

|                         |                             |                                                         |
|-------------------------|-----------------------------|---------------------------------------------------------|
| FLT ID: <i>N990716</i>  | FM: <i>KMCF</i>             | TO: <i>KMCF</i>                                         |
| FLT NO: <i>99-036</i>   | BLK IN: <i>1748Z</i>        | ATA: <i>1740Z</i>                                       |
| ETD: <i>1515Z</i>       | BLK OUT: <i>1459Z</i>       | ATD: <i>1512Z</i>                                       |
| ETE:                    | BLK TIME: <i>2:49</i>       | FLT TIME: <i>2:28</i>                                   |
| SPONSOR ORG: <i>AOC</i> | PROGRAM: <i>CALIBRATION</i> | PURPOSE: <i>PILOT TRNG, SYSTEM CHK, DROPSOONIE-TEST</i> |

### OAD PERSONNEL

|                         |                                |
|-------------------------|--------------------------------|
| AC <i>MAXSON</i>        | SYS ENG <i>ROLES</i>           |
| CP <i>MCCANN, YATES</i> | DATA SYS <i>PRADAS-BERGNES</i> |
| NAV                     | RADAR                          |
| FE <i>KITSON</i>        | BT/ODW <i>SMITH</i>            |
| RADIO                   | CLD PHYS                       |
| FD <i>DAMIANO</i>       | DOPPLER                        |

### PARTICIPATING SCIENTIST/VISITORS/OAD

| LAST, FIRST NAME | ACTIVITY ON A/C | AFFILIATION |
|------------------|-----------------|-------------|
| <i>WHITE</i>     | <i>PM</i>       | <i>AOC</i>  |
| <i>LANDSEA</i>   | <i>HAPS</i>     | <i>HRD</i>  |
|                  |                 |             |
|                  |                 |             |
|                  |                 |             |
|                  |                 |             |
|                  |                 |             |
|                  |                 |             |

47

PROPOSED/ACTUAL MISSION/REMARKS (RECCO, FIXES, STORM, PENET, NHOP #)

*18 -33 147/12 2:20 1754 1652 23.66*

*(7.1)*

59

13502

27  
21

## U.S. DEPT. COMM./NOAA/ORA - DATA SECTION WORK FORM NO.2 OROWF2 FILE

FLT ID: *I990716* TIME OFF: *1512Z* TIME ON: *1740Z*

|          | A/C T/O       | WX STN       | A/C LAND      | WX STN       |
|----------|---------------|--------------|---------------|--------------|
| PRESSURE | <i>1020.0</i> | <i>30.14</i> | <i>1019.6</i> | <i>30.11</i> |

## NO DATA DISPOSITION/DATE/QUALITY

1/SEC FLT LVL TAPES

FAST FLT LVL TAPES

RADAR TAPES

DOPPLER TAPES

ODW CASSETTES

HARD COPIES

AXBT

AXCP

~~GPS~~ *GPS**Drop message sent**10**2**8 new 2 old*

## PHOTOGRAPHY

|      | FWD | LS | RS | VERT |
|------|-----|----|----|------|
| ON   |     |    |    |      |
| OFF  |     |    |    |      |
| RATE |     |    |    |      |

