N43RF ERROR SUMMARY
20240925I1

Flight ID: 20240925I1

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	AccZfilterI-GPS.1
Altimeter	AltGPS.3
INE Selection	1
Differential Attack Pressure Probe	PDALPHA.1
Differential Sideslip Pressure Probe	PDBETA.1
Dynamic Attack Pressure Probe	PQALPHA.1
Dynamic Sideslip Pressure Probe	PQBETA.1

Flight Directory acdata/2024/MET/20240925I1

Local Met Data	Takeoff KLAL (0906Z)	Landing KLAL (1612Z)
Dynamic Corrections		Yes
AttackAngleIntercept		0.179211
AttackAngleSlope		5.88163
SlipAngleIntercept		0.15
SlipAngleSlope		6.89472

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.

A brief spike in the radome pressure measurements (PDBETA.2 and PQM.4) occurred at ~1011 to ~1015 UTC, but minimal impact as it occurred during initial descent down to on-station altitude

Both TDM.1 and TDM.2 (TDMref) spike around 1016 UTC. They recover from that spike around 10:22:30 UTC. During this period, TD.c, TA.d, HUM, UWZ.d, PSURF, WS.d, and WD.d are missing and/or erroneous. This spike occurs near the end of the descent to the storm and first couple of minutes level-off on-station

In addition to the spike, beginning around 1053 UTC through the remainder of the flight, TDM.1 has an erroneous oscillatory behavior and should not be used

TDM.2 is the better behaving TD sensor and only has one additional brief spike between ~13:15:30 and ~13:17:30 UTC

SFMR TB, WS SFMR, and RAIN RATE SFMR data should be used with caution as additional assessment occurs

Expendable Type	# deployed	# good	# transmitted
Dropsondes	17	16	15
Test sondes	8	0	0
AXBTs	8	4	4
AXCPs	0	0	0
AXCTDs	0	0	0
UAS	2	1	0

Flight Director: Zawislak
Phone #: 305-707-4359

ACAT-4 Version = 7.4

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

FLIGHT INFORMATION			
FLT ID:	20240925I1	FLT #:	FY24-
From:	KLAL	ETD:	0500L / 0900Z
To:	KLAL	ETA:	1300L / 1700Z
Block Time		Flight Time	
Out:	08:56	T/O:	09:06
In:	16:18	Land:	16:12
Total:	7.4	Total:	7.1
Sponsoring Org:	NHC		
Program:	PRX		
Purpose:	TDR Mission + sUAS + CHAOS		

CREW MANIFEST		
AC:	Rannenberg	Other Crew:
CP(s):	Palmer	Jun Zhang (HRD)
	Ellis	Kathryn Sellwood (HRD)
NAV(s):	Meier / Saunders	Josh Wadler (ERU)
FE(s):	Ripp	Jack Elston (Black Swift)
	Dittoe	Tom Fritz (MEDIA)
FD(s):	Zawislak	Brooke Bingaman (NSC)
		Caitlin Durkovich (NSC)
SSA:	Richards	
IFT(s):	Hunsinger	
	Vargas	
	Underwood	
MX:		

MISSION INFORMATION				
sUAS		Dropsondes		
Type	Released	Good	Bad	Sent
Black Swift	2	16	1	15
Other Expendables		Dropsonde Charge Codes		
Type	Released	17 NWS		
Streamsonde	8	AXBTs		
ASWD	1	Good	Bad	Sent
		4	4	4
Pennies		2 x TS, 2 x CAT 1		
Storm ID: (i.e., AL072012)		AL092024		
Mission ID: (i.e., NOAA2 2418A SANDY)		NOAA3 1009A HELENE		

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

REMARKS
Vargas, Fritz, Bingaman, Durkovich first pennies
all UM AXBTs
extra pass flown SE -> CTR -> NE after initial pattern

OBSERVATIONS			
Fix Number	Obs Number	Fix Time	SLP
1	Fix #1 21.05N, 86.19W	10:59:30	981 mb EXTRAP
2	Fix #2 21.02N, 86.21W	12:09:07	981 mb 020 / 04 kt
3			
4			

*Highlighted items must be completed before departure.

