

N49RF ERROR SUMMARY  
20210821N1

Flight ID: 20210821N1

| Sensor or System<br>-----            | Number or Name<br>----- |
|--------------------------------------|-------------------------|
| 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/2021/MET/20210821N1

| Local Met Data        | Takeoff KLAL (0523Z) | Landing KLAL (0000Z) |
|-----------------------|----------------------|----------------------|
| Dynamic Corrections   |                      | Yes                  |
| AttackAngleIntercept  |                      | 6.4652               |
| AttackAngleSlope      |                      | 7.59375              |
| SlipAngleIntercept    |                      | 0.925                |
| SlipAngleSlope        |                      | 6.56381              |
| 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.

.1 and .2 GPS parameters data "stair steps"  
PDBETA.1 & PDBETA.2 unrepresentative due to spare radome  
PQBETA.1 & PQBETA.2 unrepresentative due to spare radome  
All flight level wind speed and direction suspected errors due to spare radome  
TTM.3 oscillates  
TDM.1 unrepresentative

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<br>----- | # deployed<br>----- | # good<br>----- | # transmitted<br>----- |
|--------------------------|---------------------|-----------------|------------------------|
| Dropsondes               | 35                  | 34              | 34                     |
| Test sondes              | 0                   | 0               | 0                      |
| AXBTs                    | 0                   | 0               | 0                      |
| AXCPs                    | 0                   | 0               | 0                      |
| AXCTDs                   | 0                   | 0               | 0                      |

UAS   0   0   0

Flight Director: Holmes / Parrish  
Phone #: 863-500-3983

ACAT-4 Version = 7.4

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

| FLIGHT INFORMATION                |              |             |              | CREW MANIFEST |            |                         | MISSION INFORMATION |            |                    |           |          |
|-----------------------------------|--------------|-------------|--------------|---------------|------------|-------------------------|---------------------|------------|--------------------|-----------|----------|
| FLT ID:                           | 20210821N1   | FLT #:      |              | AC:           | Nardi      | Scientists:             | Pressure            |            | Dropsondes         |           |          |
| From:                             | KLAL         | ETD:        |              | CP(s):        | Varwig     |                         | A/C Takeoff         |            | Good               | Bad       | Sent     |
| To:                               | KLAL         | ETA:        |              |               |            |                         |                     |            |                    | <b>34</b> | <b>1</b> |
| Block Time                        |              | Flight Time |              | NAV:          |            |                         | ASOS Takeoff        |            | BTs                |           |          |
| In:                               | <b>1305z</b> | Land:       | <b>1302z</b> | FE(s):        |            |                         | A/C Land            |            | Good               | Bad       | Sent     |
| Out:                              | <b>0517z</b> | T/O:        | <b>0523z</b> | FD(s):        | Holmes     |                         | ASOS Land           |            |                    |           |          |
| Total:                            | <b>7.8</b>   | Total:      | <b>7.4</b>   | SSA:          | Lynch      | Visitors:               |                     |            |                    |           |          |
|                                   |              |             |              | AVAPS:        | Hartberger |                         |                     |            |                    |           |          |
| Sponsoring Org:                   | NWS          |             |              | SEB:          |            |                         | Storm Number ID:    |            | <b>AL082021</b>    |           |          |
| Program:                          | PHS          |             |              |               |            |                         | (ie: AL072012)      |            |                    |           |          |
| Purpose:                          | Surveillance |             |              | MX:           |            |                         | TCPOD/WSPOD Mission |            | <b>0808A HENRI</b> |           |          |
|                                   |              |             |              |               |            | (ie: NOAA2 2418A SANDY) |                     |            |                    |           |          |
| AS REQUIRED BY ORM                |              |             |              | Y             | N          | REMARKS                 | Fix Number          | Obs Number | Fix Time           | SLP       |          |
| VOLCANIC ASH                      |              |             |              |               | x          |                         | <b>1</b>            |            |                    |           |          |
| SCIENCE MISSION WITHIN BDRY LAYER |              |             |              |               | x          |                         |                     |            |                    |           |          |
| LACK OF PRECIPITATION             |              |             |              |               | x          |                         | <b>2</b>            |            |                    |           |          |
| RELATIVE HUMIDITY ≥ 80%           |              |             |              |               | x          |                         |                     |            |                    |           |          |
| LARGE AIR-SEA TEMP GRADIENT       |              |             |              |               | x          |                         | <b>3</b>            |            |                    |           |          |
| HIGH SURFACE WINDS                |              |             |              |               | x          |                         |                     |            |                    |           |          |
| LONG FETCH / DURATION OF SFC WND  |              |             |              |               | x          |                         | <b>4</b>            |            |                    |           |          |
| SEA SALT ACCRETION FORECAST       |              |             |              |               | x          |                         |                     |            |                    |           |          |
| SEA SALT ACCRETION OBSERVED       |              |             |              |               | x          |                         | <b>Pennies:</b>     |            |                    |           |          |

\*Highlighted items must be completed before departure.

