5	5	1824	40410	1	21.0	-52.0	"	1013.8		1901	N
6	6	1845	40413	2	20.9	-49.0	SCTBLW	1013.5		1910	N
7	7	1853	30882	3	19.9	-48.8	"	1011.9	LATE T/H	1919	Y
8	8	1854	30936	4	19.7	-48.8	"	1011.7		1927	N
9	9	1902	40397	1	18.8	-48.6	"	1009.8		1931	N
10	10	1911	40374	2	17.8	-48.5	OVCBLW	1008.4		1948	N
11	11	1920	21309	3	16.7	-49.3	"	1005.8		1951	N
12	12	1929	40297	3	15.6	-48.2	"	1002.3		1954	N
13	13	1937	30146	4	15.3	-47.4	"	999.0		1959	N
14	~~14~~	~~1944~~	30170	1	———	———	"	———	NO PTH / NO BACK UP	———	Y
15	15	1948	30128	2	15.0	-46.6	"	1000		2012	N
16	~~16~~	1954	30139	3	———	———	———	———	BAD ——— T/H	———	Y
17	16	1955	40539	5	14.2	-46.4	"		BACKUP	2015	N
18	17	1959	40267	4	13.7	-46.4	"	1000.6		2022	N
19	18	2005	30049	6	13.1	-46.8	"	1000.6		2025	N
20	~~19~~	2011	40436	1	13.1	-47.5	"	1001.4	NO T/H BAD ———		Y
21	19	2017	30131	7	13.1	-47.6	"	1000.3	BACK UP	2035	N
22	20	2017	30140	2	13.1	-48.3	"	1000.9		2040	N
23	21	2023	30132	3	13.6	-48.9	"	1001.3		2053	N
24	~~22~~	2032	———	———	———	———	"	———	BAD ———	———	Y
25	22	2033	30130	8	14.8	-49.4	"	1001.8	BACK UP	2115	N
26	23	2040	50959	1	15.2	-48.8	"	/	V2 DATA, DIED AT 415 mb	2130	Y
27	24	2047	50932	2	15.9	-48.7	SCT BLW	1003.9		2134	N
28	25	2057	51027	3	16.2	-50.0	"	1007.4		2141	N
29	~~26~~	211206	40234	4	16.2	-51.9	"	/	BAD NO T/H ———	———	Y
30	26	211248	40246	1	16.1	-51.9	"	1008.9		2146	N
31	27	2122	40421	2	15.0	-52.0	"	1009.1		2148	N
32	28	2138	50933	3	13.1	-52.1	"	1007.8		2218	N
33	29	2153	40284	4	13.1	-54.0	BKN BLW	1008.3		2227	N
34	30	2208	40295	1	14.9	-54.1	"	1010.5	LAST RPT	2233	N
35	———	———	———	———	———	———	———	———	———	———	———
36											
37											
38											

ASPEN Operator will ensure this form is delivered to the AOC Flight Director to be archived

COMMENTS:

Obs Xmitted	Obs Missed	# of sondes launched	# of bad sondes
30 29	1	34	5

AVAPS Drop Log

Project: _____ Mission: TS Teddy Flight ID: 202009 15 NI

Take Off: _____ Landing: _____ Flt Dir: Hathaway Launcher S/N: _____

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
1	201440414	1	0	1739	GD	HRD		✓
2	201 430 172	2	-.2	1747				✓
3	201 440 388	3	-.2	1759				✓
4	201440375	4	0	1811				✓
5	201440400	1	0	1824				✓
6	201 440 413	2	0	1845				✓
7	200 230 882	3	-.4	1853			LATE GPS	
8	200230936	4	-.6	1854				✓
9	201 440 397	1	-.1	1902				✓
10	201 440 374	2	-.1	1911				
11	201421309	5	-.2	1920				
12	201 440 297	3	0	1929				
13	201 430 146	4	-.1	1937				
14	201430170	1	-.3	1944			LOST TEMP/HUM	
15	201 430 128	2	0	1948				
16	201 430 139	3	-.2	1954			NO TEMP/HUM	
17	201 440 539	5	0	1955				
18	201 440 267	4	0	1959				
19	201 430 04	6	0	2005				
20	201 440 436	1	0	2011			NO TEMP/HUM	
21	201 430 131	7	0	2012				
22	201 430 140	2	-.3	2017				
23	201 430 132	3	0	2023				
24	201430129	4	0	2032			NO TEMP/HUM	
25	201 430130	8	0	233				
26	201 350 959	1	0	2040				
27	201350932	2	0	2047				
28	201 35/ 027	3	0	2057				
29	201 440 234	4	0	2112			NO TEMP/HUM	
30	201 440 426	1	-.2	2112				
31	201 440 421	2	-.2	2122				

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
32	201 350 933	3	.2	2138				C
33	201 440 284	4	0	2153				2
34	201 440 285	1	0	2205				2
35	~~201 351 040~~	2						
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
50								

Drop Station Operator Notes

Charge $$ To Options (DO NOT USE FUNDING CODES):
AOC, NWS, HRD, NESDIS, IR/SST, AR, STAN (Stanford), SAT (JPSS/NESDIS/HRD)