P-3 QC Checklist

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

Flight ID:	20240925I1
Flight Director(s):	Zawislak
Mission:	Tasked/Operational
UWZ.d mean:	-0.05

Pressure Comparison		
	Pre-flight	Post-flight
Aircraft	1007.5	Not reported
Airfield	1006.7	1007.1

This form uses:
_A.nc

SFMR Serial Unit	1

Parameters	Raw				Derived, Corrected & Reference	
✓ Acceleration	✓ AccAXI.1	✓ AccAYI.1	✓ AccAZI.1	✓ AccZfilter-GPS.1	✓ AccZref	
	✓ AccAXI.2	✓ AccAYI.2	✓ AccAZI.2	✓ AccZfilter-GPS.2		
	✓ AccAXI-GPS.1	✓ AccAYI-GPS.1	✓ AccAZI-GPS.1			
	✓ AccAXI-GPS.2	✓ AccAYI-GPS.2	✓ AccAZI-GPS.2			
✓ Altitude	✓ AltGPS.1	✓ AltI-GPS.1	✓ AltPaADDU.1	✓ AltRA.1	✓ ALTref	✓ AltRA1.c
	✓ AltGPS.2	✓ AltI-GPS.2	✓ AltBCADDU.1	✓ AltRA.2	✓ ALTPA.d	✓ AltRA2.c
	✓ AltGPS.3				✓ ALTGA.d	
	✓ AltGPS.4					
✓ Ground Speed	✓ GsXI-GPS.1	✓ GsYI-GPS.1	✓ GsZI-GPS.1		✓ GSXref	
	✓ GsXI-GPS.2	✓ GsYI-GPS.2	✓ GsZI-GPS.2		✓ GSYref	
					✓ GSZref	
✓ Location	✓ LatGPS.1	✓ LatI-GPS.1	✓ LonGPS.1	✓ LonI-GPS.1	✓ LATref	
	✓ LatGPS.2	✓ LatI-GPS.2	✓ LonGPS.2	✓ LonI-GPS.2	✓ LONref	
	✓ LatGPS.3		✓ LonGPS.3			
	✓ LatGPS.4		✓ LonGPS.4			
✓ Pressure Sensors	✓ PDALPHA.1	✓ PQALPHA.1	✓ PQM.1	✓ PSM.1	✓ PQMref	
	✓ PDALPHA.2	✓ PQBETA.1	✓ PQM.2	✓ PSM.2	✓ PQ.c	
	✓ PDBETA.1		✓ PQM.3	✓ PTM.1	✓ PSMref	
	X PDBETA.2		X PQM.4		✓ PS.c	
✓ Air Speed	✓ CasADDU.1	✓ TasADDU.1	✓ IasADDU.1		✓ IAS.d	✓ TAS.d
✓ Pitch / Roll	✓ PitchI.1	✓ PitchRateI.1	✓ RollI.1	✓ RollRateI.1	✓ PITCHref	
	✓ PitchI.2	✓ PitchRateI.2	✓ RollI.2	✓ RollRateI.2	✓ ROLLref	
	inop PitchI.3	inop PitchRateI.3	inop RollI.3	inop RollRateI.3		
✓ Temperature, Dewpoint,	✓ TTM.1	X TDM.1	✓ TRadD.1		X TD.c	✓ TTMref
Radiometers	✓ TTM.2	X TDM.2	✓ TRadS.1		X TDMref	X TA.d
	inop TTM.3	inop TDM.3	inop TRadU.1		X HUM	
✓ Wind and Pressure		X CH 1 TB	X CH 4 TB		X UWZ.d	X WS.d
X SFMR	SFMR	X CH 2 TB	X CH 5 TB		X PSURF	X WD.d
		X CH 3 TB	X CH 6 TB		X WS SFMR	X RAIN RATE SFMR

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

QC Key:	
Valid	✓
Errors (see NOTES)	X
Sensor Inoperative	inop

NOTES:

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AVAPS Drop Log

Project: _____ Mission: TS Helene Flight ID: 20240925I1

Take Off: 0500 Landing: _____ Flt Dir: Jon Launcher S/N: _____

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
1	23324105S	1	-0.8	1037	JH	NWS	IP 1	✓
2	23183002T	2	-0.	1056	JH	NWS	MP	✓
3	23355004 9	3	-0.4	1059	JH	NWS	CNT	✓
4	23321056*	4	-0.4	1114	JH	NWS	MP	✓
5	23314049 1	1	-0.5	1126	JH	NWS	EP1	✓
6	23324110S	2	-0.3	1143	JH	NWS	IP 2	✓
7	23315016 6	3	0	1155	JH	NWS	MP	✓
8	23324103 2	4	-0.5	1209	JH	NWS	CNT	✓
9	23314064 0	1	-1.1	1223	JH	NWS	MP	✓
10	23315015 9	2	-0.4	1235	JH	NWS	EP2	✓
11	23314058 9	3	-0.4	1254	JH	NWS	IP3	✓
12	23314064 2	4	-0.4	1324	JH	NWS	CNTR	✓
13	23314063 8	1	-0.5	1338	JH	NWS	MP	✓
14	23324109 0	2	-0.3	1347	JH	NWS	EP3	✓
15	23314059 3	3	-0.5	1424	JH	NWS	RMW	✓
16	2335600368	1	-0.3	1442	JH	NWS	EP 4 NO PTH.	X
17	23314085 5	2	-0.3	1446	JH	NWS	EP4	
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								

