

# N49RF ERROR SUMMARY

## AR-2023 07WSC IOP08

Flight ID: 20230107N1

| 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               | 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/2023/MET/20230107N1

| Local Met Data        | Takeoff PHNL (1935Z) | Landing PHNL (0256Z) |
|-----------------------|----------------------|----------------------|
| Dynamic Corrections   |                      | Yes                  |
| AttackAngleIntercept  |                      | 6.4652               |
| AttackAngleSlope      |                      | 7.59375              |
| SlipAngleIntercept    | 0.925                |                      |
| SlipAngleSlope        |                      | 6.56381              |
| AttackAngleIntercept2 |                      | 5.01255              |
| AttackAngleSlope2     | 5.40932              |                      |
| SlipAngleIntercept2   |                      | 0.72                 |
| SlipAngleSlope2       |                      | 7.0494               |

### 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.

Neither dew point sensor (TDM.1 or TDM.2) performed reliably during the mission, therefore all flight level humidity data should be considered suspect.

| Expendable Type | # deployed | # good | # transmitted |
|-----------------|------------|--------|---------------|
| -----           | -----      | -----  | -----         |
| Dropsondes      | 30         | 30     | 30            |
| Test sondes     | 0          | 0      | 0             |
| AXBTS           | 0          | 0      | 0             |
| AXCPs           | 0          | 0      | 0             |
| AXCTDs          | 0          | 0      | 0             |
| UAS             | 0          | 0      | 0             |

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

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:                           | 20230107N1 | FLT #:             |        | AC:           | NARD 1             | Scientists: | Pressure                                       |            | Dropsondes  |     |      |
| From:                             | PHNL       | ETD:               | 1930 z | CP(s):        | de TRIQUET         |             | A/C Takeoff                                    |            | Good        | Bad | Sent |
| To:                               | PHNL       | ETA:               | 0300 z |               |                    |             |                                                |            | 30          | 0   | 30   |
| Block Time                        |            | Flight Time        |        | NAV:          |                    |             | ASOS Takeoff                                   |            | BTs         |     |      |
| In:                               | 0300       | Land:              | 0256   | FE(s):        |                    |             | A/C Land                                       |            | Good        | Bad | Sent |
| Out:                              | 1916       | T/O:               | 1935   | FD(s):        | HENNING<br>de SOLO |             | ASOS Land                                      |            |             |     |      |
| Total:                            | 7.7        | Total:             | 7.4    | SSA:          | DEFE O             | Visitors:   |                                                |            |             |     |      |
| Sponsoring Org:                   |            | CW3E               |        | AVAPS:        | HARTBERGER         |             | Storm Number ID:                               |            |             |     |      |
| Program:                          |            | PAR                |        | SEB:          | SANTON I           |             | (ie: AL072012)                                 |            |             |     |      |
| Purpose:                          |            | Atmospheric Rivers |        | MX:           |                    |             | TCP00/WSP00 Mission<br>(ie: NOAA2 2418A SANDY) |            | 07WSC 10PD8 |     |      |
| AS REQUIRED BY ORM                |            |                    | Y      | N             | REMARKS            |             | Fix Number                                     | Obs Number | Fix Time    | SLP |      |
| VOLCANIC ASH                      |            |                    |        |               |                    |             | 1                                              |            |             |     |      |
| SCIENCE MISSION WITHIN BDRY LAYER |            |                    |        |               |                    |             | 2                                              |            |             |     |      |
| LACK OF PRECIPITATION             |            |                    |        |               |                    |             | 3                                              |            |             |     |      |
| RELATIVE HUMIDITY ≥ 80%           |            |                    |        |               |                    |             | 4                                              |            |             |     |      |
| 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

|                           |                          |
|---------------------------|--------------------------|
| <b>Flight ID:</b>         | <b>20230107N1</b>        |
| <b>Flight Director(s)</b> | <b>Henning / de Solo</b> |
| <b>UWZ.d mean:</b>        | <b>0.21</b>              |

| Pressure Comparison |               |               |
|---------------------|---------------|---------------|
|                     | <b>T/O</b>    | <b>Land</b>   |
| <b>Aircraft</b>     | <b>1021.4</b> | <b>1017.8</b> |
| <b>Tower</b>        | <b>1021.5</b> | <b>1018.5</b> |

