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14823 LANCE MISSILE NUMBER 4849 26 APRIL 1983(U) ARMY  
ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WSMR NM  
ATMOSPHERIC SCIENCES LAB D C KELLER APR 83

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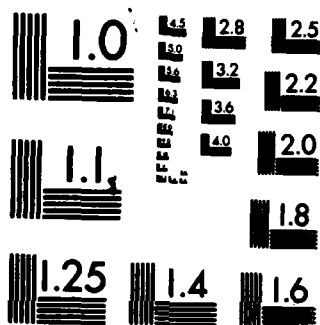
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METEOROLOGICAL DATA REPORT  
14823 LANCE  
Missile Number 4849  
26 April 1983

by

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Program Support Coordinator  
Phone Number (505) 679-9568  
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| 1. REPORT NUMBER<br>DR 1297                                                                                                                                                                                    | 2. GOVT ACCESSION NO.<br>AD A129 669 | 3. RECIPIENT'S CATALOG NUMBER                                  |
| 4. TITLE (and Subtitle)<br>14823B LANCE<br>Missile Number 4849                                                                                                                                                 |                                      | 5. TYPE OF REPORT & PERIOD COVERED                             |
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| 14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)<br>US Army Electronics Research and Development Cmd<br>Adelphi, MD 20783                                                           |                                      | 12. REPORT DATE<br>April 1983                                  |
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| 18. SUPPLEMENTARY NOTES                                                                                                                                                                                        |                                      |                                                                |
| 19. KEY WORDS (Continue on reverse side if necessary and identify by block number)                                                                                                                             |                                      |                                                                |
| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number)<br>Meteorological data gathered for the launching of the 14823B LANCE, Missile<br>Number 4849 are presented in tabular form. |                                      |                                                                |

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## INTRODUCTION

14823B LANCE, Missile Number 4849, Round Number 384-MST, was launched from LC-39 White Sands Missile Range (WSMR), New Mexico, at 0918:48 MST, 26 April 1983. The scheduled launch time was 0900 MDT.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the LC-39 Met Site at T-0 minutes.

(2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

#### b. Upper Air

(1) Low level wind data were obtained from RPTS T-9 pibal observation at:

### SITE AND ALTITUDE

LC-36 9000 Feet

(2) Air structure data (rawinsonde) were collected at the following Met Sites:

### SITE AND TIME

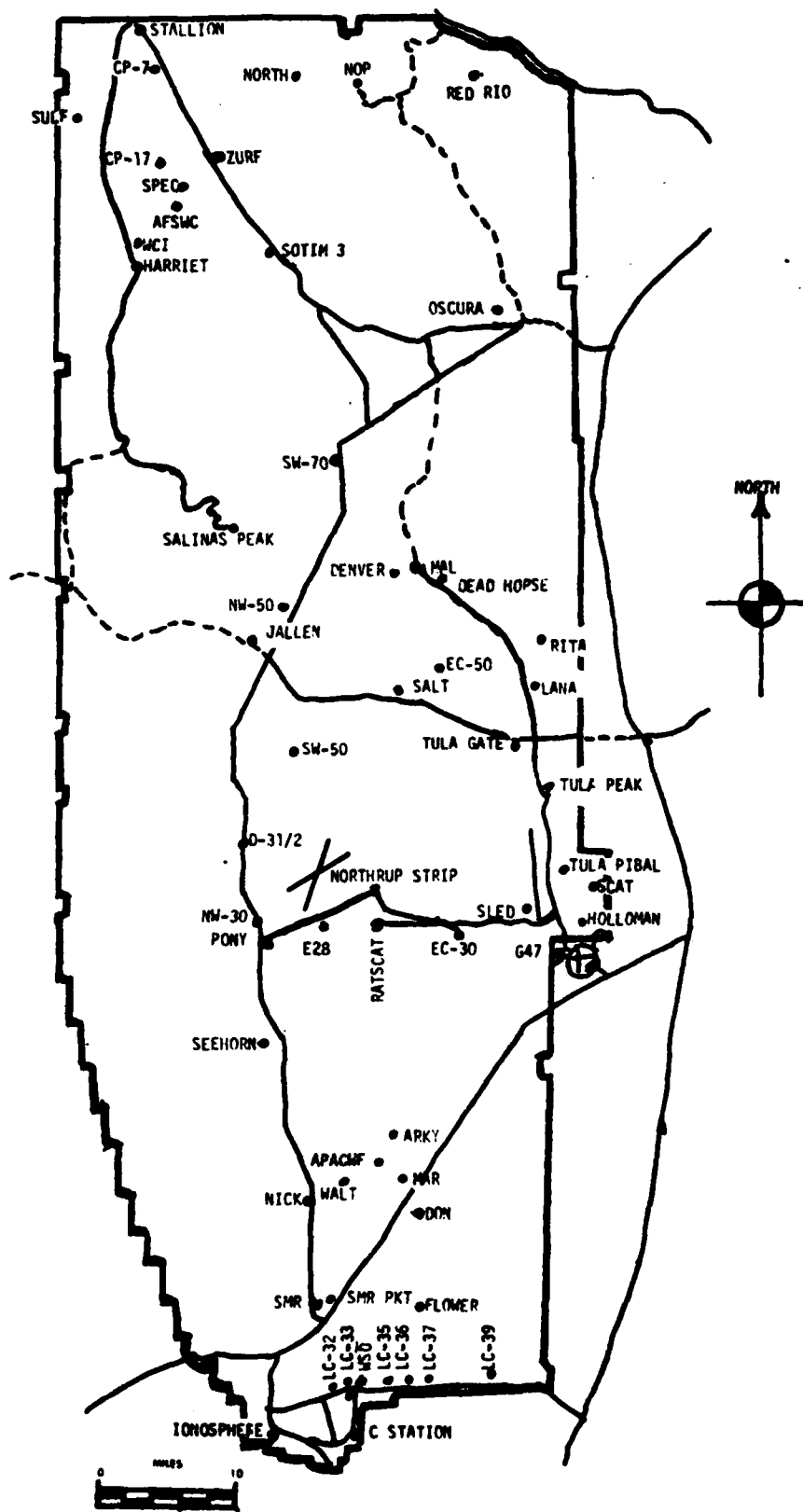
|        |          |
|--------|----------|
| WSD    | 0900 MDT |
| NW-30  | 0800 MDT |
| JALLEN | 0900 MDT |

|                    |                                     |
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| Unannounced        | <input type="checkbox"/>            |
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| By _____           |                                     |
| Distribution/      |                                     |
| Availability Codes |                                     |
| Dist               | Avail and/or Special                |
| A-23               | CP                                  |





# WSMR METEOROLOGICAL SITES



# PROJECT SURFACE OBSERVATION

TABLE 1 STATION LC-39

H = 4063.75

Y = 186,564.96

X = 530,938.82

83

Apr

DATE 26

YEAR

MONTH

DAY

| TIME<br>M D I | PRESSURE<br>mbs | TEMPERATURE<br>OF<br>OC | DEW POINT<br>OF<br>OC | RELATIVE<br>HUMIDITY<br>% | DENSITY<br>gm/m <sup>3</sup> | WIND              |          |              | VISIBIL-<br>ITY  |
|---------------|-----------------|-------------------------|-----------------------|---------------------------|------------------------------|-------------------|----------|--------------|------------------|
|               |                 |                         |                       |                           |                              | DIRECTION<br>degs | IN<br>Tn | SPEED<br>kts | CHARACTER<br>kts |
| 0900          | 872.6           | 20.8                    | 7.6                   | 42                        |                              | 270               |          | 09           | 20               |
| 0919          | 872.5           | 20.9                    | 7.7                   | 42                        |                              | 270               |          | 10           | 20               |
|               |                 |                         |                       |                           |                              |                   |          |              |                  |

| OBSTRUCTIONS<br>TO VISIBILITY | CLOUDS    |      |        |           |      |     |           |      |     | REMARKS |
|-------------------------------|-----------|------|--------|-----------|------|-----|-----------|------|-----|---------|
|                               | 1st LAYER |      |        | 2nd LAYER |      |     | 3rd LAYER |      |     |         |
|                               | AMT       | TYPE | HGT    | AMT       | TYPE | HGT | AMT       | TYPE | HGT |         |
|                               |           |      |        |           |      |     |           |      |     |         |
|                               | 1         | AS   | 12,500 |           |      |     |           |      |     |         |
|                               | 1         | AS   | 12,500 |           |      |     |           |      |     |         |
|                               |           |      |        |           |      |     |           |      |     |         |

## PSYCHROMETRIC COMPUTATION

|                 |      |      |
|-----------------|------|------|
| TIME:           | 0900 | 0919 |
| DRY BULB TEMP.  | 20.8 | 20.9 |
| WET BULB TEMP.  | 12.9 | 13.0 |
| WET BULB DEPR.  | 7.9  | 7.9  |
| DEW POINT       | 7.6  | 7.7  |
| RELATIVE HUMID. | 42   | 42   |

### PILOT BALLOON MEASURED WIND DATA

**TABLE 2**

RELEASED FROM LC-36

DATE 26 Apr 83

TIME 0809 MDT

COORDINATES (WSTM)    X= 504,466.00    Y= 190,732.16    H= 4037.21

**H= 4037.21**

NOTE: WIND DIRECTIONS ARE REFERENCED TO \_\_\_\_\_.

HEIGHTS ARE METERS AGL OR FEET AGL X .

| HEIGHT<br>AGL | DIRECTION<br>DEGREES | SPEED<br>KNOTS |
|---------------|----------------------|----------------|
| SFC           | 310                  | 12             |
| 200           |                      | Misc           |
| 400           | 283                  | 20             |
| 600           | 284                  | 24             |
| 800           | 284                  | 25             |
| 1000          | 285                  | 25             |
| 1200          | 282                  | 22             |
| 1400          | 284                  | 23             |
| 1600          | 288                  | 24             |
| 1800          | 282                  | 24             |
| 2000          | 277                  | 23             |
| 2200          | 276                  | 23             |
| 2400          | 280                  | 22             |
| 2600          | 288                  | 22             |
| 2800          | 288                  | 23             |
| 3000          | 289                  | 24             |
| 3200          | 288                  | 25             |
| 3400          | 289                  | 25             |
| 3600          | 293                  | 22             |
| 3800          | 291                  | 22             |
| 4000          | 292                  | 22             |
| 4200          | 293                  | 23             |
| 4400          | 291                  | 24             |
| 4600          | 288                  | 24             |
| 4800          | 282                  | 25             |
| 5000          | 277                  | 28             |
| 5200          | 271                  | 27             |
| 5400          | 270                  | 30             |
| 5600          | 271                  | 33             |
| 5800          | 271                  | 33             |

[illegible][illegible]

## PILOT BALLOON MEASURED WIND DATA

**TABLE 3**

RELEASED FROM LC-36

DATE 26 Apr 83

TIME 0919 MDT

COORDINATES (WSTM) X= 504,466.00 Y= 190,732.16 H= 4037.21

NOTE: WIND DIRECTIONS ARE REFERENCED TO \_\_\_\_\_

HEIGHTS ARE METERS AGL \_\_\_\_\_ OR FEET AGL   X  .

| HEIGHT<br>AGL | DIRECTION<br>DEGREES | SPEED<br>KNOTS |
|---------------|----------------------|----------------|
| SFC           | 315                  | 14             |
| 200           |                      | MISG           |
| 400           | 284                  | 20             |
| 600           | 284                  | 25             |
| 300           | 281                  | 24             |
| 1000          | 285                  | 24             |
| 1200          | 281                  | 23             |
| 1400          | 283                  | 24             |
| 1600          | 282                  | 24             |
| 1800          | 281                  | 26             |
| 2000          | 274                  | 21             |
| 2200          | 274                  | 22             |
| 2400          | 273                  | 21             |
| 2600          | 274                  | 23             |
| 2800          | 277                  | 27             |
| 3000          | 272                  | 24             |
| 3200          | 281                  | 28             |
| 3400          | 281                  | 26             |
| 3600          | 285                  | 22             |
| 3800          | 286                  | 21             |
| 4000          | 288                  | 20             |
| 4200          | 282                  | 22             |
| 4400          | 278                  | 23             |
| 4600          | 277                  | 25             |
| 4800          | 274                  | 28             |
| 5000          | 271                  | 29             |
| 5200          | 270                  | 31             |
| 5400          | 270                  | 31             |
| 5600          | 271                  | 27             |
| 5800          | 267                  | 26             |

[illegible][illegible]

COMPUTER MET MESSAGE DATA  
26 Apr11 1983

USD 0900 MDT

METCM1324064

261500122873

|          |          |
|----------|----------|
| 00462014 | 29400873 |
| 01501022 | 29140862 |
| 02495020 | 28860837 |
| 03486025 | 28540798 |
| 04496030 | 28170752 |
| 05488018 | 27780707 |
| 06477020 | 27380665 |
| 07476026 | 27070625 |
| 08447022 | 26780586 |
| 09436017 | 26420550 |
| 10431022 | 26040515 |
| 11439026 | 25650483 |
| 12437029 | 25110436 |
| 13435028 | 24350380 |
| 14435032 | 23520330 |
| 15453033 | 22690285 |
| 16455047 | 22030244 |
| 17475061 | 21640209 |
| 18474063 | 21430179 |
| 19476062 | 21780152 |
| 20467055 | 21510130 |
| 21467052 | 21030111 |
| 22457050 | 20920095 |
| 23473030 | 21320081 |
| 24495010 | 21260069 |
| 25447014 | 21610059 |
| 26402006 | 21730050 |

NW-30 0800 MDT

METCM1329065

261400122871

|          |          |
|----------|----------|
| 00533004 | 29090871 |
| 01501006 | 29010861 |
| 02470008 | 28800836 |
| 03472021 | 28460797 |
| 04408014 | 28060750 |
| 05489024 | 27690706 |
| 06178032 | 27530663 |
| 07454031 | 27200623 |
| 08453035 | 26780585 |
| 09421023 | 26370549 |
| 10405022 | 25950514 |
| 11420023 | 25530481 |
| 12430035 | 24930435 |
| 13431034 | 24300379 |
| 14441035 | 23520328 |
| 15448041 | 22630283 |
| 16451055 | 21980243 |
| 17465067 | 21580208 |
| 18475072 | 21420178 |
| 19473081 | 21550152 |
| 20468081 | 21320129 |
| 21460066 | 21090110 |
| 22473056 | 21070094 |
| 23480046 | 21170080 |
| 24414005 | 21200068 |
| 25458013 | 21560058 |
| 26163016 | 21610050 |

JALLEN 0900 MDT

METCM1332065

261500124871

|          |          |
|----------|----------|
| 00444002 | 29260871 |
| 01349005 | 29180861 |
| 02406003 | 28900836 |
| 03470003 | 28500797 |
| 04491011 | 28040750 |
| 05479013 | 27660706 |
| 06478029 | 27450663 |
| 07454029 | 27220623 |
| 08434028 | 26750585 |
| 09417026 | 26370549 |
| 10417025 | 25950514 |
| 11429032 | 25560481 |
| 12422036 | 25020435 |
| 13453036 | 24300379 |
| 14444040 | 23470329 |
| 15450042 | 22610283 |
| 16457056 | 21940243 |
| 17476075 | 21640208 |
| 18471070 | 21370178 |
| 19466031 | 21510152 |
| 20460080 | 21420129 |
| 21461071 | 21230110 |
| 22475062 | 21120094 |
| 23504028 | 21190080 |
| 24329008 | 21290068 |
| 25221011 | 21530058 |
| 26144008 | 21720050 |

