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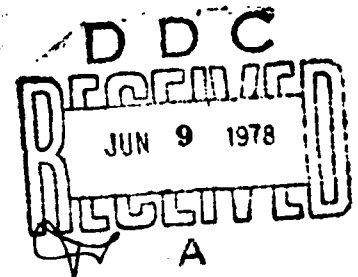
14820A LANCE  
MISSILE NO. 3316, ROUND NO. 310 APT  
(25 JANUARY 1978)

BY

WSMR METEOROLOGICAL TEAM

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| 19. KEY WORDS (Continue on reverse side if necessary and identify by block number)<br>1. Ballistics<br>2. Meteorology<br>3. Winds                                                                                              |                       |                                                             |
| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number)<br>Meteorological data gathered for the launching of 14820A Lance, Missile Number 3316, Round Number 310 APT, are presented in tabular form. |                       |                                                             |

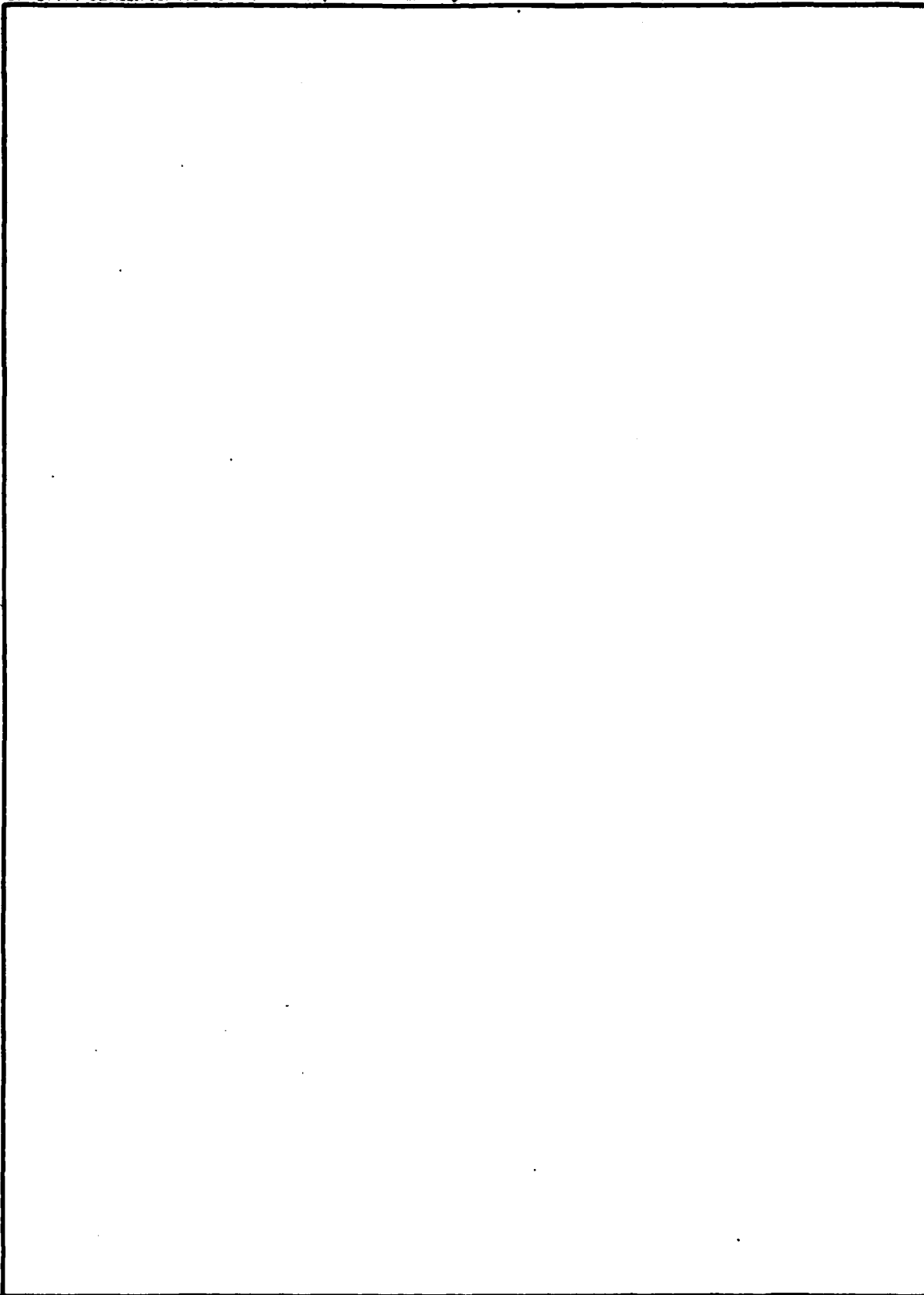
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#### INTRODUCTION

14820A Lance, Missile Number 3316, Round Number 310 APT, was launched from LC-39, White Sands Missile Range (WSMR), New Mexico, at 1600 HRS MST, 25 January 1978. The scheduled launch time was 1545 HRS MST.

#### DISCUSSION

Meteorological data were recorded and reduced by the WSMR Meteorological Team, Atmospheric Sciences Laboratory (ASL), WSMR, New Mexico. The data are presented in the following tabulations.

|                   |       |                   |
|-------------------|-------|-------------------|
| ELEVATION         | 3,990 | FEET/MSL          |
| PRESSURE          | 879.4 | MBS               |
| TEMPERATURE       | 9.6   | °C                |
| RELATIVE HUMIDITY | 26    | %                 |
| DEW POINT         | -8.9  | °C                |
| DENSITY           | 1,080 | GM/M <sup>3</sup> |
| WIND SPEED        | 02    | MPH               |
| WIND DIRECTION    | 360   | DEGREES           |
| CLOUD COVER       | 8     | C1                |

TABLE I. SURFACE OBSERVATIONS TAKEN AT WSD,  
AT 1600 HRS MST/25 JANUARY 1978

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) | HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|------------------|------------------------|----------------|
| SUR              | CALM                   | CALM           | 2100             | 272                    | 04.0           |
| 100              | CALM                   | CALM           | 2200             | 269                    | 04.5           |
| 200              | CALM                   | CALM           | 2300             | 274                    | 05.0           |
| 300              | 004                    | 01.5           | 2400             | 280                    | 06.0           |
| 400              | 008                    | 03.0           | 2500             | 282                    | 07.0           |
| 500              | 008                    | 02.5           | 2600             | 284                    | 08.0           |
| 600              | 007                    | 02.5           | 2700             | 289                    | 10.0           |
| 700              | 007                    | 01.5           | 2800             | 295                    | 12.0           |
| 800              | 360                    | 00.5           | 2900             | 300                    | 12.5           |
| 900              | 341                    | 01.0           | 3000             | 304                    | 13.0           |
| 1000             | 321                    | 01.5           | 3100             | 310                    | 14.5           |
| 1100             | 319                    | 02.0           | 3200             | 316                    | 16.0           |
| 1200             | 317                    | 02.5           | 3300             | 321                    | 17.0           |
| 1300             | 319                    | 02.5           | 3400             | 326                    | 18.5           |
| 1400             | 320                    | 03.0           | 3500             | 329                    | 19.5           |
| 1500             | 299                    | 02.5           | 3600             | 332                    | 20.5           |
| 1600             | 275                    | 02.5           | 3700             | 332                    | 22.0           |
| 1700             | 273                    | 02.5           | 3800             | 333                    | 24.0           |
| 1800             | 272                    | 02.5           | 3900             | 336                    | 26.0           |
| 1900             | 273                    | 03.0           | 4000             | 340                    | 28.5           |
| 2000             | 275                    | 03.5           | 4100             | 343                    | 29.0           |

TABLE II. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 1  
RELEASED FROM LC-39, AT 1600 HRS MST/25 JANUARY 1978  
14820A LANCE, MISSILE NO. 3316, ROUND NO. 310 APT

PIBAL RELEASE POINT WSTM COORDINATES:

X = 530,938.82      Y = 186,564.96      Z = 4,063.75

APPROXIMATELY:    1 MILE SOUTH OF LAUNCHER.

NOTE:    WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) | HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|------------------|------------------------|----------------|
| 4200             | 345                    | 31.0           | 6400             | 348                    | 41.5           |
| 4300             | 345                    | 30.0           | 6500             | 347                    | 42.0           |
| 4400             | 346                    | 30.5           | 6600             | 346                    | 42.5           |
| 4500             | 347                    | 31.5           | 6700             | 346                    | 42.0           |
| 4600             | 349                    | 32.5           | 6800             | 346                    | 42.0           |
| 4700             | 349                    | 33.0           | 6900             | 345                    | 41.0           |
| 4800             | 350                    | 35.5           | 7000             | 344                    | 40.0           |
| 4900             | 351                    | 35.5           | 7100             | 345                    | 41.0           |
| 5000             | 351                    | 35.5           | 7200             | 347                    | 42.0           |
| 5100             | 351                    | 36.0           | 7300             | 347                    | 41.0           |
| 5200             | 351                    | 36.5           | 7400             | 347                    | 40.0           |
| 5300             | 359                    | 35.0           | 7500             | 347                    | 39.5           |
| 5400             | 008                    | 34.5           | 7600             | 347                    | 39.0           |
| 5500             | 359                    | 35.0           | 7700             | 348                    | 36.0           |
| 5600             | 349                    | 36.0           | 7800             | 349                    | 33.5           |
| 5700             | 348                    | 37.0           | 7900             | 347                    | 34.0           |
| 5800             | 347                    | 38.0           | 8000             | 344                    | 35.0           |
| 5900             | 349                    | 38.0           | 8100             | 344                    | 35.0           |
| 6000             | 350                    | 38.5           | 8200             | 344                    | 35.0           |
| 6100             | 350                    | 40.5           | 8300             | 344                    | 34.0           |
| 6200             | 351                    | 43.5           | 8400             | 344                    | 33.0           |
| 6300             | 350                    | 42.5           |                  |                        |                |

TABLE II. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

SIGNIFICANT LEVEL DATA  
0250020067  
WHITE SANDS  
TABLE III.

STATION ALTITUDE 3989.00 FEET MSL  
25 JAN. 78 1600 HRS MST  
ASCENSION NO. 07

| PRESSURE<br>MILLIBARS | GEOMETRIC<br>ALTITUDE<br>MSL FEET | TEMPERATURE    |                        | RELATIVE<br>PERCENT |
|-----------------------|-----------------------------------|----------------|------------------------|---------------------|
|                       |                                   | AIR<br>DEGREES | WET-BULB<br>CENTIGRADE |                     |
| 879.4                 | 3989.0                            | 9.7            | -9.3                   | 45.0                |
| 868.0                 | 4346.0                            | 6.3            | -7.6                   | 36.0                |
| 850.0                 | 4908.0                            | 4.7            | -9.1                   | 36.0                |
| 768.8                 | 7565.9                            | -0.7           | -12.3                  | 41.0                |
| 750.4                 | 8202.4                            | .7             | -12.0                  | 38.0                |
| 700.0                 | 10025.1                           | -1.6           | -14.9                  | 38.0                |
| 633.0                 | 12638.5                           | -4.1           | -18.3                  | 32.0                |
| 551.0                 | 16184.7                           | -10.1          | -27.7                  | 22.0                |
| 500.0                 | 18613.2                           | -15.4          | -32.7                  | 21.0                |
| 400.0                 | 23994.8                           | -28.3          | -42.5                  | 24.0                |
| 344.6                 | 27441.0                           | -36.0          | -49.2                  | 24.0                |
| 300.0                 | 30542.8                           | -43.5          |                        |                     |
| 250.0                 | 34483.3                           | -51.8          |                        |                     |
| 224.6                 | 36735.7                           | -55.7          |                        |                     |
| 200.0                 | 39116.6                           | -62.1          |                        |                     |
| 184.6                 | 40734.0                           | -62.7          |                        |                     |
| 167.8                 | 42667.9                           | -60.3          |                        |                     |
| 150.0                 | 44940.2                           | -62.7          |                        |                     |
| 134.8                 | 47110.5                           | -59.2          |                        |                     |
| 112.2                 | 50855.3                           | -60.6          |                        |                     |
| 100.0                 | 53184.5                           | -62.7          |                        |                     |
| 70.0                  | 60303.9                           | -66.0          |                        |                     |
| 63.0                  | 61771.1                           | -66.6          |                        |                     |
| 60.7                  | 63141.8                           | -60.6          |                        |                     |

STATION ALTITUDE 3989.00 FEET MSL  
25 JAN. 78 1600 HRS MST  
ASCENSION NO. 67

UPPER AIR DATA  
0250020067  
WHITE SANDS  
TABLE IV.