REMARKS

*Sonde splash 1019.5  
1019.4*

N990716

m/s

| TIME   | LAT  | LONG | TRK | HD  | WD  | WS | TA    | TD    | PA   | GA   | PS    |  |             |       |
|--------|------|------|-----|-----|-----|----|-------|-------|------|------|-------|--|-------------|-------|
| 153100 | 2708 | 8356 | 236 | 233 | 172 | 10 | -29.0 | -41.6 | 8591 | 9028 | 326.4 |  | BTN CLDS    | 156.3 |
| 154100 | 2629 | 8503 | 243 | 238 | 173 | 14 | -29.4 | -38.9 | 8591 | 9031 | 326.3 |  | ABV CLD     | 125.9 |
| 154953 |      |      |     |     |     |    |       |       |      |      |       |  | OLD DROP    |       |
| 155012 |      |      |     |     |     |    |       |       |      |      |       |  | AVAPS CRASH |       |
| 155028 |      |      |     |     |     |    |       |       |      |      |       |  | NEW FAIL    |       |
| 155900 | 2517 | 8541 | 11  | 9   | 31  | 12 | -27.8 | -38.4 | 8595 | 9022 | 326.3 |  | ABV CLD     | 126.5 |
| 161532 | 2517 | 8541 |     |     |     |    |       |       |      |      |       |  | NEW DROP    |       |
| 161558 |      |      |     |     |     |    |       |       |      |      |       |  | NEW         |       |
| 161613 | 2551 | 8554 | 184 | 182 | 117 | 6  | -28.5 | -36.6 |      |      | 326.2 |  | NEW         |       |
| 163500 | 2554 | 8539 | 0   | 359 | 16  | 4  | -29.5 | -36.1 | 8591 | 9019 | 326.4 |  | ABL CLDS    | 84.9  |
| 165018 |      |      |     |     |     |    |       |       |      |      |       |  | NEW         |       |
| 165030 |      |      |     |     |     |    |       |       |      |      |       |  | NEW         |       |
| 165040 |      |      |     |     |     |    |       |       |      |      |       |  | NEW         |       |
| 165056 |      |      |     |     |     |    |       |       |      |      |       |  | OLD         |       |
| 1651   |      |      |     |     |     |    |       |       |      |      |       |  |             |       |
| 170600 | 2535 | 8516 | 47  | 47  | 105 | 9  | -28.9 | -35.7 | 8597 | 9017 | 326.0 |  | ABV CLD     | 157.1 |

# N49RF Hurricane 99 / AVAPS DropSonde Log

N49RF Project: TEST / TRAIN Flight ID: 990716N

Mission: \_\_\_\_\_ Flight #: Ø System Status: \_\_\_\_\_

| Drop # | Sonde Serial Number  | Chn. #       | Time (Zulu) | Press. offset | Winds time | Operator Initials | Comments / Drop Status/ Failure Reason | GOOD <input checked="" type="checkbox"/> |
|--------|----------------------|--------------|-------------|---------------|------------|-------------------|----------------------------------------|------------------------------------------|
| 1      | <del>984325303</del> | 1            | 1550        |               |            |                   | AVAPS crashed                          |                                          |
| 2      | <del>992435082</del> | 2            | ↓           |               |            |                   | " " see back                           |                                          |
| 3      | <del>992435126</del> | 6            | ↓           |               |            |                   |                                        |                                          |
| 4      | <del>992435080</del> | <del>2</del> | NO DROP     |               |            |                   |                                        |                                          |
| 5      | <del>992435080</del> | 5            | 1616        |               | -          | JAS               |                                        | B                                        |
| 6      | <del>984325266</del> | <del>1</del> |             |               |            |                   |                                        |                                          |
| 7      | <del>992435132</del> | 6            | 1616        |               |            | JAS               |                                        | B                                        |
| 8      | 992435073            | 7            | 1616        |               |            | JAS               |                                        | ✓                                        |
| 9      |                      |              |             |               |            |                   |                                        |                                          |
| 10     | 984325266            | 1            |             |               | 29         |                   |                                        |                                          |
