

# N49 Error Summary

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

Flight ID: 20210223N1 Mission ID: 12WSC IOP17 Mission Type: Tasked/Operational

T/O Time: 1957Z PHNL Landed: 0334Z PHNL

Flight Director(s): Hathaway QC performed by: Hathaway Phone #: 863-500-3911

## Expendable Counts

|           | Deployed | Good | Bad | Trasmitted |
|-----------|----------|------|-----|------------|
| Dropsonde | 27       | 25   | 2   | 25         |
| AXBTs     | 0        | 0    | 0   | 0          |
| UAS       | 0        |      |     |            |

## Information on Meteorological Sensors

| Sensor or System                     | Number or Name |
|--------------------------------------|----------------|
| Static Pressure Probe                | PSM.2          |
| Dynamic Pressure Prob                | 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       |
| Dynamic Corrections                  | Yes            |
| Attack Angle Intercept               | 3.97           |
| Attack Angle Slope                   | 3.86           |
| Slip Angle Intercept                 | 1.258          |
| Slip Angle Slope                     | 6.69941        |
| Attack Angle Intercept 2             | 5.05753        |
| Attack Angle Slope 2                 | 5.52397        |
| Slip Angle Intercept 2               | 0.931          |
| Slip Angle Slope 2                   | 6.57562        |

## QC Checklist

|           | PSM.1   | PSM.2   | Average PSM | Station Pressure |
|-----------|---------|---------|-------------|------------------|
| Takeoff   | 1016.33 | 1017.07 | 1016.70     | 1016.8           |
| Landing   | 1014.57 | 1015.82 | 1015.2      | 1014.8           |
| UWZ Mean: | 0.16    |         |             |                  |

| QC Key        | Not checked(n/a) | Reference (R) | Valid(/) | Errors(X) |   |             |   |             |   |         |  |  |
|---------------|------------------|---------------|----------|-----------|---|-------------|---|-------------|---|---------|--|--|
| 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    | / | 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  |  |  |
|               | /                | GsXIGPS.1     | /        | GsYIGPS.1 | / | GsZIGPS.1   |   |             |   |         |  |  |
|               | /                | GsXIGPS.2     | /        | GsYIGPS.2 | / | GsZIGPS.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       | / | PDALPHAref | / | PQMref |
|            | /   | PDALPHA.2 | / | PQALPHA.2    | / | PQM.2     | / | PSM.2       | / | PDBETAref  | / | PQ.c   |
|            | /   | PDBETA.1  | / | PQBETA.1     |   |           |   |             | / | PQALPHAref | / | PSMref |
|            | /   | PDBETA.2  | / | PQBETA.2     |   |           |   |             | / | 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     | X | TTM.4        | X | TDM.1     |   |             | X | TD.c       | / | TTMref |
|            | n/a | TTM.2     |   |              | X | TDM.2     |   |             | X | TDMref     | / | TA.d   |
|            | X   | TTM.3     |   |              |   |           |   |             |   |            |   |        |
| Misc.      |     |           |   |              |   |           |   |             | / | UWZ.d      | / | WS.d   |
|            |     |           |   |              |   |           |   |             | / | DPJ_WSZ    | / | WD.d   |
|            |     |           |   |              |   |           |   |             | X | HUM        |   |        |

QC/Data Comments:

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

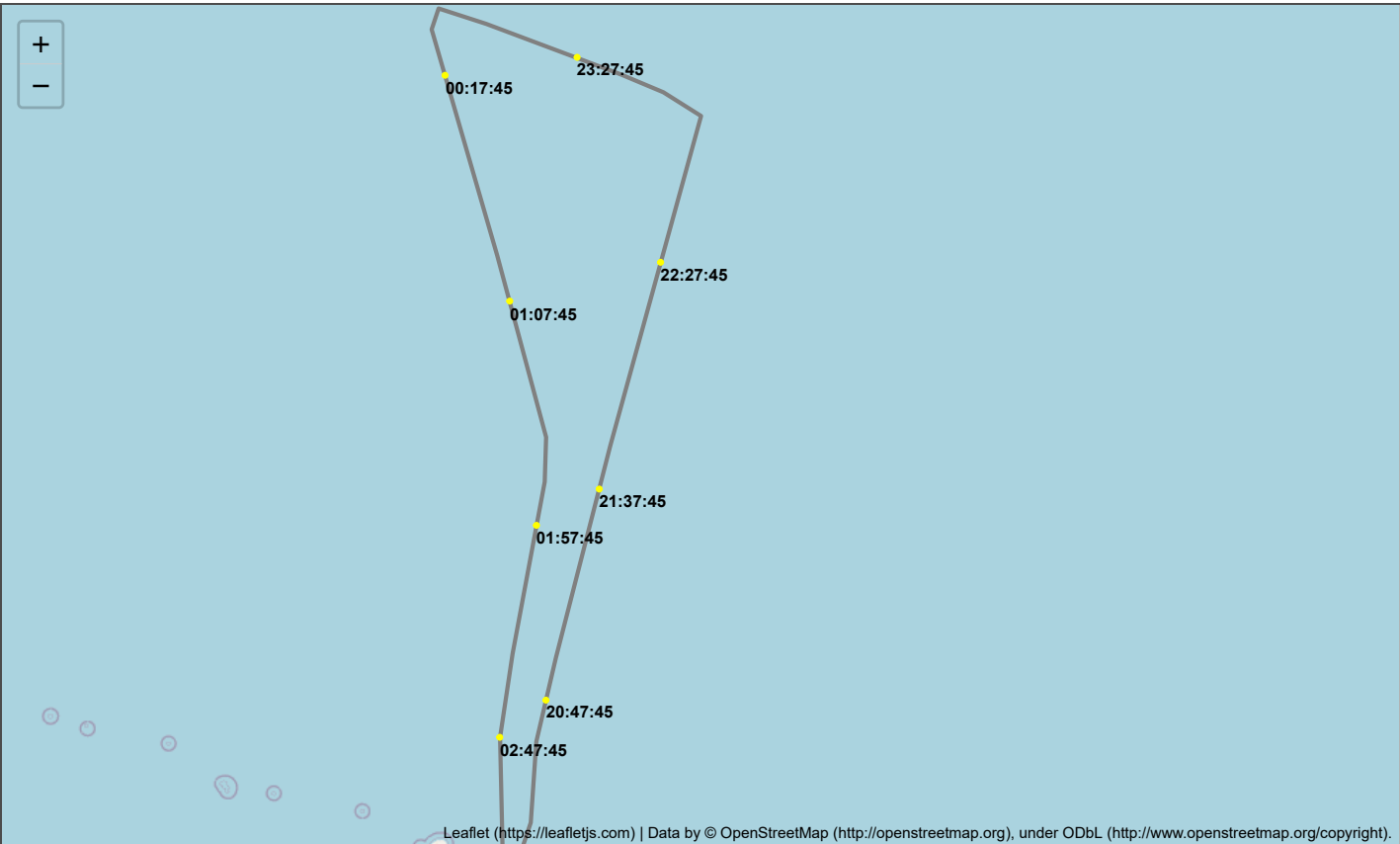
Takeoff/anding data: Data during landing and takeoff are potentially suspect. It is recommended that ground data not be used for scientific analysis.

