

|                    |                 |                       |
|--------------------|-----------------|-----------------------|
| FLT ID: 990208N    | FM: PHNL        | TO: PHNL              |
| FLT NO: 99-21      | BLK IN: 0403    | ATA: 0357             |
| ETD: 20Z           | BLK OUT: 1953   | ATD: 2007             |
| ETE: 7.5           | BLK TIME: 1753  | FLT TIME: 12007       |
| SPONSOR ORG: Dcep. | PROGRAM: WSA-99 | PURPOSE: Research #10 |

DAO PERSONNEL

|                    |                        |
|--------------------|------------------------|
| AC Finke ✓         | SYS ENG Pradas-Bergues |
| CP Maxson/McCann ✓ | DATA SYS Smith ✓       |
| NAV                | RABAR Carpenter ✓      |
| FE Kitson          | BT/ODW Hornbrook ✓     |
| RADIO              | CLD PHYS               |
| FD Parrish ✓       | DOPPLER                |

PARTICIPATING SCIENTIST/VISITORS/DAO

| LAST, FIRST NAME | ACTIVITY ON A/C | AFFILIATION |
|------------------|-----------------|-------------|
| Shapiro, M. ✓    | PI              | ETL/NOAA    |
| Goldenberg, S. ✓ | NAPS            | HEB/NOAA    |
|                  |                 |             |
|                  |                 |             |
|                  |                 |             |
|                  |                 |             |
|                  |                 |             |
|                  |                 |             |
|                  |                 |             |
|                  |                 |             |

1853Z  
020/12  
22/16  
30.16  
1021.3  
23.8/  
14  
1020  
26/11  
LAD  
0152Z  
24/16  
30.11  
20/12  
23.5/  
14.1

PROPOSED/ACTUAL MISSION/REMARKS (RECCO, FIXES, STORM, PENET, NHOP #)  
Drop 22 for Dcep ~15 for ETL → up toward 45°D, 152°W.