GEODETIC COORDINATES  
J240043 LAT DEG  
106.37033 LON DEG

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNUTS | WIND DATA<br>DIRECTION (TN)<br>DEGREES (TN) | SPEED<br>KNUTS | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---------------------------------------------|----------------------|------------------------------|----------------------------|---------------------------------------------|----------------|---------------------------|
| 3989.0                            | 879.4                 | 9.7                                         | 25.0                 | 1081.7                       | 655.6                      | 10.0                                        | 1.9            | 1.000255                  |
| 4000.0                            | 879.0                 | 9.6                                         | 25.3                 | 1081.7                       | 655.5                      | 8.9                                         | 1.9            | 1.000255                  |
| 4500.0                            | 863.0                 | 5.9                                         | 36.0                 | 1076.0                       | 651.2                      | 322.2                                       | 2.3            | 1.000256                  |
| 5000.0                            | 847.1                 | 4.5                                         | 36.2                 | 1061.3                       | 649.6                      | 299.4                                       | 3.6            | 1.000251                  |
| 5500.0                            | 831.2                 | 3.5                                         | 37.1                 | 1045.3                       | 648.4                      | 269.4                                       | 5.2            | 1.000247                  |
| 6000.0                            | 815.6                 | 2.5                                         | 38.1                 | 1029.6                       | 647.2                      | 264.1                                       | 6.8            | 1.000243                  |
| 6500.0                            | 800.4                 | 1.5                                         | 39.0                 | 1014.1                       | 646.0                      | 269.2                                       | 11.5           | 1.000239                  |
| 7000.0                            | 785.4                 | .4                                          | 39.9                 | 998.6                        | 644.8                      | 293.7                                       | 16.2           | 1.000235                  |
| 7500.0                            | 770.7                 | -.6                                         | 40.9                 | 983.8                        | 643.6                      | 307.3                                       | 20.0           | 1.000231                  |
| 8000.0                            | 755.2                 | .3                                          | 39.0                 | 962.4                        | 644.6                      | 317.3                                       | 22.6           | 1.000227                  |
| 8500.0                            | 741.9                 | .3                                          | 37.7                 | 944.1                        | 644.6                      | 329.9                                       | 21.6           | 1.000222                  |
| 9000.0                            | 727.9                 | -.4                                         | 37.1                 | 928.6                        | 643.8                      | 337.3                                       | 24.2           | 1.000218                  |
| 9500.0                            | 714.2                 | -1.1                                        | 36.6                 | 913.4                        | 642.9                      | 336.6                                       | 30.7           | 1.000214                  |
| 10000.0                           | 700.7                 | -1.8                                        | 36.0                 | 898.5                        | 642.1                      | 334.7                                       | 36.8           | 1.000210                  |
| 10500.0                           | 687.3                 | -2.2                                        | 35.3                 | 882.9                        | 641.6                      | 331.4                                       | 42.5           | 1.000206                  |
| 11000.0                           | 674.2                 | -2.7                                        | 34.5                 | 867.5                        | 641.0                      | 329.7                                       | 43.5           | 1.000202                  |
| 11500.0                           | 661.4                 | -3.1                                        | 33.7                 | 852.4                        | 640.5                      | 329.1                                       | 38.7           | 1.000198                  |
| 12000.0                           | 648.8                 | -3.5                                        | 33.0                 | 837.5                        | 640.0                      | 327.4                                       | 35.9           | 1.000195                  |
| 12500.0                           | 636.4                 | -4.0                                        | 32.2                 | 822.9                        | 639.4                      | 324.2                                       | 36.3           | 1.000191                  |
| 13000.0                           | 624.1                 | -4.7                                        | 31.0                 | 809.3                        | 638.5                      | 321.4                                       | 36.7           | 1.000187                  |
| 13500.0                           | 612.0                 | -5.6                                        | 29.6                 | 796.2                        | 637.5                      | 319.5                                       | 37.4           | 1.000184                  |
| 14000.0                           | 600.2                 | -6.4                                        | 28.2                 | 783.3                        | 636.5                      | 318.2                                       | 37.4           | 1.000180                  |
| 14500.0                           | 588.5                 | -7.2                                        | 26.8                 | 770.6                        | 635.5                      | 316.2                                       | 36.0           | 1.000177                  |
| 15000.0                           | 577.1                 | -8.1                                        | 25.3                 | 758.1                        | 634.4                      | 318.1                                       | 35.6           | 1.000173                  |
| 15500.0                           | 566.0                 | -8.9                                        | 23.9                 | 745.9                        | 633.4                      | 318.0                                       | 36.8           | 1.000170                  |
| 16000.0                           | 555.0                 | -9.8                                        | 22.5                 | 733.8                        | 632.4                      | 317.0                                       | 38.8           | 1.000167                  |
| 16500.0                           | 544.1                 | -10.8                                       | 21.9                 | 722.2                        | 631.2                      | 315.5                                       | 41.4           | 1.000164                  |
| 17000.0                           | 533.3                 | -11.9                                       | 21.7                 | 710.8                        | 629.8                      | 312.9                                       | 42.2           | 1.000161                  |
| 17500.0                           | 522.8                 | -13.0                                       | 21.5                 | 699.7                        | 628.5                      | 309.2                                       | 41.8           | 1.000159                  |
| 18000.0                           | 512.4                 | -14.1                                       | 21.3                 | 688.8                        | 627.2                      | 306.7                                       | 41.7           | 1.000156                  |

UPPER AIR DATA  
0250020067  
WHITE SANDS  
TABLE IV. (CONT)

STATION ALTITUDE 3989.00 FEET MSL  
25 JAN. 78  
1600 HRS MST  
ASCENSION NO. 67

GEOMETRIC ALTITUDE 3989.00 FEET MSL  
25 JAN. 78  
1600 HRS MST  
ASCENSION NO. 67

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION (TN)<br>SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|------------------------------------------|----------------------|------------------------------|----------------------------|-----------------------------------------------|---------------------------|
| 18500.0                        | 502.3                 | -15.2                                    | 21.0                 | 678.0                        | 625.8                      | 305.8                                         | 1.000153                  |
| 19000.0                        | 492.0                 | -16.3                                    | 21.2                 | 667.2                        | 624.4                      | 306.6                                         | 1.000151                  |
| 19500.0                        | 481.9                 | -17.5                                    | 21.5                 | 656.6                        | 622.9                      | 308.9                                         | 1.000148                  |
| 20000.0                        | 472.1                 | -18.7                                    | 21.8                 | 646.2                        | 621.5                      | 309.6                                         | 1.000146                  |
| 20500.0                        | 462.4                 | -19.9                                    | 22.1                 | 635.9                        | 620.0                      | 309.6                                         | 1.000143                  |
| 21000.0                        | 452.9                 | -21.1                                    | 22.3                 | 625.9                        | 618.5                      | 308.1                                         | 1.000141                  |
| 21500.0                        | 443.6                 | -22.3                                    | 22.6                 | 616.0                        | 617.1                      | 306.0                                         | 1.000139                  |
| 22000.0                        | 434.5                 | -23.5                                    | 22.9                 | 606.2                        | 615.6                      | 303.5                                         | 1.000136                  |
| 22500.0                        | 425.6                 | -24.7                                    | 23.2                 | 595.7                        | 614.1                      | 300.9                                         | 1.000134                  |
| 23000.0                        | 416.8                 | -25.9                                    | 23.4                 | 587.3                        | 612.6                      | 297.8                                         | 1.000132                  |
| 23500.0                        | 408.3                 | -27.1                                    | 23.7                 | 578.0                        | 611.1                      | 295.3                                         | 1.000130                  |
| 24000.0                        | 399.9                 | -28.3                                    | 24.0                 | 568.9                        | 609.6                      | 293.6                                         | 1.000128                  |
| 24500.0                        | 391.4                 | -29.4                                    | 24.0                 | 559.3                        | 608.2                      | 292.5                                         | 1.000125                  |
| 25000.0                        | 383.0                 | -30.5                                    | 24.0                 | 549.9                        | 606.8                      | 292.8                                         | 1.000123                  |
| 25500.0                        | 374.8                 | -31.7                                    | 24.0                 | 540.6                        | 605.4                      | 293.0                                         | 1.000121                  |
| 26000.0                        | 366.8                 | -32.8                                    | 24.0                 | 531.5                        | 604.0                      | 293.3                                         | 1.000119                  |
| 26500.0                        | 358.9                 | -33.9                                    | 24.0                 | 522.6                        | 602.6                      | 293.9                                         | 1.000117                  |
| 27000.0                        | 351.2                 | -35.0                                    | 24.0                 | 513.8                        | 601.2                      | 294.8                                         | 1.000115                  |
| 27500.0                        | 343.7                 | -36.1                                    | 23.500               | 505.1                        | 599.8                      | 295.1                                         | 1.000113                  |
| 28000.0                        | 336.1                 | -37.4                                    | 19.700               | 496.5                        | 598.2                      | 295.2                                         | 1.000111                  |
| 28500.0                        | 328.7                 | -38.6                                    | 15.800               | 488.1                        | 596.7                      | 295.0                                         | 1.000109                  |
| 29000.0                        | 321.4                 | -39.8                                    | 11.900               | 479.8                        | 595.2                      | 294.8                                         | 1.000107                  |
| 29500.0                        | 314.3                 | -41.0                                    | 8.100                | 471.6                        | 593.6                      | 294.4                                         | 1.000105                  |
| 30000.0                        | 307.4                 | -42.2                                    | 4.200                | 463.6                        | 592.1                      | 294.0                                         | 1.000103                  |
| 30500.0                        | 300.6                 | -43.4                                    | .300                 | 455.7                        | 590.5                      | 292.8                                         | 1.000102                  |
| 31000.0                        | 293.7                 | -44.5                                    |                      | 447.4                        | 589.1                      | 291.6                                         | 1.000100                  |
| 31500.0                        | 287.0                 | -45.5                                    |                      | 439.2                        | 587.8                      | 290.3                                         | 1.000098                  |
| 32000.0                        | 280.4                 | -46.6                                    |                      | 431.2                        | 586.4                      | 289.1                                         | 1.000096                  |
| 32500.0                        | 274.0                 | -47.6                                    |                      | 423.3                        | 585.1                      | 288.5                                         | 1.000094                  |
| 33000.0                        | 267.8                 | -48.7                                    |                      | 415.5                        | 583.7                      | 288.0                                         | 1.000093                  |

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

STATION ALTITUDE 3489.00 FEET MSL  
25 JAN. 78 1600 HRS MST  
ASCENSION NO. 67

UPPER AIR DATA  
0250020067  
WHITE SANDS  
TABLE IV. (CONT)

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

| GLOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>MEER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                 |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---------------------------------------------|----------------------|-----------------------------|----------------------------|---------------------------|----------------|---------------------------|
|                                   |                       |                                             |                      |                             |                            | DIRECTION<br>DEGREES (TH) | SPEED<br>KNOTS |                           |
| 33500.0                           | 261.6                 | -49.7                                       |                      | 408.0                       | 582.3                      | 288.3                     | 83.9           | 1.000091                  |
| 34000.0                           | 255.7                 | -50.8                                       |                      | 400.5                       | 580.9                      | 288.8                     | 88.8           | 1.000089                  |
| 34500.0                           | 249.8                 | -51.8                                       |                      | 393.2                       | 579.6                      | 289.3                     | 93.7           | 1.000088                  |
| 35000.0                           | 243.9                 | -52.7                                       |                      | 385.5                       | 578.4                      | 289.8                     | 98.7           | 1.000086                  |
| 35500.0                           | 238.2                 | -53.6                                       |                      | 377.9                       | 577.3                      | 290.3                     | 101.9          | 1.000084                  |
| 36000.0                           | 232.6                 | -54.4                                       |                      | 370.5                       | 576.2                      | 290.7                     | 104.6          | 1.000083                  |
| 36500.0                           | 227.1                 | -55.3                                       |                      | 363.2                       | 575.0                      | 291.1                     | 107.2          | 1.000081                  |
| 37000.0                           | 221.7                 | -56.4                                       |                      | 356.4                       | 573.5                      | 291.4                     | 109.8          | 1.000079                  |
| 37500.0                           | 216.4                 | -57.8                                       |                      | 350.0                       | 571.8                      | 291.4                     | 111.4          | 1.000078                  |
| 38000.0                           | 211.2                 | -59.1                                       |                      | 343.7                       | 570.0                      | 291.3                     | 112.7          | 1.000077                  |
| 38500.0                           | 206.1                 | -60.4                                       |                      | 337.5                       | 568.2                      | 290.7                     | 112.7          | 1.000075                  |
| 39000.0                           | 201.1                 | -61.8                                       |                      | 331.5                       | 566.4                      | 290.0                     | 112.4          | 1.000074                  |
| 39500.0                           | 196.2                 | -62.2                                       |                      | 324.1                       | 565.8                      | 288.6                     | 110.8          | 1.000072                  |
| 40000.0                           | 191.4                 | -62.4                                       |                      | 316.5                       | 565.5                      | 288.7                     | 107.8          | 1.000070                  |
| 40500.0                           | 186.8                 | -62.6                                       |                      | 309.0                       | 565.3                      | 284.8                     | 104.9          | 1.000069                  |
| 41000.0                           | 182.2                 | -62.4                                       |                      | 301.1                       | 565.6                      | 282.8                     | 101.7          | 1.000067                  |
| 41500.0                           | 177.8                 | -61.7                                       |                      | 292.9                       | 566.4                      | 281.1                     | 99.3           | 1.000065                  |
| 42000.0                           | 173.4                 | -61.1                                       |                      | 284.9                       | 567.3                      | 280.5                     | 98.3           | 1.000063                  |
| 42500.0                           | 169.2                 | -60.5                                       |                      | 277.2                       | 568.1                      | 280.2                     | 97.6           | 1.000062                  |
| 43000.0                           | 165.1                 | -60.7                                       |                      | 270.6                       | 567.9                      | 280.9                     | 98.7           | 1.000060                  |
| 43500.0                           | 161.0                 | -61.2                                       |                      | 264.7                       | 567.2                      | 281.7                     | 100.0          | 1.000059                  |
| 44000.0                           | 157.1                 | -61.7                                       |                      | 258.9                       | 566.5                      | 282.8                     | 102.2          | 1.000058                  |
| 44500.0                           | 153.3                 | -62.2                                       |                      | 253.2                       | 565.8                      | 283.5                     | 102.5          | 1.000056                  |
| 45000.0                           | 149.6                 | -62.6                                       |                      | 247.5                       | 565.3                      | 283.3                     | 97.9           | 1.000055                  |
| 45500.0                           | 145.9                 | -61.8                                       |                      | 240.5                       | 566.4                      | 282.7                     | 93.4           | 1.000054                  |
| 46000.0                           | 142.4                 | -61.0                                       |                      | 233.8                       | 567.4                      | 281.4                     | 88.8           | 1.000052                  |
| 46500.0                           | 138.9                 | -60.2                                       |                      | 227.2                       | 568.5                      | 279.8                     | 87.6           | 1.000051                  |
| 47000.0                           | 135.5                 | -59.4                                       |                      | 220.9                       | 569.6                      | 278.2                     | 89.4           | 1.000049                  |
| 47500.0                           | 132.3                 | -59.3                                       |                      | 215.5                       | 569.6                      | 276.5                     | 91.0           | 1.000048                  |
| 48000.0                           | 129.1                 | -59.5                                       |                      | 210.5                       | 569.4                      | 275.0                     | 92.6           | 1.000047                  |