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

SIGNIFICANT LEVEL DATA  
1160020204  
WHITE SANDS

STATION ALTITUDE 3000.00 FT MSL  
0900 HDT  
24 APR 65  
ACQUISITION NO. 24

TABLE 5

| PRESSURE | GEODETIC ALTITUDE | TEMPERATURE AIR    | TEMPERATURE DEWPOINT | REL. HUM. PERCENT |
|----------|-------------------|--------------------|----------------------|-------------------|
| WILIBARS | MFL FEET          | DEGREES CENTIGRADE |                      |                   |
| 972.5    | 3089.0            | 20.1               | 4.6                  | 36.0              |
| 960.5    | 4240.4            | 17.5               | -2.7                 | 25.0              |
| 956.0    | 4721.0            | 15.9               | -3.1                 | 27.0              |
| 825.7    | 5520.3            | 13.8               | -3.5                 | 30.0              |
| 775.3    | 7250.0            | 10.0               | -0.1                 | 27.0              |
| 700.0    | 10013.1           | 3.7                | -16.0                | 22.0              |
| 640.1    | 12211.6           | -1.5               | -22.1                | 19.0              |
| 630.0    | 12790.0           | -2.2               | -23.9                | 17.0              |
| 603.8    | 13894.7           | -4.1               | -24.0                | 18.0              |
| 578.2    | 15013.2           | -6.2               | -23.9                | 23.0              |
| 520.8    | 17671.9           | -12.2              | -31.0                | 19.0              |
| 500.0    | 18691.4           | -14.8              | -33.2                | 19.0              |
| 458.3    | 20839.5           | -19.5              | -37.2                | 19.0              |
| 400.0    | 24118.1           | -26.7              | -43.3                | 19.0              |
| 357.2    | 26770.5           | -33.3              | -46.4                | 20.0              |
| 350.4    | 27214.1           | -34.2              | -46.8                | 21.0              |
| 324.5    | 28965.4           | -39.0              | -52.5                | 22.0              |
| 300.0    | 30720.4           | -43.6              |                      |                   |
| 290.3    | 30995.0           | -43.7              |                      |                   |
| 268.5    | 33147.2           | -49.6              |                      |                   |
| 256.7    | 34111.7           | -51.7              |                      |                   |
| 250.0    | 34670.4           | -51.9              |                      |                   |
| 233.9    | 36904.6           | -54.6              |                      |                   |
| 228.5    | 36581.2           | -54.5              |                      |                   |
| 212.5    | 38107.6           | -56.0              |                      |                   |
| 200.0    | 39371.3           | -58.3              |                      |                   |
| 192.1    | 40204.5           | -59.6              |                      |                   |
| 177.4    | 41344.7           | -59.8              |                      |                   |
| 175.0    | 42120.3           | -58.1              |                      |                   |
| 167.8    | 43090.0           | -57.4              |                      |                   |
| 163.4    | 43555.3           | -56.0              |                      |                   |
| 150.0    | 45153.5           | -55.0              |                      |                   |
| 143.5    | 46287.0           | -54.9              |                      |                   |
| 112.3    | 51357.3           | -63.2              |                      |                   |
| 100.0    | 53700.3           | -64.0              |                      |                   |
| 93.7     | 55013.5           | -65.0              |                      |                   |
| 90.3     | 55765.4           | -63.2              |                      |                   |
| 82.2     | 57675.0           | -62.5              |                      |                   |
| 72.1     | 58469.9           | -56.6              |                      |                   |
| 70.9     | 61000.7           | -60.4              |                      |                   |

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GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

SIGNIFICANT LEVEL DATA  
1100020204  
WHITE SANDS

TABLE 5 Cont'd

STATION ALTITUDE 5300.0 FT MSL  
26 APR 63 0900 MDT  
ASCL 651.00 100. 200

| PRESSURE GEOMETRIC<br>ALTITUDE<br>MILLIBARS MSL FEET | TEMPERATURE    |                        | REL. HUM.<br>PERCENT |
|------------------------------------------------------|----------------|------------------------|----------------------|
|                                                      | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |
| 57.1 61072.4                                         | -62.0          |                        |                      |
| 60.9 63072.2                                         | -57.0          |                        |                      |
| 59.0 68007.2                                         | -55.0          |                        |                      |
| 50.4 73537.8                                         | -53.6          |                        |                      |
| 50.7 75345.5                                         | -51.4          |                        |                      |
| 30.3 78661.7                                         | -52.2          |                        |                      |

GEOMETRIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

UPPER AIR DATA  
1140020204  
WIND SPEEDS

STATION ALTITUDE 5400.0 FEET SL  
24 APR 63 0900 MDT  
ASOS 10.0 2.4

TABLE 6

| GEOMETRIC ALTITUDE<br>FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUMIDITY<br>PERCENT | DENSITY<br>GM/CM <sup>3</sup><br>METER | SPEED OF<br>SOUND<br>M/SEC | DIRECTION<br>DEGREES (TR) | WIND DATA<br>SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|----------------------------|-----------------------|---------------------------------------------|--------------------------|----------------------------------------|----------------------------|---------------------------|-----------------------------|---------------------------|
| 3900.0                     | 872.5                 | 70.1                                        | 36.0                     | 1032.7                                 | 660.4                      | 260.0                     | 14.0                        | 1.000267                  |
| 4000.0                     | 872.2                 | 70.0                                        | 35.5                     | 1032.7                                 | 660.2                      | 260.2                     | 14.1                        | 1.000267                  |
| 4500.0                     | 850.0                 | 66.6                                        | 26.1                     | 1027.7                                 | 663.9                      | 266.6                     | 17.1                        | 1.000251                  |
| 5000.0                     | 841.5                 | 65.2                                        | 28.0                     | 1014.5                                 | 662.2                      | 271.0                     | 20.2                        | 1.000248                  |
| 5500.0                     | 820.5                 | 63.0                                        | 29.9                     | 1001.0                                 | 660.7                      | 274.2                     | 23.5                        | 1.000245                  |
| 6000.0                     | 811.6                 | 62.8                                        | 29.2                     | 986.9                                  | 659.4                      | 275.2                     | 25.6                        | 1.000240                  |
| 6500.0                     | 797.6                 | 61.7                                        | 28.3                     | 973.0                                  | 653.1                      | 274.9                     | 26.8                        | 1.000235                  |
| 7000.0                     | 782.6                 | 60.6                                        | 27.4                     | 959.3                                  | 650.0                      | 275.2                     | 27.5                        | 1.000230                  |
| 7500.0                     | 760.3                 | 59.4                                        | 26.6                     | 945.7                                  | 653.4                      | 276.4                     | 27.3                        | 1.000226                  |
| 8000.0                     | 754.2                 | 58.3                                        | 25.7                     | 932.2                                  | 654.0                      | 277.6                     | 27.1                        | 1.000221                  |
| 8500.0                     | 740.4                 | 57.2                                        | 24.7                     | 919.0                                  | 652.7                      | 277.3                     | 26.0                        | 1.000217                  |
| 9000.0                     | 726.8                 | 56.0                                        | 23.8                     | 905.9                                  | 651.3                      | 276.6                     | 24.7                        | 1.000213                  |
| 9500.0                     | 713.4                 | 54.7                                        | 22.9                     | 893.0                                  | 649.9                      | 275.9                     | 23.4                        | 1.000209                  |
| 10000.0                    | 700.3                 | 53.7                                        | 22.0                     | 880.3                                  | 648.6                      | 274.4                     | 22.0                        | 1.000205                  |
| 10500.0                    | 687.2                 | 52.5                                        | 21.3                     | 867.6                                  | 647.1                      | 272.6                     | 20.7                        | 1.000201                  |
| 11000.0                    | 674.3                 | 51.4                                        | 20.7                     | 855.1                                  | 645.7                      | 270.5                     | 19.4                        | 1.000197                  |
| 11500.0                    | 661.7                 | 50.2                                        | 20.0                     | 842.7                                  | 644.3                      | 269.1                     | 19.0                        | 1.000194                  |
| 12000.0                    | 649.3                 | 49.3                                        | 19.3                     | 830.6                                  | 642.9                      | 268.1                     | 19.2                        | 1.000191                  |
| 12500.0                    | 637.6                 | 48.0                                        | 18.0                     | 817.5                                  | 641.9                      | 267.1                     | 19.5                        | 1.000187                  |
| 13000.0                    | 624.9                 | 46.6                                        | 17.2                     | 804.1                                  | 641.0                      | 266.3                     | 21.4                        | 1.000184                  |
| 13500.0                    | 613.2                 | 45.4                                        | 17.6                     | 791.4                                  | 640.0                      | 264.1                     | 23.3                        | 1.000181                  |
| 14000.0                    | 601.3                 | 44.3                                        | 18.5                     | 778.8                                  | 638.9                      | 260.6                     | 24.2                        | 1.000178                  |
| 14500.0                    | 589.8                 | 43.2                                        | 20.7                     | 766.5                                  | 637.8                      | 256.6                     | 23.7                        | 1.000175                  |
| 15000.0                    | 578.5                 | 42.2                                        | 22.9                     | 754.4                                  | 636.7                      | 252.9                     | 23.2                        | 1.000173                  |
| 15500.0                    | 567.2                 | 41.3                                        | 22.3                     | 742.9                                  | 635.4                      | 245.6                     | 20.8                        | 1.000170                  |
| 16000.0                    | 556.2                 | 40.4                                        | 21.5                     | 731.6                                  | 634.0                      | 240.3                     | 19.4                        | 1.000167                  |
| 16500.0                    | 545.4                 | 39.6                                        | 20.8                     | 720.4                                  | 632.8                      | 237.8                     | 18.7                        | 1.000164                  |
| 17000.0                    | 534.7                 | 38.7                                        | 20.0                     | 709.5                                  | 631.3                      | 240.7                     | 19.5                        | 1.000161                  |
| 17500.0                    | 524.3                 | 37.8                                        | 19.3                     | 698.7                                  | 629.9                      | 243.1                     | 20.3                        | 1.000158                  |
| 18000.0                    | 514.0                 | 36.9                                        | 19.0                     | 688.2                                  | 628.4                      | 242.5                     | 21.4                        | 1.000156                  |
| 18500.0                    | 503.8                 | 36.0                                        | 19.0                     | 677.9                                  | 626.9                      | 242.0                     | 22.5                        | 1.000153                  |
| 19000.0                    | 493.9                 | 35.1                                        | 19.0                     | 667.4                                  | 625.4                      | 242.3                     | 23.9                        | 1.000151                  |
| 19500.0                    | 484.2                 | 34.2                                        | 19.0                     | 656.8                                  | 624.1                      | 242.5                     | 25.2                        | 1.000148                  |
| 20000.0                    | 474.2                 | 33.3                                        | 19.0                     | 646.4                                  | 622.8                      | 243.7                     | 26.3                        | 1.000146                  |
| 20500.0                    | 464.7                 | 32.4                                        | 19.0                     | 636.2                                  | 621.4                      | 245.1                     | 27.3                        | 1.000143                  |
| 21000.0                    | 455.3                 | 31.5                                        | 19.0                     | 626.0                                  | 620.1                      | 246.3                     | 28.5                        | 1.000141                  |
| 21500.0                    | 445.9                 | 30.6                                        | 19.0                     | 615.8                                  | 618.7                      | 247.2                     | 29.7                        | 1.000138                  |
| 22000.0                    | 436.8                 | 29.7                                        | 19.0                     | 605.6                                  | 617.4                      | 247.8                     | 30.5                        | 1.000136                  |
| 22500.0                    | 427.0                 | 28.8                                        | 19.0                     | 595.0                                  | 616.0                      | 247.8                     | 29.8                        | 1.000134                  |
| 23000.0                    | 417.0                 | 27.9                                        | 19.0                     | 584.3                                  | 614.7                      | 247.6                     | 28.9                        | 1.000132                  |



STATION ALTITUDE 3,990.00 FEET MSL  
26 APR. 63 0900 MDT  
ASCENSION NO. 214

UPPER AIR DATA  
1100020204  
WHITE SANDS

GEODETIC COORDINATES  
32-40043 LAT DEG  
106-37033 LONG DEG

TABLE 6 Cont'd

| GEOMETRIC ALTITUDE<br>ASL FEET | PRESSURE<br>MILLIBARS | AIR TEMPERATURE<br>DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY<br>G/M <sup>3</sup> CMIC<br>METER | SPEED OF SOUND<br>KNOTS | WIND DIRECTION<br>(DEGREES TRUE) | WIND SPEED<br>KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|---------------------------------------|-------------------|-------------------------------------------|-------------------------|----------------------------------|---------------------|---------------------|
| 23500.0                        | 419.4                 | -25.3                                 | 19.0              | 570.8                                     | 613.3                   | 246.6                            | 27.4                | 1.000129            |
| 24000.0                        | 402.0                 | -26.4                                 | 19.0              | 567.5                                     | 611.9                   | 245.7                            | 26.8                | 1.000127            |
| 24500.0                        | 385.5                 | -27.7                                 | 19.1              | 558.4                                     | 610.4                   | 244.9                            | 27.0                | 1.000125            |
| 25000.0                        | 369.2                 | -28.9                                 | 19.3              | 549.4                                     | 608.9                   | 245.1                            | 27.7                | 1.000123            |
| 25500.0                        | 352.1                 | -30.1                                 | 19.5              | 540.5                                     | 607.3                   | 245.4                            | 28.4                | 1.000121            |
| 26000.0                        | 335.1                 | -31.4                                 | 19.7              | 531.6                                     | 605.8                   | 245.1                            | 28.5                | 1.000119            |
| 26500.0                        | 318.3                 | -32.6                                 | 19.9              | 523.5                                     | 604.2                   | 245.1                            | 28.7                | 1.000117            |
| 27000.0                        | 301.7                 | -33.8                                 | 20.5              | 514.6                                     | 602.8                   | 245.5                            | 29.3                | 1.000115            |
| 27500.0                        | 285.0                 | -35.0                                 | 21.2              | 505.1                                     | 601.2                   | 245.7                            | 30.1                | 1.000113            |
| 28000.0                        | 268.5                 | -36.4                                 | 21.4              | 496.0                                     | 599.5                   | 245.8                            | 31.2                | 1.000111            |
| 28500.0                        | 252.0                 | -37.7                                 | 21.7              | 487.0                                     | 597.8                   | 245.3                            | 31.8                | 1.000109            |
| 29000.0                        | 235.5                 | -39.1                                 | 21.6**            | 478.2                                     | 596.0                   | 244.6                            | 32.3                | 1.000108            |
| 29500.0                        | 219.0                 | -40.4                                 | 15.3**            | 474.2                                     | 594.4                   | 244.5                            | 32.8                | 1.000106            |
| 30000.0                        | 202.5                 | -41.7                                 | 9.0**             | 460.3                                     | 592.7                   | 245.1                            | 33.2                | 1.000104            |
| 30500.0                        | 186.0                 | -43.0                                 | 2.0**             | 458.0                                     | 591.0                   | 248.4                            | 33.3                | 1.000102            |
| 31000.0                        | 169.5                 | -44.3                                 |                   | 449.8                                     | 590.1                   | 253.2                            | 33.7                | 1.000100            |
| 31500.0                        | 153.0                 | -45.1                                 |                   | 442.2                                     | 588.3                   | 257.9                            | 34.3                | 1.000098            |
| 32000.0                        | 136.5                 | -46.5                                 |                   | 434.9                                     | 586.6                   | 258.3                            | 34.2                | 1.000097            |
| 32500.0                        | 120.0                 | -47.8                                 |                   | 427.0                                     | 584.8                   | 256.6                            | 33.8                | 1.000095            |
| 33000.0                        | 103.5                 | -49.2                                 |                   | 420.5                                     | 583.0                   | 254.8                            | 34.5                | 1.000094            |
| 33500.0                        | 87.0                  | -50.4                                 |                   | 413.0                                     | 581.5                   | 253.3                            | 35.7                | 1.000092            |
| 34000.0                        | 70.5                  | -51.5                                 |                   | 405.5                                     | 580.1                   | 253.9                            | 39.1                | 1.000090            |
| 34500.0                        | 54.0                  | -51.8                                 |                   | 396.8                                     | 579.6                   | 254.4                            | 42.6                | 1.000088            |
| 35000.0                        | 37.5                  | -52.5                                 |                   | 388.8                                     | 578.7                   | 254.8                            | 46.2                | 1.000087            |
| 35500.0                        | 21.0                  | -53.5                                 |                   | 381.4                                     | 577.4                   | 255.2                            | 49.8                | 1.000085            |
| 36000.0                        | 4.5                   | -54.4                                 |                   | 374.1                                     | 576.2                   | 257.1                            | 51.7                | 1.000083            |
| 36500.0                        |                       | -54.5                                 |                   | 365.5                                     | 576.0                   | 258.8                            | 53.7                | 1.000081            |
| 37000.0                        |                       | -54.9                                 |                   | 357.6                                     | 575.5                   | 262.7                            | 55.6                | 1.000080            |
| 37500.0                        |                       | -55.4                                 |                   | 349.9                                     | 574.9                   | 266.6                            | 57.6                | 1.000078            |
| 38000.0                        |                       | -55.9                                 |                   | 342.5                                     | 574.2                   | 267.9                            | 59.4                | 1.000076            |
| 38500.0                        |                       | -56.7                                 |                   | 335.7                                     | 573.1                   | 268.7                            | 61.1                | 1.000075            |
| 39000.0                        |                       | -57.6                                 |                   | 329.1                                     | 571.9                   | 267.7                            | 62.3                | 1.000073            |
| 39500.0                        |                       | -58.5                                 |                   | 322.6                                     | 570.8                   | 266.5                            | 63.5                | 1.000072            |
| 40000.0                        |                       | -59.3                                 |                   | 316.0                                     | 569.7                   | 266.9                            | 64.2                | 1.000070            |
| 40500.0                        |                       | -59.6                                 |                   | 309.4                                     | 569.3                   | 268.0                            | 64.8                | 1.000069            |
| 41000.0                        |                       | -59.7                                 |                   | 301.6                                     | 569.2                   | 268.3                            | 65.0                | 1.000067            |
| 41500.0                        |                       | -59.8                                 |                   | 294.5                                     | 569.1                   | 268.1                            | 64.9                | 1.000066            |
| 42000.0                        |                       | -59.9                                 |                   | 286.2                                     | 570.3                   | 267.2                            | 64.1                | 1.000064            |
| 42500.0                        |                       | -60.8                                 |                   | 278.1                                     | 571.7                   | 265.7                            | 62.9                | 1.000062            |
| 43000.0                        |                       | -61.8                                 |                   | 270.9                                     | 572.2                   | 265.2                            | 65.9                | 1.000060            |