Total 34 drops  
18 Dcep  
16 ETL

34

| Time   | LAT    | LONG   | TRK   | WD    | WS   | GA    | PA    | TA    | TD    |          | Pt    | USE  | CH | CDX             |
|--------|--------|--------|-------|-------|------|-------|-------|-------|-------|----------|-------|------|----|-----------------|
| 1953   | BLOCK  |        | OUT   |       |      |       |       |       |       |          |       |      |    |                 |
| 2008   | 2117.2 | 157538 | 158   | 90    | 14   | 805   | 770   | 14.6  | 8.6   | ↑        | 900mb |      |    |                 |
| 201645 | 2142   | 15734  | 5.7   | 65    | 4    | 5947  | 5711  | -9.4  | -35   | ↑        | 482mb |      |    |                 |
| 202645 | 2252   | 15727  | 6     | 320   | 17   | 10062 | 9700  | -41.4 | -51.4 | ↑        | 274mb |      |    |                 |
| 210128 | 2635   | 15745  | 348   | 319   | 39.3 | 12944 | 12551 | -57.1 | -67.8 |          | 1     | NCEP | 5  | Thin CI, BKN SC |
| 211250 | 2746   | 15801  | 348   | 311   | 40.7 | 12922 | 12530 | -57.6 | -68.2 |          |       |      |    |                 |
| 212219 | 2845   | 15815  | 349   | 310   | 46   | 12895 | 12546 | -58   | -68.6 |          | 2     | NCEP | 6  | BKN AC          |
| 214403 | 3100   | 15845  | 349.6 | 299   | 48   | 12842 | 12545 | -58.7 | -69.1 |          | 3     | NCEP | 7  | OVC AS, SC      |
| 220542 | 3315   | 15915  | 348   | 289   | 44.3 | 12769 | 12534 | -62   | -71   | ↑        | 4     | NCEP | 5  | OVC AS, SC      |
| 222629 | 3525   | 15950  | 349   | 298   | 42   | 12692 | 12537 | -64   | -72   |          | 5     | NCEP | 6  | OVC AS          |
| 223202 | 3600   | 15957  | 349   | 295   | 44   |       |       | -63   | -72   |          | 51    | ETL  | 7  | OVC AS, SC      |
| 223750 | 3636   | 16006  |       | 300   | 44   |       |       | -65   | -73   |          | 52    | ETL  | 5  | OVC AS          |
| 224338 | 3712   | 16013  |       | 300   | 45   |       |       | -65.6 | -73   |          | 53    | ETL  | 1  | "               |
| 224811 | 3740   | 16020  | 348   | 296   | 47   | 12599 | 12537 | -65   | -73   |          | 6     | NCEP | 6  | "               |
| 225356 | 3815   | 16030  |       | 294   | 50   |       |       | -64.6 | -72.8 |          | 54    | ETL  | 7  | "               |
| 225942 | 3850   | 16040  |       | 293   | 51.7 |       |       | -64   | -73   |          | 55    | ETL  | 5  | OVC AS          |
| 230529 | 3924   | 16050  |       | 290.6 | 49.9 |       |       | -65   | -73   |          | 56    | ETL  | 2  | OVC AS          |
| 231103 | 4000   | 16055  | ~     | 287   | 47.9 | 12511 | 12538 | -63.5 | -72.7 |          | 7     | NCEP | 6  | "               |
| 231552 | 4026   | 16020  |       | 291   | 45   |       |       | -61.9 | -72.0 |          | 57    | ETL  | 7  | "               |
| 232057 | 4052   | 15939  |       | 294   | 41   |       |       | -60.6 | -70.8 |          | 58    | ETL  | 5  | "               |
| 232613 | 4116   | 15858  |       | 300   | 43   |       |       | -60.8 | -70.9 |          | 59    | ETL  | 3  | "               |
| 233141 | 4145   | 15814  |       | 299.8 | 42   |       |       | -61.7 | -71   |          | 8     | NCEP | 6  | OVC CS          |
| 234147 | 4233   | 15648  |       | 290   | 41.6 |       |       | -58.9 | -70.2 |          | 61    | ETL  | 4  | "               |
| 235140 | 4320   | 15518  | 54    | 295   | 42   | 12270 | 12537 | -56   | -68   |          | 9     | NCEP | 7  | "               |
| 234705 | 4345   | 15432  |       | 304   | 35   |       |       | -55.5 | -67   |          | 63    | ETL  | 5  | Thin CS, SC     |
| 000240 | 4410   | 15339  |       | 303   | 33   |       |       | -56   | -67   |          | 64    | ETL  | 6  | EDGE OF CS      |
| 000811 | 4435   | 15250  |       | 299   | 35   |       |       | -55   | -67   |          | 65    | ETL  | 1  | SC BKN          |
| 001336 | 4453   | 15200  | ~     | 299   | 31   | 12170 | 12541 | -54.7 | -66.7 |          | 10    | NCEP | 7  | OVC BKN         |
| 002143 | 4554   | 15119  | 156   | 287   | 31   |       |       | -54.9 | -65.8 |          | 67    | ETL  | 5  | BKN SC          |
| 003056 | 4745   | 15038  | 155.5 | 290   | 33   | 12857 | 13120 | -55   | -65.7 |          | 11    | NCEP | 6  | Thin CI, BKN SC |
| 004835 | 4830   | 14919  | 157   | 292   | 41   | 12918 | 13116 | -55   | -66   |          | 12    | NCEP | 1  | SC SC           |
| 010055 | 4853   | 14827  |       | 301   | 41.8 |       |       | -57   | -67   | Shd Fell | 7BA   | ETL  | 4  | SC SC (AOC)     |
| 010746 | 4900   | 14803  | ~     | 302   | 44   | 13001 | 13119 | -57   | -67   |          | 13    | NCEP | 5  | SC SC           |
| 011718 | 4900   | 14846  |       | 295   | 54.3 | 13057 | 13119 | -59   | -68   |          | 75    | ETL  | 6  | SC SC           |
| 012722 | 4900</ |        |       |       |      |       |       |       |       |          |       |      |    |                 |