|                      | Raw 1Hz Mean File Parameters |                |               |               |  | C File Parameters |          |
|----------------------|------------------------------|----------------|---------------|---------------|--|-------------------|----------|
| ✓ Accelerometer      | ✓ AccAXI.1                   | ✓ AccAYI.1     | ✓ AccAZI.1    |               |  | ✓ AccZref         |          |
|                      | ✓ AccAXI.2                   | ✓ AccAYI.2     | ✓ AccAZI.2    |               |  |                   |          |
|                      | ✓ AccAXI.3                   | ✓ AccAYI.3     | ✓ AccAZI.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       | x 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      | ✓ GsGPS.3     |  | ✓ GSZref          |          |
|                      | ✓ GsXGPS.1                   | ✓ GsYGPS.1     | ✓ GsZGPS.1    |               |  |                   |          |
|                      | ✓ GsXGPS.2                   | ✓ GsYGPS.2     | ✓ GsZGPS.2    |               |  |                   |          |
|                      | ✓ GsXGPS.3                   | ✓ GsYGPS.3     | ✓ GsZGPS.3    |               |  |                   |          |
| ✓ Lat / Lon          | ✓ LatGPS.1                   | ✓ LatI.1       | ✓ LonGPS.1    | ✓ LonI.1      |  | ✓ LATref          |          |
|                      | ✓ LatGPS.2                   | ✓ LatI.2       | ✓ LonGPS.2    | ✓ LonI.2      |  | ✓ LONref          |          |
|                      | ✓ LatGPS.3                   |                | ✓ LonGPS.3    |               |  |                   |          |
| ✓ Pressure           | ✓ PDALPHA.1                  | ✓ PQALPHA.1    | ✓ PQM.1       | ✓ PSM.1       |  | ✓ PDLAPHaref      | ✓ 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                  | ✓ TasADDU.1    |               |               |  | ✓ IAS.d           | ✓ TAS.d  |
| ✓ Pitch / Roll       | ✓ PitchI.1                   | ✓ PitchRateI.1 | ✓ RolI.1      | RollRateI.1   |  | ✓ PITCHref        |          |
|                      | ✓ PitchI.2                   | ✓ PitchRateI.2 | ✓ RolI.2      | ✓ RollRateI.2 |  | ✓ ROLLref         |          |
|                      | ✓ PitchI.3                   | ✓ PitchRateI.3 | ✓ RolI.3      | ✓ RollRateI.3 |  |                   |          |
| x Temp / Dewpt       | ✓ TTM.1                      | ✓ TTM.4        | x TDM.1       |               |  | x TD.c            | ✓ TTMref |
|                      | ✓ TTM.2                      |                | x TDM.2       |               |  | x TDMref          | ✓ TA.d   |
|                      | ✓ TTM.3                      |                |               |               |  |                   |          |
| x Misc. (Must check) |                              |                |               |               |  | UWZ.d             | ✓ WS.d   |
|                      |                              |                |               |               |  | DPJ_WSZ           | ✓ WD.d   |
|                      |                              |                |               |               |  | x HUM             |          |

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

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

| NOTES:                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Numerous Radar Altitude dropouts on climb to operational alt but stabilized during science mission</p> <p>Both dew point sensors unreliable. Consider all FL humidity data suspect</p> |

## AOC GPS Dropwindsonde Log (updated Mar 2019)

Flight ID: 20230107N1ASPEN Operator/Flight Director(s): Henning / de SoloMission ID: 07WSC 10P8Storm Name/Track: AR 10P8PG 1 of 1