| 11     | <del>992435076</del> | <del>4</del> |             |               |            |                   |                                        |                                          |
| 12     |                      | 3            |             |               |            |                   |                                        |                                          |
| 13     | 992435129            | 6            |             | 0             |            |                   | NO winds PTH OK                        |                                          |
| 14     | <del>992435076</del> | <del>4</del> |             | 0             |            |                   |                                        |                                          |
| 15     | <del>992435080</del> | <del>3</del> |             | 0             |            |                   |                                        |                                          |
| 16     | 992435077            | 8            |             | 0             |            |                   | Launch Defect in Tube PTH good         |                                          |
| 17     |                      | 7            |             | Ø             |            |                   | Winds OK PTH good                      |                                          |
| 18     |                      |              |             |               |            |                   |                                        |                                          |
| 19     |                      |              |             |               |            |                   |                                        |                                          |
| 20     |                      |              |             |               |            |                   |                                        |                                          |
| 21     |                      |              |             |               |            |                   |                                        |                                          |
| 22     |                      |              |             |               |            |                   |                                        |                                          |
| 23     |                      |              |             |               |            |                   |                                        |                                          |
| 24     | 984325303            | 2            | 1549        | Ø             | -          | JS/JR             | System CRASH                           | —                                        |
| 25     | 992435082            | 1            | 1549        | Ø             |            |                   | System CRASH                           | —                                        |
| 26     | 992435131            | 6            | 1549        | Ø             | -          |                   | FAILED on launch                       | B                                        |
| 27     | 992435135            | 5            | 1615        | Ø             | -          |                   | FAILED on launch                       | B                                        |
| 28     | 992435132            | 6            | 1616        | Ø             | -          |                   | Posr taken / NO WINDS                  | B                                        |
| 29     | 992435073            | 7            | 1615        | Ø             | 38         |                   | PROTOTYPE                              | ✓                                        |
| 30     | 992435077            | 8            | 1649        | Ø             | -          |                   | LAUNCH Defect pin pulled 426ms         | B                                        |
| 31     | 984325266            | 1            | 1650        | Ø             | 28         |                   | CONTROL                                | ✓                                        |
| 32     | 992435072            | 7            | 1650        | Ø             | 30         |                   | PROTOTYPE                              | ✓                                        |
| 33     | 992435129            | 6            | 1650        | Ø             | -          | JS/JR             | NO WINDS-Prototype                     | B                                        |

