

N49RF ERROR SUMMARY
Tropical Storm Sally

Flight ID: 20200914N1

Sensor or System -----	Number or Name -----
Static Pressure Probe	PSM.2
Dynamic Pressure Probe	PQM.2
Total Temperature Probe	TTM.4
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/20200914N1

Local Met Data	Takeoff (0544Z)	Landing (1325Z)
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.

AltRA.1 has multiple significant dropouts and should not be used as absolute altitude.

PQBeta.1 and PQBeta.2 are unrepresentative with unusual drop outs.

When examined at high resolution, data from the three inertials (IRUs) shows "stairstepping" for all parameters w 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.

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	61	57	57
Test sondes	0	0	0
AXBTS	0	0	0
AXCPs	0	0	0
AXCTDs	0	0	0
UAS	0	0	0

Flight Director: Richard Henning
Phone #: (863) 500-3982

ACAT-4 Version = 7.3

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

FLIGHT INFORMATION				CREW MANIFEST			MISSION INFORMATION					
FLT ID:	20200914N1	FLT #:		AC:	Waddington	Scientists:	Pressure		Dropsondes			
From:	KLAL	ETD:	0530z	CP(s):	Norman		A/C Takeoff		Good	Bad	Sent	
To:	KLAL	ETA:	1330z									
Block Time		Flight Time		NAV:			ASOS Takeoff		57	4	57	
In:	1329	Land:	1325	FE(s):				BTs				
Out:	0534	T/O:	0544	FD(s):	Henning	Visitors:	A/C Land		Good	Bad	Sent	
Total:	7.9	Total:	7.7	SSA:	Miller			ASOS Land				
Sponsoring Org:		HRD		AVAPS:	Patel		Storm Number ID:		AL192020			
Program:		PHX		SEB:			(ie: AL072012)					
Purpose:		TS SALLY		MX:			TCPOD/WSPOD Mission		NOAA9 WB19A SALLY			
							(ie: NOAA2 2418A SANDY)					
AS REQUIRED BY ORM				Y	N	REMARKS	Fix Number	Obs Number	Fix Time	SLP		
VOLCANIC ASH					x							
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												
							Pennies:					

*Highlighted items must be completed before departure.

Remarks:

G-IV QC Checklist

Overall Assessment	Minor instrument issue(s) - minimal mission impact.
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Flight ID:	20200914N1
Flight Director(s):	Henning / Kalen
Mission:	Tasked/Operational
UWZ.d mean:	0.24

Pressure Comparison		
	T/O	Land
Aircraft	1009.6	1010.3
Tower	1009.6	1010.6

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

FLID_Mission_Documents.pdf.
<input checked="" type="checkbox"/> Error Summary
<input checked="" type="checkbox"/> Crew Manifest
<input checked="" type="checkbox"/> QC Checklist
<input checked="" type="checkbox"/> Dropwindsonde Log(s) - AVAPS and FD if completed
<input checked="" type="checkbox"/> Flight Track
<input checked="" type="checkbox"/> Miscellaneous FD Notes

QC Key	
Not checked	<input type="checkbox"/>
Valid	<input checked="" type="checkbox"/>
Errors (note)	<input checked="" type="checkbox"/>

NOTES:
<p>AltRA.1 has multiple significant dropouts and should not be used as absolute altitude.</p> <p>PQBeta.1 and PQBeta.2 are unrepresentative with unusual drop outs.</p> <p>When examined at high resolution, data from the three inertials (IRUs) shows "stairstepping" for all parameters intervals (generally less than 15 seconds).</p> <p>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.</p> <p>TTM.3 has a small amplitude (magnitude 0.2 - 0.3 deg C) unnatural oscillation with a period of roughly 30 seconds.</p> <p>TTM.1 was used for calculation of Ambient Temperature (TA) and other derived parameters.</p> <p>There were no edits made in the measured parameters used to calculate meteorological and navigational parameters.</p> <p>Takeoff/Landing data: Data during landing and takeoff are potentially suspect</p> <p>It is recommended that ground data not be used for scientific analysis.</p>

57/61

Block out 0534Z
 T10: 0544Z
 Lnd: 1325Z
 Block In: 1229Z

AOC GPS Dropwindsonde Log (updated Mar 2019)

