N43RF ERROR SUMMARY
20240815I1

Flight ID: 20240815I1

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.1
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/20240815I1

Local Met Data	Takeoff KILM (1408Z)	Landing KILM (1704Z)
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.

I.3 for Pitch and Roll, TTM.3, and TDM.3 not operational.
TRadU.1 has erroneous data throughout the flight and should not be used.
PDALPHAref, PDBETAref, PQALPHAref, PQBETAref, and DPJ_WSZ are not provided since _AC file is not produced; all other "C" file parameters checked are from the _A file.
GPS.3 and .4 parameters inop for duration of flight
AltBCADDU.1 unrepresentative between 16:52-17:19
PQM.1 trends ~10 mb high
SFMR WS and RR drop out during 4th penetration 19:32-19:33
SFMR TB, WS SFMR, and RAIN RATE SFMR data should be used with caution as additional assessment occurs

Expendable Type	# deployed	# good	# transmitted
Dropsondes	22	21	21
Test sondes	0	0	0
AXBTs	3	0	0
AXCPs	0	0	0

AXCTDs	0	0	0
UAS	2	2	0

Flight Director: KALEN
Phone #: 863-500-3962

ACAT-4 Version = 7.4

U.S. Department of Commerce / NOAA / OMAO / Aircraft Operations Center - N43RF Manifest

FLIGHT INFORMATION

FLT ID:	20240815I1	FLT #:	
From:	KILM	ETD:	1000L / 1400Z
To:	KILM	ETA:	1800L / 2200Z

Block Time		Flight Time	
In:	22:09	Land:	22:03
Out:	14:00	T/O:	14:08
Total:	**8.2**	Total:	**7.9**

Sponsoring Org:	HRD
Program:	PHX
Purpose:	sUAS RESEARCH ERNESTO

CREW MANIFEST

AC:	Abitbol	**Scientists:**
CP(s):	Wood	Zhang, J (HRD)
	Taraboletti	Montgomery (HRD)
NAV:	Schaefer / Dunford	Elston (sUAS)
FE(s):	Stokes	Fromm (sUAS)
	Dittoe	Naeher (sUAS)
FD(s):	Kalen	
SSA:	McAlister	**Visitors:**
AVAPS:	Keller / Underwood	
SEB:		
MX:		

MISSION INFORMATION

Pressure		Dropsondes		
		Good	Bad	Sent
A/C Takeoff		21	1	21
ASOS Takeoff		**BTs / sUAS**		
		Good	Bad	Sent
A/C Land		0 / 2	3 / 0	0 / 0
ASOS Land				

Storm Number ID: (ie: AL072012)	**AL052024**
TCPOD/WSPOD Mission (ie: NOAA2 2418A SANDY)	**NOAA3 WB05A ERNESTO**

OBSERVATIONS

Fix Number	Obs Number	Fix Time	SLP
1	13	17:38Z	976 mb
2			
3			
4			
Pennies:	4, Cat 1		

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		X

REMARKS

*Highlighted items must be completed before departure.

Remarks:

P-3 QC Checklist

Overall Assessment	Minor instrument issue(s) - no mission impact.

Flight ID:	20240815I1
Flight Director(s):	Kalen
Mission:	Non-tasked Science Collection/Research
UWZ.d mean:	0.01

Pressure Comparison		
	Pre-flight	Post-flight
Aircraft	1020.6	1018.4
Airfield	1018.5	1016.8

This form uses:
_A.nc

SFMR Serial Unit	2

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
	x AltGPS.3				✓ ALTGA.d	
	x 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	
	x LatGPS.3		x LonGPS.3			
	x LatGPS.4		x 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	
	✓ PDBETA.2		✓ 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, Radiometers	✓ TTM.1	✓ TDM.1	✓ TRadD.1		✓ TD.c	✓ TTMref
	✓ TTM.2	✓ TDM.2	✓ TRadS.1		✓ TDMref	✓ TA.d
	inop TTM.3	inop TDM.3	inop TRadU.1		✓ HUM	
✓ Wind and Pressure		x CH 1 TB	x CH 4 TB		✓ UWZ.d	✓ WS.d
✓ SFMR	SFMR	x CH 2 TB	x CH 5 TB		✓ PSURF	✓ 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:
I.3 for Pitch and Roll, TTM.3, and TDM.3 not operational.
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AVAPS Drop Log

