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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
1970A MLRS, MISSILE NUMBER BR-13, ROUND NUMBER B-81, 7 FEBRUAR--ETC(U)
FEB 80

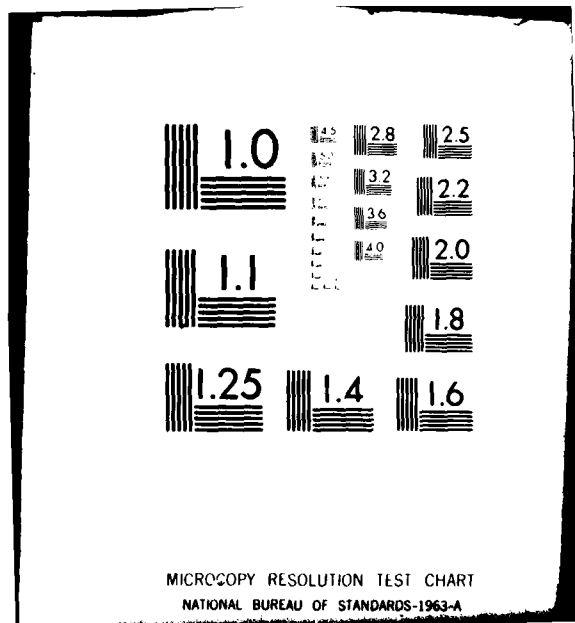
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DR 1127
FEBRUARY 1980

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METEOROLOGICAL DATA REPORT

19702A MLRS
Missile No. BR-13
Round No. B-81
07 February 1980

by

White Sands Meteorological Team

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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Meteorological data gathered for the launching of the 19702A MLRS, Missile Number BR-13, Round Number B-81 are presented in tabular form.

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INTRODUCTION

19702A MLRS, Missile Number BR-13, Round Number B-81,
was launched from LC-33, White Sands Missile Range (WSMR), New Mexico,
at 1424 MST on 07 February 1980. The scheduled launch time was
1400:04 MST.

DISCUSSION

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

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), Wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

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

SITE AND ALTITUDE

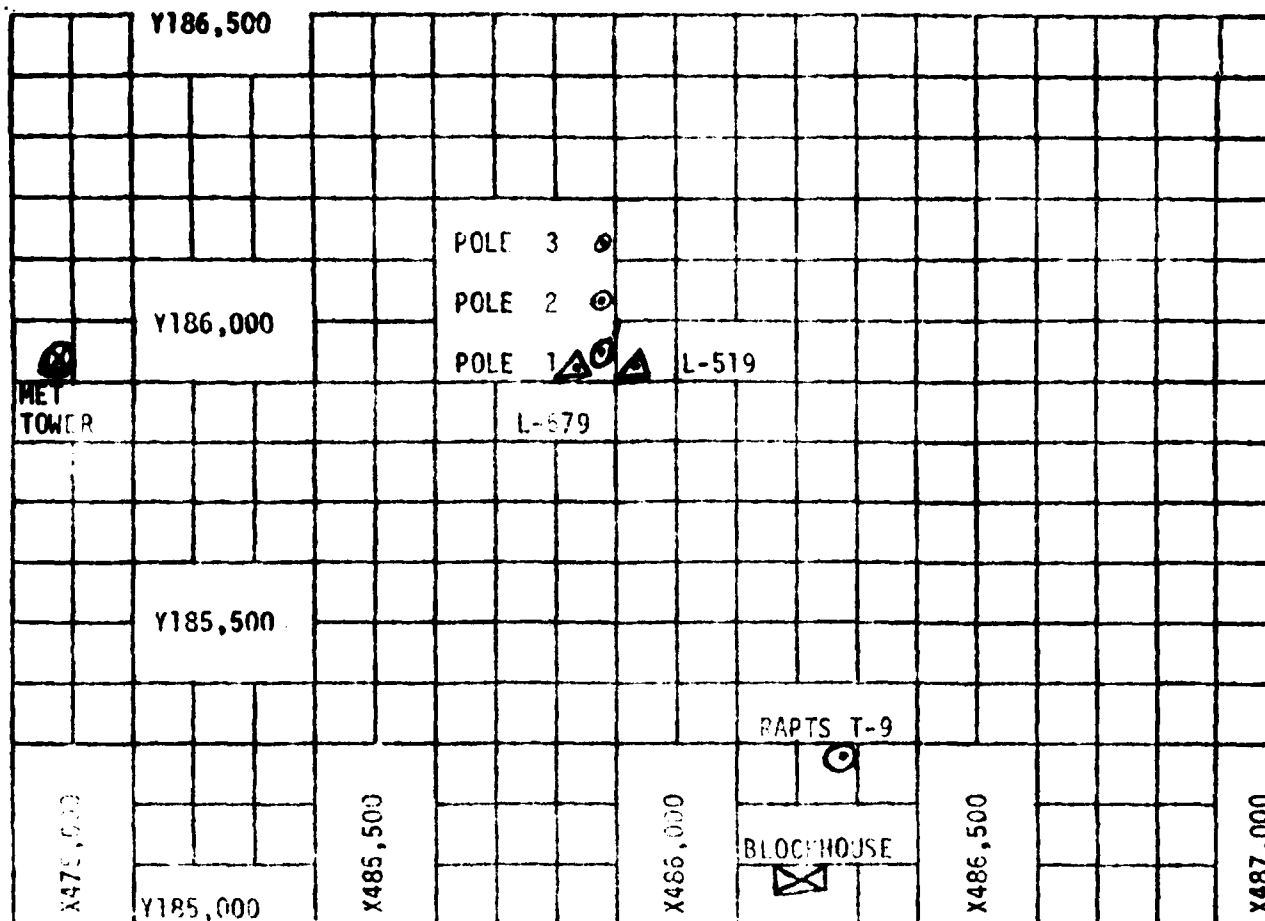
| | |
|-------|------|
| LC-33 | 2 km |
| Nick | 2 km |