## NOAA/AOC/SED N49RF Flight Performance log

N49RF Project: Winter Storms 99 Project No. 425 Flight No. 11 Flight ID: 990208NSED Crew: SMITH, HORN BROOK, Carpenter, Prodas Mission: #10Pre-Flight: 1924 Z Take-Off: 2006 Z Landing: 0357 Z

| SYSTEM      |                                                              |      |         | Pre-Flight Check                                      | In-Flight     | Post-Flight |                                                        |         |
|-------------|--------------------------------------------------------------|------|---------|-------------------------------------------------------|---------------|-------------|--------------------------------------------------------|---------|
| N<br>A<br>V | IRS #1                                                       |      |         | ✓ JAS                                                 |               |             |                                                        |         |
|             | IRS #2                                                       |      |         | ✓                                                     |               |             |                                                        |         |
|             | IRS #3                                                       |      |         | ✓                                                     |               |             |                                                        |         |
|             | GPS Honeywell #1                                             |      |         | ✓ JAS                                                 |               |             |                                                        |         |
|             | GPS Honeywell #2                                             |      |         | ✓ JAS                                                 |               |             |                                                        |         |
|             | GPS Collins                                                  |      |         | ✓ FMI *                                               |               |             | Off? <input checked="" type="checkbox"/> JAS           |         |
|             | Nose Radar -Collins                                          |      |         | ✓ JAS                                                 |               |             | Off? <input checked="" type="checkbox"/> JAS           |         |
|             |                                                              | Time | Temp °C | ✓ JAS                                                 |               |             | Time                                                   | Temp °C |
|             | Temp #1                                                      | 1931 | 23.0    | ✓                                                     |               |             |                                                        |         |
| T           | Temp #2                                                      | ↓    | 23.4    | ✓                                                     |               |             |                                                        |         |
| E           | Temp #3                                                      | ↓    | 23.3    | ✓                                                     |               |             |                                                        |         |
| M           | Temp #4                                                      | ↓    | 23.5    | ✓                                                     |               |             |                                                        |         |
| P           | DP Left                                                      | ↓    | 14.6    | ✓                                                     | Cal. Time:    |             |                                                        |         |
|             | DP Right                                                     |      | 14.6    | ✓                                                     | Cal. Time:    |             |                                                        |         |
| P           | Attack Angle (ADCAOA)                                        |      |         | JAS ✓                                                 |               |             |                                                        |         |
| R           | Slip Angle (BP/DBP)                                          |      |         | ✓                                                     |               |             |                                                        |         |
| E           | Differential (PQ1/PQ2)                                       |      |         | ✓                                                     |               |             |                                                        |         |
| S           | Absolute (PS1/PS2)                                           |      |         | 1020.6/1022.6 JAS                                     |               |             |                                                        |         |
| S           | Check Radome Press. Lines <input type="checkbox"/>           |      |         | Date: 990122                                          |               |             |                                                        |         |
| S           | DOWN PRT-5 ⇒ Open? <input type="checkbox"/>                  |      |         | NI                                                    |               |             | Closed? <input checked="" type="checkbox"/> N/A        |         |
| Y           | MADS (WINDS/DISCWIN)                                         |      |         | ✓ JAS                                                 |               |             | # DATs: 1                                              |         |
| S           | MADS Printer ⇒ Paper? <input checked="" type="checkbox"/>    |      |         | JAS                                                   |               |             | Printer Power off? <input checked="" type="checkbox"/> |         |
| T           | MADS Cal. Date: 990204                                       |      |         | QC time: 1938 JAS                                     |               |             | QC time: 0358                                          |         |
| E           | WINDS ⇒ NET BCAST <input checked="" type="checkbox"/>        |      |         | JAS                                                   |               |             |                                                        |         |
| M           | HAPS System / Time set? <input checked="" type="checkbox"/>  |      |         | JAS                                                   |               |             | # Msg.: 18 # Fail: 10                                  |         |
| S           | AVAPS System / Time set? <input checked="" type="checkbox"/> |      |         | JAS                                                   |               |             |                                                        |         |
|             | AVAPS Printer ⇒ Paper? <input checked="" type="checkbox"/>   |      |         | JAS                                                   |               |             |                                                        |         |
|             | Exterior Walk Around <input checked="" type="checkbox"/>     |      |         | JCPB                                                  |               |             |                                                        |         |
|             | Inspect DropSonde Chute Bolts                                |      |         | JAS                                                   |               |             |                                                        |         |
|             | Satcom (Flight Phone) <input checked="" type="checkbox"/>    |      |         | JAS                                                   |               |             | Off CB? <input checked="" type="checkbox"/> JAS        |         |
|             | Call COMSAT? <input type="checkbox"/> (*292#)                |      |         | NOT DONE                                              |               |             |                                                        |         |
| M           | FCU/UPS/CB                                                   |      |         | CB's Checked? <input checked="" type="checkbox"/> JAS |               |             | UPS off? <input checked="" type="checkbox"/> JAS       |         |
| I           | AVAPS Sondes                                                 |      |         | # On Board: 81                                        | # Dropped: 34 |             | # Good: 33                                             |         |
| S           | AXBT                                                         | NT   |         | # On Board: 0                                         | # Dropped:    |             | # Good: 1                                              |         |
| C           | APN-232                                                      |      |         | ✓ JAS                                                 |               |             |                                                        |         |
|             | Modem Power On? <input checked="" type="checkbox"/>          |      |         | JAS                                                   |               |             |                                                        |         |