Flight ID: 20200914N1

ASPEN Operator/Flight Director(s): Kelen / Henning

Mission ID: NOAA5 WBISA

Storm Name/Track: Tropical Storm Sally

PG 1 of 2

Flt Time 7.7

Sonde #	Ob #	Launch Time HHMMSS (Z)	Sonde ID (min last 5)	Ch # used	Lat (°N)	Lon (°E)	Prominent Wx Cond.	SFC Prs (mb)	Comments / Issues / QC / ASPEN Edits	KWBC #	Sonde Issues?
1	1	062909	20522	1	28.32	-84.92		1009.2	13041 / Flight level Winds Bad	14050	N
2	2	063230	20524	2	28.37	-85.37		1007	12549 / FLWB	0657	N
3	3	063653	30711	3	28.37	-85.92		1004.5	11543 / FLWB	0705	N
4	-	063900	31009	4	-	-	-	-	NLD	-	Y
5	4	064049	20529	5	28.16	-86.39		1000.8	15526 / FLWB	0710	N
6	5	064338	30675	6	28.17	-86.79		998.2	16518 / FLWB	0713	N
7	6	064629	20796	1	28.17	-87.19		997.1	02017 / FLWB	0718	N
8	7	065037	30951	2	28.19	-87.78		1009.9	01030 / FLWB	0722	N
9	8	065448	30155	3	28.21	-88.34		1004.9	00532	0726	N
10	9	065911	40006	4	28.23	-88.95		1006.6	01020 / FLWB	0732	N
11	10	070340	30212	5	28.26	-89.55		1008.4	03028 / FLWB	0735	N
12	11	070615	40001	6	28.42	-89.82		1008.3	02025 / FLWB	0741	N
13	12	071233	30190	1	29.30	-89.58		1006.8	03531 / FLWB	0744	N
14	13	072858	31019	2	30.07	-87.21		1008.2	08041 / FLWB	0751	N
15	14	073400	30650	3	29.56	-87.03		1007.1	08039	0755	N
16	15	073905	20521	4	28.97	-87.05		1003.2	07550	0800	N
17	16	074513	20791	5	28.25	-87.05		997.9	09523	0807	N
18	17	075040	30708	6	27.89	-87.07		1001.6	23523	0812	N
19	18	075726	30923	1	26.74	-87.09		1004.6	23027 / FLWB	0818	N
20	19	080437	20520	2	26.09	-87.33		1006.4	24517 / FLWB	0827	N
21	20	081538	20533	3	27.18	-88.19		1004.5	30023 / FLWB	0835	N
22	21	082203	10268	4	27.86	-88.63		1005.3	34520 / FLWB	0844	N
23	22	082809	30957	1	28.54	-88.99		1007.1	02527 / FLWB	0851	N
24	23	083417	10575	2	29.23	-88.59		1006.6	05031	0855	N
25	24	083925	40050	3	29.75	-88.17		1008.2	05525 / FLWB		N
26	-	084506	40005	4	-	-	-	-	No PTH	-	Y
27	25	084614	51114	1	29.81	-87.22		1007.1	08533 / FLWB	0908	N
28	26	085218	10563	5	29.64	-86.43		1007.2	10040	0916	N
29	27	085708	30910	6	29.16	-86.12		1005.4	11541	0922	N
30	28	091135	51113	2	27.67	-85.93		1002.6	20529 / FLWB	0933	N
31	-	091856	51124	3	-	-	-	-	No GPS	-	Y
32	-	091525	50180	4	-	-	-	-	NLD	-	Y
33	29	092234	30911	1	27.10	-87.12		1003.3	24027	0944	N
34	30	092651	40028	5	27.10	-87.71		1003.3	No sfc wind / FLWB	0949	Y
35	31	093223	20506	6	27.24	-88.43		1004.7	No sfc wind / FLWB	0957	Y
36	32	093757	10295	2	27.85	-89.17		1006.7	34527 / FLWB	1005	N
37	33	094417	10265	3	27.43	-90.02		1007.8	No sfc wind / FLWB	1010	Y
38	34	094944	20024	4	27.65	-90.66		1008.4	02020 / FLWB	1018	N

B1K 7.9

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

Obs Xmitted Obs Missed # of sondes launched # of bad sondes

357 310
 5 63
 285 373

AOC GPS Dropwindsonde Log (updated Mar 2019)

Flight ID: 20200914N1

ASPEN Operator/Flight Director(s): Kalen / Henning

Mission ID: NOAA9 WB1FA

Storm Name/Track: TS Sally

PG 2 of 2

Sonde #	Ob #	Launch Time HHMMSS (Z)	Sonde ID (min last 5)	Ch # used	Lat (°N)	Lon (°E)	Prominent Wx Cond.	SFC Prs (mb)	Comments / Issues / QC / ASPEN Edits	KWBC #	Sonde Issues?
1	35	095519	10597	1	28.23	-89.25		1008.4	02519	1029	N
2	36	100232	70060	2	28.95	-89.61		1008.0	1/6 Sfc Wind / FLWB	1031	Y
3	37	100924	30181	3	29.62	-89.00		1008.8	05027	1039	N
4	38	101447	30944	4	29.87	-88.28		1009.7	05530 / FLWB	1042	N
5	39	102034	30954	1	30.12	-87.52		1008.7	06531	1047	N
6	40	102752	20790	2	29.91	-86.54		1009.6	08532	1059	N
7	41	103509	30181	3	29.67	-85.58		1008.9	11529 / FLWB	1101	N
8	42	104370	10764	7	28.86	-85.06		1009.7	13034	1108	N
9	43	105022	20790	1	28.08	-84.83		1008.7	12520 / FLWB	1112	N
10	44	105732	10573	2	27.18	-84.77		1007.8	15029 / FLWB	1118	N
11	45	110609	20792	3	26.53	-85.70		1007.1	19533 / FLWB	1130	N
12	46	111506	10565	4	25.88	-86.68		1007.2	20026 / FLWB	1134	N
13	47	112435	10784	1	25.33	-87.76		1008.4	25522 / FLWB	1147	N
14	48	113144	40055	2	25.73	-86.59		1008.2	24510 / FLWB	1151	N
15	49	113843	40384	3	26.14	-87.41		1007.8	32507 / FLWB	1158	N
16	50	114554	40389	4	26.59	-90.24		1007.7	02015	1206	N
17	51	115251	40351	1	27.08	-90.99		1007.9	01512	1212	N
18	52	115945	40396	2	27.93	-90.82		1007.9	01524	1222	N
19	53	120442	40045	3	28.46	-90.54		1008.7	02020 / FLWB	1227	N
20	54	121451	10299	4	28.44	-89.16		1006.7	01526	1238	N
21	55	122454	30720	1	29.51	-87.81		-	GPS Issues	1247	Y
22	56	123520	10765	2	29.09	-86.60		1003.1	09540	1255	N
23	57	124442	40034	3	29.09	-85.43		1008.0	LAST Sonde / 13038	1304	N
24											
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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

2020-09-14, 05:17:05-13:29:56