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 73,000 feet in 500-foot increments.

SITE AND TIME

MSD 1400 MST

NORTH



1. MET TOWER - 4 Bendix Model T-20 Anemometers at 17 ft, 62 ft, 102 ft, and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with L/A recorders.
 - (a) Pole #1 - 38.7 ft.
 - (b) Pole #2 - 53.0 ft.
 - (c) Pole #3 - 83.6 ft.
3. RAPTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

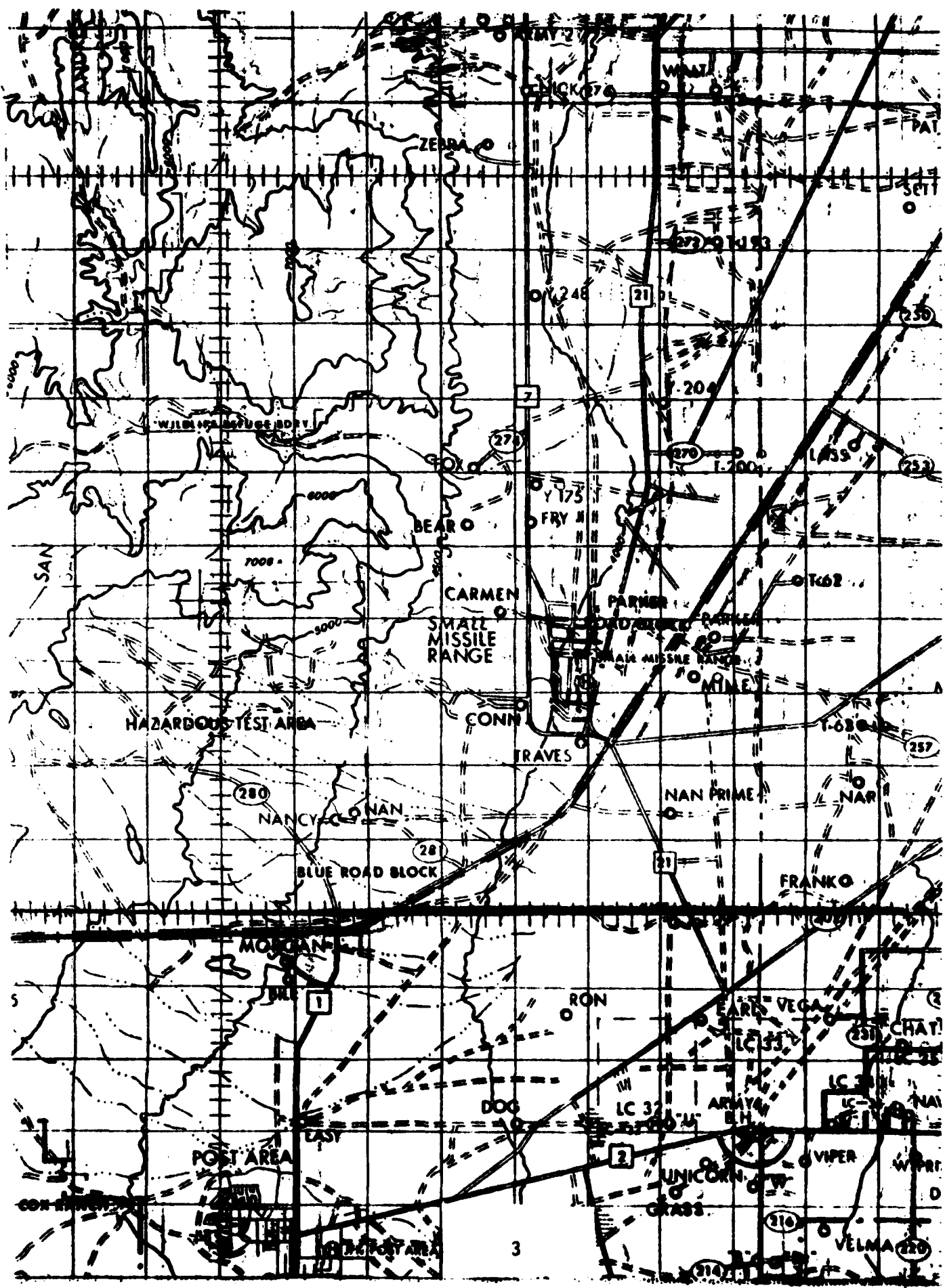


TABLE 1. Surface Observations taken at 1424 MST,
07 February 1980 at LC-33, 19702A MLRS,
Missile Number BR-13, Round Number B-81.