Project: HX 2024 Mission: HX ERNESTO Flight ID: 20240815I1

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

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
1	2323200058	1	-0.9	1612	RK	NWS	IP1	✓
2	2336402 00	2	-0.8	1623	RK	NWS	MP (No dewpoint)	X
3	2309309 76	3	-1.2	1625	RK	NWS	Backup	✓
4	2320502 70	4	-1.1	1633	RK	NWS	Center/deluxe combo	✓
5	2320509 75	5	-1.0	1640	RK	HRD	RMW	✓
6	2322401 73	6	-0.8	1648	RK	NWS	MP	✓
7	2333409 80	7	-0.3	1657	RK	NWS	EP1	✓
8	2320208 09	8	-0.9	1717	RK	NWS	IP2	✓
9	2335310 98	1	-0.3	1728	RK	NWS	MP	✓
10	2320501 83	2	-0.7	1731	RK	HRD	RMW	✓
11	2333501 47	3	-0.8	1738	RK	NWS	Center/combo	✓
12	2320507 99	4	-1.4	1740	RK	HRD	RMW	✓
13	2331502 24	5	-0.5	1749	RK	NWS	MP	✓
14	2335413 18	6	-0.6	1804	RK	NWS	EP2	✓
15	2336407 97	7	-0.3	1821	RK	NWS	IP3/combo deluxe	✓
16	2320508 04	8	-0.8	1841Z	NGH	NWS	MP	✓
17	2337103 92	1	-0.5	1848Z	|	HRD	RMW	✓
18	2335603 65	2	-0.5	1855Z	|	NWS	Center	✓
19	2320508 01	3	-1.0	1858Z	|	HRD	RMW	✓
20	2323200 66	4	-1.0	1906Z	|	NWS	MP	✓
21	2320208 08	5	-1.3	1914Z	|	NWS	EP3	✓
22	2320307 20	6	-1.4	1924Z	|	HRD	RMW	✓
23								
24								
25								
26								
27								
28								
29								
30								
31								

Dropwindsonde Scientist Log

Storm:	ERNESTO	**Flight ID:**	20240815I1	**Mission ID:**	WB05A	**Takeoff:**	1400	**Landing:**	HHMMZ

Dropsonde Scientist(s):	Sellwood	**AVAPS Operator:**	Keller

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"...

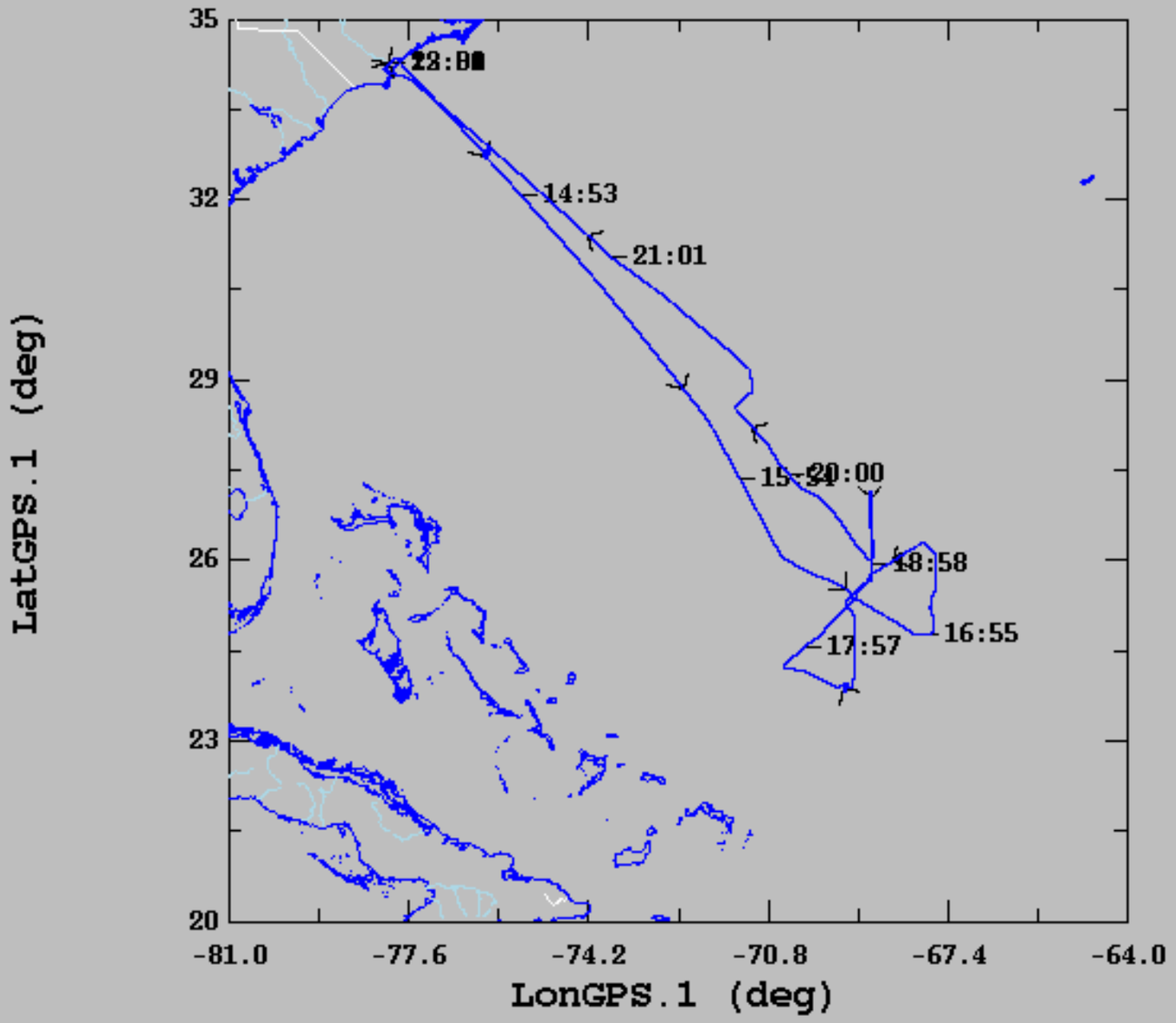
✓ Make synoptic map plots in ASPEN and copy them to the "FRD" folder on the workstation desktop for automated transmission to the ground for archival.
✓ Ensure ASPEN files have been sent to the ground by locating and verifying all files in the "FLIGHTID" folder within the "FRD" folder on the workstation 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.