STATION ALTITUDE 3989.00 FEET MSL  
25 JAN. 78 1600 HRS MST  
ASCENSION NO. 67

UPPER AIR DATA  
0250020067  
WHITE SANDS  
TABLE IV. (CONT)

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

| GEOMETRIC<br>ALTITUDE | PRESSURE  | AIR<br>TEMPERATURE    | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNUTS | WIND DATA<br>DIRECTION<br>DEGREES (TN) | SPEED<br>KNUTS | INDEX<br>OF<br>REFRACTION |
|-----------------------|-----------|-----------------------|----------------------|------------------------------|----------------------------|----------------------------------------|----------------|---------------------------|
| MSL FEET              | MILLIBARS | DEGREES<br>CENTIGRADE |                      |                              |                            |                                        |                |                           |
| 48500.0               | 125.9     | -59.7                 |                      | 205.5                        | 569.1                      | 274.0                                  | 90.0           | 1.0000040                 |
| 49000.0               | 122.9     | -59.9                 |                      | 200.7                        | 568.9                      | 273.1                                  | 88.0           | 1.0000045                 |
| 49500.0               | 119.9     | -60.1                 |                      | 196.1                        | 568.6                      | 273.2                                  | 84.2           | 1.0000044                 |
| 50000.0               | 117.0     | -60.3                 |                      | 191.5                        | 568.4                      | 273.5                                  | 80.0           | 1.0000043                 |
| 50500.0               | 114.2     | -60.5                 |                      | 187.0                        | 568.1                      | 275.7                                  | 79.7           | 1.0000042                 |
| 51000.0               | 111.4     | -60.7                 |                      | 182.7                        | 567.8                      | 278.2                                  | 80.1           | 1.0000041                 |
| 51500.0               | 108.7     | -61.2                 |                      | 178.6                        | 567.2                      | 280.7                                  | 82.2           | 1.0000040                 |
| 52000.0               | 106.0     | -61.6                 |                      | 174.6                        | 566.6                      | 283.1                                  | 84.6           | 1.0000039                 |
| 52500.0               | 103.4     | -62.1                 |                      | 170.7                        | 566.0                      | 283.8                                  | 81.5           | 1.0000038                 |
| 53000.0               | 100.9     | -62.5                 |                      | 166.9                        | 565.4                      | 284.4                                  | 77.5           | 1.0000037                 |
| 53500.0               | 98.4      | -62.8                 |                      | 163.1                        | 565.0                      | 284.3                                  | 69.4           | 1.0000036                 |
| 54000.0               | 96.0      | -63.1                 |                      | 159.2                        | 564.7                      | 284.0                                  | 60.7           | 1.0000035                 |
| 54500.0               | 93.6      | -63.3                 |                      | 155.4                        | 564.3                      | 284.0                                  | 56.0           | 1.0000036                 |
| 55000.0               | 91.3      | -63.5                 |                      | 151.8                        | 564.0                      | 284.1                                  | 52.0           | 1.0000034                 |
| 55500.0               | 89.0      | -63.8                 |                      | 148.2                        | 563.7                      | 283.5                                  | 45.7           | 1.0000033                 |
| 56000.0               | 86.8      | -64.0                 |                      | 144.7                        | 563.4                      | 282.2                                  | 38.2           | 1.0000032                 |
| 56500.0               | 84.7      | -64.2                 |                      | 141.2                        | 563.1                      | 279.6                                  | 29.6           | 1.0000031                 |
| 57000.0               | 82.6      | -64.5                 |                      | 137.9                        | 562.8                      | 273.9                                  | 19.4           | 1.0000031                 |
| 57500.0               | 80.6      | -64.7                 |                      | 134.6                        | 562.5                      | 263.1                                  | 12.2           | 1.0000030                 |
| 58000.0               | 78.6      | -64.9                 |                      | 131.5                        | 562.2                      | 269.2                                  | 15.3           | 1.0000029                 |
| 58500.0               | 76.6      | -65.2                 |                      | 128.3                        | 561.8                      | 273.1                                  | 16.6           | 1.0000029                 |
| 59000.0               | 74.7      | -65.4                 |                      | 125.3                        | 561.5                      | 278.5                                  | 26.5           | 1.0000028                 |
| 59500.0               | 72.9      | -65.6                 |                      | 122.3                        | 561.2                      | 281.6                                  | 35.4           | 1.0000027                 |
| 60000.0               | 71.1      | -65.9                 |                      | 119.5                        | 560.9                      | 283.0                                  | 40.6           | 1.0000027                 |
| 60500.0               | 69.3      | -66.1                 |                      | 116.6                        | 560.6                      | 283.7                                  | 41.8           | 1.0000026                 |
| 61000.0               | 67.6      | -66.3                 |                      | 113.8                        | 560.3                      | 284.4                                  | 42.4           | 1.0000025                 |
| 61500.0               | 65.9      | -66.5                 |                      | 111.1                        | 560.0                      | 285.0                                  | 38.6           | 1.0000025                 |
| 62000.0               | 64.3      | -66.6                 |                      | 107.9                        | 561.3                      | 285.7                                  | 34.6           | 1.0000024                 |
| 62500.0               | 62.7      | -66.4                 |                      | 104.1                        | 564.2                      |                                        |                | 1.0000023                 |
| 63000.0               | 61.1      | -61.2                 |                      | 100.5                        | 567.1                      |                                        |                | 1.0000022                 |

STATION ALTITUDE 3989.00 FEET MSL  
25 JAN. 78  
ASCENSION NO. 67

MANDATORY LEVELS  
0250020067  
WHITE SANDS  
TABLE V.

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

| PRESSURE GEOPOTENTIAL |        | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | WIND DATA                 |                |
|-----------------------|--------|----------------|------------------------|----------------------|---------------------------|----------------|
| MILLIBARS             | FEET   | AIR<br>DEGREES | WETPOINT<br>CENTIGRADE |                      | DIRECTION<br>DEGREES (TN) | SPEED<br>KNOTS |
| 850.0                 | 4907.  | 4.7            | -9.1                   | 30.                  | 302.3                     | 3.4            |
| 800.0                 | 6518.  | 1.4            | -11.0                  | 39.                  | 209.4                     | 11.7           |
| 750.0                 | 8210.  | .7             | -12.0                  | 30.                  | 322.7                     | 22.0           |
| 700.0                 | 10025. | -1.8           | -14.9                  | 30.                  | 334.5                     | 37.1           |
| 650.0                 | 11953. | -3.5           | -17.4                  | 33.                  | 327.7                     | 35.9           |
| 600.0                 | 14019. | -6.4           | -21.6                  | 28.                  | 316.2                     | 37.3           |
| 550.0                 | 16235. | -10.2          | -27.8                  | 22.                  | 316.2                     | 40.0           |
| 500.0                 | 18621. | -15.4          | -32.7                  | 21.                  | 805.6                     | 41.6           |
| 450.0                 | 21200. | -21.5          | -37.2                  | 24.                  | 807.2                     | 39.4           |
| 400.0                 | 24011. | -28.3          | -42.5                  | 24.                  | 243.4                     | 40.0           |
| 350.0                 | 27109. | -35.2          | -48.5                  | 24.                  | 295.0                     | 55.7           |
| 300.0                 | 30573. | -43.5          |                        |                      | 292.5                     | 63.9           |
| 250.0                 | 34523. | -51.8          |                        |                      | 209.4                     | 94.5           |
| 200.0                 | 39171. | -62.1          |                        |                      | 209.6                     | 112.1          |
| 175.0                 | 41877. | -61.4          |                        |                      | 200.6                     | 98.3           |
| 150.0                 | 45015. | -62.7          |                        |                      | 203.3                     | 96.9           |
| 125.0                 | 48744. | -59.8          |                        |                      | 273.4                     | 88.8           |
| 100.0                 | 53294. | -62.7          |                        |                      | 204.3                     | 70.6           |
| 80.0                  | 57785. | -64.8          |                        |                      | 200.6                     | 15.0           |
| 70.0                  | 60451. | -66.0          |                        |                      | 203.9                     | 42.1           |

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

GEODETIC COORDINATES  
33.61920 LAT DEG  
106.66591 LON DEG

SIGNIFICANT LEVEL DATA  
0250040020  
STALLION  
TABLE VI.

STATION ALTITUDE 4940.00 FEET MSL  
20 JAN. 78 1600 HRS MST  
ASCENSION NO. 20

| PRESSURE | GEOMETRIC<br>ALTITUDE | TEMPERATURE    |                         | REL. HUM.<br>PERCENT |
|----------|-----------------------|----------------|-------------------------|----------------------|
|          |                       | AIR<br>DEGREES | WET POINT<br>CENTIGRADE |                      |
| 848.4    | 4940.0                | 5.7            | -1.9                    | 58.0                 |
| 844.5    | 5066.9                | 3.5            | -10.5                   | 35.0                 |
| 806.3    | 6290.9                | .0             | -12.6                   | 38.0                 |
| 786.8    | 6935.8                | 1.4            | -12.4                   | 35.0                 |
| 764.3    | 7700.4                | .4             | -14.0                   | 33.0                 |
| 700.0    | 9988.4                | -5.1           | -17.8                   | 36.0                 |
| 571.8    | 15142.7               | -10.8          | -28.3                   | 22.0                 |
| 500.0    | 18480.5               | -17.3          | -37.0                   | 16.0                 |
| 475.3    | 19719.4               | -14.4          | -40.0                   | 14.0                 |
| 400.0    | 23827.6               | -30.4          | -49.1                   | 14.0                 |
| 300.0    | 30304.6               | -46.5          |                         |                      |
| 250.0    | 34180.2               | -56.4          |                         |                      |
| 235.8    | 35385.3               | -54.7          |                         |                      |
| 200.0    | 38738.1               | -61.5          |                         |                      |
| 161.3    | 39635.8               | -63.3          |                         |                      |
| 174.3    | 41517.1               | -60.8          |                         |                      |
| 150.0    | 44575.3               | -60.0          |                         |                      |
| 141.3    | 45790.0               | -61.5          |                         |                      |
| 136.5    | 46495.7               | -58.1          |                         |                      |
| 100.0    | 52805.0               | -64.3          |                         |                      |
| 70.0     | 59948.6               | -63.1          |                         |                      |
| 61.2     | 62628.9               | -65.7          |                         |                      |
| 58.0     | 63703.2               | -61.9          |                         |                      |
| 51.3     | 66158.3               | -65.7          |                         |                      |
| 50.0     | 66700.3               | -62.9          |                         |                      |
| 50.0     | 76982.8               | -60.5          |                         |                      |
| 25.5     | 80277.6               | -60.0          |                         |                      |
| 20.0     | 85251.4               | -56.2          |                         |                      |
| 16.3     | 89482.2               | -56.2          |                         |                      |

GEODETIC COORDINATES  
33.81920 LAT DEG  
100.06501 LONG DEG

UPPER AIR DATA  
0250040020  
STALLION  
TABLE VII.