| | | |
|-------------------|-------|-------------------|
| ELEVATION | 3983 | FT/MSL |
| PRESSURE | 868.0 | MBS |
| TEMPERATURE | 17.5 | °C |
| RELATIVE HUMIDITY | 21 | % |
| DEW POINT | -5.0 | °C |
| DENSITY | 1037 | GM/M ³ |
| WIND SPEED | 17 | KTS |
| WIND DIRECTION | 240 | DEGREES |
| CLOUD COVER | 3 | Cu |

TABLE 2

LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

| POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL | | | POLE #2 X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL | | | POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL | | |
|---|------------|--------------|---|------------|--------------|---|------------|--------------|
| T-TIME SEC | DIR DEG | SPEED KTS | T-TIME SEC | DIR DEG | SPEED KTS | T-TIME SEC | DIR DEG | SPEED KTS |
| -30 | 285 | 20 | -30 | 271 | 13 | -30 | 265 | 22 |
| -20 | 289 | 25 | -20 | 273 | 17 | -20 | 243 | 26 |
| -10 | 272 | 28 | -10 | 257 | 21 | -10 | 249 | 25 |
| 0.0 | 275 | 31 | 0.0 | 266 | 19 | 0.0 | 248 | 28 |
| +10 | 276 | 25 | +10 | 258 | 24 | +10 | 249 | 26 |

TABLE

3

LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

| LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base) | | | LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base) | | |
|--|---------|-----------|--|---------|-----------|
| T-TIME SEC | DIR DEG | SPEED KTS | T-TIME SEC | DIR DEG | SPEED KTS |
| -30 | 251 | 16 | -30 | 255 | 24 |
| -20 | 244 | 21 | -20 | 252 | 22 |
| -10 | 248 | 17 | -10 | 253 | 20 |
| 0.0 | 236 | 17 | 0.0 | 251 | 22 |
| +10 | 252 | 16 | +10 | 256 | 24 |

| LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base) | | | LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base) | | |
|---|---------|-----------|--|---------|-----------|
| T-TIME SEC | DIR DEG | SPEED KTS | T-TIME SEC | DIR DEG | SPEED KTS |
| -30 | 260 | 23 | -30 | 254 | 25 |
| -20 | 252 | 23 | -20 | 249 | 27 |
| -10 | 260 | 25 | -10 | 250 | 24 |
| 0.0 | 256 | 25 | 0.0 | 252 | 24 |
| +10 | 260 | 22 | +10 | 261 | 23 |

STATION ALTITUDE 9989.00 FEET MSL
 7 FEB. 69
 ASCENSION I.O. 59

SIGNIFICANT LEVEL DATA

03302009
 WHITE SANDS
 TABLE 6

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

| PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET | TEMPERATURE AIR DEGREE CENTIGRADE | REL. HUM. PERCENT |
|---|---|----------------------|
| 893.2 | 19.5 | 23.0 |
| 850.0 | 15.0 | 31.0 |
| 764.4 | 6.5 | 37.0 |
| 700.0 | 1.1 | 51.0 |
| 684.2 | -2.5 | 50.0 |
| 659.4 | -4.7 | 52.0 |
| 518.2 | -8.1 | 50.0 |
| 585.2 | -12.0 | 52.0 |
| 539.5 | -14.5 | 49.0 |
| 500.0 | -19.4 | 20.0 |
| 449.6 | -25.8 | 20.0 |
| 400.0 | -31.5 | 27.0 |
| 382.4 | -33.8 | 22.0 |
| 345.6 | -39.6 | 22.0 |
| 300.0 | -45.7 | |
| 274.2 | -50.8 | |
| 269.2 | -50.2 | |
| 264.2 | -45.6 | |
| 259.4 | -46.4 | |
| 250.0 | -47.5 | |
| 241.6 | -46.8 | |
| 235.6 | -43.3 | |
| 230.8 | -41.6 | |
| 221.4 | -41.6 | |
| 212.8 | -43.9 | |
| 208.6 | -43.2 | |
| 200.0 | -43.5 | |
| 163.6 | -44.7 | |
| 164.0 | -49.7 | |
| 150.0 | -52.3 | |
| 127.4 | -57.7 | |
| 125.8 | -57.4 | |
| 115.6 | -60.8 | |
| 110.5 | -60.0 | |
| 100.0 | -62.3 | |
| 84.2 | -59.0 | |
| 70.0 | -62.6 | |
| 50.0 | -61.2 | |
| 47.6 | -58.4 | |
| 38.8 | -58.3 | |