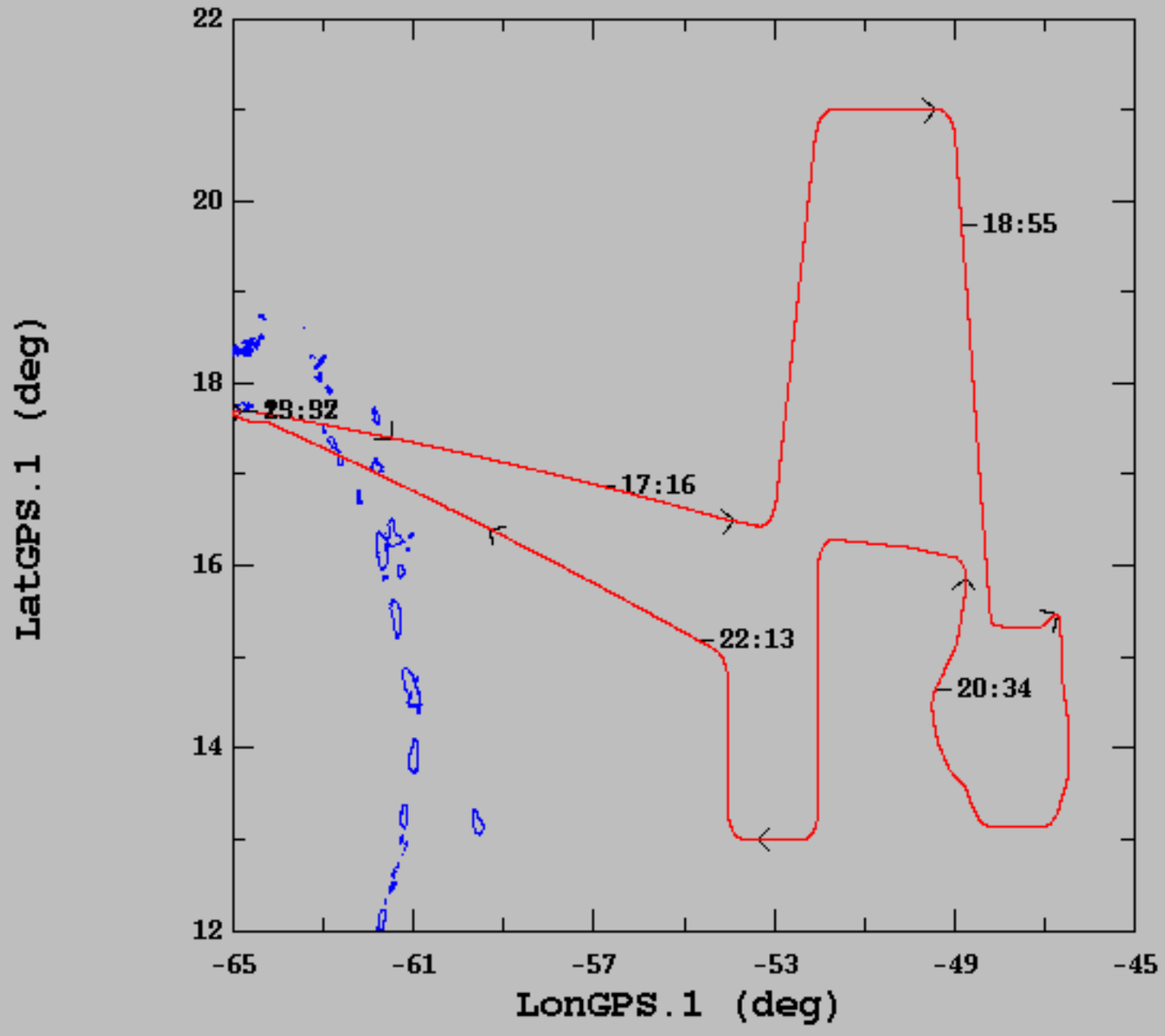
AVAPS Pre-Flight Check:

- If time-permits, verify cabin pressure sensor w/ lab standard
- Start AVAPS., then start Soundings and set the Project Name and Full Flight ID (example: 20120823N2).
- Verify the Frequency band allocation as required:
  Band A: 53rd WRS - Band B: N42RF - Band C: N43RF - Band D: N49RF - Band E: Unallocated
- Select the **GPS Reference** tab from the **Soundings Displays** page and verify good GPS data
- Perform a prelaunch check on each channel, look for reasonable data and no CRC error status lights.
- Verify data is available on Remote AVAPS, then terminate the sonde.
- Verify the AVAPS Data mission folder has been created
- Verify AVAPS PC Time is correct – if time is off by >4sec, no data will display
- Early launch detects are caused usually by remanufactured sondes with the chute riser line not properly coiled below the PCB ear. This may also cause fast falls. If this is suspected, repack the riser line as time permits
- Perform RH Regeneration on all sondes – Multiple RD41 sondes may be processed at once

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 using cabin pressure sensor – warning, this can not be used during a climb
- If the Cal lab pressure standard and the cabin pressure standard match, apply pressure offset +/- 0.1 mB
- Wait until GPS available (green) on the pre-launch screen before continuing.
- Select "begin data collection" and verify good data with winds prior to putting sonde in launch tube
- On N42 & N43, remove about ½ of the ribbon. Do not shorten the ribbon on N49. Loosen ribbon and extend end of ribbon to near, but not over, the sensor end of the sonde. Place excess orange tape on end of ribbon to form a pocket.
- Place the sonde in the launch tube, sensor arm up, with the power pin socket facing right
- Verify the sonde is actively tracking GPS data prior to launch and no early launch detect

2020-09-15, 15:37:04-23:52:03



	mean	sigma	min	max
LatGPS.1 (deg), 1 s/sec	16.61	1.95	13.00	21.01
LonGPS.1 (deg), 1 s/sec	-54.96	5.92	-64.99	-46.44