STATION ALTITUDE 4940.00 FEET MSL  
25 JAN. 78  
1600 HRS MST  
ASCENSION NO. 20

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES | TEMPERATURE<br>DEWPOINT<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|-------------------------------|---------------------------------------|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       |                               |                                       |                      |                              |                            | DIRECTION<br>DEGREES (T) | SPEED<br>KNOTS |                           |
| 4940.0                            | 846.4                 | 5.7                           | -1.9                                  | 58.0                 | 1057.4                       | 651.5                      | 250.0                    | 8.0            | 1.000261                  |
| 5000.0                            | 846.6                 | 4.7                           | -5.6                                  | 47.1                 | 1059.7                       | 649.9                      | 254.9                    | 7.9            | 1.000256                  |
| 5500.0                            | 830.8                 | 2.3                           | -11.2                                 | 36.1                 | 1049.6                       | 646.9                      | 290.1                    | 9.8            | 1.000247                  |
| 6000.0                            | 815.2                 | .8                            | -12.1                                 | 37.5                 | 1035.4                       | 645.2                      | 309.3                    | 14.0           | 1.000243                  |
| 6500.0                            | 799.9                 | .5                            | -12.5                                 | 37.0                 | 1017.4                       | 644.8                      | 319.1                    | 18.4           | 1.000238                  |
| 7000.0                            | 784.9                 | 1.3                           | -12.5                                 | 34.8                 | 995.1                        | 645.8                      | 326.0                    | 23.2           | 1.000233                  |
| 7500.0                            | 770.1                 | .7                            | -13.5                                 | 33.5                 | 978.8                        | 645.0                      | 331.9                    | 26.9           | 1.000229                  |
| 8000.0                            | 755.6                 | -.3                           | -14.5                                 | 33.4                 | 963.8                        | 643.8                      | 335.8                    | 29.0           | 1.000225                  |
| 8500.0                            | 741.2                 | -1.5                          | -15.3                                 | 34.0                 | 949.7                        | 642.4                      | 338.7                    | 27.4           | 1.000221                  |
| 9000.0                            | 727.1                 | -2.7                          | -16.1                                 | 34.7                 | 935.8                        | 640.9                      | 340.9                    | 26.9           | 1.000217                  |
| 9500.0                            | 713.3                 | -3.9                          | -17.0                                 | 35.4                 | 922.1                        | 639.5                      | 340.7                    | 26.0           | 1.000214                  |
| 10000.0                           | 699.7                 | -5.1                          | -17.3                                 | 36.0                 | 908.8                        | 638.1                      | 338.6                    | 27.4           | 1.000210                  |
| 10500.0                           | 686.1                 | -5.7                          | -18.8                                 | 34.6                 | 892.9                        | 637.4                      | 336.0                    | 29.9           | 1.000206                  |
| 11000.0                           | 672.8                 | -6.2                          | -19.7                                 | 33.3                 | 877.4                        | 636.7                      | 335.0                    | 30.4           | 1.000202                  |
| 11500.0                           | 659.7                 | -6.8                          | -20.7                                 | 31.9                 | 862.1                        | 636.0                      | 336.7                    | 29.2           | 1.000198                  |
| 12000.0                           | 646.9                 | -7.3                          | -21.7                                 | 30.5                 | 847.2                        | 635.4                      | 340.4                    | 26.9           | 1.000194                  |
| 12500.0                           | 634.3                 | -7.9                          | -22.7                                 | 29.2                 | 832.5                        | 634.7                      | 339.2                    | 27.9           | 1.000191                  |
| 13000.0                           | 622.0                 | -8.4                          | -23.7                                 | 27.8                 | 818.0                        | 634.0                      | 334.8                    | 30.2           | 1.000187                  |
| 13500.0                           | 609.9                 | -9.0                          | -24.7                                 | 26.5                 | 803.9                        | 633.3                      | 329.3                    | 34.1           | 1.000184                  |
| 14000.0                           | 596.0                 | -9.5                          | -25.8                                 | 25.1                 | 789.9                        | 632.7                      | 324.3                    | 37.0           | 1.000180                  |
| 14500.0                           | 586.4                 | -10.1                         | -26.9                                 | 23.7                 | 776.2                        | 632.0                      | 322.0                    | 39.4           | 1.000177                  |
| 15000.0                           | 575.0                 | -10.6                         | -28.0                                 | 22.4                 | 762.8                        | 631.3                      | 321.9                    | 40.8           | 1.000173                  |
| 15500.0                           | 563.5                 | -11.5                         | -29.2                                 | 21.4                 | 750.2                        | 630.3                      | 321.2                    | 44.1           | 1.000170                  |
| 16000.0                           | 552.4                 | -12.5                         | -30.5                                 | 20.5                 | 738.0                        | 629.1                      | 320.3                    | 47.4           | 1.000167                  |
| 16500.0                           | 541.4                 | -13.4                         | -31.8                                 | 19.6                 | 726.1                        | 627.9                      | 319.1                    | 49.8           | 1.000164                  |
| 17000.0                           | 530.7                 | -14.4                         | -33.1                                 | 18.7                 | 714.3                        | 626.7                      | 316.6                    | 49.4           | 1.000161                  |
| 17500.0                           | 520.1                 | -15.4                         | -34.4                                 | 17.8                 | 702.8                        | 625.5                      | 313.6                    | 49.7           | 1.000158                  |
| 18000.0                           | 509.8                 | -16.4                         | -35.7                                 | 16.9                 | 691.4                        | 624.3                      | 310.6                    | 50.3           | 1.000156                  |
| 18500.0                           | 499.6                 | -17.3                         | -37.1                                 | 16.0                 | 680.2                        | 623.2                      | 308.2                    | 51.0           | 1.000153                  |
| 19000.0                           | 489.5                 | -18.2                         | -38.3                                 | 15.2                 | 668.7                        | 622.1                      | 306.7                    | 51.5           | 1.000150                  |

STATION ALTITUDE 4940.00 FEET MSL  
25 JAN. 78 1600 HRS MST  
ASCENSION NO. 20

UPPER AIR DATA  
0250040020  
STATION  
TABLE VII. (CONT)

GEODETIC COORDINATES  
35.31920 LAT DEG  
106.66501 LON DEG

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                 |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---------------------------------------------|----------------------|------------------------------|----------------------------|---------------------------|----------------|---------------------------|
|                                   |                       |                                             |                      |                              |                            | DIRECTION<br>DEGREES (TA) | SPEED<br>KNOTS |                           |
| 19500.0                           | 479.6                 | -19.0                                       | 14.4                 | 657.3                        | 621.1                      | 305.2                     | 51.5           | 1.000146                  |
| 20000.0                           | 469.7                 | -20.2                                       | 14.0                 | 646.7                        | 619.7                      | 303.5                     | 51.1           | 1.000145                  |
| 20500.0                           | 460.0                 | -21.5                                       | 14.0                 | 636.7                        | 618.1                      | 301.9                     | 50.4           | 1.000143                  |
| 21000.0                           | 450.4                 | -22.8                                       | 14.0                 | 626.6                        | 616.4                      | 300.3                     | 49.5           | 1.000140                  |
| 21500.0                           | 441.1                 | -24.2                                       | 14.0                 | 617.1                        | 614.8                      | 299.2                     | 49.8           | 1.000138                  |
| 22000.0                           | 431.9                 | -25.5                                       | 14.0                 | 607.5                        | 613.1                      | 298.2                     | 50.2           | 1.000136                  |
| 22500.0                           | 422.7                 | -26.8                                       | 14.0                 | 598.1                        | 611.4                      | 297.2                     | 50.3           | 1.000134                  |
| 23000.0                           | 414.1                 | -28.2                                       | 14.0                 | 588.9                        | 609.8                      | 296.1                     | 50.4           | 1.000132                  |
| 23500.0                           | 405.5                 | -29.5                                       | 14.0                 | 579.6                        | 608.1                      | 295.0                     | 50.5           | 1.000130                  |
| 24000.0                           | 396.9                 | -30.8                                       | 13.6**               | 570.6                        | 606.5                      | 294.1                     | 50.7           | 1.000128                  |
| 24500.0                           | 388.2                 | -32.1                                       | 12.5**               | 560.9                        | 604.9                      | 293.1                     | 51.0           | 1.000125                  |
| 25000.0                           | 379.7                 | -33.3                                       | 11.5**               | 551.4                        | 603.4                      | 292.3                     | 51.9           | 1.000123                  |
| 25500.0                           | 371.4                 | -34.5                                       | 10.4**               | 542.1                        | 601.6                      | 291.6                     | 52.7           | 1.000121                  |
| 26000.0                           | 363.2                 | -35.7                                       | 9.3**                | 532.9                        | 600.3                      | 291.2                     | 53.9           | 1.000119                  |
| 26500.0                           | 355.2                 | -37.0                                       | 8.2**                | 523.9                        | 598.7                      | 291.0                     | 55.3           | 1.000117                  |
| 27000.0                           | 347.4                 | -38.2                                       | 7.1**                | 515.1                        | 597.2                      | 292.6                     | 58.1           | 1.000115                  |
| 27500.0                           | 339.8                 | -39.4                                       | 6.1**                | 506.4                        | 595.6                      | 294.1                     | 60.8           | 1.000113                  |
| 28000.0                           | 332.3                 | -40.6                                       | 5.0**                | 497.9                        | 594.0                      | 295.1                     | 61.9           | 1.000111                  |
| 28500.0                           | 325.0                 | -41.9                                       | 3.9**                | 489.6                        | 592.5                      | 296.1                     | 63.1           | 1.000109                  |
| 29000.0                           | 317.9                 | -43.1                                       | 2.8**                | 481.4                        | 590.9                      | 295.9                     | 62.3           | 1.000107                  |
| 29500.0                           | 310.9                 | -44.3                                       | 1.7**                | 473.3                        | 589.3                      | 295.3                     | 61.1           | 1.000105                  |
| 30000.0                           | 304.1                 | -45.6                                       | .7**                 | 465.4                        | 587.7                      | 294.7                     | 60.1           | 1.000104                  |
| 30500.0                           | 297.3                 | -46.8                                       |                      | 457.5                        | 586.1                      | 293.9                     | 59.5           | 1.000102                  |
| 31000.0                           | 290.3                 | -48.1                                       |                      | 449.5                        | 584.4                      | 293.3                     | 59.5           | 1.000100                  |
| 31500.0                           | 283.6                 | -49.4                                       |                      | 441.6                        | 582.7                      | 293.0                     | 60.5           | 1.000098                  |
| 32000.0                           | 277.0                 | -50.7                                       |                      | 433.8                        | 581.0                      | 292.7                     | 62.3           | 1.000097                  |
| 32500.0                           | 270.6                 | -52.0                                       |                      | 426.2                        | 579.3                      | 292.4                     | 64.4           | 1.000095                  |
| 33000.0                           | 264.3                 | -53.3                                       |                      | 418.8                        | 577.6                      | 292.1                     | 66.4           | 1.000093                  |
| 33500.0                           | 258.1                 | -54.6                                       |                      | 411.5                        | 575.9                      | 292.0                     | 69.0           | 1.000092                  |
| 34000.0                           | 252.1                 | -55.9                                       |                      | 404.3                        | 574.2                      | 291.9                     | 71.7           | 1.000090                  |

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

UPPER AIR DATA  
 0250040020  
 STALLION  
 TABLE VI'. (CONT)