Dropwindsonde Scientist Log

Storm:	AL09/HELENE	**Flight ID:**	20240925I1	**Mission ID:**	1009A	**Takeoff:**	0906z	**Landing:**	1611z

Dropsonde Scientist(s):	Kaplan	**AVAPS Operator:**	Vargas/Hunsinger

Pre-flight

✓ Discuss the pattern with the Lead Project Scientist (LPS) and ensure that enough dropsondes are onboard.
✓ Complete the appropriate pre-flight set-up of your workstation and ASPEN (see Dropsonde Processing Guide).

In-flight

✓ Ensure the Flight Director is aware of upcoming drops and whether a backup is requested in case of failure.
✓ Ensure the AVAPS operator has determined that the dropsonde is (or is not) transmitting a good signal.
✓ Prioritize processing of center drops and report MSLP and surface wind speed and direction to the Flight Director.
✓ Fill in the Dropwindsonde Scientist log as drops are released and processed.
✓ Copy completed ASPEN files (e.g., FRD, netCDF, Skew-t, WMO txt, BUFR) into the “FRD” folder on the workstation desktop for automated transmission to the ground for archival.

Once “science is complete”...

✓ Make synoptic map plots in ASPEN and copy them to the “FRD” folder on the workstation desktop for automated transmission to the ground for archival.
✓ Ensure ASPEN files have been sent to the ground by locating and verifying all files in the “FLIGHTID” folder within the “FRD” folder on the workstation desktop.
✓ Archive ASPEN_DATA and RAW_DATA into a folder named with the FLIGHTID within the “Season Dropsonde Archive” folder on the workstation desktop and upload the same directories into StormName/FLIGHTID/Dropsonde/ folder on Drive.
✓ Download this Dropwindsonde Scientist Log as “PDF” and upload completed PDF and Google Doc to the StormName/FLIGHTID/Dropsonde/ folder within the “Mission Reports” directory in the HFP Google Drive.

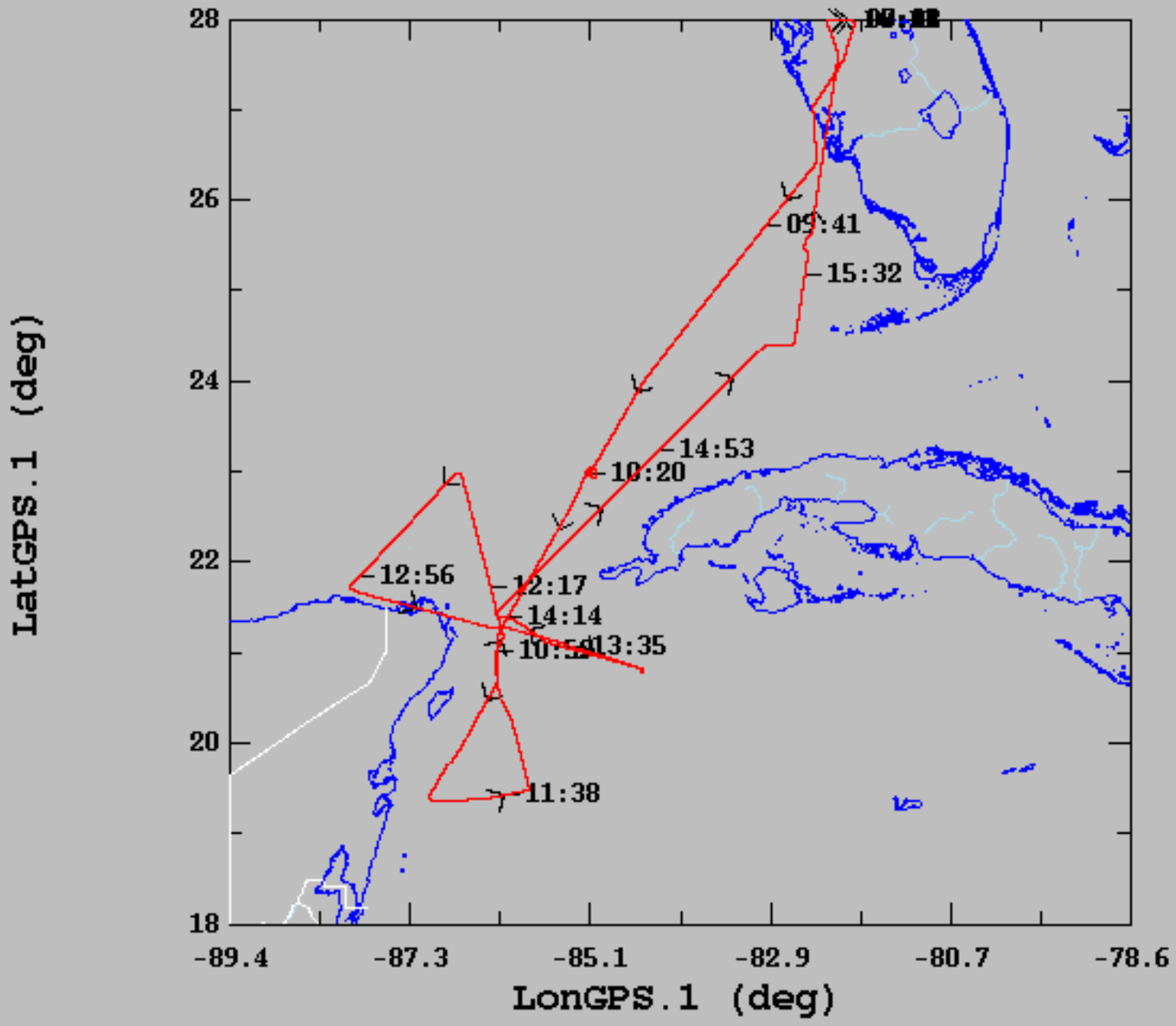
Storm: <<AL09/Helene>> **Flight ID: <<20240925I1>>** **Mission ID: <<1009A HELENE>>**