STATION ALTITUDE 9989.00 FEET MSL
 7 FEB. 60
 ASCENSION NO. 59

UPPER AIR DATA
 050020059
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 7'

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE | | REL. HUM. PERCENT | DENSITY GM/CM ³ | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|--------------------------------|-----------------------|----------------|------------------------|----------------------|-------------------------------|-------------------------|---------------------------|----------------|---------------------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | | | | DIRECTION DEGREES (TN) | SPEED KNOTS | |
| 3989.0 | 868.2 | 19.5 | -2.2 | 23.0 | 1031.1 | 667.2 | 250.0 | 9.9 | 1.000253 |
| 4000.0 | 867.9 | 19.4 | -2.1 | 23.1 | 1031.0 | 667.1 | 250.3 | 10.0 | 1.000253 |
| 4500.0 | 852.5 | 15.6 | -1.9 | 29.9 | 1020.0 | 662.6 | 261.0 | 13.7 | 1.000253 |
| 5000.0 | 837.1 | 13.8 | -2.7 | 31.9 | 1014.0 | 660.7 | 267.0 | 17.6 | 1.000249 |
| 5500.0 | 822.0 | 12.5 | -3.5 | 32.9 | 1000.8 | 659.0 | 270.6 | 21.7 | 1.000245 |
| 6000.0 | 807.1 | 10.9 | -4.3 | 33.9 | 987.8 | 657.3 | 273.3 | 25.8 | 1.000241 |
| 6500.0 | 792.5 | 9.5 | -5.2 | 35.0 | 975.0 | 655.6 | 275.2 | 30.0 | 1.000237 |
| 7000.0 | 778.1 | 8.0 | -6.1 | 36.0 | 962.3 | 653.9 | 276.6 | 34.2 | 1.000233 |
| 7500.0 | 764.0 | 6.6 | -7.0 | 37.1 | 949.9 | 652.1 | 279.1 | 38.5 | 1.000229 |
| 8000.0 | 749.0 | 5.1 | -7.3 | 40.1 | 937.0 | 650.5 | 281.4 | 42.8 | 1.000226 |
| 8500.0 | 735.9 | 3.7 | -7.7 | 43.0 | 924.3 | 648.8 | 267.5 | 43.8 | 1.000223 |
| 9000.0 | 722.2 | 2.3 | -8.1 | 46.0 | 911.9 | 647.1 | 252.5 | 46.4 | 1.000220 |
| 9500.0 | 708.8 | .9 | -8.6 | 49.0 | 899.6 | 645.4 | 224.8 | 45.8 | 1.000216 |
| 10000.0 | 695.5 | -0.5 | -9.4 | 50.7 | 887.2 | 643.8 | 201.5 | 49.5 | 1.000213 |
| 10500.0 | 682.4 | -1.7 | -10.7 | 50.1 | 874.4 | 642.3 | 175.7 | 42.9 | 1.000209 |
| 11000.0 | 669.4 | -3.1 | -11.6 | 51.0 | 862.4 | 640.6 | 168.8 | 21.7 | 1.000205 |