STATION ALTITUDE 4940.00 FEET MSL  
 25 JAN. 78  
 ASCENSION NO. 20

GEODETIC COORDINATES  
 33.61920 LAT DEG  
 106.66501 LON DEG

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIPARS | TEMPERATURE<br>AIR DEGREES | DEWPOINT<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF |       | WIND DATA<br>DIRECTION<br>DEGREES (TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|----------------------------|------------------------|----------------------|------------------------------|----------|-------|----------------------------------------|----------------|---------------------------|
|                                |                       |                            |                        |                      |                              | SCUND    | KNOTS |                                        |                |                           |
| 34500.0                        | 246.2                 | -57.3                      |                        |                      | 397.2                        | 572.4    |       | 292.0                                  | 75.3           | 1.000088                  |
| 35000.0                        | 240.3                 | -58.6                      |                        |                      | 390.2                        | 570.6    |       | 292.2                                  | 79.6           | 1.000087                  |
| 35500.0                        | 234.5                 | -59.8                      |                        |                      | 382.8                        | 569.1    |       | 292.3                                  | 83.7           | 1.000085                  |
| 36000.0                        | 228.8                 | -60.0                      |                        |                      | 374.0                        | 568.7    |       | 292.2                                  | 87.5           | 1.000083                  |
| 36500.0                        | 223.2                 | -60.3                      |                        |                      | 365.4                        | 568.4    |       | 292.1                                  | 91.0           | 1.000081                  |
| 37000.0                        | 217.8                 | -60.6                      |                        |                      | 357.0                        | 568.0    |       | 291.8                                  | 93.7           | 1.000079                  |
| 37500.0                        | 212.5                 | -60.8                      |                        |                      | 348.7                        | 567.7    |       | 291.5                                  | 96.4           | 1.000076                  |
| 38000.0                        | 207.4                 | -61.1                      |                        |                      | 340.7                        | 567.3    |       | 291.3                                  | 97.8           | 1.000076                  |
| 38500.0                        | 202.4                 | -61.4                      |                        |                      | 332.9                        | 566.9    |       | 291.1                                  | 99.2           | 1.000074                  |
| 39000.0                        | 197.4                 | -62.0                      |                        |                      | 325.3                        | 566.1    |       | 290.6                                  | 98.2           | 1.000073                  |
| 39500.0                        | 192.6                 | -63.0                      |                        |                      | 319.3                        | 564.7    |       | 290.0                                  | 95.2           | 1.000071                  |
| 40000.0                        | 187.9                 | -62.6                      |                        |                      | 311.2                        | 565.0    |       | 289.3                                  | 92.2           | 1.000069                  |
| 40500.0                        | 183.3                 | -62.2                      |                        |                      | 302.6                        | 565.9    |       | 288.0                                  | 88.9           | 1.000067                  |
| 41000.0                        | 178.8                 | -61.5                      |                        |                      | 294.3                        | 566.8    |       | 286.5                                  | 85.6           | 1.000066                  |
| 41500.0                        | 174.4                 | -60.8                      |                        |                      | 286.2                        | 567.7    |       | 285.3                                  | 84.4           | 1.000064                  |
| 42000.0                        | 170.2                 | -60.7                      |                        |                      | 279.1                        | 567.9    |       | 284.4                                  | 84.0           | 1.000062                  |
| 42500.0                        | 166.1                 | -60.5                      |                        |                      | 272.1                        | 568.0    |       | 283.3                                  | 82.8           | 1.000061                  |
| 43000.0                        | 162.1                 | -60.4                      |                        |                      | 265.4                        | 568.2    |       | 282.3                                  | 80.8           | 1.000059                  |
| 43500.0                        | 158.1                 | -60.3                      |                        |                      | 258.6                        | 568.4    |       | 281.2                                  | 79.1           | 1.000058                  |
| 44000.0                        | 154.3                 | -60.2                      |                        |                      | 252.4                        | 568.6    |       | 280.3                                  | 78.1           | 1.000056                  |
| 44500.0                        | 150.6                 | -60.0                      |                        |                      | 246.1                        | 568.7    |       | 279.5                                  | 77.6           | 1.000055                  |
| 45000.0                        | 146.9                 | -60.5                      |                        |                      | 240.7                        | 568.1    |       | 278.9                                  | 78.2           | 1.000054                  |
| 45500.0                        | 143.3                 | -61.1                      |                        |                      | 235.5                        | 567.2    |       | 278.5                                  | 79.0           | 1.000052                  |
| 46000.0                        | 139.9                 | -60.5                      |                        |                      | 229.1                        | 568.1    |       | 278.4                                  | 79.8           | 1.000051                  |
| 46500.0                        | 136.5                 | -58.1                      |                        |                      | 221.1                        | 571.3    |       | 278.5                                  | 80.5           | 1.000049                  |
| 47000.0                        | 133.1                 | -58.6                      |                        |                      | 216.2                        | 570.6    |       | 279.1                                  | 80.0           | 1.000048                  |
| 47500.0                        | 129.9                 | -59.1                      |                        |                      | 211.4                        | 570.0    |       | 279.7                                  | 79.6           | 1.000047                  |
| 48000.0                        | 126.1                 | -59.6                      |                        |                      | 206.7                        | 569.5    |       | 279.6                                  | 76.2           | 1.000046                  |
| 48500.0                        | 123.7                 | -60.1                      |                        |                      | 202.2                        | 568.7    |       | 279.4                                  | 72.7           | 1.000045                  |
| 49000.0                        | 120.6                 | -60.6                      |                        |                      | 197.7                        | 568.0    |       | 279.2                                  | 70.6           | 1.000044                  |

UPPER AIR DATA  
0250040020  
STATION  
TABLE VII. (CONT)

STATION ALTITUDE 4940.00 FEET MSL  
25 JAN. 78  
1600 HRS MST  
ASCENSION NO. 20

GEOMETRIC COORDINATES  
33.81920 LAT NEG  
106.66501 LONG NEG

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---------------------------------------------|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       |                                             |                      |                              |                            | DIRECTION<br>DEGREES(TP) | SPEED<br>KNOTS |                           |
| 49500.0                           | 117.7                 | -61.1                                       |                      | 193.3                        | 567.4                      | 279.0                    | 68.7           | 1.000043                  |
| 50000.0                           | 114.6                 | -61.5                                       |                      | 189.1                        | 560.7                      | 279.3                    | 66.3           | 1.000042                  |
| 50500.0                           | 112.0                 | -62.0                                       |                      | 184.9                        | 556.1                      | 280.0                    | 66.9           | 1.000041                  |
| 51000.0                           | 109.3                 | -62.5                                       |                      | 180.6                        | 555.4                      | 280.7                    | 69.4           | 1.000040                  |
| 51500.0                           | 106.6                 | -63.0                                       |                      | 176.8                        | 564.7                      | 281.0                    | 67.6           | 1.000039                  |
| 52000.0                           | 104.1                 | -63.5                                       |                      | 172.9                        | 564.1                      | 281.3                    | 65.8           | 1.000039                  |
| 52500.0                           | 101.5                 | -64.0                                       |                      | 169.1                        | 563.4                      | 281.4                    | 62.9           | 1.000038                  |
| 53000.0                           | 99.0                  | -64.3                                       |                      | 165.2                        | 563.1                      | 281.3                    | 59.0           | 1.000037                  |
| 53500.0                           | 96.6                  | -64.2                                       |                      | 161.0                        | 563.2                      | 281.2                    | 55.2           | 1.000036                  |
| 54000.0                           | 94.2                  | -64.1                                       |                      | 157.0                        | 563.3                      | 281.4                    | 52.1           | 1.000035                  |
| 54500.0                           | 91.9                  | -64.0                                       |                      | 153.1                        | 563.4                      | 281.7                    | 49.0           | 1.000034                  |
| 55000.0                           | 89.6                  | -63.9                                       |                      | 149.2                        | 563.5                      | 282.8                    | 47.4           | 1.000033                  |
| 55500.0                           | 87.4                  | -63.8                                       |                      | 145.3                        | 563.6                      | 284.0                    | 45.9           | 1.000032                  |
| 56000.0                           | 85.3                  | -63.8                                       |                      | 141.8                        | 563.7                      | 286.2                    | 43.6           | 1.000032                  |
| 56500.0                           | 83.2                  | -63.7                                       |                      | 138.3                        | 563.8                      | 288.7                    | 41.2           | 1.000031                  |
| 57000.0                           | 81.1                  | -63.6                                       |                      | 134.8                        | 564.0                      | 291.1                    | 39.4           | 1.000030                  |
| 57500.0                           | 79.1                  | -63.5                                       |                      | 131.4                        | 564.1                      | 293.6                    | 37.9           | 1.000029                  |
| 58000.0                           | 77.2                  | -63.4                                       |                      | 128.2                        | 564.2                      | 295.5                    | 36.8           | 1.000029                  |
| 58500.0                           | 75.3                  | -63.3                                       |                      | 124.9                        | 564.3                      | 295.3                    | 36.6           | 1.000028                  |
| 59000.0                           | 73.4                  | -63.3                                       |                      | 121.8                        | 564.4                      | 295.2                    | 36.4           | 1.000027                  |
| 59500.0                           | 71.6                  | -63.2                                       |                      | 118.8                        | 564.5                      | 293.0                    | 35.3           | 1.000026                  |
| 60000.0                           | 69.8                  | -63.1                                       |                      | 115.5                        | 564.6                      | 290.5                    | 34.2           | 1.000026                  |
| 60500.0                           | 68.1                  | -63.6                                       |                      | 113.2                        | 563.9                      | 288.1                    | 33.0           | 1.000025                  |
| 61000.0                           | 66.4                  | -64.1                                       |                      | 110.7                        | 563.2                      | 285.7                    | 31.8           | 1.000025                  |
| 61500.0                           | 64.6                  | -64.6                                       |                      | 108.2                        | 562.6                      | 283.1                    | 30.4           | 1.000024                  |
| 62000.0                           | 63.2                  | -65.1                                       |                      | 105.8                        | 561.9                      | 282.9                    | 30.3           | 1.000024                  |
| 62500.0                           | 61.6                  | -65.6                                       |                      | 103.4                        | 561.3                      | 282.7                    | 30.1           | 1.000023                  |
| 63000.0                           | 60.1                  | -64.4                                       |                      | 100.2                        | 562.9                      | 283.0                    | 29.6           | 1.000022                  |
| 63500.0                           | 58.6                  | -62.8                                       |                      | 97.0                         | 565.3                      | 283.9                    | 28.7           | 1.000022                  |
| 64000.0                           | 57.1                  | -62.4                                       |                      | 94.4                         | 565.6                      | 284.8                    | 27.7           | 1.000021                  |

STATION ALTITUDE 4940.00 FEET MSL  
25 JAN. 76 1600 HRS MST  
ASCENSION NO. 20

UPPER AIR DATA  
J250040J20  
STATION  
TABLE VII. (CONT)

GEODETIC COORDINATES  
33.81920 LAT DEG  
104.66501 LON DEG

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CM <sup>3</sup> | SPEED OF<br>SOUND<br>KNOTS | WIND DATA               |                | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|----------------|------------------------|----------------------|-------------------------------|----------------------------|-------------------------|----------------|---------------------------|
|                                |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |                               |                            | LIFTING<br>DEGREES (VA) | SPEED<br>KNOTS |                           |
| 64500.0                        | 55.7                  | -63.1          |                        |                      | 92.4                          | 504.6                      | 264.3                   | 23.1           | 1.000021                  |
| 65000.0                        | 54.4                  | -63.9          |                        |                      | 90.5                          | 505.5                      | 263.4                   | 16.5           | 1.000020                  |
| 65500.0                        | 53.0                  | -64.7          |                        |                      | 88.6                          | 506.5                      | 260.8                   | 13.5           | 1.000020                  |
| 66000.0                        | 51.7                  | -65.5          |                        |                      | 86.7                          | 507.4                      | 273.0                   | 8.2            | 1.000019                  |
| 66500.0                        | 50.4                  | -65.6          |                        |                      | 83.5                          | 508.6                      | 244.4                   | 3.7            | 1.000019                  |
| 67000.0                        | 49.2                  | -62.8          |                        |                      | 81.5                          | 505.0                      | 237.1                   | 2.4            | 1.000018                  |
| 67500.0                        | 48.0                  | -62.7          |                        |                      | 75.4                          | 505.1                      | 216.4                   | 1.3            | 1.000016                  |
| 68000.0                        | 46.8                  | -62.6          |                        |                      | 77.5                          | 503.3                      | 292.2                   | 1.9            | 1.000017                  |
| 68500.0                        | 45.7                  | -62.5          |                        |                      | 75.5                          | 505.5                      | 209.3                   | 6.1            | 1.000017                  |
| 69000.0                        | 44.6                  | -62.4          |                        |                      | 73.6                          | 505.6                      | 312.4                   | 10.4           | 1.000016                  |
| 69500.0                        | 43.5                  | -62.2          |                        |                      | 71.8                          | 505.6                      | 214.9                   | 13.6           | 1.000016                  |
| 70000.0                        | 42.4                  | -62.1          |                        |                      | 70.0                          | 505.9                      | 316.4                   | 16.9           | 1.000016                  |
| 70500.0                        | 41.4                  | -62.0          |                        |                      | 68.2                          | 506.1                      | 217.7                   | 19.6           | 1.000015                  |
| 71000.0                        | 40.3                  | -61.9          |                        |                      | 66.5                          | 506.2                      | 319.5                   | 20.1           | 1.000015                  |
| 71500.0                        | 39.4                  | -61.8          |                        |                      | 64.9                          | 506.4                      | 221.2                   | 20.5           | 1.000014                  |
| 72000.0                        | 38.4                  | -61.7          |                        |                      | 63.2                          | 506.6                      | 322.6                   | 20.5           | 1.000014                  |
| 72500.0                        | 37.5                  | -61.5          |                        |                      | 61.7                          | 506.7                      | 223.6                   | 19.2           | 1.000014                  |
| 73000.0                        | 36.5                  | -61.4          |                        |                      | 60.1                          | 506.9                      | 324.8                   | 16.0           | 1.000013                  |
| 73500.0                        | 35.6                  | -61.3          |                        |                      | 58.6                          | 507.0                      | 227.7                   | 15.8           | 1.000013                  |
| 74000.0                        | 34.6                  | -61.2          |                        |                      | 57.2                          | 507.2                      | 334.2                   | 12.7           | 1.000013                  |
| 74500.0                        | 33.9                  | -61.1          |                        |                      | 55.7                          | 507.3                      | 244.5                   | 9.9            | 1.000012                  |
| 75000.0                        | 33.1                  | -61.0          |                        |                      | 54.3                          | 507.5                      | 10.2                    | 7.3            | 1.000012                  |
| 75500.0                        | 32.3                  | -60.8          |                        |                      | 53.0                          | 507.6                      | 21.6                    | 7.5            | 1.000012                  |
| 76000.0                        | 31.5                  | -60.7          |                        |                      | 51.7                          | 507.8                      | 78.7                    | 10.7           | 1.000012                  |
| 76500.0                        | 30.7                  | -60.6          |                        |                      | 50.4                          | 508.0                      | 89.9                    | 14.2           | 1.000011                  |
| 77000.0                        | 30.0                  | -60.5          |                        |                      | 49.1                          | 508.1                      | 96.0                    | 17.7           | 1.000011                  |
| 77500.0                        | 29.2                  | -60.5          |                        |                      | 47.9                          | 506.0                      | 100.1                   | 21.4           | 1.000011                  |
| 78000.0                        | 28.5                  | -60.6          |                        |                      | 46.8                          | 508.0                      | 101.3                   | 21.5           | 1.000010                  |
| 78500.0                        | 27.6                  | -60.6          |                        |                      | 45.6                          | 507.9                      | 102.5                   | 21.4           | 1.000010                  |
| 79000.0                        | 27.2                  | -60.7          |                        |                      | 44.5                          | 507.9                      | 103.4                   | 21.0           | 1.000010                  |