\*\* AT LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3,000.00 FEET ISL  
25 APR. 63 0900 MDT  
ASL 1510.00 234

UPPER AIR DATA  
1150020204  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37053 LON DEG

TABLE 6 Cont'd

| GEODETIC<br>ALTITUDE<br>ASL FEET | PRESSURE<br>MILLIBARS | AIR<br>TEMPERATURE<br>DEGREES CELSIUS | REL. HUMID.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>M/SEC | WIND DATA<br>DIRECTION<br>DEGREES (TN) | WIND<br>SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|----------------------------------|-----------------------|---------------------------------------|------------------------|------------------------------|----------------------------|----------------------------------------|------------------------|---------------------------|
| 43500.0                          | 100.8                 | -55.1                                 |                        | 263.0                        | 573.9                      | 265.1                                  | 70.7                   | 1.000039                  |
| 44000.0                          | 100.0                 | -55.8                                 |                        | 250.4                        | 574.4                      | 266.0                                  | 69.8                   | 1.000057                  |
| 44500.0                          | 100.2                 | -55.5                                 |                        | 250.0                        | 574.8                      | 267.1                                  | 68.1                   | 1.000056                  |
| 45000.0                          | 102.5                 | -55.2                                 |                        | 243.6                        | 575.1                      | 268.3                                  | 61.0                   | 1.000054                  |
| 45500.0                          | 149.0                 | -55.0                                 |                        | 237.9                        | 575.4                      | 269.5                                  | 54.7                   | 1.000053                  |
| 46000.0                          | 143.5                 | -54.9                                 |                        | 232.2                        | 575.5                      | 269.1                                  | 52.8                   | 1.000052                  |
| 46500.0                          | 142.0                 | -55.2                                 |                        | 227.1                        | 575.1                      | 268.3                                  | 51.4                   | 1.000051                  |
| 47000.0                          | 130.6                 | -56.1                                 |                        | 222.5                        | 574.0                      | 266.5                                  | 51.2                   | 1.000050                  |
| 47500.0                          | 133.3                 | -56.9                                 |                        | 216.0                        | 572.9                      | 264.8                                  | 52.3                   | 1.000049                  |
| 48000.0                          | 132.1                 | -57.7                                 |                        | 213.6                        | 571.8                      | 263.3                                  | 54.9                   | 1.000048                  |
| 48500.0                          | 128.4                 | -58.5                                 |                        | 209.3                        | 570.7                      | 262.0                                  | 57.3                   | 1.000047                  |
| 49000.0                          | 123.9                 | -59.3                                 |                        | 205.1                        | 569.7                      | 261.4                                  | 58.2                   | 1.000046                  |
| 49500.0                          | 122.0                 | -60.2                                 |                        | 200.9                        | 568.6                      | 260.8                                  | 59.1                   | 1.000045                  |
| 50000.0                          | 119.9                 | -61.0                                 |                        | 196.9                        | 567.5                      | 260.8                                  | 58.2                   | 1.000044                  |
| 50500.0                          | 117.1                 | -61.8                                 |                        | 192.9                        | 566.4                      | 261.1                                  | 56.6                   | 1.000043                  |
| 51000.0                          | 114.3                 | -62.6                                 |                        | 189.1                        | 565.3                      | 261.7                                  | 54.4                   | 1.000042                  |
| 51500.0                          | 111.5                 | -63.2                                 |                        | 185.1                        | 564.4                      | 262.9                                  | 51.3                   | 1.000041                  |
| 52000.0                          | 108.8                 | -63.4                                 |                        | 180.7                        | 564.2                      | 263.5                                  | 49.2                   | 1.000040                  |
| 52500.0                          | 106.1                 | -63.6                                 |                        | 176.4                        | 564.0                      | 263.3                                  | 48.3                   | 1.000039                  |
| 53000.0                          | 103.5                 | -63.8                                 |                        | 172.3                        | 563.7                      | 262.1                                  | 48.3                   | 1.000038                  |
| 53500.0                          | 101.0                 | -63.9                                 |                        | 168.2                        | 563.5                      | 260.3                                  | 49.0                   | 1.000037                  |
| 54000.0                          | 98.6                  | -64.2                                 |                        | 164.3                        | 563.1                      | 258.9                                  | 49.7                   | 1.000037                  |
| 54500.0                          | 96.1                  | -64.6                                 |                        | 160.0                        | 562.6                      | 257.6                                  | 50.4                   | 1.000036                  |
| 55000.0                          | 93.8                  | -65.0                                 |                        | 157.0                        | 562.1                      | 257.3                                  | 50.8                   | 1.000035                  |
| 55500.0                          | 91.5                  | -65.8                                 |                        | 152.3                        | 563.6                      | 257.1                                  | 51.0                   | 1.000034                  |
| 56000.0                          | 89.3                  | -65.9                                 |                        | 148.1                        | 564.6                      | 257.5                                  | 49.9                   | 1.000033                  |
| 56500.0                          | 87.1                  | -62.9                                 |                        | 144.3                        | 564.8                      | 258.0                                  | 48.4                   | 1.000032                  |
| 57000.0                          | 85.0                  | -62.7                                 |                        | 140.7                        | 565.1                      | 259.3                                  | 42.5                   | 1.000031                  |
| 57500.0                          | 82.0                  | -62.6                                 |                        | 137.2                        | 565.3                      | 261.4                                  | 35.0                   | 1.000031                  |
| 58000.0                          | 80.9                  | -60.1                                 |                        | 132.3                        | 568.6                      | 265.1                                  | 27.1                   | 1.000029                  |
| 58500.0                          | 79.0                  | -66.6                                 |                        | 127.1                        | 573.2                      | 272.0                                  | 19.0                   | 1.000028                  |
| 59000.0                          | 77.1                  | -57.4                                 |                        | 124.5                        | 572.2                      | 279.8                                  | 14.5                   | 1.000028                  |
| 59500.0                          | 75.3                  | -58.1                                 |                        | 122.0                        | 571.2                      | 282.5                                  | 13.5                   | 1.000027                  |
| 60000.0                          | 73.5                  | -58.9                                 |                        | 119.5                        | 570.2                      | 285.0                                  | 12.6                   | 1.000027                  |
| 60500.0                          | 71.7                  | -59.6                                 |                        | 117.0                        | 569.3                      | 280.8                                  | 13.0                   | 1.000026                  |
| 61000.0                          | 70.0                  | -60.4                                 |                        | 114.7                        | 568.3                      | 276.9                                  | 13.5                   | 1.000026                  |
| 61500.0                          | 68.3                  | -61.8                                 |                        | 112.6                        | 568.4                      | 273.1                                  | 12.6                   | 1.000025                  |
| 62000.0                          | 66.7                  | -62.4                                 |                        | 110.2                        | 565.5                      | 268.3                                  | 11.0                   | 1.000025                  |
| 62500.0                          | 65.1                  | -61.0                                 |                        | 106.9                        | 567.5                      | 262.1                                  | 9.7                    | 1.000024                  |
| 63000.0                          | 63.5                  | -59.5                                 |                        | 103.6                        | 569.4                      | 254.1                                  | 8.7                    | 1.000023                  |

STATION ALTITUDE 3000.00 FEET MS,  
26 APR. 63 0900 MDT  
ASCENSION NO. 274

UPPER AIR DATA  
1160020204  
WHITE SALES

GEODETLIC COORDINATES  
32.40003 LAT DEG  
106.57033 LONG DEG

TABLE 6 Cont'd

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CM <sup>3</sup> | SPEED OF<br>SOUND<br>M/SEC | WIND DATA<br>DIRECTION (TH)<br>SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|------------------------------------------|----------------------|-------------------------------|----------------------------|-----------------------------------------------|---------------------------|
| 03500.0                           | 62.2                  | -58.1                                    |                      | 100.4                         | 571.3                      | 245.2                                         | 1.000022                  |
| 04000.0                           | 60.5                  | -57.0                                    |                      | 97.5                          | 572.8                      | 244.5                                         | 1.000022                  |
| 04500.0                           | 59.1                  | -56.0                                    |                      | 95.2                          | 573.0                      | 243.8                                         | 1.000021                  |
| 05000.0                           | 57.7                  | -55.7                                    |                      | 92.9                          | 573.2                      | 243.6                                         | 1.000021                  |
| 05500.0                           | 56.4                  | -55.6                                    |                      | 90.6                          | 573.3                      | 250.1                                         | 1.000020                  |
| 06000.0                           | 55.2                  | -55.4                                    |                      | 88.4                          | 573.5                      | 253.6                                         | 1.000020                  |
| 06500.0                           | 53.7                  | -55.3                                    |                      | 86.3                          | 573.7                      | 256.7                                         | 1.000019                  |
| 07000.0                           | 52.5                  | -55.2                                    |                      | 84.2                          | 573.9                      | 258.7                                         | 1.000019                  |
| 07500.0                           | 51.2                  | -55.0                                    |                      | 82.2                          | 574.0                      | 259.7                                         | 1.000018                  |
| 08000.0                           | 50.0                  | -55.0                                    |                      | 80.2                          | 574.2                      | 250.1                                         | 1.000018                  |
| 08500.0                           | 48.8                  | -55.7                                    |                      | 78.3                          | 574.5                      | 247.7                                         | 1.000017                  |
| 09000.0                           | 47.7                  | -55.5                                    |                      | 76.4                          | 574.8                      | 241.6                                         | 1.000017                  |
| 09500.0                           | 46.6                  | -55.3                                    |                      | 74.5                          | 575.0                      | 237.5                                         | 1.000017                  |
| 10000.0                           | 45.5                  | -55.1                                    |                      | 72.7                          | 575.3                      | 233.5                                         | 1.000016                  |
| 10500.0                           | 44.4                  | -54.9                                    |                      | 70.9                          | 575.6                      | 226.9                                         | 1.000016                  |
| 11000.0                           | 43.4                  | -54.7                                    |                      | 69.2                          | 575.8                      | 219.3                                         | 1.000015                  |
| 11500.0                           | 42.4                  | -54.5                                    |                      | 67.5                          | 576.1                      | 212.5                                         | 1.000015                  |
| 12000.0                           | 41.4                  | -54.3                                    |                      | 65.9                          | 576.4                      | 204.4                                         | 1.000015                  |
| 12500.0                           | 40.4                  | -54.0                                    |                      | 64.3                          | 576.7                      | 200.2                                         | 1.000014                  |
| 13000.0                           | 39.5                  | -53.8                                    |                      | 62.7                          | 576.9                      | 201.0                                         | 1.000014                  |
| 13500.0                           | 38.6                  | -53.6                                    |                      | 61.2                          | 577.2                      | 202.7                                         | 1.000014                  |
| 14000.0                           | 37.7                  | -53.0                                    |                      | 59.6                          | 578.0                      | 205.4                                         | 1.000013                  |
| 14500.0                           | 36.8                  | -52.3                                    |                      | 58.0                          | 578.9                      | 207.9                                         | 1.000013                  |
| 15000.0                           | 35.9                  | -51.6                                    |                      | 56.5                          | 579.9                      | 212.3                                         | 1.000013                  |
| 15500.0                           | 35.1                  | -51.5                                    |                      | 55.2                          | 580.0                      | 216.2                                         | 1.000012                  |
| 16000.0                           | 34.3                  | -51.6                                    |                      | 53.9                          | 579.9                      | 212.2                                         | 1.000012                  |
| 16500.0                           | 33.5                  | -51.7                                    |                      | 52.7                          | 579.7                      | 200.6                                         | 1.000011                  |
| 17000.0                           | 32.7                  | -51.8                                    |                      | 51.5                          | 579.6                      |                                               | 1.000011                  |
| 17500.0                           | 32.0                  | -51.9                                    |                      | 50.4                          | 579.5                      |                                               | 1.000011                  |
| 18000.0                           | 31.2                  | -52.0                                    |                      | 49.2                          | 579.3                      |                                               | 1.000011                  |
| 18500.0                           | 30.5                  | -52.2                                    |                      | 48.1                          | 579.1                      |                                               | 1.000011                  |

STATION ALTITUDE 3000.00 FT SL  
26 APR. 63 0900 MDT  
ACQUISITION NO. 230

BAROMETER LEVELS  
11.00020204  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.57033 LONG DEG

TABLE 7

| PRESSURE  | GEOMETRICAL | TEMPERATURE<br>AIR | TEMPERATURE<br>DEWPOINT | REL. HUMIDITY<br>PERCENT | WIND DATA<br>DIRECTION<br>(DEGREES TN) | SPEED<br>KNOTS |
|-----------|-------------|--------------------|-------------------------|--------------------------|----------------------------------------|----------------|
| MILLIBARS | FEET        | DEGREES            | CENTIGRADE              |                          |                                        |                |
| 888.0     | 4718.       | 15.9               | -3.1                    | 27.                      | 268.7                                  | 18.4           |
| 895.0     | 6303.       | 11.9               | -5.6                    | 28.                      | 275.0                                  | 20.6           |
| 796.0     | 8151.       | 8.0                | -10.6                   | 25.                      | 277.7                                  | 20.9           |
| 700.0     | 10003.      | 3.7                | -16.0                   | 22.                      | 274.4                                  | 22.0           |
| 650.0     | 11960.      | -0.9               | -21.4                   | 19.                      | 268.2                                  | 19.2           |
| 601.0     | 14002.      | -4.4               | -24.6                   | 19.                      | 260.2                                  | 24.1           |
| 556.0     | 16271.      | -9.1               | -27.3                   | 21.                      | 236.6                                  | 16.9           |
| 507.0     | 18665.      | -14.8              | -33.2                   | 19.                      | 242.1                                  | 23.0           |
| 453.0     | 21253.      | -20.5              | -38.0                   | 19.                      | 246.8                                  | 29.2           |
| 403.0     | 24078.      | -26.7              | -43.3                   | 19.                      | 245.6                                  | 20.9           |
| 350.0     | 27101.      | -34.3              | -48.8                   | 21.                      | 245.7                                  | 29.6           |
| 300.0     | 30660.      | -43.6              |                         |                          | 250.5                                  | 33.4           |
| 250.0     | 34602.      | -51.9              |                         |                          | 254.5                                  | 43.7           |
| 200.0     | 39278.      | -58.3              |                         |                          | 266.8                                  | 63.1           |
| 175.0     | 42021.      | -58.1              |                         |                          | 266.9                                  | 63.9           |
| 150.0     | 45233.      | -55.0              |                         |                          | 269.3                                  | 56.3           |
| 125.0     | 49025.      | -50.6              |                         |                          | 261.2                                  | 56.4           |
| 100.0     | 53342.      | -64.0              |                         |                          | 259.7                                  | 49.2           |
| 80.0      | 58043.      | -58.3              |                         |                          | 267.3                                  | 23.7           |
| 70.0      | 60708.      | -60.4              |                         |                          | 277.1                                  | 13.5           |
| 60.0      | 63955.      | -56.9              |                         |                          | 244.3                                  | 7.7            |
| 50.0      | 67752.      | -55.9              |                         |                          | 256.7                                  | 9.8            |
| 40.0      | 72432.      | -54.0              |                         |                          | 200.4                                  | 7.5            |

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4910.00 FEET MSL  
26 APR. 63  
ASSET SIGN. NO. 11 0800 MDT