| 11500.0 | 656.7 | -4.6 | -12.9 | 51.9 | 850.6 | 638.9 | 278.2 | 28.5 | 1.000201 |
| 12000.0 | 644.1 | -5.7 | -14.1 | 51.4 | 838.0 | 637.5 | 277.2 | 52.7 | 1.000198 |
| 12500.0 | 631.7 | -6.8 | -15.3 | 50.7 | 825.4 | 636.1 | 259.0 | 51.2 | 1.000194 |
| 13000.0 | 619.5 | -8.0 | -16.5 | 50.1 | 813.0 | 634.7 | 246.5 | 50.8 | 1.000190 |
| 13500.0 | 607.4 | -9.5 | -17.6 | 50.6 | 801.1 | 633.1 | 246.0 | 47.4 | 1.000187 |
| 14000.0 | 595.5 | -10.6 | -18.7 | 51.3 | 789.5 | 631.5 | 247.5 | 47.2 | 1.000184 |
| 14500.0 | 583.9 | -11.9 | -19.8 | 52.0 | 778.0 | 629.9 | 248.5 | 48.3 | 1.000180 |
| 15000.0 | 572.4 | -12.6 | -20.5 | 51.5 | 764.7 | 629.1 | 249.2 | 54.3 | 1.000177 |
| 15500.0 | 561.1 | -13.2 | -21.3 | 50.5 | 751.5 | 628.3 | 249.7 | 61.6 | 1.000174 |
| 16000.0 | 550.0 | -13.9 | -22.1 | 49.7 | 738.5 | 627.5 | 250.6 | 66.5 | 1.000170 |
| 16500.0 | 539.1 | -14.6 | -23.0 | 48.6 | 725.8 | 626.7 | 251.7 | 69.8 | 1.000167 |
| 17000.0 | 528.5 | -15.4 | -26.1 | 40.9 | 714.9 | 625.1 | 252.7 | 72.8 | 1.000163 |
| 17500.0 | 517.7 | -17.2 | -29.5 | 33.2 | 704.2 | 623.4 | 253.8 | 73.2 | 1.000160 |
| 18000.0 | 507.3 | -18.5 | -33.3 | 25.5 | 693.7 | 621.8 | 254.8 | 73.5 | 1.000157 |
| 18500.0 | 497.1 | -19.8 | -36.9 | 20.0 | 683.2 | 620.2 | 255.7 | 74.9 | 1.000154 |
| 19000.0 | 486.9 | -21.0 | -37.9 | 20.0 | 672.6 | 618.7 | 256.5 | 76.7 | 1.000151 |
| 19500.0 | 476.9 | -22.5 | -39.0 | 20.0 | 662.1 | 617.1 | 257.5 | 80.2 | 1.000149 |
| 20000.0 | 467.1 | -23.5 | -40.1 | 20.0 | 651.6 | 615.6 | 258.0 | 83.9 | 1.000146 |
| 20500.0 | 457.6 | -24.8 | -41.1 | 20.0 | 641.6 | 614.0 | 260.9 | 80.0 | 1.000144 |
| 21000.0 | 448.1 | -26.0 | -42.1 | 20.2 | 631.5 | 612.5 | 263.6 | 76.3 | 1.000142 |
| 21500.0 | 438.7 | -27.0 | -42.4 | 21.5 | 620.9 | 611.2 | 260.0 | 73.8 | 1.000139 |
| 22000.0 | 429.5 | -28.0 | -42.7 | 22.8 | 610.4 | 610.0 | 266.0 | 75.0 | 1.000137 |
| 22500.0 | 420.5 | -29.1 | -43.1 | 24.0 | 600.1 | 608.7 | 266.5 | 76.9 | 1.000134 |
| 23000.0 | 411.7 | -30.1 | -43.6 | 25.3 | 590.0 | 607.4 | 260.2 | 79.2 | 1.000132 |