UPPER AIR DATA  
 U250040020  
 STATION  
 TABLE VII. (CONT)

STATION ALTITUDE 4940.00 FEET MSL  
 25 JAN. 76 1600 HRS MST  
 ASCENSION NO. 20

GEODETIC COORDINATES  
 33.81920 LAT DEG  
 106.66501 LON DEG

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                 |                | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|----------------------------|---------------------------|----------------|---------------------------|
|                                |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |                              |                            | DIRECTION<br>DEGREES (TN) | SPEED<br>KNOTS |                           |
| 79500.0                        | 26.5                  | -60.7          |                        |                      | 42.5                         | 567.6                      | 104.3                     | 18.7           | 1.000010                  |
| 80000.0                        | 25.9                  | -60.8          |                        |                      | 42.4                         | 567.7                      | 105.4                     | 16.4           | 1.000009                  |
| 80500.0                        | 25.2                  | -60.6          |                        |                      | 41.3                         | 568.0                      | 105.8                     | 14.1           | 1.000009                  |
| 81000.0                        | 24.6                  | -60.1          |                        |                      | 40.3                         | 568.6                      | 103.6                     | 11.9           | 1.000009                  |
| 81500.0                        | 24.0                  | -59.7          |                        |                      | 39.2                         | 569.2                      | 100.5                     | 9.6            | 1.000009                  |
| 82000.0                        | 23.4                  | -59.2          |                        |                      | 38.2                         | 569.8                      | 89.9                      | 8.1            | 1.000008                  |
| 82500.0                        | 22.9                  | -58.7          |                        |                      | 37.2                         | 570.4                      | 71.7                      | 7.7            | 1.000006                  |
| 83000.0                        | 22.3                  | -58.3          |                        |                      | 36.2                         | 571.1                      | 53.8                      | 8.2            | 1.000006                  |
| 83500.0                        | 21.8                  | -57.8          |                        |                      | 35.2                         | 571.7                      | 41.6                      | 9.4            | 1.000006                  |
| 84000.0                        | 21.3                  | -57.4          |                        |                      | 34.3                         | 572.3                      | 53.7                      | 11.0           | 1.000006                  |
| 84500.0                        | 20.7                  | -56.9          |                        |                      | 33.4                         | 572.9                      | 27.8                      | 12.8           | 1.000007                  |
| 85000.0                        | 20.2                  | -56.4          |                        |                      | 32.5                         | 573.5                      | 11.4                      | 13.6           | 1.000007                  |
| 85500.0                        | 19.8                  | -56.2          |                        |                      | 31.7                         | 573.6                      | 55.9                      | 15.3           | 1.000007                  |
| 86000.0                        | 19.3                  | -56.2          |                        |                      | 31.0                         | 573.8                      |                           |                | 1.000007                  |
| 86500.0                        | 18.8                  | -56.2          |                        |                      | 30.2                         | 573.8                      |                           |                | 1.000007                  |
| 87000.0                        | 18.4                  | -56.2          |                        |                      | 29.5                         | 573.8                      |                           |                | 1.000007                  |
| 87500.0                        | 17.9                  | -56.2          |                        |                      | 28.8                         | 573.8                      |                           |                | 1.000006                  |
| 88000.0                        | 17.5                  | -56.2          |                        |                      | 28.1                         | 573.8                      |                           |                | 1.000006                  |
| 88500.0                        | 17.1                  | -56.2          |                        |                      | 27.4                         | 573.8                      |                           |                | 1.000006                  |
| 89000.0                        | 16.7                  | -56.2          |                        |                      | 26.8                         | 573.8                      |                           |                | 1.000006                  |

STATION ALTITUDE 4940.00 FEET MSL  
25 JAN. 76 1600 HRS MST  
ASCENSION NO. 2J

WIND DATA  
0250040020  
STALLION  
TABLE VIII.

GEOMETRIC COORDINATES  
33.81920 LAT DEG  
106.66501 LON DEG

| PRESSURE GEOPOTENTIAL |       | TEMPERATURE               |                        | REL. HUM.<br>PERCENT | WIND DATA                |                |
|-----------------------|-------|---------------------------|------------------------|----------------------|--------------------------|----------------|
| MILLIBARS             | FEET  | AIR<br>DEGREES CENTIGRADE | DEWPOINT<br>CENTIGRADE |                      | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |
| 800.0                 | 6497. | .4                        | -12.0                  | 37.                  | 315.1                    | 10.9           |
| 750.0                 | 6196. | -0.8                      | -14.6                  | 34.                  | 327.0                    | 20.5           |
| 700.0                 | 5989. | -5.1                      | -17.6                  | 30.                  | 338.6                    | 27.4           |
| 650.0                 | 5782. | -7.2                      | -21.4                  | 31.                  | 340.0                    | 27.1           |
| 600.0                 | 5575. | -9.4                      | -25.6                  | 25.                  | 324.8                    | 36.7           |
| 550.0                 | 5368. | -12.7                     | -30.8                  | 20.                  | 319.9                    | 40.0           |
| 500.0                 | 5161. | -17.3                     | -37.0                  | 16.                  | 308.2                    | 51.0           |
| 450.0                 | 4954. | -22.9                     | -42.9                  | 14.                  | 303.0                    | 49.4           |
| 400.0                 | 4747. | -30.4                     | -49.1                  | 14.                  | 294.3                    | 50.6           |
| 350.0                 | 4540. | -37.8                     | -60.1                  | 8.**                 | 292.5                    | 57.8           |
| 300.0                 | 4333. | -46.3                     |                        |                      | 294.1                    | 59.7           |
| 250.0                 | 4126. | -56.4                     |                        |                      | 291.9                    | 73.4           |
| 200.0                 | 3919. | -61.2                     |                        |                      | 290.8                    | 99.0           |
| 175.0                 | 3703. | -60.9                     |                        |                      | 289.2                    | 84.3           |
| 150.0                 | 3496. | -60.0                     |                        |                      | 279.2                    | 77.9           |
| 125.0                 | 3289. | -59.9                     |                        |                      | 279.4                    | 72.7           |
| 100.0                 | 3082. | -64.3                     |                        |                      | 281.3                    | 56.6           |
| 80.0                  | 2875. | -63.5                     |                        |                      | 293.9                    | 37.7           |
| 70.0                  | 2668. | -63.1                     |                        |                      | 285.2                    | 33.6           |
| 60.0                  | 2461. | -64.3                     |                        |                      | 283.7                    | 26.9           |
| 50.0                  | 2254. | -62.9                     |                        |                      | 285.3                    | 20.3           |
| 40.0                  | 2047. | -61.9                     |                        |                      | 321.6                    | 20.7           |
| 30.0                  | 1840. | -60.5                     |                        |                      | 100.0                    | 21.6           |
| 25.0                  | 1633. | -60.4                     |                        |                      | 102.0                    | 10.6           |
| 20.0                  | 1426. | -56.2                     |                        |                      | 345.8                    | 17.5           |

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

STATION ALTITUDE 4126.59 FEET MSL  
25 JAN. 78 1700 HRS MST  
ASCENSION NO. 55

SIGNIFICANT LEVEL DATA  
0250010055  
HOLLOWMAN  
TABLE IX.

GEOMETRIC COORDINATES  
32.88865 LAT NEG  
106.69965 LON DEG

| PRESSURE GEOMETRIC |                      | TEMPERATURE    |                         | REL. HUM.<br>PERCENT |
|--------------------|----------------------|----------------|-------------------------|----------------------|
| MILLIBARS          | ALTITUDE<br>MSL FEET | AIR<br>DEGREES | DFWPPOINT<br>CENTIGRADE |                      |
| 875.5              | 4126.6               | 5.4            | -1.5                    | 59.0                 |
| 866.1              | 4419.6               | 4.6            | -4.0                    | 36.0                 |
| 850.0              | 4920.0               | 3.0            | -9.4                    | 38.0                 |
| 792.8              | 6760.1               | -0.2           | -11.8                   | 41.0                 |
| 788.6              | 6899.6               | .0             | -11.4                   | 42.0                 |
| 700.0              | 10006.2              | -4.2           | -16.1                   | 39.0                 |
| 659.3              | 11547.0              | -6.9           | -19.7                   | 35.0                 |
| 644.5              | 12128.9              | -6.0           | -20.7                   | 30.0                 |
| 580.8              | 14783.3              | -9.3           | -24.2                   | 18.0                 |
| 500.0              | 18526.5              | -16.5          | -36.3                   | 16.0                 |
| 484.3              | 19309.9              | -18.1          | -37.7                   | 16.0                 |
| 400.0              | 23879.2              | -30.2          | -47.2                   | 17.0                 |
| 360.3              | 25048.9              | -33.2          | -49.3                   | 16.0                 |
| 300.0              | 30376.5              | -44.6          |                         |                      |
| 250.0              | 34289.9              | -53.8          |                         |                      |
| 200.0              | 38683.0              | -62.6          |                         |                      |
| 188.8              | 40038.8              | -64.7          |                         |                      |
| 180.8              | 40913.9              | -59.5          |                         |                      |
| 150.0              | 44710.4              | -61.5          |                         |                      |
| 143.3              | 45639.4              | -62.6          |                         |                      |
| 126.3              | 48191.4              | -61.2          |                         |                      |
| 120.3              | 49178.6              | -61.2          |                         |                      |
| 116.3              | 49866.0              | -59.8          |                         |                      |
| 100.0              | 52925.6              | -63.0          |                         |                      |
| 78.8               | 57668.4              | -67.0          |                         |                      |
| 70.0               | 60010.1              | -65.6          |                         |                      |
| 58.3               | 63652.0              | -64.0          |                         |                      |
| 50.0               | 66719.4              | -64.2          |                         |                      |
| 44.3               | 69142.0              | -63.0          |                         |                      |

STATION ALTITUDE +120.59 FEET ASL  
25 JAN. 78 1700 HRS MST  
ASCENSION NO. 50

UPPER AIR DATA  
0250010055  
HOLLOMAN  
TABLE X.