**NOAA/AOC/SED N49RF Flight Performance log**

N49RF Project: Hurricane 99 Project No. 430 Flight No. 00 Flight ID: 990716N  
 SED Crew: Prados, Smith, Roles Mission: Training, Prop Test, Fast Test  
 Pre-Flight: 1413 Z Take-Off: 1511 Z Landing: 1740 Z

| SYSTEM                     |                                                               |         | Pre-Flight Check                                    | In-Flight            | Post-Flight |                                                        |
|----------------------------|---------------------------------------------------------------|---------|-----------------------------------------------------|----------------------|-------------|--------------------------------------------------------|
| N<br>A<br>V                | IRS #1                                                        |         | ✓                                                   |                      |             |                                                        |
|                            | IRS #2                                                        |         | ✓                                                   |                      |             |                                                        |
|                            | IRS #3                                                        |         | ✓                                                   |                      |             |                                                        |
|                            | GPS Honeywell #1                                              |         | ✓                                                   |                      |             |                                                        |
|                            | GPS Honeywell #2                                              |         | ✓                                                   |                      |             |                                                        |
|                            | GPS Collins                                                   |         | ✓                                                   |                      |             | Off? <input checked="" type="checkbox"/>               |
|                            | Nose Radar -Collins                                           |         | ✓                                                   |                      |             | Off? <input checked="" type="checkbox"/>               |
| T<br>E<br>M<br>P           | Time                                                          | Temp °C |                                                     |                      | Time        | Temp °C                                                |
|                            | Temp #1                                                       |         | ✓                                                   |                      |             |                                                        |
|                            | Temp #2                                                       |         | ✓                                                   |                      |             |                                                        |
|                            | Temp #3                                                       |         | NI                                                  |                      |             |                                                        |
|                            | Temp #4                                                       |         | ✓                                                   |                      |             |                                                        |
|                            | DP Left                                                       |         | ✓                                                   | Cal. Time:           |             |                                                        |
|                            | DP Right                                                      |         | ✓                                                   | Cal. Time:           |             |                                                        |
| P<br>R<br>E<br>S           | Attack Angle (ADCAOA)                                         |         | ✓                                                   |                      |             |                                                        |
|                            | Slip Angle (BPx/DxPx)                                         |         | ✓                                                   |                      |             |                                                        |
|                            | Differential (PQ1/PQ2)                                        |         | ✓                                                   |                      |             |                                                        |
|                            | Absolute (PS1/PS2)                                            |         | ✓                                                   |                      |             |                                                        |
|                            | Check Radome Press. Lines <input checked="" type="checkbox"/> |         | Date: <u>7/13/99</u>                                |                      |             |                                                        |
| S<br>Y<br>S<br>T<br>E<br>M | DOWN PRT-5 ⇨ Open? <input type="checkbox"/>                   |         | <u>Closed</u>                                       |                      |             | Closed? <input checked="" type="checkbox"/>            |
|                            | MADS (WINDS/DISCWIN)                                          |         | ✓                                                   |                      |             | # DATs: <u>1</u>                                       |
|                            | MADS Printer ⇨ Paper? <input type="checkbox"/>                |         | ✓                                                   |                      |             | Printer Power off? <input checked="" type="checkbox"/> |
|                            | MADS Cal. Date: <u>07/16/99</u>                               |         | QC time:                                            |                      |             | QC time: <u>1748</u>                                   |
|                            | WINDS ⇨ NET BCAST <input checked="" type="checkbox"/>         |         | ✓                                                   |                      |             |                                                        |
|                            | HAPS System / Time set? <input checked="" type="checkbox"/>   |         | ✓                                                   |                      |             | # Msg.: <u>2</u> # Fail: <u>0</u>                      |
|                            | AVAPS System / Time set? <input checked="" type="checkbox"/>  |         | ✓                                                   |                      |             |                                                        |
|                            | Exterior Walk Around <input checked="" type="checkbox"/>      |         | ✓                                                   |                      |             |                                                        |
|                            | Inspect DropSonde Chute Bolts                                 |         | ✓                                                   |                      |             |                                                        |
| M<br>I<br>S<br>C           | Satcom (Flight Phone) <input checked="" type="checkbox"/>     |         | ✓                                                   |                      |             | Off CB? <input checked="" type="checkbox"/>            |
|                            | Call COMSAT? <input type="checkbox"/> (*292#)                 |         | —                                                   |                      |             |                                                        |
|                            | FCU/UPS/CB                                                    |         | CB's Checked? <input checked="" type="checkbox"/> ✓ |                      |             | UPS off? <input checked="" type="checkbox"/>           |
|                            | AVAPS Sondes                                                  |         | # On Board: <u>60</u>                               | # Dropped: <u>10</u> |             | # Good: <u>4</u>                                       |
|                            | AXBT                                                          |         | # On Board: <u>0</u>                                | # Dropped:           |             | # Good:                                                |
|                            | APN-232                                                       |         | ✓                                                   |                      |             |                                                        |
|                            | Modem Power On? <input checked="" type="checkbox"/>           |         | ✓                                                   |                      |             |                                                        |

|           |             |                 |       |                  |
|-----------|-------------|-----------------|-------|------------------|
| 1         | DAT Tape #1 | On: <u>1447</u> | Type: | Off: <u>1749</u> |
| 2         | DAT Tape #2 | On: <u>—</u>    | Type: | Off:             |
| Comments: |             |                 |       |                  |
|           |             |                 |       |                  |
|           |             |                 |       |                  |
|           |             |                 |       |                  |
|           |             |                 |       |                  |

## G4 Checkout Flight

N990716

### DATA TYPE

### SENSOR or OPTION

|                              |          |
|------------------------------|----------|
| INE                          | VEW, VNS |
| Accelerometer                | ACINS    |
| Temperature Probe            | AT1      |
| Altitude (for vertical wind) | PALT     |
| Static Pressure              | PS1M     |
| Dynamic Pressure             | QC1M     |
| Dewpoint Probe               | DPRC     |

### Notes:

There were no time gaps.