|                                                    |             |      |          |           |           |
|----------------------------------------------------|-------------|------|----------|-----------|-----------|
| 1                                                  | DAT Tape #1 | 1937 | On: 1937 | Type: V60 | Off: 0403 |
| 2                                                  | DAT Tape #2 |      | On:      | Type:     | Off:      |
| Comments: *GPS Rcvr & DISPLAY SWAPPED OUT w/spares |             |      |          |           |           |
|                                                    |             |      |          |           |           |
|                                                    |             |      |          |           |           |
|                                                    |             |      |          |           |           |

08/27/98 JCPB

# N49RF Winter Storms 99 / AVAPS DropSonde Log

N49RF Project: Winter Storms 99

Flight ID: 990208N

Mission: 10

Flight #: 11

System Status: Ch #8 disabled

| Drop # | Sonde Serial Number | Chn. # | Time (Zulu) | Press. offset | Winds time | Operator Initials | Comments / Drop Status/ Failure Reason | GOOD <input checked="" type="checkbox"/> |
|--------|---------------------|--------|-------------|---------------|------------|-------------------|----------------------------------------|------------------------------------------|
| 1      | 983 310 206         | 5      | 2101        | 0             | 19         | DWC/cph           |                                        | ✓                                        |
| 2      | 983 310 179         | 6      | 2122        | 0             | 42         |                   |                                        | ✓                                        |
| 3      | 983 310 105         | 7      | 2144        | 0             | 25         |                   |                                        | ✓                                        |
| 4      | 974 740 140         | 5      | 2205        | 0             | 45         |                   |                                        | ✓                                        |
| 5      | 983 620 606         | 6      | 2226        | 0             | 51         |                   |                                        | ✓                                        |
| m 6    | 983 840 557         | 7      | 2232        | +1.0          | 38         |                   |                                        | ✓                                        |
| m 7    | 983 410 055         | 5      | 2237        | 0             | 39         |                   |                                        | ✓                                        |
| m 8    | 983 620 755         | 1      | 2243        | .4            | 21         |                   |                                        | ✓                                        |
| 9      | 983 620 660         | 6      | 2248        | 0             | 23         |                   |                                        | ✓                                        |
| m 10   | 983 620 599         | 7      | 2253        | 0             | 31         |                   |                                        | ✓                                        |
| m 11   | 983 410 098         | 5      | 2259        | .7            | 21         |                   |                                        | ✓                                        |
| m 12   | 983-720 800         | 2      | 2305        | +1.0          | 43         |                   |                                        | ✓                                        |
| 13     | 983 310 129         | 6      | 2311        | 0             | 41         |                   |                                        | ✓                                        |
| m 14   | 960 620 753         | 7      | 2315        | .6            | 27         |                   |                                        | ✓                                        |
| m 15   | 983 410 120         | 5      | 2321        | .6            | 21         |                   |                                        | ✓                                        |
| m 16   | 983 310 197         | 3      | 2326        | 0             | 21         |                   |                                        | ✓                                        |
| 17     | 983 340 110         | 6      | 2331        | 0             | 19         |                   |                                        | ✓                                        |
| m 18   | 983 410 054         | 4      | 2341        | 0             | 20         |                   |                                        | ✓                                        |
| 19     | 983 340 055         | 7      | 2351        | 0             | 24         |                   |                                        | ✓                                        |
| m 20   | 983 410 044         | 5      | 2357        | .5            | 31         |                   |                                        | ✓                                        |
| m 21   | 983 310 168         | 6      | 0002        | .4            | 27         |                   |                                        | ✓                                        |
| m 22   | 983 310 205         | 1      | 0008        | 0             | 25         |                   |                                        | ✓                                        |
| 23     | 983 310 100         | 7      | 0013        | 0             | 60         |                   |                                        | ✓                                        |
| m 24   | 983 340 090         | 5      | 0021        | .6            | 15         |                   |                                        | ✓                                        |
| 25     | 983 340 057         | 6      | 0031        | 0             | 17         |                   | Lathe says no Foam                     | ✓                                        |
| 26     | 983 410 041         | 1      | 0048        | 0             | 23         |                   |                                        | ✓                                        |
| m 27   | 983 310 194         | 4      | 0101        | .4            |            |                   | Slow Fall chute / did not open         | Fast Fall ✓                              |
| 28     | 983 310 164         | 5      | 0107        | .5            | 32         |                   |                                        | ✓                                        |
| m 29   | 983 340 108         | 6      | 0117        | 0             | 25         |                   |                                        | ✓                                        |
| 30     | 983 310 076         | 7      | 0127        | 1.1           | 20         |                   |                                        | ✓                                        |
| 15 31  | 983 410 048         | 5      | 0147        | .6            | 30         |                   |                                        | ✓                                        |
| 32     | 983 340 061         | 6      | 0204        | .5            | 23         |                   |                                        | ✓                                        |
| 33     | 983 620 683         | 7      | 0223        | 0             | 33         |                   |                                        | ✓                                        |