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES | TEMPERATURE<br>DEWPOINT<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION<br>DEGREES (TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|----------------------------|---------------------------------------|----------------------|------------------------------|----------------------------|----------------------------------------|----------------|---------------------------|
| 4120.0                         | 875.5                 | 5.9                        | -1.5                                  | 55.0                 | 1090.4                       | 651.0                      | 300.0                                  | 4.1            | 1.000270                  |
| 4500.0                         | 863.5                 | 4.5                        | -9.1                                  | 36.3                 | 1081.9                       | 649.0                      |                                        |                | 1.000256                  |
| 5000.0                         | 847.4                 | 2.9                        | -10.0                                 | 36.1                 | 1068.2                       | 647.6                      |                                        |                | 1.000252                  |
| 5500.0                         | 831.5                 | 2.0                        | -10.5                                 | 38.9                 | 1051.5                       | 646.6                      |                                        |                | 1.000246                  |
| 6000.0                         | 815.9                 | 1.1                        | -11.0                                 | 39.8                 | 1035.1                       | 645.0                      |                                        |                | 1.000244                  |
| 6500.0                         | 800.6                 | .3                         | -11.6                                 | 40.6                 | 1019.0                       | 644.5                      |                                        |                | 1.000240                  |
| 7000.0                         | 785.6                 | -.1                        | -11.5                                 | 41.4                 | 1001.2                       | 644.1                      |                                        |                | 1.000236                  |
| 7500.0                         | 770.6                 | -.8                        | -12.5                                 | 41.4                 | 984.6                        | 643.3                      |                                        |                | 1.000232                  |
| 8000.0                         | 756.0                 | -1.5                       | -13.0                                 | 40.9                 | 968.4                        | 642.5                      |                                        |                | 1.000227                  |
| 8500.0                         | 741.0                 | -2.2                       | -13.8                                 | 40.5                 | 952.4                        | 641.7                      |                                        |                | 1.000223                  |
| 9000.0                         | 727.5                 | -2.8                       | -14.5                                 | 40.0                 | 936.7                        | 640.0                      |                                        |                | 1.000219                  |
| 9500.0                         | 713.7                 | -3.5                       | -15.3                                 | 39.5                 | 921.2                        | 640.0                      |                                        |                | 1.000215                  |
| 10000.0                        | 700.2                 | -4.2                       | -16.0                                 | 39.0                 | 906.0                        | 639.2                      | 328.1                                  | 18.9           | 1.000211                  |
| 10500.0                        | 686.7                 | -5.1                       | -17.2                                 | 37.7                 | 891.6                        | 636.1                      | 328.2                                  | 29.9           | 1.000207                  |
| 11000.0                        | 673.5                 | -5.9                       | -18.4                                 | 36.4                 | 877.3                        | 637.1                      | 328.5                                  | 36.2           | 1.000203                  |
| 11500.0                        | 660.5                 | -6.8                       | -19.6                                 | 35.1                 | 863.3                        | 636.0                      | 328.9                                  | 35.0           | 1.000199                  |
| 12000.0                        | 647.8                 | -6.2                       | -20.5                                 | 31.1                 | 844.7                        | 636.7                      | 329.0                                  | 34.1           | 1.000195                  |
| 12500.0                        | 635.2                 | -6.5                       | -21.8                                 | 26.3                 | 829.2                        | 636.4                      | 327.4                                  | 34.6           | 1.000190                  |
| 13000.0                        | 622.9                 | -7.1                       | -23.3                                 | 26.1                 | 815.1                        | 635.6                      | 325.6                                  | 35.3           | 1.000187                  |
| 13500.0                        | 610.8                 | -7.7                       | -24.6                                 | 25.8                 | 801.2                        | 634.5                      | 323.5                                  | 36.3           | 1.000183                  |
| 14000.0                        | 596.9                 | -8.3                       | -26.4                                 | 21.5                 | 787.5                        | 634.1                      | 321.9                                  | 36.9           | 1.000179                  |
| 14500.0                        | 587.3                 | -8.9                       | -28.1                                 | 19.3                 | 774.1                        | 633.4                      | 320.6                                  | 37.2           | 1.000176                  |
| 15000.0                        | 575.8                 | -9.7                       | -29.6                                 | 17.9                 | 761.2                        | 632.4                      | 319.2                                  | 39.6           | 1.000172                  |
| 15500.0                        | 564.4                 | -10.7                      | -30.5                                 | 17.6                 | 748.6                        | 631.5                      | 318.0                                  | 41.8           | 1.000169                  |
| 16000.0                        | 553.2                 | -11.0                      | -31.5                                 | 17.3                 | 736.7                        | 630.1                      | 316.6                                  | 42.8           | 1.000167                  |
| 16500.0                        | 542.2                 | -12.6                      | -32.5                                 | 17.1                 | 724.8                        | 628.9                      | 314.4                                  | 43.5           | 1.000164                  |
| 17000.0                        | 531.5                 | -13.0                      | -33.4                                 | 16.8                 | 713.1                        | 627.8                      | 311.0                                  | 43.6           | 1.000161                  |
| 17500.0                        | 521.0                 | -14.5                      | -34.4                                 | 16.5                 | 701.6                        | 626.6                      | 307.6                                  | 44.1           | 1.000158                  |
| 18000.0                        | 510.6                 | -15.5                      | -35.3                                 | 16.3                 | 690.3                        | 625.4                      | 304.4                                  | 44.9           | 1.000155                  |
| 18500.0                        | 500.5                 | -16.4                      | -36.3                                 | 16.0                 | 679.1                        | 624.2                      | 302.8                                  | 44.7           | 1.000153                  |

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

UPPER AIR DATA  
 0250010055  
 40LLONAM  
 TABLE X. (CONT)

STATION ALTITUDE 4126.59 FEET MSL  
 25 JAN. 78  
 ASCENSION NO. 55

GEOPHTIC COORDINATES  
 32.88865 LAT NFG  
 106.04965 LON NEG

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES | TEMPERATURE<br>DEWPOINT<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DIRECTION<br>DEGREES (TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|----------------------------|---------------------------------------|----------------------|------------------------------|----------------------------|--------------------------------|----------------|---------------------------|
| 19000.0                        | 490.5                 | -17.5                      | -37.1                                 | 16.0                 | 668.1                        | 623.0                      | 301.9                          | 43.9           | 1.000150                  |
| 19500.0                        | 480.5                 | -18.6                      | -38.1                                 | 16.0                 | 657.4                        | 621.6                      | 301.9                          | 43.5           | 1.000148                  |
| 20000.0                        | 470.5                 | -19.9                      | -39.1                                 | 16.2                 | 647.2                        | 620.0                      | 302.2                          | 43.2           | 1.000145                  |
| 20500.0                        | 460.6                 | -21.3                      | -40.1                                 | 16.5                 | 637.1                        | 618.4                      | 303.0                          | 43.9           | 1.000143                  |
| 21000.0                        | 451.2                 | -22.8                      | -41.2                                 | 16.4                 | 627.2                        | 616.7                      | 303.2                          | 44.7           | 1.000141                  |
| 21500.0                        | 441.9                 | -23.9                      | -42.2                                 | 16.5                 | 617.5                        | 615.1                      | 302.3                          | 45.8           | 1.000136                  |
| 22000.0                        | 432.7                 | -25.2                      | -43.3                                 | 16.6                 | 606.3                        | 613.5                      | 300.7                          | 46.9           | 1.000130                  |
| 22500.0                        | 423.6                 | -26.5                      | -44.3                                 | 16.7                 | 596.6                        | 611.8                      | 298.6                          | 47.9           | 1.000134                  |
| 23000.0                        | 415.0                 | -27.9                      | -45.4                                 | 16.8                 | 589.4                        | 610.2                      | 296.6                          | 48.9           | 1.000132                  |
| 23500.0                        | 406.4                 | -29.2                      | -46.4                                 | 16.9                 | 580.3                        | 608.5                      | 294.7                          | 49.9           | 1.000130                  |
| 24000.0                        | 397.9                 | -30.5                      | -47.4                                 | 17.1                 | 571.3                        | 606.9                      | 293.0                          | 51.1           | 1.000128                  |
| 24500.0                        | 389.4                 | -31.8                      | -48.3                                 | 17.5                 | 562.0                        | 605.3                      | 291.5                          | 52.4           | 1.000126                  |
| 25000.0                        | 381.1                 | -33.1                      | -49.2                                 | 18.0                 | 553.0                        | 603.6                      | 291.4                          | 53.3           | 1.000124                  |
| 25500.0                        | 372.7                 | -34.2                      | -50.8                                 | 18.5**               | 543.3                        | 602.3                      | 291.4                          | 54.2           | 1.000121                  |
| 26000.0                        | 364.5                 | -35.2                      | -52.6                                 | 14.8**               | 533.7                        | 600.9                      | 292.1                          | 54.7           | 1.000119                  |
| 26500.0                        | 356.3                 | -36.3                      | -54.5                                 | 13.1**               | 524.4                        | 599.6                      | 292.8                          | 55.0           | 1.000117                  |
| 27000.0                        | 348.7                 | -37.4                      | -56.5                                 | 11.4**               | 515.1                        | 598.2                      | 293.1                          | 54.3           | 1.000115                  |
| 27500.0                        | 341.0                 | -38.4                      | -58.7                                 | 9.7**                | 506.1                        | 596.6                      | 293.2                          | 53.5           | 1.000113                  |
| 28000.0                        | 333.5                 | -39.5                      | -61.0                                 | 8.0**                | 497.2                        | 595.5                      | 292.7                          | 52.1           | 1.000111                  |
| 28500.0                        | 326.1                 | -40.6                      | -63.6                                 | 6.3**                | 488.5                        | 594.1                      | 292.1                          | 51.0           | 1.000109                  |
| 29000.0                        | 319.0                 | -41.7                      | -66.7                                 | 4.7**                | 480.0                        | 592.7                      | 291.2                          | 50.6           | 1.000107                  |
| 29500.0                        | 311.9                 | -42.7                      | -70.6                                 | 3.0**                | 471.6                        | 591.4                      | 290.1                          | 50.7           | 1.000105                  |
| 30000.0                        | 305.1                 | -43.8                      | -76.9                                 | 1.5**                | 463.4                        | 590.0                      | 288.8                          | 51.3           | 1.000103                  |
| 30500.0                        | 298.3                 | -44.9                      |                                       |                      | 455.2                        | 588.6                      | 288.7                          | 56.0           | 1.000101                  |
| 31000.0                        | 291.4                 | -46.1                      |                                       |                      | 447.0                        | 587.1                      | 289.0                          | 62.4           | 1.000100                  |
| 31500.0                        | 284.7                 | -47.2                      |                                       |                      | 439.0                        | 585.5                      | 289.7                          | 67.8           | 1.000098                  |
| 32000.0                        | 278.1                 | -48.4                      |                                       |                      | 431.2                        | 584.0                      | 290.2                          | 73.1           | 1.000096                  |
| 32500.0                        | 271.7                 | -49.6                      |                                       |                      | 423.4                        | 582.5                      | 290.4                          | 77.0           | 1.000094                  |
| 33000.0                        | 265.5                 | -50.6                      |                                       |                      | 415.9                        | 581.0                      | 290.1                          | 78.9           | 1.000093                  |
| 33500.0                        | 259.4                 | -51.9                      |                                       |                      | 408.5                        | 579.4                      | 289.9                          | 80.9           | 1.000091                  |

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

STATION ALTITUDE 4126.54 FEET MSL  
25 JAN. 78 1700 HRS MST  
ASCENSION NO. 55

UPPER AIR DATA  
0250010055  
HOLLOMAN  
TABLE X. (CONT)

GEODETIC COORDINATES  
32.88865 LAT NEG  
106.09965 LON NEG

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES<br>JELPOINT<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|------------------------------------------------------|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                |                       |                                                      |                      |                              |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 34000.0                        | 253.4                 | -53.1                                                |                      | 401.2                        | 577.9                      | 289.6                    | 82.9           | 1.000089                  |
| 34500.0                        | 247.5                 | -54.2                                                |                      | 343.7                        | 576.4                      | 289.3                    | 85.0           | 1.000088                  |
| 35000.0                        | 241.5                 | -55.2                                                |                      | 306.0                        | 575.2                      | 289.3                    | 88.1           | 1.000086                  |
| 35500.0                        | 235.7                 | -56.2                                                |                      | 378.5                        | 573.9                      | 289.4                    | 91.9           | 1.000084                  |
| 36000.0                        | 230.1                 | -57.2                                                |                      | 371.1                        | 572.6                      | 289.5                    | 95.7           | 1.000083                  |
| 36500.0                        | 224.5                 | -58.1                                                |                      | 363.8                        | 571.5                      | 289.6                    | 99.5           | 1.000081                  |
| 37000.0                        | 219.2                 | -59.1                                                |                      | 356.7                        | 570.0                      | 289.7                    | 103.3          | 1.000079                  |
| 37500.0                        | 213.9                 | -60.1                                                |                      | 349.7                        | 568.7                      | 290.0                    | 109.0          | 1.000078                  |
| 38000.0                        | 208.6                 | -61.1                                                |                      | 342.9                        | 567.5                      | 290.4                    | 114.9          | 1.000076                  |
| 38500.0                        | 203.0                 | -62.0                                                |                      | 336.2                        | 566.0                      | 290.6                    | 119.8          | 1.000075                  |
| 39000.0                        | 198.8                 | -63.0                                                |                      | 329.6                        | 564.8                      | 290.8                    | 124.3          | 1.000073                  |
| 39500.0                        | 193.9                 | -63.8                                                |                      | 322.7                        | 563.7                      | 290.3                    | 124.2          | 1.000072                  |
| 40000.0                        | 189.2                 | -64.6                                                |                      | 316.0                        | 562.6                      | 289.3                    | 120.9          | 1.000070                  |
| 40500.0                        | 184.5                 | -65.0                                                |                      | 304.4                        | 561.2                      | 286.6                    | 109.8          | 1.000068                  |
| 41000.0                        | 180.0                 | -65.5                                                |                      | 293.6                        | 560.4                      | 283.2                    | 98.8           | 1.000065                  |
| 41500.0                        | 175.7                 | -66.1                                                |                      | 286.8                        | 559.0                      | 279.2                    | 88.7           | 1.000064                  |
| 42000.0                        | 171.4                 | -66.1                                                |                      | 280.2                        | 566.7                      | 276.1                    | 87.7           | 1.000062                  |
| 42500.0                        | 167.3                 | -66.3                                                |                      | 273.9                        | 568.5                      | 277.1                    | 86.9           | 1.000061                  |
| 43000.0                        | 163.2                 | -66.6                                                |                      | 267.5                        | 568.0                      | 277.6                    | 86.5           | 1.000060                  |
| 43500.0                        | 159.2                 | -66.9                                                |                      | 261.3                        | 567.6                      | 278.2                    | 90.3           | 1.000058                  |
| 44000.0                        | 155.4                 | -61.1                                                |                      | 255.3                        | 567.5                      | 278.7                    | 91.5           | 1.000057                  |
| 44500.0                        | 151.6                 | -61.4                                                |                      | 249.4                        | 566.9                      | 279.0                    | 91.7           | 1.000056                  |
| 45000.0                        | 147.9                 | -61.9                                                |                      | 243.9                        | 566.2                      | 279.3                    | 91.8           | 1.000054                  |
| 45500.0                        | 144.3                 | -62.6                                                |                      | 238.7                        | 565.5                      | 278.8                    | 91.0           | 1.000053                  |
| 46000.0                        | 140.6                 | -62.6                                                |                      | 232.9                        | 565.5                      | 278.0                    | 89.9           | 1.000052                  |
| 46500.0                        | 137.5                 | -62.5                                                |                      | 226.6                        | 565.7                      | 277.2                    | 88.6           | 1.000051                  |
| 47000.0                        | 134.0                 | -61.9                                                |                      | 221.0                        | 566.2                      | 276.4                    | 87.8           | 1.000049                  |
| 47500.0                        | 130.7                 | -61.6                                                |                      | 215.7                        | 566.6                      | 275.7                    | 86.7           | 1.000048                  |
| 48000.0                        | 127.5                 | -61.5                                                |                      | 209.7                        | 567.0                      | 275.4                    | 84.3           | 1.000047                  |
| 48500.0                        | 124.4                 | -61.2                                                |                      | 204.5                        | 567.2                      | 275.6                    | 80.9           | 1.000046                  |