Remarks:

|  |
|--|
|  |
|  |
|  |

## G-IV QC Checklist

|                           |                         |
|---------------------------|-------------------------|
| <b>Flight ID:</b>         | <b>20210821N1</b>       |
| <b>Flight Director(s)</b> | <b>Holmes / Parrish</b> |
| <b>UWZ.d mean:</b>        | <b>0.01</b>             |

| Pressure Comparison |               |               |
|---------------------|---------------|---------------|
|                     | T/O           | Land          |
| <b>Aircraft</b>     | <b>1010.5</b> | <b>1011.4</b> |
| <b>Tower</b>        | <b>1008.3</b> | <b>1010.7</b> |

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

| 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:

.1 and .2 GPS parameters data "stair steps"  
**PDBETA.1 & PDBETA.2 unrepresentative due to spare radome**  
**PQBETA.1 & PQBETA.2 unrepresentative due to spare radome**  
**All flight level wind speed and direction suspected errors due to spare radome**  
**TTM.3 oscillates**  
**TDM.1 unrepresentative**

AVAPS Drop Log

Project: \_\_\_\_\_

Mission: Henri

Flight ID: 20210821N1

Take Off: \_\_\_\_\_

Landing: \_\_\_\_\_

Flt Dir: Holmes

Launcher S/N: 2

| Drop # | Sonde Serial # | Rcvr # | Press Offset | Launch Time | Operator | Charge \$\$ To | Comments    | Good ? |
|--------|----------------|--------|--------------|-------------|----------|----------------|-------------|--------|
| 1      | 204 650 042    | 1      | 0            | 0626        | JFK      | NWS            |             | ✓      |
| 2      | 204 850 209    | 2      | 0            | 0633        |          |                | Medium fall | ✓      |
| 3      | 204 521 409    | 3      | 0            | 0643        |          |                |             | ✓      |
| 4      | 204 250 136    | 4      | 0            | 0654        |          |                |             | ✓      |
| 5      | 204 650 368    | 1      | 0            | 0707        |          |                |             | ✓      |
| 6      | 204 650 041    | 2      | 0            | 0721        |          |                |             | ✓      |
| 7      | 204 650 402    | 3      | 0            | 0728        |          |                |             | ✓      |
| 8      | 204 640 098    | 4      | 0            | 0734        |          |                |             | ✓      |
| 9      | 205 050 300    | 1      | 0            | 0745        |          |                |             | ✓      |
| 10     | 204 521 391    | 2      | 0            | 0757        |          |                | Late LD     | ✓      |
| 11     | 205 050 260    | 3      | 0            | 0818        | CFL      |                |             | ✓      |
| 12     | 204 770 385    | 4      | 0            | 0835        |          |                |             | ✓      |
| 13     | 204 260 905    | 1      | 0            | 0845        |          |                |             | ✓      |
| 14     | 204 260 894    | 2      | 0            | 0902        |          |                |             | ✓      |
| 15     | 205 050 270    | 3      | 0            | 0926        |          |                |             | ✓      |
| 16     | 204 850 547    | 4      | 0            | 0937        |          |                |             | ✓      |
| 17     | 205 050 248    | 1      | 0            | 0947        |          |                |             | ✓      |
| 18     | 204 850 207    | 2      | 0            | 0956        |          |                |             | ✓      |
| 19     | 205 050 259    | 3      | 0            | 1004        |          |                |             | ✓      |
| 20     | 205 050 237    | 4      | 0            | 1015        |          |                |             | ✓      |
| 21     | 204 840 590    | 1      | 0            | 1028        |          |                |             | ✓      |
| 22     | 204 850 210    | 2      | 0            | 1036        |          |                |             | ✓      |
| 23     | 204 521 369    | 3      | 0            | 1045        |          |                |             | ✓      |
| 24     | 204 640 095    | 4      | 0            | 1052        |          |                |             | ✓      |
| 25     | 204 530 490    | 1      | 0            | 1100        |          |                |             | ✓      |
| 26     | 204 521 420    | 2      | 0            | 1109        |          |                |             | ✓      |
| 27     | 204 521 287    | 3      | 0            | 1119        |          |                |             | ✓      |
| 28     | 204 650 379    | 4      | 0            | 1129        |          |                |             | ✓      |
| 29     | 204 521 422    | 1      | 0            | 1139        |          |                |             | ✓      |
| 30     | 204 650 039    | 2      | 0            | 1151        |          |                |             | ✓      |
| 31     | 204 650 371    | 3      | 0            | 1159        |          |                |             | ✓      |

| Drop # | Sonde Serial # | Rcvr # | Press Offset | Launch Time | Operator | Charge \$\$ To | Comments | Good ? |
|--------|----------------|--------|--------------|-------------|----------|----------------|----------|--------|
| 32     | 205 050 264    | 4      | 0            | 1207        | CFL      | NWS            |          | L      |
| 33     | 204 840 555    | 1      | 0            | 1215        |          |                |          | L      |
| 34     | 204 120 632    | 2      | Ø            | 1222        |          |                | Late GPS |        |
| 35     | 204 530 812    | 3      | Ø            | 1224        |          |                | back up  | L      |
| 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)