16 mal

34 - Launched

1 - Bad - (slow fall chute)

| Drop # | Sonde Serial Number | Chn # | Time (Z) | Press. offset | Winds time | Operator Init. | Comments Drop Status | GOOD <input checked="" type="checkbox"/> |
|--------|---------------------|-------|----------|---------------|------------|----------------|----------------------|------------------------------------------|
| 34     | 983 310 181         | 5     | 0241     | 0             | 28         |                |                      | <input checked="" type="checkbox"/>      |
| 35     |                     |       |          |               |            |                |                      |                                          |
| 36     |                     |       |          |               |            |                |                      |                                          |
| 37     |                     |       |          |               |            |                |                      |                                          |
| 38     |                     |       |          |               |            |                |                      |                                          |
| 39     |                     |       |          |               |            |                |                      |                                          |
| 40     |                     |       |          |               |            |                |                      |                                          |
| 41     |                     |       |          |               |            |                |                      |                                          |
| 42     |                     |       |          |               |            |                |                      |                                          |
| 43     |                     |       |          |               |            |                |                      |                                          |
| 44     |                     |       |          |               |            |                |                      |                                          |
| 45     |                     |       |          |               |            |                |                      |                                          |
| 46     |                     |       |          |               |            |                |                      |                                          |
| 47     |                     |       |          |               |            |                |                      |                                          |
| 48     |                     |       |          |               |            |                |                      |                                          |
| 49     |                     |       |          |               |            |                |                      |                                          |
| 50     |                     |       |          |               |            |                |                      |                                          |
| 51     |                     |       |          |               |            |                |                      |                                          |
| 52     |                     |       |          |               |            |                |                      |                                          |
| 53     |                     |       |          |               |            |                |                      |                                          |
| 54     |                     |       |          |               |            |                |                      |                                          |
| 55     |                     |       |          |               |            |                |                      |                                          |
| 56     |                     |       |          |               |            |                |                      |                                          |
| 57     |                     |       |          |               |            |                |                      |                                          |
| 58     |                     |       |          |               |            |                |                      |                                          |
| 59     |                     |       |          |               |            |                |                      |                                          |
| 60     |                     |       |          |               |            |                |                      |                                          |

06/16/98

**AVAPS PRE-FLIGHT CHECK:**

- (1) Apply power to computer, VAPS fan and VAPS chassis
- (2) Verify no **ER** status lights on the four MWG cards
- (3) Set the computer time to GPS time
- (4) Start AVAPS and run the hardware checks via the **Utility** function
- (5) Start **Soundings** and set the **Project Name** and **Flight ID** (6) Perform a prelaunch check using all four channels simultaneously reading one sonde, look for reasonable data and no CRC error status lights, winds data is not expected. All AVAPS chassis status lights should be green.