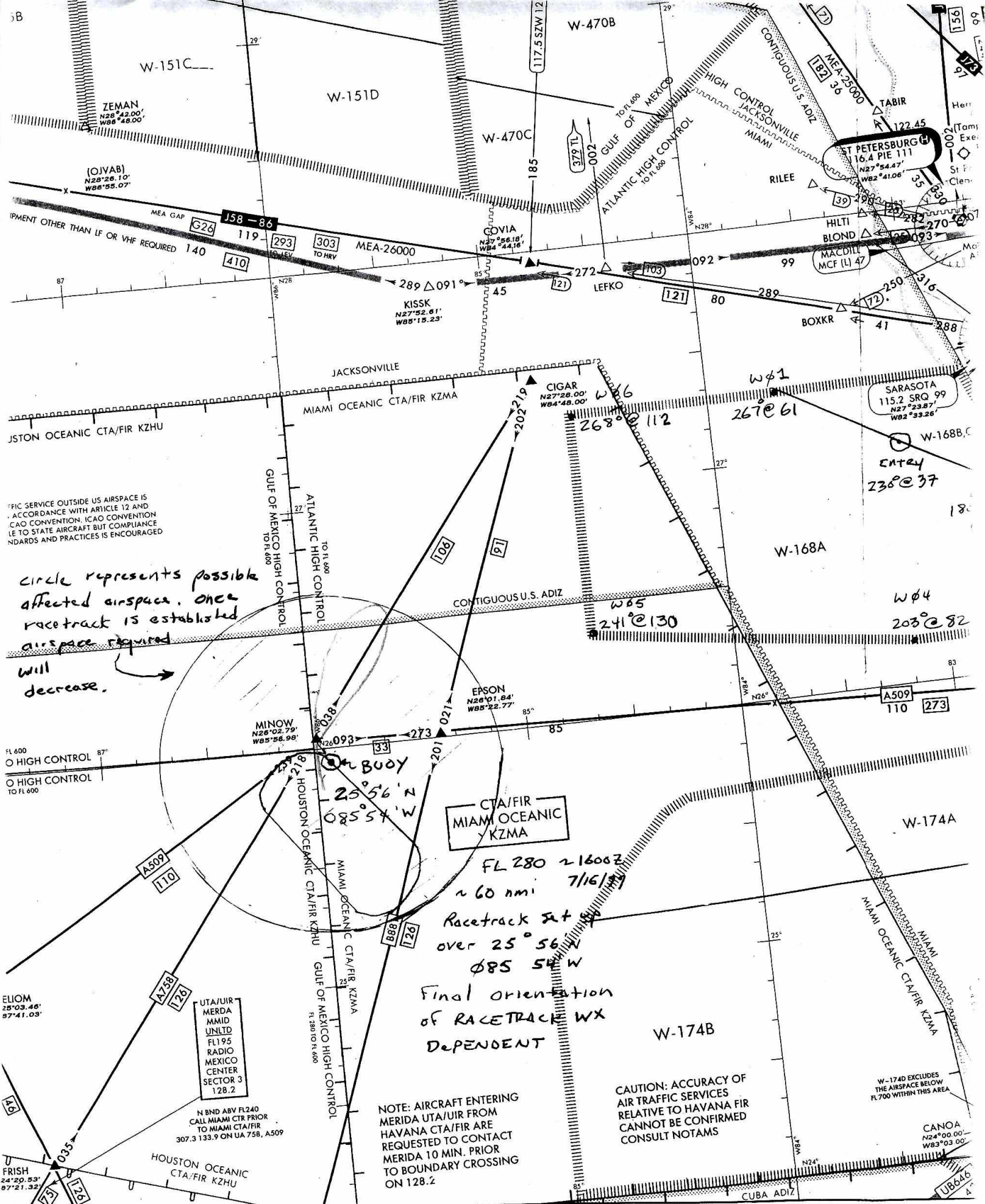
The east/west and north/south groundspeeds from both Honeywell inertial navigation systems performed well during this flight.