STATION ALTITUDE 9989.30 FEET MSL
 7 FEB. 80 1400 HRS MST
 ASCENSION, NO. 59

UPPER AIR DATA
 0380U20059
 WHITE SANDS
 TABLE 7 (cont)

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | AIR TEMPERATURE DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DIRECTION DEGREES (TN) | WIND SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------|--------------------|------------------------------------|-------------------|------------------------|----------------------|-----------------------------|------------------|---------------------|
| 23500.0 | 403.0 | -31.1 | 26.6 | 580.1 | 606.1 | 265.7 | 83.3 | 1.000130 |
| 24000.0 | 394.5 | -32.2 | 25.5 | 570.3 | 604.7 | 265.4 | 87.1 | 1.000128 |
| 24500.0 | 386.0 | -33.5 | 23.1 | 560.7 | 603.3 | 265.1 | 89.2 | 1.000125 |
| 25000.0 | 377.7 | -34.5 | 22.0 | 551.4 | 601.8 | 264.9 | 91.2 | 1.000123 |
| 25500.0 | 369.5 | -35.8 | 22.0 | 542.3 | 600.5 | 264.6 | 91.5 | 1.000121 |
| 26000.0 | 361.5 | -37.0 | 22.0 | 533.3 | 598.7 | 264.3 | 91.6 | 1.000119 |
| 26500.0 | 353.7 | -38.3 | 22.0 | 524.5 | 597.1 | 263.7 | 91.7 | 1.000117 |
| 27000.0 | 346.0 | -39.5 | 22.0 | 515.9 | 595.5 | 263.0 | 91.7 | 1.000115 |
| 27500.0 | 338.5 | -40.7 | 18.7** | 506.9 | 594.0 | 262.5 | 88.6 | 1.000113 |
| 28000.0 | 330.8 | -41.8 | 15.2** | 498.0 | 592.6 | 262.0 | 84.7 | 1.000111 |
| 28500.0 | 323.4 | -42.9 | 11.7** | 489.3 | 591.1 | 260.3 | 76.7 | 1.000109 |
| 29000.0 | 316.2 | -44.1 | 8.2** | 480.8 | 589.7 | 258.1 | 68.6 | 1.000107 |
| 29500.0 | 309.1 | -45.2 | 4.7** | 472.4 | 588.2 | 254.2 | 63.2 | 1.000105 |
| 30000.0 | 302.2 | -46.3 | 1.1** | 454.2 | 586.7 | 250.0 | 58.7 | 1.000103 |
| 30500.0 | 295.4 | -47.4 | | 455.6 | 585.3 | 247.4 | 57.5 | 1.000102 |
| 31000.0 | 288.6 | -48.5 | | 447.5 | 584.0 | 246.0 | 56.2 | 1.000100 |
| 31500.0 | 282.0 | -49.5 | | 439.3 | 582.6 | 247.0 | 54.5 | 1.000098 |
| 32000.0 | 275.6 | -50.6 | | 431.3 | 581.2 | 249.2 | 55.4 | 1.000096 |
| 32500.0 | 269.3 | -50.2 | | 420.7 | 581.7 | 252.7 | 60.6 | 1.000094 |
| 33000.0 | 263.1 | -46.7 | | 404.8 | 566.2 | 255.0 | 67.5 | 1.000090 |
| 33500.0 | 257.2 | -46.7 | | 395.6 | 566.3 | 256.1 | 76.8 | 1.000088 |
| 34000.0 | 251.5 | -47.5 | | 387.6 | 565.4 | 255.3 | 80.3 | 1.000066 |
| 34500.0 | 245.6 | -47.1 | | 378.6 | 565.7 | 253.3 | 79.5 | 1.000084 |
| 35000.0 | 240.1 | -45.9 | | 368.1 | 567.2 | 251.5 | 82.0 | 1.000062 |
| 35500.0 | 234.7 | -43.0 | | 359.2 | 591.0 | 250.2 | 85.7 | 1.000079 |
| 36000.0 | 229.5 | -41.6 | | 345.3 | 592.8 | 249.5 | 91.4 | 1.000077 |
| 36500.0 | 224.4 | -41.7 | | 337.8 | 592.6 | 248.5 | 95.2 | 1.000075 |
| 37000.0 | 219.4 | -42.3 | | 331.1 | 592.0 | 246.7 | 94.8 | 1.000074 |
| 37500.0 | 214.6 | -43.5 | | 325.4 | 590.4 | 245.1 | 93.8 | 1.000072 |
| 38000.0 | 209.8 | -43.4 | | 316.1 | 590.5 | 244.0 | 91.1 | 1.000071 |
| 38500.0 | 205.1 | -43.4 | | 310.9 | 590.6 | 243.5 | 88.2 | 1.000069 |
| 39000.0 | 200.5 | -43.6 | | 304.3 | 590.3 | 244.6 | 84.7 | 1.000068 |
| 39500.0 | 196.0 | -43.9 | | 297.8 | 589.9 | 246.2 | 81.9 | 1.000066 |
| 40000.0 | 191.7 | -44.1 | | 291.6 | 589.5 | 248.5 | 80.2 | 1.000065 |
| 40500.0 | 187.4 | -44.4 | | 285.4 | 589.2 | 251.0 | 79.0 | 1.000064 |
| 41000.0 | 183.2 | -44.8 | | 279.4 | 588.7 | 253.7 | 78.4 | 1.000062 |
| 41500.0 | 179.0 | -45.8 | | 274.3 | 587.4 | 256.4 | 78.4 | 1.000061 |
| 42000.0 | 175.0 | -46.8 | | 269.3 | 586.1 | 259.3 | 80.7 | 1.000060 |
| 42500.0 | 171.0 | -47.8 | | 264.4 | 584.8 | 262.1 | 83.3 | 1.000059 |
| 43000.0 | 167.1 | -48.9 | | 259.6 | 583.4 | 263.3 | 85.4 | 1.000058 |

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

STATION ALTITUDE 3989.00 FEET MSL
 7 FEB. 60
 ASCENSION NO. 52

UPPER AIR DATA
 0380020059
 WHITE SANDS
 TABLE 7 (cont)

GEODEIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARMS | AIR TEMPERATURE DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GW/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION (TN) DEGREES | SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------|---------------------|------------------------------------|-------------------|------------------------|----------------------|-------------------------------------|-------------|---------------------|
| 43500.0 | 163.0 | -49.8 | | 254.8 | 562.2 | 264.2 | 87.5 | 1.000057 |
| 44000.0 | 159.0 | -50.5 | | 249.7 | 581.3 | 265.0 | 87.6 | 1.000056 |
| 44500.0 | 155.9 | -51.2 | | 244.6 | 560.4 | 265.4 | 83.7 | 1.000054 |
| 45000.0 | 152.3 | -51.9 | | 239.7 | 579.5 | 265.8 | 79.7 | 1.000053 |
| 45500.0 | 148.8 | -52.6 | | 234.9 | 578.6 | 265.9 | 75.5 | 1.000052 |
| 46000.0 | 145.3 | -53.4 | | 230.3 | 577.6 | 266.0 | 71.2 | 1.000051 |
| 46500.0 | 141.9 | -54.1 | | 225.7 | 576.5 | 265.8 | 71.4 | 1.000050 |
| 47000.0 | 138.5 | -54.9 | | 221.2 | 575.5 | 265.7 | 72.5 | 1.000049 |
| 47500.0 | 135.3 | -55.7 | | 216.8 | 574.5 | 266.6 | 75.6 | 1.000048 |
| 48000.0 | 132.1 | -56.5 | | 212.4 | 573.4 | 267.5 | 79.1 | 1.000047 |
| 48500.0 | 129.0 | -57.3 | | 208.2 | 572.4 | 267.4 | 79.8 | 1.000046 |
| 49000.0 | 126.0 | -57.6 | | 203.6 | 572.0 | 267.1 | 80.0 | 1.000045 |
| 49500.0 | 123.0 | -57.7 | | 198.8 | 571.9 | 266.3 | 77.2 | 1.000044 |
| 50000.0 | 120.0 | -58.6 | | 194.9 | 570.6 | 265.0 | 72.2 | 1.000043 |
| 50500.0 | 117.2 | -59.6 | | 181.1 | 569.3 | 264.5 | 67.0 | 1.000043 |
| 51000.0 | 114.4 | -60.5 | | 187.4 | 568.1 | 265.6 | 61.6 | 1.000042 |
| 51500.0 | 111.6 | -60.5 | | 182.7 | 568.0 | 266.9 | 56.7 | 1.000041 |
| 52000.0 | 108.9 | -60.3 | | 178.3 | 568.3 | 268.4 | 55.0 | 1.000040 |
| 52500.0 | 106.3 | -60.9 | | 174.5 | 567.6 | 270.0 | 53.3 | 1.000039 |
| 53000.0 | 103.8 | -61.5 | | 170.7 | 569.8 | 272.1 | 54.2 | 1.000038 |
| 53500.0 | 101.3 | -62.0 | | 167.1 | 568.1 | 274.1 | 55.6 | 1.000037 |
| 54000.0 | 99.8 | -62.1 | | 163.1 | 568.0 | 276.5 | 50.3 | 1.000036 |
| 54500.0 | 96.4 | -61.6 | | 158.8 | 566.6 | 285.6 | 43.2 | 1.000025 |
| 55000.0 | 94.1 | -61.1 | | 154.7 | 567.3 | 295.3 | 35.9 | 1.000034 |
| 55500.0 | 91.9 | -60.7 | | 150.6 | 567.9 | 305.7 | 26.3 | 1.000034 |
| 56000.0 | 89.6 | -60.2 | | 146.7 | 568.5 | 326.5 | 18.4 | 1.000033 |
| 56500.0 | 87.5 | -59.7 | | 142.8 | 569.1 | 338.0 | 13.9 | 1.000032 |
| 57000.0 | 85.4 | -59.3 | | 139.1 | 569.7 | 340.2 | 9.8 | 1.000031 |
| 57500.0 | 83.3 | -59.2 | | 135.7 | 569.8 | 336.2 | 6.2 | 1.000030 |
| 58000.0 | 81.3 | -59.7 | | 132.7 | 569.2 | 291.9 | 7.2 | 1.000030 |
| 58500.0 | 79.4 | -60.2 | | 129.8 | 568.6 | 268.4 | 10.9 | 1.000029 |
| 59000.0 | 77.5 | -60.6 | | 127.0 | 567.9 | 258.9 | 20.8 | 1.000028 |
| 59500.0 | 75.6 | -61.1 | | 124.2 | 567.3 | 256.2 | 33.8 | 1.000028 |
| 60000.0 | 73.8 | -61.6 | | 121.5 | 566.7 | 255.5 | 45.2 | 1.000027 |
| 60500.0 | 72.0 | -62.0 | | 118.8 | 566.0 | 257.5 | 48.4 | 1.000026 |
| 61000.0 | 70.3 | -62.5 | | 116.2 | 565.4 | 259.2 | 51.6 | 1.000026 |
| 61500.0 | 68.6 | -62.5 | | 113.4 | 565.4 | 263.7 | 39.5 | 1.000025 |
| 62000.0 | 66.9 | -62.4 | | 110.6 | 565.5 | 260.1 | 19.9 | 1.000025 |
| 62500.0 | 65.3 | -62.3 | | 107.9 | 565.7 | 350.6 | 10.9 | 1.000024 |
| 63000.0 | 63.7 | -62.2 | | 105.2 | 565.8 | 42.9 | 21.2 | 1.000023 |

STATION ALTITUDE 3989.00 FEET MSL
 / FEB. 60
 ASCENSION NO. 59

UPPER AIR DATA
 0380020059
 WHITE SANDS
 TABLE 7 (cont)