SIGNIFICANT LEVEL DATA  
1160220010  
NY 30 =

GEODETIC COORDINATES  
32.08497 LAT DEG  
106.49714 LON DEG

TABLE 8

| PRESSURE GEODETIC<br>ALTITUDE<br>MILLIBARS AGL FEET | TEMPERATURE<br>AIR DEWPOINT<br>DEGREES CENTIGRADE | REL. HUM.<br>PERCENT |
|-----------------------------------------------------|---------------------------------------------------|----------------------|
| 670.0                                               | 17.2                                              | -1.0                 |
| 650.0                                               | 15.6                                              | -3.8                 |
| 592.4                                               | 11.3                                              | -5.2                 |
| 762.2                                               | 6.2                                               | -0.7                 |
| 725.8                                               | 4.2                                               | -9.5                 |
| 700.0                                               | 2.9                                               | -14.2                |
| 674.8                                               | 2.0                                               | -10.7                |
| 647.4                                               | .9                                                | -22.8                |
| 594.2                                               | -5.7                                              | -23.6                |
| 532.2                                               | -11.6                                             | -29.0                |
| 500.0                                               | -15.6                                             | -32.4                |
| 427.2                                               | -25.2                                             | -40.2                |
| 400.0                                               | -27.6                                             | -44.0                |
| 360.0                                               | -31.4                                             | -40.8                |
| 334.0                                               | -36.8                                             | -51.0                |
| 323.0                                               | -39.2                                             | -53.1                |
| 300.0                                               | -44.0                                             |                      |
| 282.8                                               | -47.3                                             |                      |
| 260.8                                               | -50.3                                             |                      |
| 250.0                                               | -52.5                                             |                      |
| 236.8                                               | -54.5                                             |                      |
| 219.2                                               | -56.4                                             |                      |
| 214.0                                               | -56.3                                             |                      |
| 200.0                                               | -58.4                                             |                      |
| 188.4                                               | -60.2                                             |                      |
| 169.0                                               | -58.1                                             |                      |
| 150.8                                               | -57.2                                             |                      |
| 150.0                                               | -59.1                                             |                      |
| 142.4                                               | -60.9                                             |                      |
| 117.8                                               | -63.4                                             |                      |
| 106.2                                               | -62.2                                             |                      |
| 100.0                                               | -62.0                                             |                      |
| 79.0                                                | -59.8                                             |                      |
| 77.5                                                | -59.8                                             |                      |
| 76.0                                                | -61.5                                             |                      |
| 70.0                                                | -62.6                                             |                      |
| 60.6                                                | -56.9                                             |                      |
| 50.0                                                | -57.4                                             |                      |
| 50.0                                                | -56.2                                             |                      |
| 44.6                                                |                                                   |                      |

GEODETIC COORDINATES  
32.88497 LAT (EG)  
106.49714 LONG (EG)

STATIONARY LEVEL DATA  
1100220010  
FW.30

TABLE 8 Cont'd

STATION ALTITUDE 4,10.00 FEET MSL  
26 APR. 13 0800 MDT  
ASCESSION NO. 10

| PRESSURE GEOMETRIC<br>ALTITUDE<br>FILLIARS, MSL FEET | TEMPERATURE |                                | REL. HUM.<br>PERCENT |
|------------------------------------------------------|-------------|--------------------------------|----------------------|
|                                                      | AIR         | DEWPOINT<br>DEGREES CENTIGRADE |                      |
| 42.2                                                 | 71.75.9     | -54.6                          |                      |
| 37.0                                                 | 74.149.5    | -56.0                          |                      |
| 34.6                                                 | 75.569.1    | -53.1                          |                      |
| 30.0                                                 | 78.10.9     | -52.0                          |                      |
| 25.4                                                 | 82.160.0    | -52.5                          |                      |
| 20.0                                                 | 87.52.0     | -46.1                          |                      |
| 14.2                                                 | 94.50.3     | -42.7                          |                      |
| 12.2                                                 | 98.79.6     | -38.0                          |                      |

TABLED ALTITUDE 4010.0 F LT 5L  
26 APR 55  
ACCELERATION 0.0 0800 MDT

UNDER AIR DATA  
116022010  
IN 30

TABLE 9

GEODETIC COORDINATES  
32.00397 LAT DEG  
106.49714 LONG DEG

| GEOMETRIC ALTITUDE<br>FSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES<br>CENTIGRADE | REL. HUMID.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KIOTS | DIRECTION<br>DEGREES (TH) | WIND DATA<br>SPEED<br>KIOTS | INJFX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|------------------------------------------|------------------------|------------------------------|----------------------------|---------------------------|-----------------------------|---------------------------|
| 4010.0                         | 870.0                 | 17.2                                     | 27.0                   | 1042.2                       | 664.0                      | 300.0                     | 4.1                         | 1.000208                  |
| 4500.0                         | 855.7                 | 16.0                                     | 26.8                   | 1020.5                       | 663.2                      | 200.3                     | 6.0                         | 1.000251                  |
| 5000.0                         | 840.4                 | 14.7                                     | 27.0                   | 1014.8                       | 661.7                      | 270.6                     | 8.4                         | 1.000207                  |
| 5500.0                         | 825.3                 | 13.4                                     | 28.6                   | 1001.3                       | 660.1                      | 205.6                     | 11.2                        | 1.000243                  |
| 6000.0                         | 810.5                 | 12.0                                     | 30.1                   | 980.0                        | 658.0                      | 204.5                     | 16.2                        | 1.000240                  |
| 6500.0                         | 795.9                 | 10.8                                     | 31.5                   | 974.5                        | 657.1                      | 205.4                     | 20.5                        | 1.000236                  |
| 7000.0                         | 781.4                 | 9.7                                      | 32.5                   | 960.6                        | 655.8                      | 200.0                     | 22.3                        | 1.000213                  |
| 7500.0                         | 767.2                 | 8.6                                      | 33.6                   | 946.9                        | 654.5                      | 276.0                     | 18.8                        | 1.000229                  |
| 8000.0                         | 753.2                 | 7.3                                      | 34.4                   | 933.9                        | 653.0                      | 202.5                     | 16.0                        | 1.000225                  |
| 8500.0                         | 739.3                 | 5.9                                      | 35.1                   | 921.4                        | 651.3                      | 287.2                     | 14.7                        | 1.000221                  |
| 9000.0                         | 725.7                 | 4.5                                      | 35.8                   | 909.1                        | 649.7                      | 282.1                     | 18.3                        | 1.000217                  |
| 9500.0                         | 712.2                 | 3.6                                      | 31.9                   | 895.3                        | 648.5                      | 273.1                     | 21.9                        | 1.000212                  |
| 10000.0                        | 699.0                 | 2.9                                      | 26.7                   | 881.2                        | 647.0                      | 274.0                     | 25.3                        | 1.000206                  |
| 10500.0                        | 685.0                 | 2.7                                      | 22.6                   | 865.4                        | 647.4                      | 270.9                     | 28.3                        | 1.000201                  |
| 11000.0                        | 673.2                 | 2.5                                      | 18.8                   | 850.1                        | 647.1                      | 203.7                     | 30.3                        | 1.000198                  |
| 11500.0                        | 660.6                 | 1.7                                      | 16.9                   | 830.6                        | 646.1                      | 200.6                     | 32.1                        | 1.000192                  |
| 12000.0                        | 648.2                 | 1.0                                      | 15.1                   | 823.4                        | 645.2                      | 264.0                     | 33.1                        | 1.000188                  |
| 12500.0                        | 635.9                 | -2                                       | 15.7                   | 811.3                        | 643.8                      | 201.6                     | 34.2                        | 1.000186                  |
| 13000.0                        | 623.9                 | -1.5                                     | 16.4                   | 799.6                        | 642.3                      | 259.1                     | 33.0                        | 1.000183                  |
| 13500.0                        | 612.0                 | -2.7                                     | 17.2                   | 788.0                        | 640.8                      | 256.4                     | 31.5                        | 1.000180                  |
| 14000.0                        | 600.4                 | -3.9                                     | 17.9                   | 776.5                        | 639.4                      | 254.4                     | 30.6                        | 1.000177                  |
| 14500.0                        | 589.0                 | -5.2                                     | 18.7                   | 765.3                        | 637.9                      | 252.1                     | 29.9                        | 1.000175                  |
| 15000.0                        | 577.7                 | -5.4                                     | 19.4                   | 754.1                        | 636.4                      | 248.5                     | 29.3                        | 1.000172                  |
| 15500.0                        | 566.4                 | -7.7                                     | 20.0                   | 742.9                        | 634.9                      | 244.2                     | 27.0                        | 1.000169                  |
| 16000.0                        | 555.4                 | -8.9                                     | 20.6                   | 731.9                        | 633.4                      | 239.4                     | 24.7                        | 1.000167                  |
| 16500.0                        | 544.6                 | -10.1                                    | 21.3                   | 721.1                        | 631.9                      | 235.6                     | 23.7                        | 1.000164                  |
| 17000.0                        | 534.0                 | -11.4                                    | 21.9                   | 710.4                        | 630.4                      | 232.1                     | 23.0                        | 1.000161                  |
| 17500.0                        | 523.5                 | -12.7                                    | 22.0                   | 699.8                        | 628.9                      | 231.4                     | 23.3                        | 1.000159                  |
| 18000.0                        | 513.1                 | -13.9                                    | 22.0                   | 689.4                        | 627.3                      | 230.8                     | 23.6                        | 1.000156                  |
| 18500.0                        | 503.1                 | -15.2                                    | 22.0                   | 679.1                        | 625.8                      | 232.2                     | 23.3                        | 1.000154                  |
| 19000.0                        | 492.8                 | -16.5                                    | 22.1                   | 668.7                        | 624.2                      | 233.7                     | 23.0                        | 1.000151                  |
| 19500.0                        | 482.8                 | -17.7                                    | 22.2                   | 658.4                        | 622.7                      | 235.3                     | 23.2                        | 1.000149                  |
| 20000.0                        | 473.0                 | -19.0                                    | 22.4                   | 648.2                        | 621.2                      | 237.0                     | 24.0                        | 1.000146                  |
| 20500.0                        | 463.4                 | -20.2                                    | 22.5                   | 638.2                        | 619.6                      | 238.6                     | 24.7                        | 1.000144                  |
| 21000.0                        | 454.0                 | -21.5                                    | 22.6                   | 628.3                        | 618.1                      | 239.5                     | 27.0                        | 1.000141                  |
| 21500.0                        | 444.8                 | -22.7                                    | 22.7                   | 618.6                        | 616.5                      | 240.3                     | 29.3                        | 1.000139                  |
| 22000.0                        | 435.7                 | -24.0                                    | 22.9                   | 609.1                        | 615.0                      | 241.3                     | 32.7                        | 1.000137                  |
| 22500.0                        | 426.7                 | -25.2                                    | 23.0                   | 599.7                        | 613.5                      | 242.2                     | 36.7                        | 1.000135                  |
| 23000.0                        | 418.0                 | -26.8                                    | 21.7                   | 589.1                        | 612.5                      | 242.3                     | 39.8                        | 1.000132                  |
| 23500.0                        | 409.3                 | -28.8                                    | 20.4                   | 578.6                        | 611.5                      | 242.0                     | 42.2                        | 1.000130                  |

GEODETIC COORDINATES  
32.88497 LAT DEG  
106.49714 LONG DEG

UPPER AIR DATA  
110626010  
10M 30

TABLE 9 Cont'd

STATION ALTITUDE 10000 FEET SL  
26 APR 63 0800 MDT  
ASCENDING NO. 13

| GEOMETRIC ALTITUDE<br>NSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES CENTIGRADE | TEMPERATURE<br>DEWPOINT<br>DEGREES CENTIGRADE | REL. HUMID.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | DIRECTION,<br>DEGREES (TN) | WIND DATA<br>SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|---------------------------------------|-----------------------------------------------|------------------------|------------------------------|----------------------------|----------------------------|-----------------------------|---------------------------|
| 24000.0                        | 400.8                 | -27.5                                 | -43.9                                         | 19.1                   | 560.3                        | 610.0                      | 238.5                      | 37.2                        | 1.000127                  |
| 24500.0                        | 392.3                 | -28.5                                 | -44.7                                         | 19.2                   | 558.6                        | 609.4                      | 240.3                      | 36.9                        | 1.000125                  |
| 25000.0                        | 384.1                 | -29.5                                 | -45.4                                         | 19.5                   | 549.1                        | 606.1                      | 244.6                      | 37.5                        | 1.000123                  |
| 25500.0                        | 376.0                 | -30.5                                 | -46.2                                         | 19.8                   | 539.6                        | 606.9                      | 244.0                      | 28.2                        | 1.000121                  |
| 26000.0                        | 368.7                 | -31.5                                 | -46.9                                         | 20.0                   | 530.6                        | 605.6                      | 243.0                      | 29.4                        | 1.000119                  |
| 26500.0                        | 360.1                 | -32.7                                 | -47.8                                         | 20.2                   | 521.8                        | 604.1                      | 243.2                      | 33.1                        | 1.000117                  |
| 27000.0                        | 352.0                 | -33.9                                 | -48.7                                         | 20.5                   | 513.1                        | 602.0                      | 244.4                      | 34.1                        | 1.000115                  |
| 27500.0                        | 344.0                 | -35.1                                 | -49.7                                         | 20.7                   | 504.5                        | 601.1                      | 247.5                      | 32.8                        | 1.000113                  |
| 28000.0                        | 337.4                 | -36.2                                 | -50.6                                         | 20.9                   | 496.2                        | 599.6                      | 250.1                      | 36.0                        | 1.000111                  |
| 28500.0                        | 330.1                 | -37.6                                 | -51.7                                         | 21.0                   | 488.3                        | 597.9                      | 250.1                      | 37.1                        | 1.000109                  |
| 29000.0                        | 322.9                 | -39.2                                 | -53.1                                         | 20.0**                 | 480.9                        | 595.9                      | 248.7                      | 37.0                        | 1.000107                  |
| 29500.0                        | 315.8                 | -40.7                                 | -57.3                                         | 14.6**                 | 473.2                        | 594.0                      | 248.0                      | 36.7                        | 1.000106                  |
| 30000.0                        | 308.8                 | -42.1                                 | -62.9                                         | 8.2**                  | 465.6                        | 592.1                      | 247.4                      | 37.0                        | 1.000104                  |
| 30500.0                        | 302.0                 | -43.6                                 | -74.3                                         | 1.8**                  | 458.2                        | 590.3                      | 247.4                      | 38.6                        | 1.000102                  |
| 31000.0                        | 295.2                 | -44.9                                 |                                               |                        | 450.5                        | 588.6                      | 248.1                      | 40.0                        | 1.000100                  |
| 31500.0                        | 288.5                 | -46.2                                 |                                               |                        | 442.6                        | 586.9                      | 249.3                      | 41.3                        | 1.000099                  |
| 32000.0                        | 282.0                 | -47.4                                 |                                               |                        | 435.2                        | 585.3                      | 251.4                      | 41.8                        | 1.000097                  |
| 32500.0                        | 275.6                 | -48.5                                 |                                               |                        | 427.3                        | 583.9                      | 253.9                      | 41.9                        | 1.000095                  |
| 33000.0                        | 269.3                 | -49.5                                 |                                               |                        | 419.5                        | 582.6                      | 254.5                      | 44.0                        | 1.000093                  |
| 33500.0                        | 263.1                 | -50.5                                 |                                               |                        | 411.8                        | 581.2                      | 254.6                      | 46.6                        | 1.000092                  |
| 34000.0                        | 257.0                 | -51.4                                 |                                               |                        | 403.9                        | 580.1                      | 253.8                      | 50.1                        | 1.000090                  |
| 34500.0                        | 251.1                 | -52.3                                 |                                               |                        | 396.1                        | 578.9                      | 253.9                      | 52.1                        | 1.000088                  |
| 35000.0                        | 245.2                 | -53.2                                 |                                               |                        | 388.4                        | 577.8                      | 254.4                      | 53.7                        | 1.000087                  |
| 35500.0                        | 239.5                 | -54.1                                 |                                               |                        | 380.9                        | 576.6                      | 254.7                      | 57.3                        | 1.000085                  |
| 36000.0                        | 233.9                 | -54.9                                 |                                               |                        | 373.2                        | 575.7                      | 255.3                      | 59.9                        | 1.000083                  |
| 36500.0                        | 228.4                 | -55.4                                 |                                               |                        | 365.4                        | 574.9                      | 256.3                      | 61.3                        | 1.000081                  |
| 37000.0                        | 222.8                 | -56.0                                 |                                               |                        | 357.8                        | 574.1                      | 257.8                      | 62.3                        | 1.000080                  |
| 37500.0                        | 217.8                 | -56.4                                 |                                               |                        | 350.0                        | 573.6                      | 259.8                      | 63.1                        | 1.000078                  |
| 38000.0                        | 212.6                 | -56.5                                 |                                               |                        | 341.9                        | 573.4                      | 261.1                      | 65.2                        | 1.000076                  |
| 38500.0                        | 207.6                 | -57.2                                 |                                               |                        | 333.0                        | 572.4                      | 262.2                      | 67.6                        | 1.000075                  |
| 39000.0                        | 202.7                 | -58.0                                 |                                               |                        | 325.1                        | 571.4                      | 262.8                      | 68.9                        | 1.000073                  |
| 39500.0                        | 197.8                 | -58.7                                 |                                               |                        | 321.4                        | 570.5                      | 263.2                      | 70.1                        | 1.000072                  |
| 40000.0                        | 193.1                 | -59.5                                 |                                               |                        | 314.8                        | 569.5                      | 264.4                      | 69.4                        | 1.000070                  |
| 40500.0                        | 188.5                 | -60.2                                 |                                               |                        | 308.3                        | 568.5                      | 265.7                      | 68.3                        | 1.000069                  |
| 41000.0                        | 184.0                 | -60.7                                 |                                               |                        | 300.3                        | 569.1                      | 266.9                      | 68.0                        | 1.000067                  |
| 41500.0                        | 179.6                 | -61.3                                 |                                               |                        | 292.5                        | 569.7                      | 267.9                      | 68.1                        | 1.000065                  |
| 42000.0                        | 175.3                 | -61.8                                 |                                               |                        | 284.9                        | 570.4                      | 267.9                      | 69.9                        | 1.000063                  |
| 42500.0                        | 171.1                 | -62.3                                 |                                               |                        | 277.5                        | 571.0                      | 267.8                      | 71.6                        | 1.000062                  |
| 43000.0                        | 167.0                 | -62.9                                 |                                               |                        | 270.3                        | 571.6                      | 267.6                      | 73.4                        | 1.000060                  |
| 43500.0                        | 163.7                 | -63.5                                 |                                               |                        | 263.4                        | 572.1                      | 267.0                      | 75.0                        | 1.000059                  |

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.