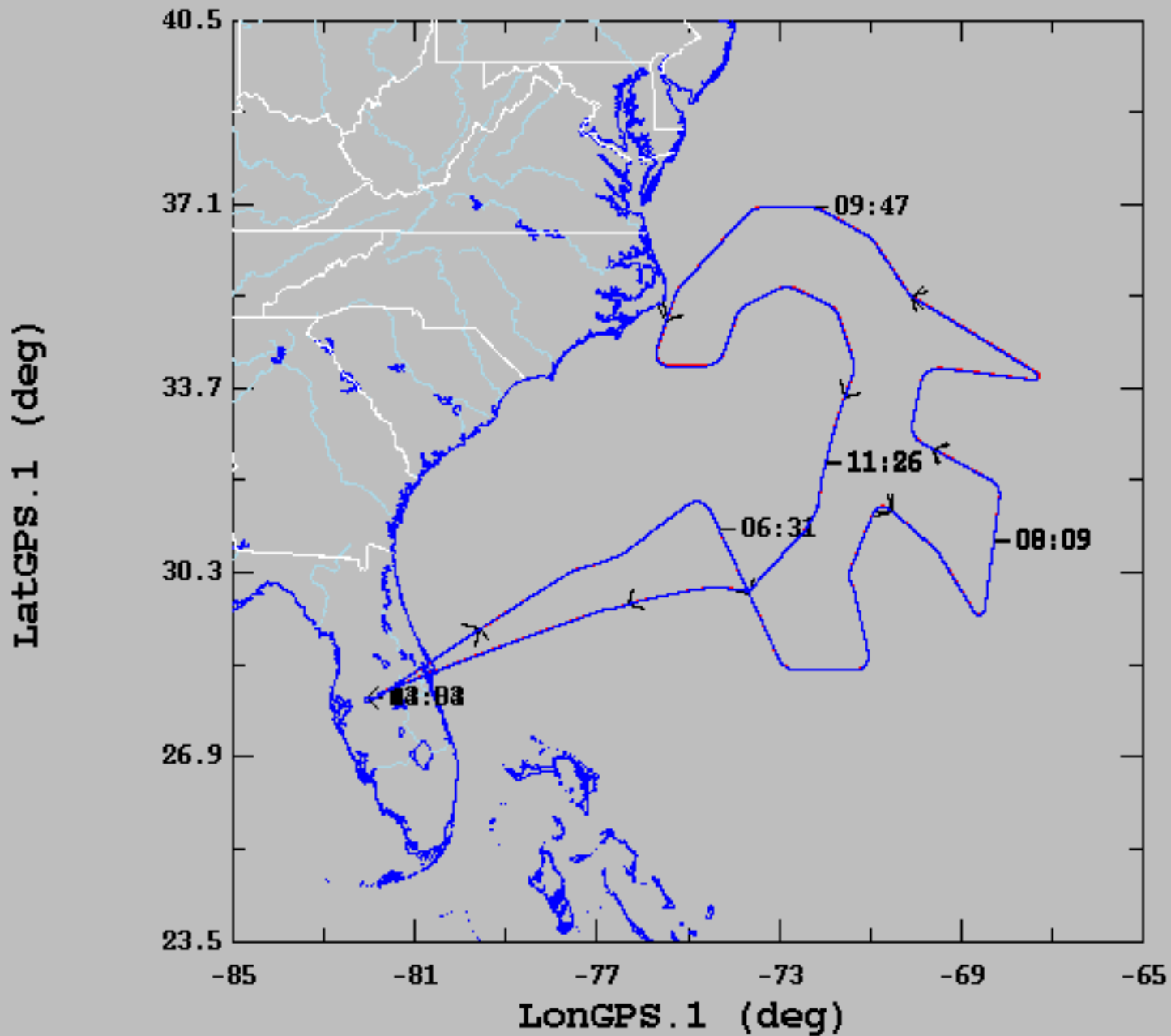
#### AVAPS Pre-Flight Check:

- 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: 53<sup>rd</sup> 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**

2021-08-21, 04:53:47-13:04:05



|                            | mean   | sigma | min    | max    |
|----------------------------|--------|-------|--------|--------|
| — LatGPS.1 (deg), 1 s/sec  | 31.58  | 2.76  | 27.91  | 37.02  |
| — LongGPS.1 (deg), 1 s/sec | -74.02 | 4.32  | -82.07 | -67.28 |
| — LatI.1 (deg), 1 s/sec    | 31.60  | 2.76  | 27.91  | 37.03  |
| — LonI.1 (deg), 1 s/sec    | -74.01 | 4.31  | -82.07 | -67.28 |