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

All three AccAXI parameters contain an unusual oscillation.

TDM.1 and TDM.2 were unrepresentative for the cruise portion of the mission above 41 K and also for intervals at low altitudes. Consider all relative humidity values to be suspect.

TTM.3 and TTM.4 have unnatural oscillations. Used TTM.1 as reference.



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

| FLIGHT INFORMATION                |            |              |                                | CREW MANIFEST |                                                        |             | MISSION INFORMATION                            |            |                  |     |      |
|-----------------------------------|------------|--------------|--------------------------------|---------------|--------------------------------------------------------|-------------|------------------------------------------------|------------|------------------|-----|------|
| FLT ID:                           | 20210223N1 | FLT #:       |                                | AC:           | Mansour                                                | Scientists: | Pressure                                       |            | Dropsondes       |     |      |
| From:                             | PHNL       | ETD:         | 1945Z                          | CP(s):        | Nardi                                                  |             | A/C Takeoff                                    |            | Good             | Bad | Sent |
| To:                               | PHNL       | ETA:         | 0330Z                          |               |                                                        |             |                                                |            | 25               | 2   | 25   |
| Block Time                        |            | Flight Time  |                                | Nav(s):       |                                                        |             | ASOS Takeoff                                   |            | BTs              |     |      |
| In:                               | 0338Z      | Land:        | 0334Z                          |               |                                                        |             |                                                |            | Good             | Bad | Sent |
| Out:                              | 1945Z      | T/O:         | 1957Z                          | FE(s):        |                                                        |             | A/C Land                                       |            | 0                | 0   | 0    |
| Total:                            | 7.9        | Total:       | 7.6                            | FD(s):        | Hathaway<br>Kalen                                      | Visitors:   | ASOS Land                                      |            |                  |     |      |
| Sponsoring Org:                   |            | EMC          |                                | SEB:          |                                                        |             | Storm Number ID:<br>(ie: AL072012)             |            | NONE             |     |      |
| Program:                          |            | PAR          |                                | SSA:          | DeFeo                                                  |             | TCPOD/WSPOD Mission<br>(ie: NOAA2 2418A SANDY) |            | NOAA 12WSC IDP17 |     |      |
| Purpose:                          |            | AR2021 10P17 |                                | AVAPS:        | Warnecke                                               |             | OBSERVATIONS                                   |            |                  |     |      |
| AS REQUIRED BY ORM                |            |              | Y                              | N             | REMARKS                                                |             | Fix Number                                     | Obs Number | Fix Time         | SLP |      |
| 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       |            |              |                                | ✓             |                                                        |             |                                                |            |                  |     |      |
| Gmax:                             |            |              | Gmin:                          |               | *Highlighted items must be completed before departure. |             |                                                |            |                  |     |      |
| Remarks:                          |            |              | PACD, PMDY, PHNL<br>Bay Midway |               |                                                        |             |                                                |            |                  |     |      |

## AOC GPS Dropwindsonde Log (updated Mar 2019)

Flight ID: 20210223N1

ASPEN Operator/Flight Director(s):

KALEN HATHAWAY

Mission ID: N0AA9 12WSC 10P17

Storm Name/Track: Atmo River

PG of

[illegible]

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

|                |    |         |
|----------------|----|---------|
| 945            | 12 | 15      |
| <del>945</del> | 13 | 16      |
| 07456          | 14 | 17 15 6 |
| 08             | 15 | 17367   |