STATION ALTITUDE 4510.00 F ET MSL  
24 APR. 73 0800 MDT  
ASTORIA, O. 1

UPPER AIR DATA  
1100220010  
NW 30

GEOGETIC COORDINATES  
32.58497 LAT LLG  
106.49714 LONG DEG

TABLE 9 Cont'd

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES<br>CELSIUS | REL. HUM.<br>PERCENT | DENSITY<br>GM/CM <sup>3</sup><br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION<br>(DEGREES TRU) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|---------------------------------------|----------------------|----------------------------------------|----------------------------|-----------------------------------------|----------------|---------------------------|
| 44000.0                        | 159.2                 | -57.2                                 |                      | 250.0                                  | 572.5                      | 206.4                                   | 76.6           | 1.000057                  |
| 44100.0                        | 159.4                 | -57.1                                 |                      | 250.6                                  | 572.6                      | 206.1                                   | 77.1           | 1.000056                  |
| 44200.0                        | 151.7                 | -57.0                                 |                      | 244.6                                  | 572.7                      | 205.8                                   | 78.0           | 1.000054                  |
| 44300.0                        | 140.1                 | -57.5                                 |                      | 239.3                                  | 572.1                      | 205.8                                   | 80.0           | 1.000053                  |
| 44400.0                        | 140.6                 | -58.5                                 |                      | 234.7                                  | 570.6                      | 205.4                                   | 83.0           | 1.000052                  |
| 44500.0                        | 141.2                 | -59.2                                 |                      | 229.0                                  | 569.9                      | 204.6                                   | 86.9           | 1.000051                  |
| 44600.0                        | 137.9                 | -59.4                                 |                      | 224.5                                  | 569.0                      | 203.8                                   | 88.5           | 1.000050                  |
| 44700.0                        | 134.5                 | -59.6                                 |                      | 219.4                                  | 569.2                      | 202.9                                   | 88.5           | 1.000049                  |
| 44800.0                        | 131.2                 | -59.9                                 |                      | 214.4                                  | 568.9                      | 202.1                                   | 88.2           | 1.000048                  |
| 44900.0                        | 120.1                 | -70.1                                 |                      | 209.4                                  | 568.6                      | 201.4                                   | 84.8           | 1.000047                  |
| 449000.6                       | 125.0                 | -60.3                                 |                      | 204.6                                  | 568.3                      | 200.6                                   | 81.4           | 1.000046                  |
| 44950.0                        | 122.0                 | -60.6                                 |                      | 199.9                                  | 568.0                      | 200.0                                   | 78.2           | 1.000045                  |
| 50000.0                        | 119.1                 | -60.8                                 |                      | 195.4                                  | 567.7                      | 209.5                                   | 75.0           | 1.000044                  |
| 50500.0                        | 110.2                 | -61.2                                 |                      | 191.0                                  | 567.1                      | 209.2                                   | 72.1           | 1.000043                  |
| 51000.0                        | 113.4                 | -61.8                                 |                      | 186.9                                  | 566.3                      | 209.0                                   | 69.5           | 1.000042                  |
| 51500.0                        | 110.6                 | -62.4                                 |                      | 182.9                                  | 565.5                      | 209.1                                   | 66.4           | 1.000041                  |
| 52000.0                        | 100.0                 | -63.0                                 |                      | 179.0                                  | 564.8                      | 209.5                                   | 63.0           | 1.000040                  |
| 52500.0                        | 105.3                 | -63.2                                 |                      | 174.0                                  | 564.4                      | 200.4                                   | 60.4           | 1.000039                  |
| 53000.0                        | 102.3                 | -62.7                                 |                      | 170.2                                  | 563.1                      | 201.8                                   | 58.7           | 1.000038                  |
| 53500.0                        | 100.3                 | -62.3                                 |                      | 165.7                                  | 563.8                      | 203.1                                   | 58.2           | 1.000037                  |
| 54000.0                        | 97.0                  | -62.3                                 |                      | 161.0                                  | 563.0                      | 204.2                                   | 58.8           | 1.000036                  |
| 54500.0                        | 95.5                  | -62.3                                 |                      | 157.8                                  | 563.7                      | 205.0                                   | 59.4           | 1.000035                  |
| 55000.0                        | 93.2                  | -62.4                                 |                      | 154.0                                  | 563.0                      | 205.3                                   | 60.2           | 1.000034                  |
| 55500.0                        | 90.0                  | -62.4                                 |                      | 150.3                                  | 563.5                      | 205.5                                   | 60.8           | 1.000033                  |
| 56000.0                        | 80.7                  | -62.5                                 |                      | 140.7                                  | 563.4                      | 205.8                                   | 60.4           | 1.000033                  |
| 56500.0                        | 80.6                  | -62.6                                 |                      | 143.2                                  | 563.3                      | 206.1                                   | 60.1           | 1.000032                  |
| 57000.0                        | 84.5                  | -62.6                                 |                      | 139.8                                  | 563.3                      | 206.7                                   | 57.5           | 1.000031                  |
| 57500.0                        | 82.4                  | -62.7                                 |                      | 136.4                                  | 563.2                      | 207.5                                   | 54.7           | 1.000030                  |
| 58000.0                        | 80.4                  | -62.8                                 |                      | 133.1                                  | 563.1                      | 208.5                                   | 49.6           | 1.000030                  |
| 58500.0                        | 70.5                  | -61.7                                 |                      | 129.3                                  | 566.5                      | 270.1                                   | 42.3           | 1.000029                  |
| 59000.0                        | 70.6                  | -59.8                                 |                      | 125.0                                  | 569.0                      | 272.4                                   | 34.9           | 1.000028                  |
| 59500.0                        | 74.7                  | -60.1                                 |                      | 122.2                                  | 568.0                      | 273.8                                   | 26.9           | 1.000027                  |
| 60000.0                        | 72.9                  | -60.7                                 |                      | 119.6                                  | 567.9                      | 276.3                                   | 19.0           | 1.000027                  |
| 60500.0                        | 71.2                  | -61.2                                 |                      | 117.0                                  | 567.2                      | 274.6                                   | 13.9           | 1.000026                  |
| 61000.0                        | 69.5                  | -61.7                                 |                      | 114.4                                  | 566.5                      | 205.5                                   | 11.2           | 1.000025                  |
| 61500.0                        | 67.3                  | -62.2                                 |                      | 112.0                                  | 565.8                      | 202.5                                   | 9.3            | 1.000025                  |
| 62000.0                        | 60.2                  | -62.3                                 |                      | 109.3                                  | 563.7                      | 243.0                                   | 9.7            | 1.000024                  |
| 62500.0                        | 64.6                  | -61.3                                 |                      | 100.2                                  | 567.0                      | 234.4                                   | 10.2           | 1.000024                  |
| 63000.0                        | 63.0                  | -70.3                                 |                      | 103.2                                  | 568.3                      | 232.1                                   | 8.7            | 1.000023                  |
| 63500.0                        | 61.5                  | -49.3                                 |                      | 100.2                                  | 569.7                      | 229.6                                   | 6.9            | 1.000022                  |

STATION ALTITUDE 4-10-00 FEET MS,  
26 APR. 63 0800 MDT  
ASCLSION NO. 1

UNPLD AIR DATA  
1100220010  
NW 30

GEODETLIC COORDINATES  
12.08477 LAT DEG  
106.49714 LONG DEG

TABLE 9 Cont'd

| GEOMETRIC ALTITUDE<br>FSL FEET | PRESSURE | TEMPERATURE<br>AIR | RELATIVE HUMIDITY<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION<br>DEGREES (T) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|----------|--------------------|------------------------------|------------------------------|----------------------------|---------------------------------------|----------------|---------------------------|
| 64000.0                        | 60.0     | -58.3              |                              | 97.4                         | 571.0                      | 220.6                                 | 4.5            | 1.000022                  |
| 64500.0                        | 59.6     | -57.3              |                              | 94.0                         | 572.3                      | 182.7                                 | 2.2            | 1.000021                  |
| 65000.0                        | 59.2     | -56.9              |                              | 92.2                         | 572.8                      | 116.9                                 | 2.9            | 1.000021                  |
| 65500.0                        | 58.9     | -57.0              |                              | 90.0                         | 572.7                      | 102.1                                 | 5.0            | 1.000020                  |
| 66000.0                        | 58.5     | -57.1              |                              | 87.9                         | 572.6                      | 96.7                                  | 7.2            | 1.000020                  |
| 66500.0                        | 58.3     | -57.2              |                              | 85.9                         | 572.5                      | 100.7                                 | 6.8            | 1.000019                  |
| 67000.0                        | 58.0     | -57.3              |                              | 83.9                         | 572.4                      | 109.2                                 | 6.4            | 1.000019                  |
| 67500.0                        | 57.8     | -57.3              |                              | 81.9                         | 572.3                      | 119.7                                 | 4.7            | 1.000018                  |
| 68000.0                        | 57.6     | -57.3              |                              | 80.0                         | 572.4                      | 156.6                                 | 3.4            | 1.000018                  |
| 68500.0                        | 57.4     | -57.1              |                              | 78.0                         | 572.7                      | 193.3                                 | 3.9            | 1.000017                  |
| 69000.0                        | 57.3     | -56.8              |                              | 76.1                         | 573.0                      | 206.7                                 | 4.8            | 1.000017                  |
| 69500.0                        | 57.1     | -56.6              |                              | 74.2                         | 573.3                      | 215.5                                 | 5.8            | 1.000017                  |
| 70000.0                        | 56.9     | -56.3              |                              | 72.4                         | 573.7                      | 209.8                                 | 5.6            | 1.000016                  |
| 70500.0                        | 56.7     | -55.8              |                              | 70.5                         | 574.3                      | 203.7                                 | 5.4            | 1.000016                  |
| 71000.0                        | 56.5     | -55.1              |                              | 68.6                         | 575.3                      | 196.4                                 | 5.6            | 1.000015                  |
| 71500.0                        | 56.3     | -54.7              |                              | 66.9                         | 575.8                      | 189.7                                 | 6.1            | 1.000015                  |
| 72000.0                        | 56.1     | -54.9              |                              | 65.4                         | 575.5                      | 182.4                                 | 6.6            | 1.000015                  |
| 72500.0                        | 55.9     | -55.2              |                              | 63.9                         | 575.2                      | 172.2                                 | 7.2            | 1.000014                  |
| 73000.0                        | 55.7     | -55.4              |                              | 62.5                         | 574.9                      | 163.7                                 | 8.0            | 1.000014                  |
| 73500.0                        | 55.5     | -55.7              |                              | 61.1                         | 574.5                      | 157.0                                 | 7.9            | 1.000014                  |
| 74000.0                        | 55.3     | -55.9              |                              | 59.8                         | 574.2                      | 150.1                                 | 7.7            | 1.000013                  |
| 74500.0                        | 55.1     | -55.3              |                              | 58.2                         | 575.0                      | 148.3                                 | 7.1            | 1.000013                  |
| 75000.0                        | 54.9     | -54.3              |                              | 56.6                         | 576.4                      | 156.7                                 | 5.9            | 1.000013                  |
| 75500.0                        | 54.7     | -53.2              |                              | 55.0                         | 577.7                      | 169.1                                 | 4.9            | 1.000012                  |
| 76000.0                        | 54.5     | -53.1              |                              | 53.7                         | 577.9                      | 189.8                                 | 4.5            | 1.000012                  |
| 76500.0                        | 54.3     | -53.0              |                              | 52.4                         | 578.0                      | 210.9                                 | 4.8            | 1.000012                  |
| 77000.0                        | 54.1     | -53.0              |                              | 51.2                         | 578.0                      | 229.7                                 | 5.4            | 1.000011                  |
| 77500.0                        | 53.9     | -53.0              |                              | 50.0                         | 578.1                      | 235.7                                 | 5.0            | 1.000011                  |
| 78000.0                        | 53.7     | -52.9              |                              | 48.8                         | 578.1                      | 244.0                                 | 6.5            | 1.000011                  |
| 78500.0                        | 53.5     | -52.9              |                              | 47.7                         | 578.2                      | 253.9                                 | 7.1            | 1.000011                  |
| 79000.0                        | 53.3     | -52.9              |                              | 46.6                         | 578.2                      | 262.2                                 | 7.8            | 1.000010                  |
| 79500.0                        | 53.1     | -52.8              |                              | 45.5                         | 578.3                      | 269.9                                 | 8.5            | 1.000010                  |
| 80000.0                        | 52.9     | -52.7              |                              | 44.4                         | 578.4                      | 277.5                                 | 9.2            | 1.000010                  |
| 80500.0                        | 52.7     | -52.7              |                              | 43.4                         | 578.4                      | 284.0                                 | 10.0           | 1.000010                  |
| 81000.0                        | 52.5     | -52.6              |                              | 42.4                         | 578.5                      | 285.7                                 | 10.3           | 1.000009                  |
| 81500.0                        | 52.3     | -52.6              |                              | 41.4                         | 578.6                      | 286.9                                 | 10.7           | 1.000009                  |
| 82000.0                        | 52.1     | -52.5              |                              | 40.4                         | 578.7                      | 287.5                                 | 10.9           | 1.000009                  |
| 82500.0                        | 51.9     | -52.1              |                              | 39.4                         | 579.2                      | 288.8                                 | 10.7           | 1.000009                  |
| 83000.0                        | 51.7     | -51.5              |                              | 38.4                         | 580.0                      | 289.0                                 | 10.6           | 1.000009                  |
| 83500.0                        | 51.5     | -50.9              |                              | 37.4                         | 580.8                      | 287.7                                 | 9.9            | 1.000008                  |

STATION ALTITUDE 4-10-000 FEET MSL  
25 APR 63 0800 MDT  
ASL 51.00. 10

UPPER AIR DATA  
1100220010  
NW 30

GEODETIC COORDINATES  
32-44497 LAT DEG  
106-49714 LONG DEG

TABLE 9 Cont'd

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES CELSIUS | REL. HUM.<br>PERCENT | DENSITY<br>GM/CM <sup>3</sup><br>METER | SPEED<br>KNOTS | WIND DIRECTION<br>DEGREES (TN) | WIND DATA<br>SPEED<br>KNOTS | INDEX<br>OR<br>REFRACTION |
|-----------------------------------|-----------------------|---------------------------------------|----------------------|----------------------------------------|----------------|--------------------------------|-----------------------------|---------------------------|
| 84000.0                           | 23.3                  | -50.2                                 |                      | 30.5                                   | 581.7          | 291.2                          | 9.0                         | 1.000004                  |
| 85000.0                           | 22.8                  | -49.6                                 |                      | 35.5                                   | 582.5          | 295.3                          | 8.1                         | 1.000008                  |
| 86000.0                           | 22.3                  | -49.0                                 |                      | 34.6                                   | 583.3          | 294.2                          | 8.6                         | 1.000008                  |
| 87000.0                           | 21.8                  | -48.4                                 |                      | 33.6                                   | 584.1          | 293.2                          | 9.0                         | 1.000004                  |
| 88000.0                           | 21.3                  | -47.8                                 |                      | 32.9                                   | 584.9          | 293.7                          | 8.7                         | 1.000007                  |
| 89000.0                           | 20.8                  | -47.2                                 |                      | 32.1                                   | 585.7          | 296.8                          | 7.4                         | 1.000007                  |
| 90000.0                           | 20.3                  | -46.5                                 |                      | 31.2                                   | 586.5          | 301.3                          | 6.1                         | 1.000007                  |
| 91000.0                           | 19.8                  | -46.0                                 |                      | 30.5                                   | 587.1          | 323.9                          | 3.9                         | 1.000007                  |
| 92000.0                           | 19.3                  | -45.8                                 |                      | 29.8                                   | 587.4          | 19.3                           | 3.3                         | 1.000007                  |
| 93000.0                           | 18.8                  | -45.6                                 |                      | 29.1                                   | 587.7          | 52.2                           | 4.9                         | 1.000006                  |
| 94000.0                           | 18.3                  | -45.4                                 |                      | 28.4                                   | 588.0          | 18.4                           | 2.0                         | 1.000006                  |
| 95000.0                           | 17.8                  | -45.1                                 |                      | 27.7                                   | 588.3          | 285.3                          | 2.7                         | 1.000006                  |
| 96000.0                           | 17.3                  | -44.9                                 |                      | 27.1                                   | 588.6          | 265.9                          | 6.0                         | 1.000006                  |
| 97000.0                           | 16.8                  | -44.7                                 |                      | 26.5                                   | 589.0          | 201.0                          | 10.0                        | 1.000006                  |
| 98000.0                           | 16.3                  | -44.5                                 |                      | 25.8                                   | 589.1          | 258.9                          | 14.2                        | 1.000006                  |
| 99000.0                           | 15.8                  | -44.2                                 |                      | 25.2                                   | 589.4          | 257.7                          | 18.3                        | 1.000006                  |
| 100000.0                          | 15.3                  | -44.0                                 |                      | 24.7                                   | 589.7          | 255.1                          | 17.7                        | 1.000005                  |
| 101000.0                          | 14.8                  | -43.8                                 |                      | 24.1                                   | 590.0          | 252.2                          | 17.0                        | 1.000005                  |
| 102000.0                          | 14.3                  | -43.6                                 |                      | 23.5                                   | 590.3          | 249.2                          | 16.4                        | 1.000005                  |
| 103000.0                          | 13.8                  | -43.3                                 |                      | 23.0                                   | 590.6          | 245.3                          | 15.2                        | 1.000005                  |
| 104000.0                          | 13.3                  | -43.1                                 |                      | 22.4                                   | 590.9          | 240.8                          | 14.0                        | 1.000005                  |
| 105000.0                          | 12.8                  | -42.9                                 |                      | 21.9                                   | 591.1          | 235.4                          | 12.9                        | 1.000005                  |
| 106000.0                          | 12.3                  | -42.6                                 |                      | 21.4                                   | 591.5          | 232.3                          | 13.4                        | 1.000005                  |
| 107000.0                          | 11.8                  | -41.9                                 |                      | 20.9                                   | 592.4          | 230.3                          | 14.3                        | 1.000005                  |
| 108000.0                          | 11.3                  | -41.3                                 |                      | 20.4                                   | 593.2          | 228.4                          | 15.1                        | 1.000005                  |
| 109000.0                          | 10.8                  | -40.6                                 |                      | 19.9                                   | 594.1          |                                |                             | 1.000004                  |
| 110000.0                          | 10.3                  | -39.9                                 |                      | 19.4                                   | 595.0          |                                |                             | 1.000004                  |
| 111000.0                          | 9.8                   | -39.2                                 |                      | 18.9                                   | 595.9          |                                |                             | 1.000004                  |
| 112000.0                          | 9.3                   | -38.5                                 |                      | 18.4                                   | 596.7          |                                |                             | 1.000004                  |