| 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 / GC / ASPEN-Edits<br>SURFACE WINDS | KWBC # | Sonde Issues? |
|---------|------|------------------------|-----------------------|-----------|----------|----------|--------------------|--------------|-------------------------------------------------------|--------|---------------|
| 1       | 1    | 205712                 | 50419                 | 1         | 27.1     | -165.0   | SCT                | 1018.9       | 265° @ 16 kts                                         | 2116   | ✓✓            |
| 2       | 2    | 210822                 | 30541                 | 2         | 28.4     | -165.0   | SCT                | 1017.8       | 240° @ 20 kts                                         | 2127   | ✓✓            |
| 3       | 3    | 211924                 | 30235                 | 3         | 29.6     | -165.0   | SCT                | 1016.0       | 250° @ 25 kts                                         | 2138   | ✓✓            |
| 4       | 4    | 213052                 | 50447                 | 4         | 30.9     | -165.0   | SCT                | 1015.4       | 305° @ 22 kts                                         | 2150   | ✓✓            |
| 5       | 5    | 214216                 | 50658                 | 1         | 32.2     | -165.0   | SCT                | 1014.3       | 290° @ 21 kts                                         | 2202   | ✓✓            |
| 6       | 6    | 215341                 | 30738                 | 2         | 33.5     | -165.0   | SCT                | 1011.3       | 290° @ 22 kts                                         | 2215   | ✓✓            |
| 7       | 7    | 220612                 | 50449                 | 3         | 34.8     | -165.0   | SCT                | 1010.0       | 285° @ 25 kts                                         | 2228   | ✓✓            |
| 8       | 8    | 221627                 | 50400                 | 4         | 36.1     | -165.0   | SCT                | 1008.6       | 295° @ 23 kts                                         | 2235   | ✓✓            |
| 9       | 9    | 222722                 | 30713                 | 1         | 37.4     | -165.0   | SCT                | 1006.3       | 295° @ 27 kts                                         | 2248   | ✓✓            |
| 10      | 10   | 223806                 | 50613                 | 2         | 38.7     | -165.0   | SCT                | 1005.0       | 305° @ 35 kts                                         | 2304   | ✓✓            |
| 11      | 11   | 224842                 | 30542                 | 3         | 40.0     | -165.0   | SCT                | 1002.1       | 275° @ 37 kts                                         | 2310   | ✓✓            |
| 12      | 12   | 225933                 | 50465                 | 4         | 41.0     | -163.4   | SCT                | 997.7        | 275° @ 41 kts                                         | 2319   | ✓✓            |
| 13      | 13   | 231046                 | 10420                 | 1         | 42.0     | -161.7   | SCT                | 994.3        | 220° @ 21 kts                                         | 2329   | ✓✓            |
| 14      | 14   | 232143                 | 30710                 | 2         | 42.9     | -160.0   | SCT                | 990.3        | 155° @ 13 kts                                         | 2340   | ✓✓            |
| 15      | 15   | 233002                 | 40101                 | 3         | 42.2     | -158.7   | SCT                | 991.0        | NO WINDS, FAST FALL                                   | 2349   | ✓✓            |
| 16      | 16   | 233826                 | 50659                 | 4         | 42.6     | -157.4   | SCT                | 992.4        | 150° @ 20 kts                                         | 0001   | ✓✓            |
| 17      | 17   | 234703                 | 20219                 | 1         | 40.7     | -156.2   | SCT                | 995.4        | 160° @ 21 kts                                         | 0006   | ✓✓            |
| 18      | 18   | 235521                 | 10314                 | 2         | 40.0     | -155.0   | SCT                | 999.2        | 185° @ 17 kts                                         | 0013   | ✓✓            |
| 19      | 19   | 000409                 | 50380                 | 3         | 38.9     | -155.0   | OVC                | 999.6        | 220° @ 19 kts                                         | 0030   | ✓✓            |
| 20      | 20   | 001322                 | 30711                 | 4         | 37.8     | -155.0   | OVC                | 1000.4       | 210° @ 29 kts                                         | 0034   | ✓✓            |
| 21      | 21   | 002231                 | 40102                 | 1         | 36.7     | -155.0   | OVC                | 1000.1       | 180° @ 26 kts                                         | 0047   | ✓✓            |
| 22      | 22   | 003136                 | 50424                 | 2         | 35.6     | -155.0   | OVC                | 1002.3       | 175° @ 26 kts                                         | 0050   | ✓✓            |
| 23      | 23   | 004046                 | 30185                 | 3         | 34.5     | -155.0   | OVC                | 1005.0       | NO SFC WIND AVAILABLE                                 | 0100   | ✓✓            |
| 24      | 24   | 004955                 | 30233                 | 4         | 33.4     | -155.0   | SCT                | 1006.0       | 255° @ 30 kts                                         | 0117   | ✓✓            |
| 25      | 25   | 005904                 | 30543                 | 1         | 32.3     | -155.0   | SCT                | 1007.3       | 285° @ 10 kts                                         | 0123   | ✓✓            |
| 26      | 26   | 010818                 | 20221                 | 2         | 31.2     | -155.0   | SCT                | 1009.2       | 240° @ 35 kts                                         | 0142   | ✓✓            |
| 27      | 27   | 011726                 | 50448                 | 3         | 30.1     | -155.0   | SCT                | 1011.9       | 240° @ 23 kts                                         | 0144   | ✓✓            |
| 28      | 28   | 012622                 | 20217                 | 4         | 29.0     | -155.0   | SCT                | 1014.4       | 250° @ 25 kts                                         | 0151   | ✓✓            |
| 29      | 29   | 013941                 | 50423                 | 1         | 27.5     | -155.5   | SCT                | 1015.0       | 250° @ 20 kts                                         | 0159   | ✓✓            |
| 30      | 30   | 015301                 | 30168                 | 2         | 26.0     | -156.0   | SCT                | 1017.9       | 255° @ 19 kts                                         | 0213   | ✓✓            |
| 31      |      |                        |                       |           |          |          |                    |              |                                                       |        |               |
| 32      |      |                        |                       |           |          |          |                    |              |                                                       |        |               |
| 33      |      |                        |                       |           |          |          |                    |              |                                                       |        |               |
| 34      |      |                        |                       |           |          |          |                    |              |                                                       |        |               |
| 35      |      |                        |                       |           |          |          |                    |              |                                                       |        |               |
| 36      |      |                        |                       |           |          |          |                    |              |                                                       |        |               |
| 37      |      |                        |                       |           |          |          |                    |              |                                                       |        |               |
| 38      |      |                        |                       |           |          |          |                    |              |                                                       |        |               |