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	232320058	1612	26.05	-70.52	1002	010/38	10		IP NW	1
Comments: no manual QC										
2	2334640200	1623	25.73	-69.83	995	015/50	10		MP NW	n/a
Comments: bad RH backup released / processed but not transmitted										
3	230930976	1625	25.69	-69.71	992	010/46	10		MP NW	2
Comments: backup for drop 2 no manual QC sat dropouts near top of sounding										
4	202050270	1633	25.43	-69.23	976	095/18	10		CENTER	3
Comments: combo with AXBT and Blackswift SO										
5	232050975	1640	25.20	-68.83	984	165/46	10		RMW SE	4
Comments: no manual QC WL150 = 56kt (maxwindbnd)										
6	232240173	1648	24.95	-68.35	996	170/53	10		MP SE	5
Comments: removed first 11s T and RH minor wind ramp up at surface artifact of ASPEN filtering										
7	233340980	1657	24.76	-67.76	1003	185/48	10		EP SE	6
Comments: set end 2 frames up										
8	232020809	1717	26.28	-67.91	1003	125.49	10		IP NE	7
Comments: removed first 9s T and RH										
9	233531098	1728	25.91	-68.59	991	120/64	10		MP NE	8
Comments: no manual QC										
10	233050183	1731	25.80	-68.80	987	115/51	10		RMW NE	9
Comments: no manual QC (maxwindbnd)										

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	233350147	1738	25.41	-69.12	976	035/08	14		CENTER	10
Comments: set end 2 frames up (no difference in surface obs)										
12	232050799	1740	25.30	-69.23	976	295/50	10		RMW SW	11
Comments: no manual QC										
13	233150224	1749	24.89	-69.68	993	285/53	10		MP SW	12
Comments: no manual QC										
14	233541318	1804	24.28	-70.48	1004	280/40	10		EP SW	14
Comments: no manual QC										
15	233640797	1821	23.88	-69.38	1005	225/36	10		IP S	15
Comments: combo with blackswift and AXBT no manual QC										
16	232050804	1841	25.02	-69.18	989	255/60	10		MP S	16
Comments: sat dropout near surface came back for last few obs ASPEN wrongly flagged as post-splash										
17	233710392	1848	25.42	-69.22	982	280/33	10		RMW S	17
Comments: removed first 13s of T RH forgot to label as maxwindbnd but given low wind speed should be okay										
18	233560365	1855	25.70	-68.83	972	170/06	10		CENTER	18
Comments: removed first 10s of T RH										
19	232050801	1858	25.92	-68.84	979	075/42	10		RMW N	19
Comments: removed first 7s T and RH marked as maxwindbnd										
20	232320066	1906	26.50	-68.84	994	085/61	23		MP N	20
Comments: data dropouts / bad data near surface possible interference with the SUAS										

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 #
21	232020808	1914	27.11	-68.88	1002	090/32	10		EP N	21
Comments: no manual QC										
22	232030720	1924	26.54	-68.87	994	075/44	10		RMW N	22
Comments: removed first 10s of T and RH last report										
Comments:										
Comments:										
Comments:										
Comments:										
Comments:										
Comments:										
Comments:										

08/15/2024, 12:50:27-22:02:55



	mean	sigma	min	max
LatGPS.1 (deg), 1 s/sec	29.07	3.58	23.81	34.33
LonGPS.1 (deg), 1 s/sec	-72.48	3.52	-78.02	-67.62
LatGPS.1 (deg), 1 s/sec	29.07	3.58	23.81	34.33
LonGPS.1 (deg), 1 s/sec	-72.48	3.52	-78.02	-67.62