STATION ALTITUDE 4000.00 FEET MSL  
 26 APR. 1953  
 ASCENDING NO. 10 0400 MDT

BAROMETRIC LEVELS  
 11,002,0010  
 HW 30

GEODETIC COORDINATES  
 32.80497 LAT DEG  
 106.49714 LONG DEG

TABLE 10

| PRESSURE GEOPOTENTIAL<br>MILLIBARS | FLEET  | TEMPERATURE    |                        | REL. HUMIDITY<br>PERCENT | WIND DATA                 |                |
|------------------------------------|--------|----------------|------------------------|--------------------------|---------------------------|----------------|
|                                    |        | ATP<br>DEGREES | DEWPOINT<br>CENTIGRADE |                          | DIRECTION<br>DEGREES (TN) | SPEED<br>KNOTS |
| 150.0                              | 4602.  | 15.6           | -3.0                   | 26.                      | 276.0                     | 0.9            |
| 200.0                              | 6354.  | 11.1           | -5.3                   | 31.                      | 265.0                     | 19.3           |
| 250.0                              | 8109.  | 7.0            | -7.5                   | 35.                      | 284.0                     | 15.5           |
| 300.0                              | 9963.  | 2.0            | -14.2                  | 27.                      | 274.5                     | 25.0           |
| 350.0                              | 11916. | 1.1            | -22.3                  | 15.                      | 264.4                     | 35.0           |
| 400.0                              | 14008. | -4.0           | -24.0                  | 16.                      | 254.3                     | 50.6           |
| 450.0                              | 16236. | -9.5           | -27.7                  | 21.                      | 237.5                     | 24.2           |
| 500.0                              | 18674. | -15.6          | -32.4                  | 22.                      | 232.6                     | 23.2           |
| 550.0                              | 21210. | -22.0          | -37.0                  | 23.                      | 239.9                     | 20.0           |
| 600.0                              | 24067. | -27.6          | -44.0                  | 19.                      | 238.1                     | 30.6           |
| 650.0                              | 27117. | -34.3          | -49.0                  | 21.                      | 245.3                     | 35.7           |
| 700.0                              | 30530. | -40.0          |                        |                          | 247.4                     | 35.0           |
| 750.0                              | 34520. | -52.5          |                        |                          | 254.0                     | 52.3           |
| 800.0                              | 39104. | -56.4          |                        |                          | 263.0                     | 69.5           |
| 850.0                              | 41927. | -58.8          |                        |                          | 267.9                     | 69.9           |
| 900.0                              | 45120. | -57.0          |                        |                          | 265.8                     | 78.9           |
| 950.0                              | 48868. | -60.3          |                        |                          | 260.6                     | 81.5           |
| 1000.0                             | 53308. | -62.2          |                        |                          | 263.2                     | 58.2           |
| 1050.0                             | 57915. | -62.8          |                        |                          | 268.7                     | 40.5           |
| 1100.0                             | 60640. | -61.5          |                        |                          | 269.3                     | 12.2           |
| 1150.0                             | 63703. | -58.3          |                        |                          | 221.3                     | 4.6            |
| 1200.0                             | 67506. | -57.4          |                        |                          | 137.7                     | 3.7            |
| 1250.0                             | 72253. | -55.2          |                        |                          | 172.7                     | 7.1            |
| 1300.0                             | 78200. | -52.0          |                        |                          | 255.2                     | 7.2            |
| 1350.0                             | 82143. | -52.1          |                        |                          | 286.8                     | 18.7           |
| 1400.0                             | 86048. | -46.1          |                        |                          | 311.3                     | 4.7            |
| 1450.0                             | 93264. | -43.2          |                        |                          | 243.7                     | 14.8           |

\*\* AT LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 7 101.00 FT MSL  
26 APR. 53 0900 MDT  
ASCENDING 100. 00

SIGNIFICANT LEVEL DATA  
11000300000  
JALLEN

GEODETIC COORDINATES  
33.10712 LAT DEG  
106.49511 LONG DEG

TABLE 11

| PRESSURE<br>MILLIBARS | GEOMETRIC<br>ALTITUDE<br>MFL FEET | TEMPERATURE<br>AIR DEWPOINT<br>DEGREES CENTIGRADE | REL. HUMIDITY<br>PERCENT |
|-----------------------|-----------------------------------|---------------------------------------------------|--------------------------|
| 275.9                 | 4051.0                            | 18.4                                              | 1.4                      |
| 269.9                 | 4115.7                            | 19.0                                              | -3.8                     |
| 259.0                 | 4732.5                            | 16.7                                              | -3.9                     |
| 211.5                 | 5050.6                            | 12.9                                              | -4.7                     |
| 255.9                 | 7054.6                            | 7.0                                               | -6.0                     |
| 224.1                 | 9110.2                            | 4.5                                               | -7.0                     |
| 200.0                 | 10012.7                           | 2.4                                               | -9.5                     |
| 170.3                 | 10947.4                           | 1.4                                               | -16.0                    |
| 143.3                 | 12243.4                           | .0                                                | -22.3                    |
| 137.3                 | 12493.4                           | .5                                                | -19.2                    |
| 165.7                 | 15784.6                           | -8.3                                              | -24.8                    |
| 143.7                 | 16593.8                           | -0.8                                              | -20.5                    |
| 100.0                 | 18693.3                           | -15.8                                             | -32.1                    |
| 976.0                 | 19009.5                           | -18.1                                             | -35.0                    |
| 400.0                 | 24105.1                           | -27.6                                             | -43.6                    |
| 363.1                 | 26374.3                           | -32.2                                             | -47.5                    |
| 325.9                 | 27049.5                           | -39.0                                             | -52.9                    |
| 300.0                 | 30699.6                           | -44.1                                             |                          |
| 250.0                 | 34642.6                           | -53.6                                             |                          |
| 211.9                 | 39123.4                           | -56.3                                             |                          |
| 206.7                 | 38643.4                           | -56.2                                             |                          |
| 200.0                 | 39130.7                           | -57.8                                             |                          |
| 183.6                 | 41096.5                           | -60.8                                             |                          |
| 167.4                 | 43001.6                           | -58.2                                             |                          |
| 162.7                 | 43591.6                           | -58.9                                             |                          |
| 157.9                 | 44213.5                           | -57.2                                             |                          |
| 150.0                 | 45061.7                           | -58.0                                             |                          |
| 119.6                 | 49071.4                           | -59.5                                             |                          |
| 113.3                 | 51083.9                           | -61.2                                             |                          |
| 104.2                 | 52793.7                           | -60.9                                             |                          |
| 100.0                 | 53600.4                           | -62.5                                             |                          |
| 93.0                  | 55122.3                           | -61.2                                             |                          |
| 83.0                  | 57439.8                           | -63.6                                             |                          |
| 70.0                  | 58712.6                           | -58.9                                             |                          |
| 76.4                  | 59141.4                           | -59.4                                             |                          |
| 76.0                  | 60030.7                           | -62.0                                             |                          |
| 64.2                  | 62720.0                           | -58.4                                             |                          |
| 60.6                  | 63910.7                           | -58.4                                             |                          |
| 56.5                  | 65373.7                           | -58.5                                             |                          |
| 54.0                  | 66012.1                           | -55.8                                             |                          |

GEODLTIC COORDINATES  
33.16712 LAT DEG  
106.49511 LONG DEG

SIGNIFICANT LEVEL DATA  
11000.0000  
JALLEN

TABLE 11 Cont'd

STATION ALTITUDE 9751.00 FEET MSL  
26 APR. 66 0900 MDT  
ASCENDING NO. 66

| PRESSURE GEODLTIC<br>ALTITUDE<br>MILLIBARS MSL FEET | TEMPERATURE<br>AIR DEWPOINT<br>DEGREES CENTIGRADE | REL. HUM.<br>PERCENT |
|-----------------------------------------------------|---------------------------------------------------|----------------------|
|                                                     |                                                   |                      |
| 58.0 67039.9                                        | -55.8                                             |                      |
| 47.4 69060.8                                        | -56.7                                             |                      |
| 45.1 70107.9                                        | -54.6                                             |                      |
| 39.7 72002.2                                        | -55.2                                             |                      |
| 32.6 76090.8                                        | -51.2                                             |                      |
| 31.5 77739.3                                        | -49.5                                             |                      |
| 30.0 78795.1                                        | -50.1                                             |                      |
| 26.3 81630.6                                        | -51.5                                             |                      |
| 24.2 83032.1                                        | -48.0                                             |                      |
| 20.0 87612.5                                        | -45.8                                             |                      |
| 17.4 90190.2                                        | -43.2                                             |                      |
| 11.4 100173.9                                       | -41.5                                             |                      |
| 10.0 103160.6                                       | -35.2                                             |                      |
| 9.3 104004.6                                        | -33.1                                             |                      |
| 9.2 107779.7                                        | -33.1                                             |                      |

STATION ALTITUDE 4,511.00 FEET ASL  
26 APR 53 0900 MDT  
ASCENDING NO. 00

UPPER AIR DATA  
1100030000  
JALLER

GEODETIC COORDINATES  
33.16712 LAT NEG  
106.49511 LONG NEG

TABLE 12

| GEOMETRIC ALTITUDE ASL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREE CELSIUS | TEMPERATURE DEWPOINT DEGREE CELSIUS | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DIRECTION DEGREES (TN) | WIND SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------|--------------------|--------------------------------|-------------------------------------|-------------------|------------------------|----------------------|-----------------------------|------------------|---------------------|
| 4051.0                      | 870.0              | 10.4                           | 1.4                                 | 32.0              | 1037.0                 | 666.2                | 250.0                       | 1.9              | 1.000201            |
| 4500.0                      | 851.1              | 17.0                           | -3.0                                | 22.0              | 1025.0                 | 664.9                | 242.2                       | 2.2              | 1.000249            |
| 5000.0                      | 841.8              | 15.0                           | -4.1                                | 25.1              | 1012.7                 | 663.0                | 235.7                       | 2.6              | 1.000246            |
| 5500.0                      | 826.8              | 14.3                           | -4.3                                | 27.2              | 1000.0                 | 661.2                | 230.8                       | 3.0              | 1.000243            |
| 6000.0                      | 812.0              | 12.4                           | -4.7                                | 28.2              | 987.4                  | 659.4                | 230.8                       | 3.3              | 1.000240            |
| 6500.0                      | 797.3              | 11.3                           | -4.9                                | 31.7              | 974.5                  | 657.7                | 264.0                       | 3.9              | 1.000237            |
| 7000.0                      | 782.1              | 9.8                            | -5.2                                | 30.2              | 961.8                  | 656.0                | 200.1                       | 5.8              | 1.000234            |
| 7500.0                      | 760.6              | 8.3                            | -5.0                                | 36.7              | 949.3                  | 654.3                | 204.2                       | 8.5              | 1.000231            |
| 8000.0                      | 734.6              | 6.9                            | -6.0                                | 30.2              | 936.9                  | 652.6                | 279.7                       | 9.9              | 1.000228            |
| 8500.0                      | 740.7              | 5.8                            | -6.4                                | 40.0              | 923.2                  | 651.3                | 274.3                       | 10.9             | 1.000224            |
| 9000.0                      | 727.1              | 4.7                            | -6.0                                | 42.6              | 909.7                  | 650.0                | 270.3                       | 11.5             | 1.000221            |
| 9500.0                      | 713.0              | 3.6                            | -6.1                                | 42.1              | 896.7                  | 648.7                | 269.3                       | 13.2             | 1.000216            |
| 10000.0                     | 700.3              | 2.4                            | -9.4                                | 41.0              | 883.9                  | 647.2                | 270.3                       | 15.8             | 1.000212            |
| 10500.0                     | 687.2              | 1.8                            | -13.0                               | 32.2              | 869.6                  | 646.4                | 270.2                       | 20.0             | 1.000205            |
| 11000.0                     | 674.4              | 1.3                            | -16.0                               | 24.9              | 855.2                  | 645.7                | 269.7                       | 24.5             | 1.000199            |
| 11500.0                     | 661.7              | 1.0                            | -18.6                               | 21.3              | 840.1                  | 645.3                | 266.4                       | 28.2             | 1.000194            |
| 12000.0                     | 649.3              | .7                             | -21.0                               | 17.4              | 825.3                  | 645.0                | 263.2                       | 30.6             | 1.000190            |
| 12500.0                     | 637.1              | .5                             | -19.3                               | 21.0              | 810.5                  | 644.7                | 259.0                       | 30.5             | 1.000187            |
| 13000.0                     | 625.0              | -.9                            | -20.1                               | 21.7              | 799.2                  | 643.0                | 256.2                       | 29.7             | 1.000184            |
| 13500.0                     | 613.0              | -2.4                           | -21.0                               | 22.3              | 786.1                  | 641.3                | 254.0                       | 28.5             | 1.000181            |
| 14000.0                     | 601.3              | -3.3                           | -21.0                               | 22.0              | 777.2                  | 639.6                | 250.8                       | 29.1             | 1.000179            |
| 14500.0                     | 589.9              | -5.2                           | -22.0                               | 23.6              | 766.4                  | 637.9                | 246.7                       | 29.1             | 1.000176            |
| 15000.0                     | 576.6              | -6.6                           | -23.7                               | 24.2              | 753.8                  | 636.2                | 241.6                       | 28.7             | 1.000173            |
| 15500.0                     | 567.5              | -8.1                           | -24.0                               | 24.0              | 745.4                  | 634.5                | 239.1                       | 26.9             | 1.000171            |
| 16000.0                     | 556.5              | -8.7                           | -26.2                               | 22.9              | 733.4                  | 633.4                | 236.1                       | 25.8             | 1.000167            |
| 16500.0                     | 543.7              | -9.7                           | -24.1                               | 20.5              | 721.2                  | 632.5                | 233.2                       | 25.1             | 1.000164            |
| 17000.0                     | 533.0              | -11.0                          | -20.1                               | 20.6              | 710.5                  | 630.9                | 232.3                       | 24.5             | 1.000161            |
| 17500.0                     | 524.4              | -12.4                          | -30.0                               | 21.3              | 700.3                  | 629.2                | 232.8                       | 24.5             | 1.000159            |
| 18000.0                     | 514.1              | -13.3                          | -30.9                               | 22.0              | 690.3                  | 627.5                | 234.8                       | 25.2             | 1.000156            |
| 18500.0                     | 503.9              | -15.2                          | -31.7                               | 22.7              | 680.4                  | 625.7                | 237.8                       | 27.5             | 1.000154            |
| 19000.0                     | 493.9              | -16.4                          | -32.8                               | 22.5              | 669.0                  | 624.4                | 240.2                       | 30.3             | 1.000151            |
| 19500.0                     | 484.0              | -17.3                          | -34.0                               | 21.7              | 658.9                  | 623.2                | 240.2                       | 32.2             | 1.000149            |
| 20000.0                     | 474.2              | -18.3                          | -35.2                               | 21.0              | 648.1                  | 622.0                | 239.0                       | 33.5             | 1.000146            |
| 20500.0                     | 464.5              | -19.4                          | -35.2                               | 20.9              | 637.0                  | 620.6                | 236.5                       | 34.0             | 1.000144            |
| 21000.0                     | 455.2              | -20.6                          | -37.2                               | 20.7              | 627.4                  | 619.2                | 235.3                       | 35.8             | 1.000141            |
| 21500.0                     | 445.6              | -21.7                          | -36.2                               | 20.0              | 617.3                  | 617.8                | 234.7                       | 37.6             | 1.000139            |
| 22000.0                     | 436.5              | -22.8                          | -30.3                               | 20.5              | 607.3                  | 616.4                | 235.2                       | 38.0             | 1.000136            |
| 22500.0                     | 427.5              | -24.0                          | -40.3                               | 20.4              | 597.6                  | 615.0                | 237.5                       | 36.9             | 1.000134            |
| 23000.0                     | 418.6              | -25.1                          | -41.3                               | 20.3              | 588.0                  | 613.6                | 241.7                       | 34.8             | 1.000132            |
| 23500.0                     | 410.2              | -26.2                          | -42.3                               | 20.1              | 578.0                  | 612.2                | 246.3                       | 34.3             | 1.000130            |