UPPER AIR DATA  
J25001005  
WOLLOMAY  
TABLE X. (CONT)

STATION ALTITUDE 4120-59 FEET MSL  
23 JAN. 70 1700 HRS MST  
ASCEN SIG NO. 55

GEODETIC COORDINATES  
32.86805 LAT DEG  
100.05965 LONG DEG

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES<br>CELSIUS | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                 |                | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|---------------------------------------|----------------------|------------------------------|----------------------------|---------------------------|----------------|---------------------------|
|                                |                       |                                       |                      |                              |                            | DIRECTION<br>DEGREES (TN) | SPEED<br>KNOTS |                           |
| 49000.0                        | 121.4                 | -51.2                                 |                      | 199.5                        | 567.2                      | 275.9                     | 77.5           | 1.000044                  |
| 49500.0                        | 116.4                 | -60.5                                 |                      | 194.1                        | 568.0                      | 276.9                     | 72.8           | 1.000042                  |
| 50000.0                        | 115.5                 | -59.9                                 |                      | 183.2                        | 568.9                      | 278.2                     | 67.9           | 1.000042                  |
| 50500.0                        | 112.7                 | -60.5                                 |                      | 164.6                        | 568.2                      | 279.6                     | 64.4           | 1.000041                  |
| 51000.0                        | 110.3                 | -61.0                                 |                      | 180.6                        | 567.5                      | 281.7                     | 62.0           | 1.000040                  |
| 51500.0                        | 107.3                 | -61.5                                 |                      | 176.6                        | 566.8                      | 283.5                     | 59.6           | 1.000039                  |
| 52000.0                        | 104.7                 | -62.0                                 |                      | 172.1                        | 566.1                      | 284.5                     | 56.8           | 1.000038                  |
| 52500.0                        | 102.1                 | -62.6                                 |                      | 168.9                        | 565.4                      | 285.6                     | 54.0           | 1.000038                  |
| 53000.0                        | 99.6                  | -63.1                                 |                      | 165.2                        | 564.7                      | 285.0                     | 50.0           | 1.000037                  |
| 53500.0                        | 97.2                  | -63.5                                 |                      | 161.4                        | 564.1                      | 284.0                     | 45.8           | 1.000036                  |
| 54000.0                        | 94.7                  | -63.9                                 |                      | 157.7                        | 563.5                      | 282.6                     | 43.0           | 1.000035                  |
| 54500.0                        | 92.4                  | -64.3                                 |                      | 154.1                        | 563.0                      | 280.9                     | 42.6           | 1.000034                  |
| 55000.0                        | 90.1                  | -64.7                                 |                      | 150.6                        | 562.4                      | 279.2                     | 42.2           | 1.000034                  |
| 55500.0                        | 87.9                  | -65.2                                 |                      | 147.2                        | 561.8                      | 279.4                     | 43.7           | 1.000033                  |
| 56000.0                        | 85.7                  | -65.6                                 |                      | 143.8                        | 561.3                      | 279.7                     | 45.3           | 1.000032                  |
| 56500.0                        | 83.6                  | -66.0                                 |                      | 140.5                        | 560.7                      | 280.5                     | 46.4           | 1.000031                  |
| 57000.0                        | 81.5                  | -66.4                                 |                      | 137.3                        | 560.1                      | 281.8                     | 47.0           | 1.000031                  |
| 57500.0                        | 79.5                  | -66.9                                 |                      | 134.2                        | 559.5                      | 283.0                     | 47.7           | 1.000030                  |
| 58000.0                        | 77.5                  | -66.8                                 |                      | 130.8                        | 559.0                      | 284.4                     | 50.5           | 1.000029                  |
| 58500.0                        | 75.6                  | -66.5                                 |                      | 127.4                        | 560.0                      | 285.6                     | 53.4           | 1.000028                  |
| 59000.0                        | 73.7                  | -66.2                                 |                      | 124.0                        | 560.4                      | 286.2                     | 54.7           | 1.000028                  |
| 59500.0                        | 71.8                  | -65.9                                 |                      | 120.7                        | 560.0                      | 286.3                     | 54.7           | 1.000027                  |
| 60000.0                        | 70.0                  | -65.6                                 |                      | 117.6                        | 561.2                      | 286.5                     | 54.6           | 1.000026                  |
| 60500.0                        | 68.3                  | -65.4                                 |                      | 114.5                        | 561.5                      | 286.3                     | 52.3           | 1.000025                  |
| 61000.0                        | 66.6                  | -65.2                                 |                      | 111.6                        | 561.8                      | 285.6                     | 48.2           | 1.000025                  |
| 61500.0                        | 65.0                  | -64.9                                 |                      | 108.7                        | 562.1                      | 284.8                     | 44.0           | 1.000024                  |
| 62000.0                        | 63.3                  | -64.7                                 |                      | 105.9                        | 562.4                      | 283.7                     | 39.6           | 1.000024                  |
| 62500.0                        | 61.6                  | -64.5                                 |                      | 103.1                        | 562.7                      | 281.9                     | 34.7           | 1.000023                  |
| 63000.0                        | 60.2                  | -64.3                                 |                      | 100.5                        | 563.0                      | 279.5                     | 29.8           | 1.000022                  |
| 63500.0                        | 58.7                  | -64.1                                 |                      | 97.9                         | 563.3                      | 276.3                     | 25.0           | 1.000022                  |

STATION ALTITUDE +120.59 FEET MSL  
25 JAN. 78 1700 HRS MST  
ASCENSION NO. 52

UPPER AIR DATA  
J250010055  
HOLLOMAN  
TABLE X. (CONT)

GEODETTIC COORDINATES  
32.88865 LAT DEG  
106.99965 LON DEG

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                 |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---------------------------------------------|----------------------|------------------------------|----------------------------|---------------------------|----------------|---------------------------|
|                                   |                       |                                             |                      |                              |                            | DIRECTION<br>DEGREES (TN) | SPEED<br>KNOTS |                           |
| 64000.0                           | 57.3                  | -64.0                                       |                      | 95.4                         | 563.4                      | 271.7                     | 19.6           | 1.000021                  |
| 64500.0                           | 55.9                  | -64.1                                       |                      | 93.1                         | 563.3                      | 263.6                     | 14.4           | 1.000021                  |
| 65000.0                           | 54.5                  | -64.1                                       |                      | 90.8                         | 563.3                      | 251.0                     | 10.2           | 1.000020                  |
| 65500.0                           | 53.1                  | -64.1                                       |                      | 88.6                         | 563.2                      | 252.1                     | 8.9            | 1.000020                  |
| 66000.0                           | 51.8                  | -64.2                                       |                      | 86.4                         | 563.2                      | 253.5                     | 7.7            | 1.000019                  |
| 66500.0                           | 50.6                  | -64.2                                       |                      | 84.3                         | 563.2                      | 264.0                     | 6.2            | 1.000019                  |
| 67000.0                           | 49.3                  | -64.1                                       |                      | 82.1                         | 563.2                      | 278.4                     | 12.7           | 1.000018                  |
| 67500.0                           | 48.1                  | -63.8                                       |                      | 80.0                         | 563.7                      | 285.1                     | 17.5           | 1.000018                  |
| 68000.0                           | 46.7                  | -63.6                                       |                      | 78.0                         | 564.0                      |                           |                | 1.000017                  |
| 68500.0                           | 45.7                  | -63.3                                       |                      | 75.9                         | 564.2                      |                           |                | 1.000017                  |
| 69000.0                           | 44.6                  | -63.1                                       |                      | 74.0                         | 564.7                      |                           |                | 1.000016                  |

STATION ALTITUDE 4126.59 FEET MSL  
23 JAN. 78 1700 HRS MST  
ASCENSION NO. 53

MANDATORY LEVELS  
025010155  
POLLUMAN  
TABLE XI.

GEODETIC COORDINATES  
32.86865 LAT DEG  
106.09965 LON DEG

| PRESSURE GEOPOTENTIAL |        | TEMPERATURE               |          | REL. HUM. |                           | WIND DATA      |  |
|-----------------------|--------|---------------------------|----------|-----------|---------------------------|----------------|--|
| MILLIBARS             | FEET   | AIR<br>DEGREES CENTIGRADE | DEWPOINT | PERCENT   | DIRECTION<br>DEGREES (TN) | SPEED<br>KNOTS |  |
| 850.0                 | 4919.  | 3.0                       | -9.4     | 36.       | 9999.0                    | 9999.0XX       |  |
| 800.0                 | 6522.  | .2                        | -11.0    | 41.       | 9999.0                    | 9999.0XX       |  |
| 750.0                 | 8213.  | -1.8                      | -13.3    | 41.       | 9999.0                    | 9999.0XX       |  |
| 700.0                 | 10006. | -4.2                      | -16.1    | 39.       | 328.1                     | 19.2           |  |
| 650.0                 | 11912. | -6.3                      | -20.3    | 32.       | 329.3                     | 34.1           |  |
| 600.0                 | 13961. | -8.3                      | -26.3    | 22.       | 322.0                     | 36.9           |  |
| 550.0                 | 16162. | -11.9                     | -31.8    | 17.       | 316.1                     | 43.2           |  |
| 500.0                 | 18535. | -16.5                     | -36.3    | 10.       | 302.7                     | 44.6           |  |
| 450.0                 | 21103. | -22.7                     | -41.3    | 10.       | 303.0                     | 45.0           |  |
| 400.0                 | 23896. | -30.2                     | -47.2    | 17.       | 293.3                     | 50.9           |  |
| 350.0                 | 26966. | -37.2                     | -56.2    | 12.**     | 293.1                     | 54.3           |  |
| 300.0                 | 30407. | -44.6                     |          |           | 268.6                     | 55.4           |  |
| 250.0                 | 34331. | -53.8                     |          |           | 289.4                     | 84.5           |  |
| 200.0                 | 38938. | -62.6                     |          |           | 290.8                     | 124.4          |  |
| 175.0                 | 41645. | -59.8                     |          |           | 278.7                     | 88.2           |  |
| 150.0                 | 44792. | -61.5                     |          |           | 275.2                     | 71.6           |  |
| 125.0                 | 48492. | -61.2                     |          |           | 275.7                     | 60.2           |  |
| 100.0                 | 53036. | -62.0                     |          |           | 264.7                     | 48.5           |  |
| 80.0                  | 57503. | -66.7                     |          |           | 263.5                     | 48.0           |  |
| 70.0                  | 60156. | -65.6                     |          |           | 266.5                     | 53.8           |  |
| 60.0                  | 63241. | -64.3                     |          |           | 276.8                     | 25.7           |  |
| 50.0                  | 66904. | -64.2                     |          |           | 280.4                     | 13.8           |  |

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

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.