**NORMAL LAUNCH NOTES:**

- ☐ When selecting a sonde frequency, select a frequency other than the default (if there is a default), and away from other sondes in use.
- ☐ Do not pull the Power Enable Pin during pre-launch setup until after the Umbilical is attached.
- ☐ If pre-launch is complete, and more than 5 minutes remain prior to launch, replace the power Enable pin until 5 minutes prior to launch.
- ☐ Don't put the sonde in the launch tube until you have removed the ribbon retaining tape.
- ☐ Don't put the sonde in the tube until you have selected **Begin Data Collection**, and verified good data (good winds data is not expected).

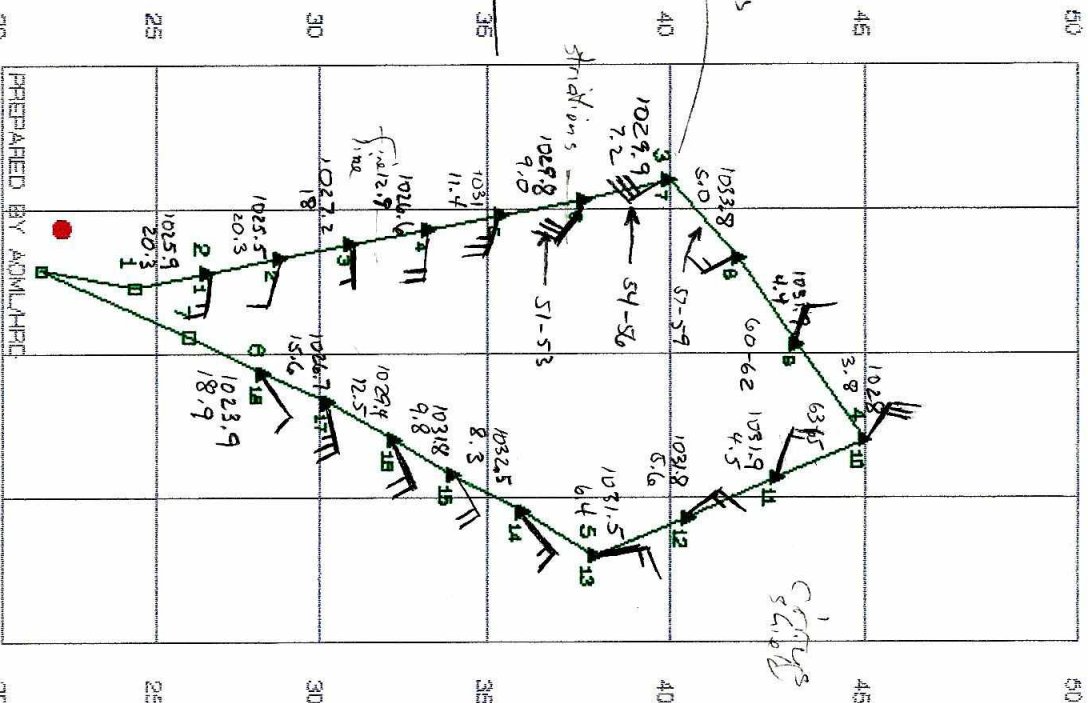
The Power Enable Pin must be removed for at least two minutes prior to launch to allow for the Sonde GPS Oscillator to warm up.