Total temperature probe #3 was removed.

No dynamic corrections were applied to the measured static and dynamic pressures. Thus wind direction and wind speed may not be representative of actual flight level conditions.

|                          | <u>Takeoff</u> | <u>Landing</u> |
|--------------------------|----------------|----------------|
| Aircraft static pressure | 1020.0mb       | 1019.6mb       |
| Corrected tower pressure | 1020.1mb       | 1019.7mb       |

Flight Meteorologist: A. Barry Damiano, (813) 828-3310 ext. 3073



circle represents possible  
affected airspace. once  
race track is established  
airspace required  
will decrease.

CTA/FIR  
MIAMI OCEANIC  
KZMA  
FL 280 ~ 1600Z  
~ 60 nmi 7/16/99  
Race track set up  
over 25°56'N  
085°54'W  
Final orientation  
of RACETRACK WX  
DEPENDENT

NOTE: AIRCRAFT ENTERING  
MERIDA UTA/UIR FROM  
HAVANA CTA/FIR ARE  
REQUESTED TO CONTACT  
MERIDA 10 MIN. PRIOR  
TO BOUNDARY CROSSING  
ON 128.2

CAUTION: ACCURACY OF  
AIR TRAFFIC SERVICES  
RELATIVE TO HAVANA FIR  
CANNOT BE CONFIRMED  
CONSULT NOTAMS

H-5

Aircraft Operations Center  
P.O. Box 6829  
MacDill AFB, FL 33608-0829

AOC1:ABD

July 15, 1999

MEMORANDUM FOR: N49RF Flight Crew

FROM: A. Barry Damiano

SUBJECT: N49RF Dropsonde Test Flight

A dropsonde test flight for N49RF has been tentatively scheduled for Friday 16 July. This flight is subject not only the availability of N49RF, but whether the new GPS dropsondes will be at AOC. Vaisala has informed AOC that the dropsondes should be here before Friday. If for any reason the flight is canceled, the flight will be rescheduled for early August.

After discussions among various parties, some revisions have been made to the flight profile. For those who received the original flight profile please note the modifications. These changes were made to include: pilot training, scientific crew training, scientific instrumentation checkout, and the dropsonde test.

NOAA49 will block out at 1100 local time and climb to 28000 feet heading toward open water. This altitude is 10000 feet lower than previously mentioned and is to achieve a higher indicated airspeed (IAS) for the dropsonde test.

The aircraft will fly to a buoy and drop the dropsondes over the buoy. Buoy 42003 (25° 56' N 85° 54' W) 215 nm from KMCF will be the target.

This flight is testing the ruggedness of the new dropsondes. An indicated airspeed of between 270 - 300 knots at altitude is requested.

Five sondes (four new and one old) are to be launched in rapid succession at an IAS of 270 knots. After the four sondes have been deployed, the G4 will continue on course for five (5) minutes, turn around, and orbit/loiter in the vicinity of the buoy until all five sondes have splashed. After the first set of sondes have splashed, a second series of five sondes (four new and one old) will be deployed. An evaluation of the sondes performance may take fifteen to twenty minutes. After the evaluation has been completed, the decision whether to continue deploying sondes or returning to MacDill AFB will be made. If the sondes evaluation is satisfactory, then a third set of sondes will be launched ( two new sondes) at an IAS of 300 knots.

Any remaining new sondes will be launched during a fourth series at an IAS of 210-240 knots.

After all sondes have been deployed, the G4 will head back to MacDill AFB. If there are unexpected problems they will be dealt with accordingly.

Total flight time will be about 3.0 hours.

Crew list:     CDR. Bob Maxson  
                  CDR. Garner Yates  
                  CDR. Bob McCann  
                  Gordon Kitson  
                  A. Barry Damiano  
                  Juan-Carlos Pradas-Bergnes  
                  Jim Roles  
                  Jeff Smith  
                  Chris Landsea (HRD)  
                  CDR. Sean White