STATION ALTITUDE 451.0 FT MSL  
25 APR 53 0900 MDT  
ASL 51.0 FT MSL

UPPER AIR DATA  
1100030000  
JALLFN

GEODETIC COORDINATES  
33-16712 LAT DEG  
106-49511 LONG DEG

TABLE 12 Cont'd

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES<br>CENTIGRADE | REL. HUMIDITY<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KILOTS | WIND DATA<br>DIRECTION<br>ULGREGS(TN) | SPEED<br>KILOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|------------------------------------------|--------------------------|------------------------------|-----------------------------|---------------------------------------|-----------------|---------------------------|
| 24000.0                        | 401.7                 | -27.4                                    | 20.0                     | 569.3                        | 610.8                       | 249.0                                 | 34.1            | 1.000128                  |
| 24500.0                        | 393.3                 | -28.4                                    | 20.0                     | 559.8                        | 609.5                       | 250.6                                 | 34.1            | 1.000125                  |
| 25000.0                        | 385.0                 | -29.4                                    | 20.0                     | 550.2                        | 608.2                       | 253.1                                 | 34.4            | 1.000123                  |
| 25500.0                        | 376.6                 | -30.4                                    | 20.0                     | 540.9                        | 607.0                       | 256.1                                 | 35.6            | 1.000121                  |
| 26000.0                        | 368.3                 | -31.4                                    | 20.0                     | 531.7                        | 605.7                       | 257.8                                 | 37.3            | 1.000119                  |
| 26500.0                        | 361.1                 | -32.5                                    | 20.1                     | 522.8                        | 604.3                       | 257.6                                 | 39.3            | 1.000117                  |
| 27000.0                        | 353.3                 | -33.9                                    | 20.3                     | 514.5                        | 602.0                       | 255.9                                 | 41.0            | 1.000115                  |
| 27500.0                        | 345.7                 | -35.3                                    | 20.5                     | 506.3                        | 600.9                       | 253.3                                 | 41.8            | 1.000113                  |
| 28000.0                        | 338.2                 | -36.7                                    | 20.7                     | 498.2                        | 599.1                       | 251.1                                 | 41.9            | 1.000111                  |
| 28500.0                        | 330.9                 | -38.0                                    | 20.9                     | 490.3                        | 597.4                       | 249.4                                 | 41.1            | 1.000110                  |
| 29000.0                        | 323.7                 | -39.4                                    | 19.3**                   | 482.4                        | 595.6                       | 247.4                                 | 40.6            | 1.000108                  |
| 29500.0                        | 316.5                 | -40.8                                    | 13.6**                   | 474.6                        | 593.9                       | 247.0                                 | 40.4            | 1.000106                  |
| 30000.0                        | 309.5                 | -42.2                                    | 7.9**                    | 466.6                        | 592.1                       | 249.0                                 | 40.4            | 1.000104                  |
| 30500.0                        | 302.7                 | -43.6                                    | 2.3**                    | 459.3                        | 590.3                       | 251.0                                 | 40.9            | 1.000102                  |
| 31000.0                        | 295.8                 | -44.8                                    |                          | 451.4                        | 588.7                       | 252.9                                 | 41.5            | 1.000101                  |
| 31500.0                        | 289.5                 | -46.0                                    |                          | 443.4                        | 587.1                       | 253.2                                 | 41.6            | 1.000099                  |
| 32000.0                        | 282.5                 | -47.2                                    |                          | 435.6                        | 585.6                       | 253.4                                 | 41.7            | 1.000097                  |
| 32500.0                        | 275.2                 | -48.4                                    |                          | 427.9                        | 584.0                       | 253.5                                 | 41.9            | 1.000095                  |
| 33000.0                        | 269.7                 | -49.6                                    |                          | 420.4                        | 582.4                       | 253.4                                 | 42.5            | 1.000094                  |
| 33500.0                        | 263.6                 | -50.8                                    |                          | 413.0                        | 580.9                       | 252.9                                 | 43.5            | 1.000092                  |
| 34000.0                        | 257.5                 | -52.1                                    |                          | 405.0                        | 579.3                       | 253.7                                 | 45.7            | 1.000090                  |
| 34500.0                        | 251.7                 | -53.3                                    |                          | 398.7                        | 577.7                       | 255.5                                 | 49.1            | 1.000089                  |
| 35000.0                        | 245.8                 | -53.9                                    |                          | 390.5                        | 576.9                       | 256.9                                 | 53.6            | 1.000087                  |
| 35500.0                        | 240.0                 | -54.3                                    |                          | 382.0                        | 576.4                       | 257.9                                 | 59.0            | 1.000085                  |
| 36000.0                        | 234.0                 | -54.7                                    |                          | 373.7                        | 575.9                       | 259.1                                 | 63.6            | 1.000083                  |
| 36500.0                        | 228.9                 | -55.0                                    |                          | 365.6                        | 575.4                       | 260.2                                 | 67.7            | 1.000081                  |
| 37000.0                        | 223.5                 | -55.4                                    |                          | 357.6                        | 574.8                       | 262.0                                 | 71.4            | 1.000080                  |
| 37500.0                        | 218.3                 | -55.8                                    |                          | 349.9                        | 574.3                       | 264.2                                 | 74.8            | 1.000078                  |
| 38000.0                        | 213.1                 | -56.2                                    |                          | 342.3                        | 573.8                       | 266.1                                 | 76.1            | 1.000076                  |
| 38500.0                        | 208.1                 | -56.2                                    |                          | 334.2                        | 573.3                       | 268.1                                 | 75.6            | 1.000074                  |
| 39000.0                        | 203.2                 | -57.0                                    |                          | 327.5                        | 572.7                       | 269.2                                 | 74.4            | 1.000073                  |
| 39500.0                        | 198.4                 | -58.1                                    |                          | 321.3                        | 571.3                       | 269.4                                 | 72.5            | 1.000072                  |
| 40000.0                        | 193.6                 | -59.9                                    |                          | 314.9                        | 570.2                       | 269.1                                 | 71.4            | 1.000070                  |
| 40500.0                        | 189.2                 | -59.8                                    |                          | 308.6                        | 569.1                       | 268.0                                 | 71.6            | 1.000069                  |
| 41000.0                        | 184.5                 | -60.6                                    |                          | 302.4                        | 567.9                       | 266.8                                 | 71.8            | 1.000067                  |
| 41500.0                        | 180.0                 | -60.2                                    |                          | 294.6                        | 568.4                       | 265.4                                 | 72.1            | 1.000066                  |
| 42000.0                        | 175.7                 | -59.6                                    |                          | 286.8                        | 569.3                       | 264.0                                 | 72.3            | 1.000064                  |
| 42500.0                        | 171.5                 | -58.9                                    |                          | 278.9                        | 570.3                       | 262.6                                 | 72.3            | 1.000062                  |
| 43000.0                        | 167.4                 | -58.2                                    |                          | 271.3                        | 571.2                       | 261.6                                 | 72.8            | 1.000060                  |
| 43500.0                        | 163.4                 | -58.8                                    |                          | 265.0                        | 570.4                       | 261.0                                 | 73.9            | 1.000059                  |

\*\* AT LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.



STATION ALTITUDE 451.00 FEET ASL  
 26 APR 73  
 ASCENSION NO. 05 0900 MDT

UPPER AIR DATA  
 1160030060  
 JALLEN

GEODETIC COORDINATES  
 33.16712 LAT DEG  
 106.49311 LONG DEG

TABLE 12 Cont'd

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES<br>CELSIUS | REL. HUM.<br>PERCENT | DENSITY<br>GM/CM <sup>3</sup> | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION (TN)<br>DEGREES (TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|---------------------------------------|----------------------|-------------------------------|----------------------------|---------------------------------------------|----------------|---------------------------|
| 44000.0                        | 152.5                 | -67.8                                 |                      | 258.0                         | 571.7                      | 261.0                                       | 75.4           | 1.000057                  |
| 44500.0                        | 152.7                 | -67.4                                 |                      | 251.5                         | 572.2                      | 261.0                                       | 77.2           | 1.000056                  |
| 45000.0                        | 152.9                 | -67.0                                 |                      | 245.9                         | 571.7                      | 262.3                                       | 78.9           | 1.000055                  |
| 45500.0                        | 143.0                 | -68.1                                 |                      | 240.4                         | 571.3                      | 263.0                                       | 80.4           | 1.000054                  |
| 46000.0                        | 144.9                 | -68.2                                 |                      | 234.8                         | 571.1                      | 263.2                                       | 81.4           | 1.000052                  |
| 46500.0                        | 141.4                 | -68.4                                 |                      | 229.4                         | 570.9                      | 262.5                                       | 81.5           | 1.000051                  |
| 47000.0                        | 130.1                 | -68.5                                 |                      | 224.1                         | 570.7                      | 261.7                                       | 81.4           | 1.000050                  |
| 47500.0                        | 134.8                 | -68.7                                 |                      | 218.9                         | 570.5                      | 260.5                                       | 80.2           | 1.000049                  |
| 48000.0                        | 131.5                 | -68.9                                 |                      | 213.9                         | 570.3                      | 259.3                                       | 79.0           | 1.000048                  |
| 48500.0                        | 123.4                 | -69.0                                 |                      | 208.9                         | 570.1                      | 259.0                                       | 78.1           | 1.000047                  |
| 49000.0                        | 125.3                 | -69.2                                 |                      | 204.1                         | 569.9                      | 258.6                                       | 77.2           | 1.000045                  |
| 49500.0                        | 122.4                 | -69.3                                 |                      | 199.4                         | 569.8                      | 258.7                                       | 76.7           | 1.000044                  |
| 50000.0                        | 119.4                 | -69.5                                 |                      | 194.8                         | 569.4                      | 258.8                                       | 76.1           | 1.000043                  |
| 50500.0                        | 110.6                 | -69.3                                 |                      | 190.8                         | 568.4                      | 258.9                                       | 74.8           | 1.000042                  |
| 51000.0                        | 113.8                 | -61.1                                 |                      | 186.9                         | 567.3                      | 259.1                                       | 73.0           | 1.000042                  |
| 51500.0                        | 111.0                 | -61.1                                 |                      | 182.4                         | 567.3                      | 259.4                                       | 71.2           | 1.000041                  |
| 52000.0                        | 100.3                 | -61.0                                 |                      | 177.9                         | 567.4                      | 260.0                                       | 69.6           | 1.000040                  |
| 52500.0                        | 105.7                 | -61.0                                 |                      | 173.6                         | 567.5                      | 260.7                                       | 68.0           | 1.000039                  |
| 53000.0                        | 103.2                 | -61.3                                 |                      | 169.7                         | 567.1                      | 261.9                                       | 67.4           | 1.000038                  |
| 53500.0                        | 100.7                 | -62.2                                 |                      | 166.3                         | 565.8                      | 263.2                                       | 67.1           | 1.000037                  |
| 54000.0                        | 90.3                  | -62.2                                 |                      | 162.2                         | 563.9                      | 264.5                                       | 66.4           | 1.000036                  |
| 54500.0                        | 92.9                  | -61.7                                 |                      | 158.0                         | 563.4                      | 265.7                                       | 65.0           | 1.000035                  |
| 55000.0                        | 92.6                  | -61.3                                 |                      | 153.9                         | 567.0                      | 267.0                                       | 63.7           | 1.000034                  |
| 55500.0                        | 91.3                  | -61.6                                 |                      | 150.3                         | 566.0                      | 268.4                                       | 60.5           | 1.000033                  |
| 56000.0                        | 89.1                  | -62.1                                 |                      | 147.0                         | 566.0                      | 270.0                                       | 57.2           | 1.000033                  |
| 56500.0                        | 80.9                  | -62.6                                 |                      | 143.8                         | 565.3                      | 272.0                                       | 52.1           | 1.000032                  |
| 57000.0                        | 84.8                  | -63.1                                 |                      | 140.7                         | 564.6                      | 274.8                                       | 44.4           | 1.000031                  |
| 57500.0                        | 82.8                  | -63.4                                 |                      | 137.4                         | 564.2                      | 278.7                                       | 36.8           | 1.000031                  |
| 58000.0                        | 80.8                  | -61.5                                 |                      | 132.9                         | 566.7                      | 280.8                                       | 28.5           | 1.000030                  |
| 58500.0                        | 78.8                  | -59.7                                 |                      | 128.6                         | 569.2                      | 284.0                                       | 20.1           | 1.000029                  |
| 59000.0                        | 76.9                  | -59.2                                 |                      | 125.3                         | 569.8                      | 285.2                                       | 13.4           | 1.000028                  |
| 59500.0                        | 75.1                  | -59.3                                 |                      | 122.7                         | 568.9                      | 274.5                                       | 9.6            | 1.000027                  |
| 60000.0                        | 73.2                  | -60.6                                 |                      | 120.1                         | 567.9                      | 252.0                                       | 6.5            | 1.000027                  |
| 60500.0                        | 71.5                  | -61.4                                 |                      | 117.0                         | 566.9                      | 227.1                                       | 5.3            | 1.000026                  |
| 61000.0                        | 69.8                  | -61.9                                 |                      | 115.1                         | 566.3                      | 200.2                                       | 5.2            | 1.000026                  |
| 61500.0                        | 68.1                  | -60.9                                 |                      | 111.8                         | 567.6                      | 175.2                                       | 5.8            | 1.000025                  |
| 62000.0                        | 66.5                  | -60.9                                 |                      | 108.6                         | 569.0                      | 145.7                                       | 6.1            | 1.000024                  |
| 62500.0                        | 64.9                  | -60.8                                 |                      | 105.5                         | 570.3                      | 124.3                                       | 7.8            | 1.000023                  |
| 63000.0                        | 63.3                  | -68.4                                 |                      | 102.7                         | 570.9                      | 112.6                                       | 8.8            | 1.000023                  |
| 63500.0                        | 61.8                  | -68.4                                 |                      | 100.3                         | 570.9                      | 103.7                                       | 8.6            | 1.000022                  |