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

COMMENTS:

Obs  
Xmitted

30/30

Obs  
Missed

0

# of sondes  
launched

30

# of bad  
sondes

1



# AVAPS Drop Log

Project: AR 2023

Mission: \_\_\_\_\_

Flight ID: 20230107N1

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

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

Flt Dir: Henning

Launcher S/N: \_\_\_\_\_

| Drop # | Sonde Serial # | Rcvr # | Press Offset | Launch Time | Operator | Charge \$\$ To | Comments | Good ? |
|--------|----------------|--------|--------------|-------------|----------|----------------|----------|--------|
| 1      | 220750419      | 1      | Ø            | 2057        | ASR      | AIR            |          |        |
| 2      | 220730541      | 2      | Ø            | 2108        | ASR      |                |          |        |
| 3      | 221030235      | 3      | Ø            | 2119        | ASR      |                |          |        |
| 4      | 220750447      | 4      | Ø            | 2130        | ASR      |                |          |        |
| 5      | 220750658      | 1      | Ø            | 2142        | ASR      |                |          |        |
| 6      | 220430738      | 2      | Ø            | 2153        | ASR      |                |          |        |
| 7      | 220750449      | 3      | Ø            | 2205        | ASR      |                |          |        |
| 8      | 220750400      | 4      | Ø            | 2216        | ASR      |                |          |        |
| 9      | 220430713      | 1      | Ø            | 2227        | ASR      |                |          |        |
| 10     | 220750613      | 2      | Ø            | 2238        | ASR      |                |          |        |
| 11     | 220730542      | 3      | Ø            | 2248        | ASR      |                |          |        |
| 12     | 220750465      | 4      | Ø            | 2259        | ASR      |                |          |        |
| 13     | 220710420      | 1      | Ø            | 2310        | ASR      |                |          |        |
| 14     | 220430710      | 2      | Ø            | 2321        | ASR      |                |          |        |
| 15     | 220440101      | 3      | Ø            | 2330        | ASR      |                |          |        |
| 16     | 220750659      | 4      | Ø            | 2338        | ASR      |                |          |        |
| 17     | 221020219      | 1      | Ø            | 2347        | ASR      |                |          |        |
| 18     | 220910314      | 2      | Ø            | 2355        | ASR      |                |          |        |
| 19     | 220950330      | 3      | Ø            | 0004        | ASR      |                |          |        |
| 20     | 220430711      | 4      | Ø            | 0013        | ASR      |                |          |        |
| 21     | 220740102      | 1      | Ø            | 0022        | ASR      |                |          |        |
| 22     | 220750424      | 2      | Ø            | 0031        | ASR      |                |          |        |
| 23     | 220430185      | 3      | Ø            | 0040        | ASR      |                |          |        |
| 24     | 221030233      | 4      | Ø            | 0049        |          |                |          |        |
| 25     | 220730543      | 1      | Ø            | 0059        | ASR      |                |          |        |
| 26     | 221020221      | 2      | Ø            | 0108        | ASR      |                |          |        |
| 27     | 220750448      | 3      | Ø            | 0117        | ASR      |                |          |        |
| 28     | 221020217      | 4      | Ø            | 0126        | ASR      |                |          |        |
| 29     | 220750423      | 1      | Ø            | 0139        | ASR      |                |          |        |
| 30     | 220430168      | 2      | Ø            | 0153        | ASR      |                |          |        |
| 31     |                |        |              |             |          |                |          |        |

01/07/2023, 18:40:09-27:00:12