Drop #	Sonde ID	Time UTC	Lat (°N/S)	Lon (°E/W)	Sfc Pressure (mb)	Lowest Wind Direction/Speed (deg/kt)	Lowest Wind Height (m)	AXBT SST (°C)	Eye, Eyewall, Rainband, etc.	Ob #
1	233241055	1037	22.42	85.41	997.4	62/42	10			1
2	231830027	1050	21.61	85.93	990.7	66/53	12			2
Set end of drop @ 173.5										
3	233550049	1059	21.03	86.19	x	x	x			X
Bad sonde. T and RH definitely bad and probably winds. Sonde not sent.										
4	233241056	1114	20.12	86.52	996.4	279/35	10			4
Set end of drop at 194.5										
5	233140491	1126	19.46	86.97	999.8	271/29	10			5
Post splash data warning but not post-splash data seen.										
6	233241105	1143	19.54	85.48	997.6	248/26	10			6
Set end of drop @199.25										
7	233150166	1155	20.33	86.06	993.7	253/40	10			7
Set t and td missing from 6-10 s.										
8	233241032	1209	21.12	86.14	981	18/4	10			8
Center sonde. But didn't get save properly in ASPEN so it didn't have center in message when sent out. Resent the obs as a corrected obs no 8.										
9	233140640	1223	22.09	86.38	994	50/41	10			10
Winds a little noisy on drop.										
10	233150159	1235	22.90	86.61	999.9	57/38	10			11

Storm: <<AL09/Helene>> **Flight ID: <<20240925I1>>** **Mission ID: <<1009A HELENE>>**

Drop #	Sonde ID	Time UTC	Lat (°N/S)	Lon (°E/W)	Sfc Pressure (mb)	Lowest Wind Direction/Speed (deg/kt)	Lowest Wind Height (m)	AXBT SST (°C)	Eye, Eyewall, Rainband, etc.	Ob #
11	233140589	1254	22.0	87.7	1000.3	10/28	10			12
12	233140642	1324	21.27	86.13	981.4	279/9kt	10			13
Center drop.										
13	233140638	1338	21.02	85.14	999.4	192/44	10			14
14	233241090	1347	20.82	84.49	999.1	163/34	10			16
15	233140593	142456	21.83	85.78	987.7	120/44	10			17
Max windband sonde. Set end of drop at 182.0										
16	233141069	1426								X
Bad sonde not sent										
17	233560368	1442								X
Bad sonde not sent										
18	233140855	1446	22.86	84.66	999.7	95/48	10			18

09/25/2024, 07:05:59-16:11:49



	mean	sigma	min	max
LatGPS.1 (deg), 1 s/sec	23.99	2.95	19.37	27.99
LonGPS.1 (deg), 1 s/sec	-84.30	1.91	-87.97	-81.89