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LONG DEG

UPPER AIR DATA  
1100030000  
JALLEN

STATION / ELEVATION 9 MILES FROM S  
26 APR 63 0907 MDT  
ASCLSSA, I. CO. 60

TABLE 12 Cont'd

| GEOMETRIC<br>ALTITUDE<br>FSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES CELSIUS | REL. HUMID.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>M/SEC | DIRECTION,<br>DEGREES (TN) | WIND DATA<br>SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---------------------------------------|------------------------|------------------------------|----------------------------|----------------------------|-----------------------------|---------------------------|
| 64000.0                           | 60.4                  | -58.4                                 |                        | 97.9                         | 570.9                      | 97.1                       | 10.1                        | 1.000022                  |
| 64500.0                           | 50.9                  | -58.4                                 |                        | 95.8                         | 570.8                      | 94.5                       | 9.1                         | 1.000021                  |
| 65000.0                           | 51.5                  | -58.5                                 |                        | 93.3                         | 570.8                      | 91.3                       | 8.2                         | 1.000011                  |
| 65500.0                           | 50.2                  | -58.8                                 |                        | 90.9                         | 571.5                      | 94.5                       | 7.3                         | 1.000020                  |
| 66000.0                           | 54.8                  | -55.9                                 |                        | 87.9                         | 574.3                      | 101.2                      | 6.6                         | 1.000020                  |
| 66500.0                           | 53.5                  | -55.8                                 |                        | 85.8                         | 574.3                      | 110.3                      | 6.1                         | 1.000019                  |
| 67000.0                           | 52.3                  | -55.8                                 |                        | 83.8                         | 574.3                      | 123.2                      | 6.1                         | 1.000019                  |
| 67500.0                           | 51.1                  | -55.8                                 |                        | 81.8                         | 574.3                      | 135.4                      | 6.4                         | 1.000018                  |
| 68000.0                           | 49.9                  | -55.8                                 |                        | 79.9                         | 574.3                      | 148.3                      | 6.5                         | 1.000018                  |
| 68500.0                           | 48.7                  | -56.2                                 |                        | 78.2                         | 573.8                      | 160.8                      | 6.9                         | 1.000017                  |
| 69000.0                           | 47.5                  | -56.7                                 |                        | 76.5                         | 573.2                      | 170.9                      | 7.6                         | 1.000017                  |
| 69500.0                           | 45.4                  | -55.8                                 |                        | 74.4                         | 574.3                      | 177.5                      | 8.1                         | 1.000017                  |
| 70000.0                           | 43.3                  | -54.8                                 |                        | 72.3                         | 573.8                      | 183.2                      | 8.6                         | 1.000016                  |
| 70500.0                           | 44.3                  | -54.7                                 |                        | 70.6                         | 573.8                      | 186.3                      | 8.9                         | 1.000016                  |
| 71000.0                           | 43.2                  | -54.8                                 |                        | 69.0                         | 573.7                      | 187.6                      | 8.8                         | 1.000015                  |
| 71500.0                           | 42.2                  | -54.0                                 |                        | 67.4                         | 573.5                      | 188.8                      | 8.8                         | 1.000015                  |
| 72000.0                           | 41.2                  | -55.0                                 |                        | 65.9                         | 573.4                      | 191.1                      | 8.3                         | 1.000015                  |
| 72500.0                           | 40.3                  | -55.1                                 |                        | 64.3                         | 573.2                      | 193.8                      | 7.9                         | 1.000014                  |
| 73000.0                           | 39.3                  | -55.0                                 |                        | 62.8                         | 573.4                      | 196.7                      | 7.4                         | 1.000014                  |
| 73500.0                           | 38.4                  | -54.5                                 |                        | 61.2                         | 573.0                      | 198.6                      | 7.4                         | 1.000014                  |
| 74000.0                           | 37.5                  | -54.1                                 |                        | 59.7                         | 573.6                      | 200.4                      | 7.3                         | 1.000013                  |
| 74500.0                           | 36.7                  | -53.6                                 |                        | 58.2                         | 577.3                      | 199.1                      | 7.2                         | 1.000013                  |
| 75000.0                           | 35.8                  | -53.1                                 |                        | 56.7                         | 577.9                      | 193.1                      | 7.3                         | 1.000013                  |
| 75500.0                           | 35.0                  | -52.6                                 |                        | 55.3                         | 576.5                      | 187.4                      | 7.4                         | 1.000012                  |
| 76000.0                           | 34.2                  | -52.2                                 |                        | 53.9                         | 579.1                      | 180.1                      | 7.3                         | 1.000012                  |
| 76500.0                           | 33.4                  | -51.7                                 |                        | 52.5                         | 579.8                      | 190.8                      | 7.0                         | 1.000012                  |
| 77000.0                           | 32.6                  | -51.2                                 |                        | 51.2                         | 580.4                      | 201.4                      | 6.1                         | 1.000011                  |
| 77500.0                           | 31.9                  | -50.6                                 |                        | 49.7                         | 581.9                      | 200.0                      | 5.3                         | 1.000011                  |
| 78000.0                           | 31.1                  | -49.6                                 |                        | 48.5                         | 582.4                      | 270.9                      | 6.7                         | 1.000011                  |
| 78500.0                           | 30.4                  | -49.9                                 |                        | 47.5                         | 582.0                      | 292.9                      | 7.6                         | 1.000011                  |
| 79000.0                           | 29.7                  | -50.2                                 |                        | 46.4                         | 581.7                      | 310.0                      | 9.0                         | 1.000010                  |
| 79500.0                           | 28.6                  | -50.4                                 |                        | 45.4                         | 581.4                      | 319.8                      | 9.7                         | 1.000010                  |
| 80000.0                           | 28.4                  | -50.7                                 |                        | 44.4                         | 581.1                      | 326.0                      | 8.3                         | 1.000010                  |
| 80500.0                           | 27.7                  | -50.9                                 |                        | 43.5                         | 580.7                      | 334.6                      | 7.1                         | 1.000010                  |
| 81000.0                           | 27.1                  | -51.2                                 |                        | 42.5                         | 580.4                      | 329.4                      | 6.3                         | 1.000009                  |
| 81500.0                           | 26.5                  | -51.4                                 |                        | 41.6                         | 580.1                      | 320.5                      | 5.7                         | 1.000009                  |
| 82000.0                           | 25.9                  | -50.8                                 |                        | 40.5                         | 580.9                      | 314.5                      | 4.9                         | 1.000009                  |
| 82500.0                           | 25.3                  | -49.8                                 |                        | 39.4                         | 582.2                      | 314.9                      | 3.8                         | 1.000009                  |
| 83000.0                           | 24.7                  | -48.8                                 |                        | 38.3                         | 583.5                      | 315.0                      | 2.7                         | 1.000009                  |
| 83500.0                           | 24.1                  | -48.0                                 |                        | 37.3                         | 584.6                      | 292.9                      | 1.0                         | 1.000009                  |

1.1104 ALTITUDE 8000.0 FT. 1.1104  
 26 APR 53 0900 MDT  
 ASCENDING NO.

UPPER AIR DATA  
 1100030000  
 JALLER

GEODETIC COORDINATES  
 33.16712 LAT DEG  
 106.49511 LONG DEG

TABLE 12 CONT'D

| GEOD. TRAC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>IN DEGREES<br>CELSIUS | DENSITY<br>PERCENT | REL. HUMIDITY<br>PERCENT | WIND DIRECTION<br>DEGREES (TR) | WIND SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|------------------------------------|-----------------------|--------------------------------------|--------------------|--------------------------|--------------------------------|---------------------|---------------------------|
| 84000.0                            | 23.6                  | -47.7                                |                    | 36.4                     | 180.4                          | 1.2                 | 1.000000                  |
| 84500.0                            | 23.5                  | -47.4                                |                    | 35.6                     | 169.7                          | 2.3                 | 1.000000                  |
| 85000.0                            | 22.5                  | -47.2                                |                    | 34.7                     | 179.9                          | 2.3                 | 1.000000                  |
| 85500.0                            | 22.3                  | -46.9                                |                    | 33.9                     | 189.4                          | 2.5                 | 1.000000                  |
| 86000.0                            | 21.5                  | -46.6                                |                    | 33.1                     | 209.3                          | 3.1                 | 1.000000                  |
| 86500.0                            | 21.2                  | -46.4                                |                    | 32.3                     | 222.4                          | 4.1                 | 1.000000                  |
| 87000.0                            | 20.5                  | -46.1                                |                    | 31.6                     | 229.1                          | 5.0                 | 1.000000                  |
| 87500.0                            | 20.1                  | -45.9                                |                    | 30.6                     | 231.5                          | 5.5                 | 1.000000                  |
| 88000.0                            | 19.7                  | -45.4                                |                    | 30.1                     | 233.6                          | 5.9                 | 1.000000                  |
| 88500.0                            | 19.2                  | -44.9                                |                    | 29.3                     | 245.3                          | 5.3                 | 1.000000                  |
| 89000.0                            | 18.8                  | -44.4                                |                    | 28.6                     | 255.6                          | 4.7                 | 1.000000                  |
| 89500.0                            | 18.4                  | -43.9                                |                    | 27.9                     | 265.8                          | 4.6                 | 1.000000                  |
| 90000.0                            | 18.0                  | -43.4                                |                    | 27.2                     | 291.2                          | 4.0                 | 1.000000                  |
| 90500.0                            | 17.6                  | -43.1                                |                    | 26.6                     | 298.5                          | 3.4                 | 1.000000                  |
| 91000.0                            | 17.2                  | -43.1                                |                    | 26.0                     | 279.0                          | 3.5                 | 1.000000                  |
| 91500.0                            | 16.8                  | -43.0                                |                    | 25.4                     | 251.6                          | 5.1                 | 1.000000                  |
| 92000.0                            | 16.4                  | -42.9                                |                    | 24.8                     | 239.0                          | 7.3                 | 1.000000                  |
| 92500.0                            | 16.1                  | -42.8                                |                    | 24.3                     | 234.6                          | 12.7                | 1.000000                  |
| 93000.0                            | 15.7                  | -42.7                                |                    | 23.7                     | 233.0                          | 18.4                | 1.000000                  |
| 93500.0                            | 15.4                  | -42.6                                |                    | 23.2                     | 233.1                          | 22.5                | 1.000000                  |
| 94000.0                            | 15.0                  | -42.6                                |                    | 22.7                     | 235.6                          | 22.9                | 1.000000                  |
| 94500.0                            | 14.7                  | -42.5                                |                    | 22.2                     | 238.1                          | 23.3                | 1.000000                  |
| 95000.0                            | 14.4                  | -42.4                                |                    | 21.7                     | 242.3                          | 21.7                | 1.000000                  |
| 95500.0                            | 14.0                  | -42.3                                |                    | 21.2                     | 248.3                          | 19.5                | 1.000000                  |
| 96000.0                            | 13.7                  | -42.2                                |                    | 20.7                     | 255.4                          | 17.4                | 1.000000                  |
| 96500.0                            | 13.4                  | -42.1                                |                    | 20.3                     | 259.1                          | 15.4                | 1.000000                  |
| 97000.0                            | 13.1                  | -42.0                                |                    | 19.8                     | 263.8                          | 13.4                | 1.000000                  |
| 97500.0                            | 12.8                  | -42.0                                |                    | 19.4                     | 270.7                          | 12.6                | 1.000000                  |
| 98000.0                            | 12.6                  | -41.9                                |                    | 18.9                     | 278.2                          | 13.3                | 1.000000                  |
| 98500.0                            | 12.3                  | -41.8                                |                    | 18.5                     | 284.9                          | 14.2                | 1.000000                  |
| 99000.0                            | 12.0                  | -41.7                                |                    | 18.1                     | 281.8                          | 14.6                | 1.000000                  |
| 99500.0                            | 11.7                  | -41.6                                |                    | 17.7                     | 277.4                          | 14.9                | 1.000000                  |
| 100000.0                           | 11.5                  | -41.5                                |                    | 17.3                     | 269.8                          | 15.4                | 1.000000                  |
| 100500.0                           | 11.2                  | -41.5                                |                    | 16.9                     | 253.1                          | 16.6                | 1.000000                  |
| 101000.0                           | 11.0                  | -41.4                                |                    | 16.4                     | 239.7                          | 19.0                | 1.000000                  |
| 101500.0                           | 10.8                  | -41.3                                |                    | 16.0                     | 237.3                          | 22.4                | 1.000000                  |
| 102000.0                           | 10.5                  | -41.2                                |                    | 15.6                     | 240.0                          | 26.2                | 1.000000                  |
| 102500.0                           | 10.3                  | -41.1                                |                    | 15.2                     | 242.1                          | 29.9                | 1.000000                  |
| 103000.0                           | 10.1                  | -41.0                                |                    | 14.8                     | 244.8                          | 29.2                | 1.000000                  |
| 103500.0                           | 9.9                   | -40.9                                |                    | 14.4                     | 248.3                          | 27.2                | 1.000000                  |

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

UPPER AIR DATA  
1100030065  
JALLD

TABLE 12 Cont'd

STATION ALTITUDE 4 51.00 FT MSL  
24 APR. 63 0900 MDT  
ACQUISITION NO. 03

| GEODETIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CM <sup>3</sup><br>METER | SPEED OF<br>SOUND<br>M/SEC | WIND DATA<br>DIRECTION<br>ULGREL (TIN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|----------------------------------|-----------------------|------------------------------------------|----------------------|----------------------------------------|----------------------------|----------------------------------------|----------------|---------------------------|
| 104000.0                         | 9.0                   | -34.2                                    |                      | 14.1                                   | 602.3                      | 252.4                                  | 25.4           | 1.000003                  |
| 104500.0                         | 9.4                   | -33.5                                    |                      | 13.7                                   | 603.1                      |                                        |                | 1.000003                  |
| 105000.0                         | 9.2                   | -33.1                                    |                      | 13.4                                   | 603.6                      |                                        |                | 1.000003                  |
| 105500.0                         | 9.0                   | -33.1                                    |                      | 13.1                                   | 603.0                      |                                        |                | 1.000003                  |
| 106000.0                         | 8.8                   | -33.1                                    |                      | 12.6                                   | 603.0                      |                                        |                | 1.000003                  |
| 106500.0                         | 8.7                   | -33.1                                    |                      | 12.0                                   | 603.0                      |                                        |                | 1.000003                  |
| 107000.0                         | 8.5                   | -33.1                                    |                      | 12.3                                   | 603.0                      |                                        |                | 1.000003                  |
| 107500.0                         | 8.3                   | -33.1                                    |                      | 12.0                                   | 603.0                      |                                        |                | 1.000003                  |

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STATION ALTITUDE 4051.0 FEET MSL  
26 APR 63 0900 MDT  
ASCEP51000.

PALMATION LEVEL  
11600.0000  
WALLER

GEODTIC COORDINATES  
33.10712 LAT DEG  
106.49511 LONG DEG

TABLE 13

| PRESSURE GEOPOTENTIAL |         | TEMPERATURE |          | REL. HUM. |              | WIND DATA |  |
|-----------------------|---------|-------------|----------|-----------|--------------|-----------|--|
| WALLER                | FEET    | DEGREES     | DEWPOINT | PERCENT   | DIRECTION    | SPEED     |  |
|                       |         | CELSIUS     | CELSIUS  |           | DEGREES (TN) | KNOTS     |  |
| 750.0                 | 4720.   | 16.7        | -3.9     | 74.       | 259.0        | 2.4       |  |
| 600.0                 | 6406.   | 11.6        | -4.9     | 31.       | 250.0        | 3.7       |  |
| 750.0                 | 8109.   | 6.5         | -5.2     | 40.       | 277.7        | 10.2      |  |
| 700.0                 | 10004.  | 2.0         | -0.5     | 41.       | 270.4        | 15.8      |  |
| 650.0                 | 11961.  | .8          | -20.0    | 10.       | 265.5        | 30.6      |  |
| 600.0                 | 14055.  | -0.0        | -22.0    | 23.       | 250.4        | 29.1      |  |
| 550.0                 | 16202.  | -0.4        | -27.2    | 21.       | 234.3        | 25.4      |  |
| 500.0                 | 18671.  | -1.0        | -32.1    | 23.       | 230.0        | 26.6      |  |
| 450.0                 | 21251.  | -21.0       | -37.6    | 21.       | 239.9        | 37.0      |  |
| 400.0                 | 24067.  | -27.6       | -43.0    | 70.       | 249.3        | 34.1      |  |
| 350.0                 | 27170.  | -30.5       | -40.3    | 20.       | 254.9        | 41.4      |  |
| 300.0                 | 30500.  | -40.1       |          |           | 251.8        | 41.1      |  |
| 250.0                 | 34570.  | -53.6       |          |           | 255.9        | 50.0      |  |
| 200.0                 | 39200.  | -57.0       |          |           | 269.3        | 73.2      |  |
| 175.0                 | 41960.  | -50.4       |          |           | 263.9        | 72.3      |  |
| 150.0                 | 45164.  | -59.0       |          |           | 262.6        | 79.7      |  |
| 125.0                 | 48923.  | -59.2       |          |           | 250.0        | 77.2      |  |
| 100.0                 | 53920.  | -62.5       |          |           | 263.5        | 67.0      |  |
| 80.0                  | 58903.  | -69.8       |          |           | 201.0        | 25.7      |  |
| 70.0                  | 60735.  | -62.0       |          |           | 204.9        | 5.2       |  |
| 60.0                  | 63901.  | -53.4       |          |           | 96.7         | 9.9       |  |
| 50.0                  | 67600.  | -55.0       |          |           | 140.0        | 0.5       |  |
| 40.0                  | 72360.  | -55.2       |          |           | 194.5        | 7.8       |  |
| 30.0                  | 78454.  | -50.1       |          |           | 302.5        | 8.3       |  |
| 25.0                  | 82362.  | -49.4       |          |           | 315.2        | 3.4       |  |
| 20.0                  | 87208.  | -45.8       |          |           | 231.9        | 5.5       |  |
| 15.0                  | 93550.  | -42.5       |          |           | 255.5        | 22.9      |  |
| 10.0                  | 102608. | -35.2       |          |           | 245.0        | 28.8      |  |

\*\* AT LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.