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE | | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|--------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | | | | DIRECTION DEGREES(TN) | SPEED KNOTS | |
| 6500.0 | 62.2 | -62.1 | | | 102.6 | 566.0 | | 55.6 | 1.000023 |
| 6400.0 | 60.7 | -62.0 | | | 100.1 | 566.1 | | 55.7 | 1.000022 |
| 6300.0 | 59.2 | -61.9 | | | 97.6 | 566.2 | | 50.0 | 1.000022 |
| 6200.0 | 57.8 | -61.8 | | | 95.2 | 566.4 | | 50.9 | 1.000021 |
| 6100.0 | 56.4 | -61.7 | | | 92.9 | 566.5 | | 281.8 | 1.000021 |
| 6000.0 | 55.0 | -61.6 | | | 90.6 | 566.6 | | 259.5 | 1.000020 |
| 5900.0 | 53.7 | -61.5 | | | 88.4 | 566.8 | | 256.8 | 1.000020 |
| 5800.0 | 52.4 | -61.4 | | | 86.2 | 566.9 | | 256.3 | 1.000019 |
| 5700.0 | 51.1 | -61.3 | | | 84.1 | 567.0 | | 256.4 | 1.000019 |
| 5600.0 | 49.9 | -61.1 | | | 82.0 | 567.3 | | 260.1 | 1.000018 |
| 5500.0 | 48.7 | -59.7 | | | 79.5 | 569.2 | | 260.5 | 1.000018 |
| 5400.0 | 47.5 | -58.4 | | | 77.1 | 570.9 | | 281.6 | 1.000017 |
| 5300.0 | 46.4 | -58.4 | | | 75.3 | 570.9 | | 321.3 | 1.000017 |
| 5200.0 | 45.3 | -58.4 | | | 73.5 | 570.9 | | 10.3 | 1.000016 |
| 5100.0 | 44.2 | -58.4 | | | 71.7 | 571.0 | | 9.9 | 1.000016 |
| 5000.0 | 43.2 | -58.4 | | | 70.0 | 571.0 | | 9.7 | 1.000016 |
| 4900.0 | 42.2 | -58.3 | | | 68.4 | 571.0 | | | 1.000015 |
| 4800.0 | 41.2 | -58.3 | | | 66.7 | 571.0 | | | 1.000015 |
| 4700.0 | 40.2 | -58.3 | | | 65.1 | 571.0 | | | 1.000014 |
| 4600.0 | 39.2 | -58.3 | | | 63.6 | 571.0 | | | 1.000014 |

STATION ALTITUDE 3989.00 FEET MSL
 7 FEB. 60 1400 HRS MST
 ASCENSION NO. 59

MANDATORY LEVELS
 0380020059
 WHITE SANDS
 TABLE 8

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

| PRESSURE GEOPOTENTIAL | | TEMPERATURE | | REL. HUM. | WIND DATA | |
|-----------------------|--------|-------------|---------------------|-----------|-----------------------|-------------|
| MILLIBARS | FEET | AIR DEGREES | DEWPOINT CENTIGRADE | PERCENT | DIRECTION DEGREES(TN) | SPEED KNOTS |
| 850.0 | 4579. | 15.0 | -2.0 | 31. | 262.2 | 14.3 |
| 800.0 | 6247. | 10.2 | -4.8 | 34. | 274.3 | 27.9 |
| 750.0 | 7992. | 5.2 | -7.3 | 40. | 281.4 | 42.8 |
| 700.0 | 9823. | -.1 | -9.0 | 51. | 208.7 | 50.9 |
| 650.0 | 11753. | -5.2 | -13.5 | 52. | 277.5 | 41.0 |
| 600.0 | 13798. | -10.1 | -18.3 | 51. | 247.0 | 46.7 |
| 550.0 | 15980. | -13.9 | -22.1 | 50. | 250.6 | 66.4 |
| 500.0 | 18333. | -19.4 | -33.6 | 20. | 255.4 | 74.3 |
| 450.0 | 20871. | -25.8 | -42.0 | 20. | 263.0 | 77.1 |
| 400.0 | 23638. | -31.5 | -44.2 | 27. | 265.6 | 64.7 |
| 350.0 | 26603. | -38.9 | -52.4 | 22. | 253.4 | 91.7 |
| 300.0 | 30105. | -46.7 | | | 249.2 | 56.4 |
| 250.0 | 34045. | -47.5 | | | 254.9 | 80.2 |
| 200.0 | 38966. | -43.6 | | | 244.7 | 84.5 |
| 175.0 | 41897. | -46.8 | | | 259.2 | 80.6 |
| 150.0 | 45205. | -52.3 | | | 265.9 | 77.2 |
| 125.0 | 49022. | -57.5 | | | 267.0 | 60.1 |
| 100.0 | 53591. | -62.3 | | | 275.4 | 55.2 |
| 80.0 | 58153. | -60.0 | | | 274.9 | 9.4 |
| 70.0 | 60872. | -62.6 | | | 259.4 | 51.9 |
| 60.0 | 63995. | -62.0 | | | 54.0 | 29.2 |
| 50.0 | 67702. | -61.2 | | | 259.4 | 35.4 |
| 40.0 | 72301. | -58.3 | | | | |

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