# FLIGHT TRACKS WSR HI N49

990208nftk

RAWINSONDES 9804

- Regular
- 12Z only
- 00Z only
- Infrequent
- Infrequent - 00Z
- Infrequent - 12Z



▲ DROP LOCATIONS

34  
-18  
-16  
-15

Winter Storm Reconnaissance (Mission 10)  
990208N N49RF 8 Feb 1999 Honolulu - Honolulu

| <u>DATA TYPE</u>              | <u>SENSOR or OPTION</u> |
|-------------------------------|-------------------------|
| INE                           | VEW_PITR, VNS_PITR      |
| Accelerometer                 | ACINS_PITR              |
| Temperature Probe             | AT1                     |
| Altitude (for vertical winds) | PALT                    |
| Static Pressure               | PS1M                    |
| Dynamic Pressure              | QC1M                    |
| Dewpoint Probe                | DPRC                    |

Notes:

34 dropsondes launched.

Numerous APN-232 radar altimeter spikes were noted from 211430z-211545z, 212530z-212610z, 212920z-213145z, and 223425-223445z.

|                          | Take Off | Land   |
|--------------------------|----------|--------|
| Corrected Tower Pressure | 1021.3   | 1019.6 |
| Aircraft Static Pressure | 1020.0   |        |

Flight Director: Jack Parrish, (813) 828-3310, Ex 3077

NOAA G-IV POC: Sean White - 813.833.3275

CALL SIGN NOAA49  
TAIL NUMBER N49RF  
ALTITUDE FL410-450  
AIRSPEED Mach 0.77 (450KTAS)

DEPARTURE

DATE 08 FEB 99  
TIME 2000Z

NCEP DROP LOCATIONS indicated by a drop number.

| #  | LAT(N)/LONG(W)<br>(degrees and minutes)   | DIST(NM) | ETE  | ETA<br>Date/Zulu Time |
|----|-------------------------------------------|----------|------|-----------------------|
|    | 21 19.291N 157 54.789W<br>Honolulu (PHNL) | ----     | ---- | 08/2000 Takeoff time  |
|    | ZIGIE (24 19/157 18)                      | 183      | 0+35 | 08/2035               |
| 1  | 26 35/157 45                              | 137      | 0+20 | 08/2055               |
| 2  | 28 45/158 15                              | 137      | 0+20 | 08/2115               |
| 3  | 31 00/158 45                              | 137      | 0+20 | 08/2135               |
| 4  | 33 15/159 15                              | 137      | 0+20 | 08/2155               |
| 5  | 35 25/159 50                              | 137      | 0+20 | 08/2215               |
|    | 3 additional dropsondes                   |          |      |                       |
| 6  | 37 40/160 20                              | 137      | 0+20 | 08/2235               |
|    | 3 additional dropsondes                   |          |      |                       |
| 7  | 40 00/161 00                              | 137      | 0+20 | 08/2255               |
|    | 3 additional dropsondes                   |          |      |                       |
| 8  | 41 45/158 15                              | 165      | 0+20 | 08/2315               |
|    | 3 additional dropsondes                   |          |      |                       |
| 9  | 43 20/155 20                              | 165      | 0+20 | 08/2335               |
|    | 3 additional dropsondes                   |          |      |                       |
| 10 | 45 00/152 00                              | 165      | 0+20 | 08/2355               |
| 11 | 42 45/150 40                              | 152      | 0+18 | 09/0013               |
| 12 | 40 30/149 20                              | 152      | 0+18 | 09/0031               |
| 13 | 38 00/148 00                              | 152      | 0+18 | 09/0049               |
| 14 | 36 00/149 30                              | 135      | 0+18 | 09/0107               |
| 15 | 34 00/150 50                              | 135      | 0+18 | 09/0125               |
| 16 | 32 20/152 00                              | 135      | 0+18 | 09/0143               |
| 17 | 30 20/153 15                              | 135      | 0+18 | 09/0204               |
| 18 | 28 20/154 20                              | 135      | 0+18 | 09/0219               |
|    | ZURIC (26 02/155 35)                      | 135      | 0+18 | 09/0237               |
|    | Honolulu (PHNL)                           | 311      | 0+48 | 09/0325               |
|    | Cumulative                                | 3214     | 7+25 |                       |

44 27.3 152 40 (66)  
43 53.9 151 20 (67)  
43 19.8 151 00 (68)  
42 12 150 19.9 (69)  
41 38 149 59.5 (70)  
41 04 149 39.6 (71)  
39 53 148 59.7 (72)  
39 15 148 39.2 (73)  
38 38 148 19.7 (74)

(75) 37.00 148 45.7