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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/8 4/2
197018 MLRS, MISSILE NUMBER 066, ROUND NUMBER 8-59.(U)

DEC 79

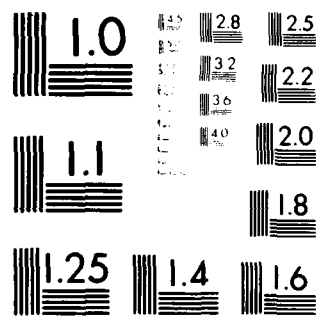
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METEOROLOGICAL DATA REPORT

19701B MLRS
Missile No. 066
Round No. B-59
10 December 1979

by

White Sands Meteorological Team

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19701B MLRS, Missile Number 066, Round Number B-59 are presented in tabular form.		

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Acquisition For	
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A-23	
Availability Codes	
Distribution	
By	
Instruments	
Location	

INTRODUCTION

19701B MLRS, Missile Number 066, Round Number B-59,
was launched from LC-33, White Sands Missile Range (WSMR), New Mexico,
at 1413 MST on 10 December 1979. The scheduled launch time was
1430 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:

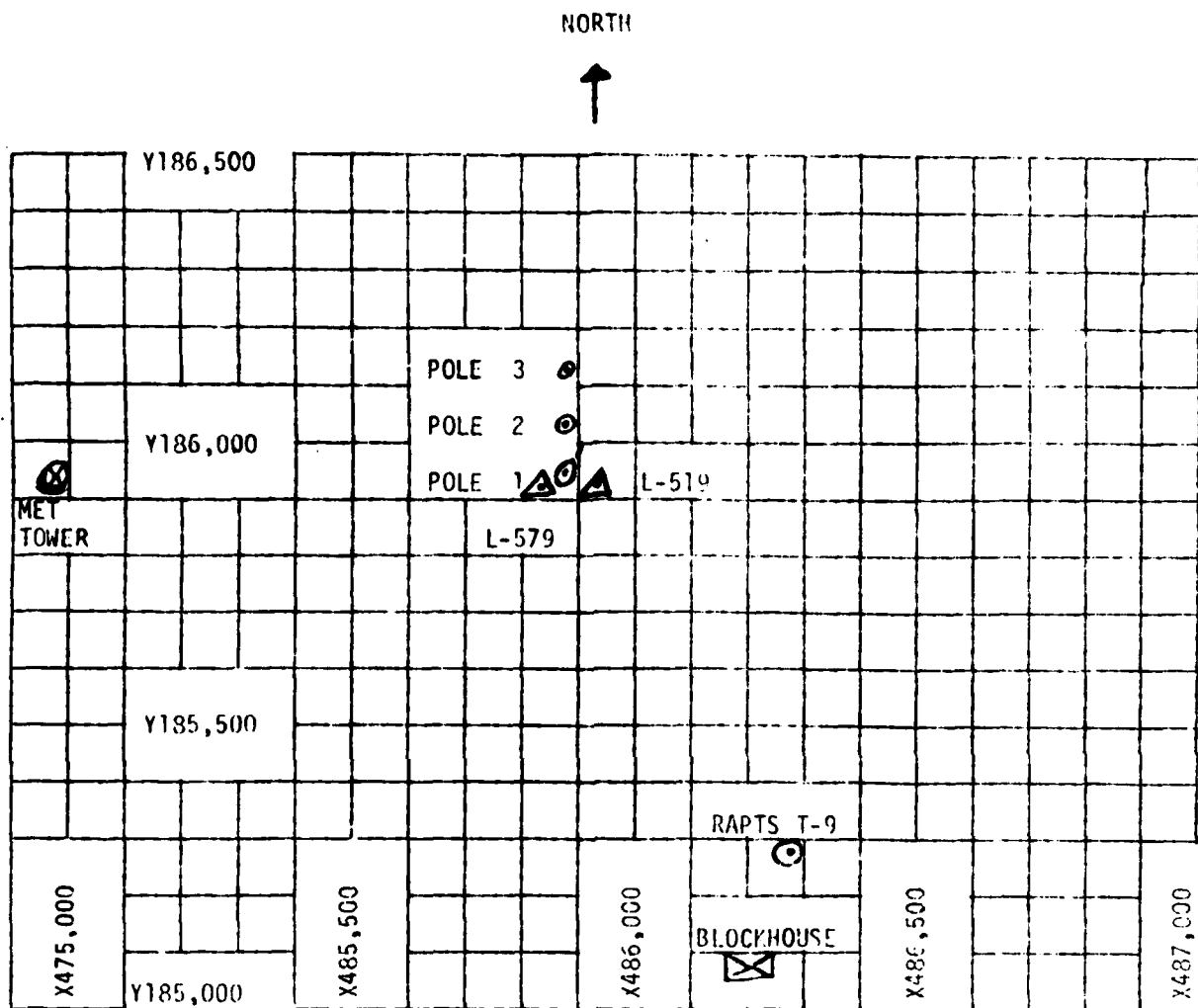
SITE AND ALTITUDE

LC-33 2Km

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 30,000 feet in 500-foot increments.

SITE AND TIME

SMR 1415 MST



1. MET TOWER - 4 Bendix Model T-20 Anemometers at 12 ft, 62 ft, 102 ft, and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/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.

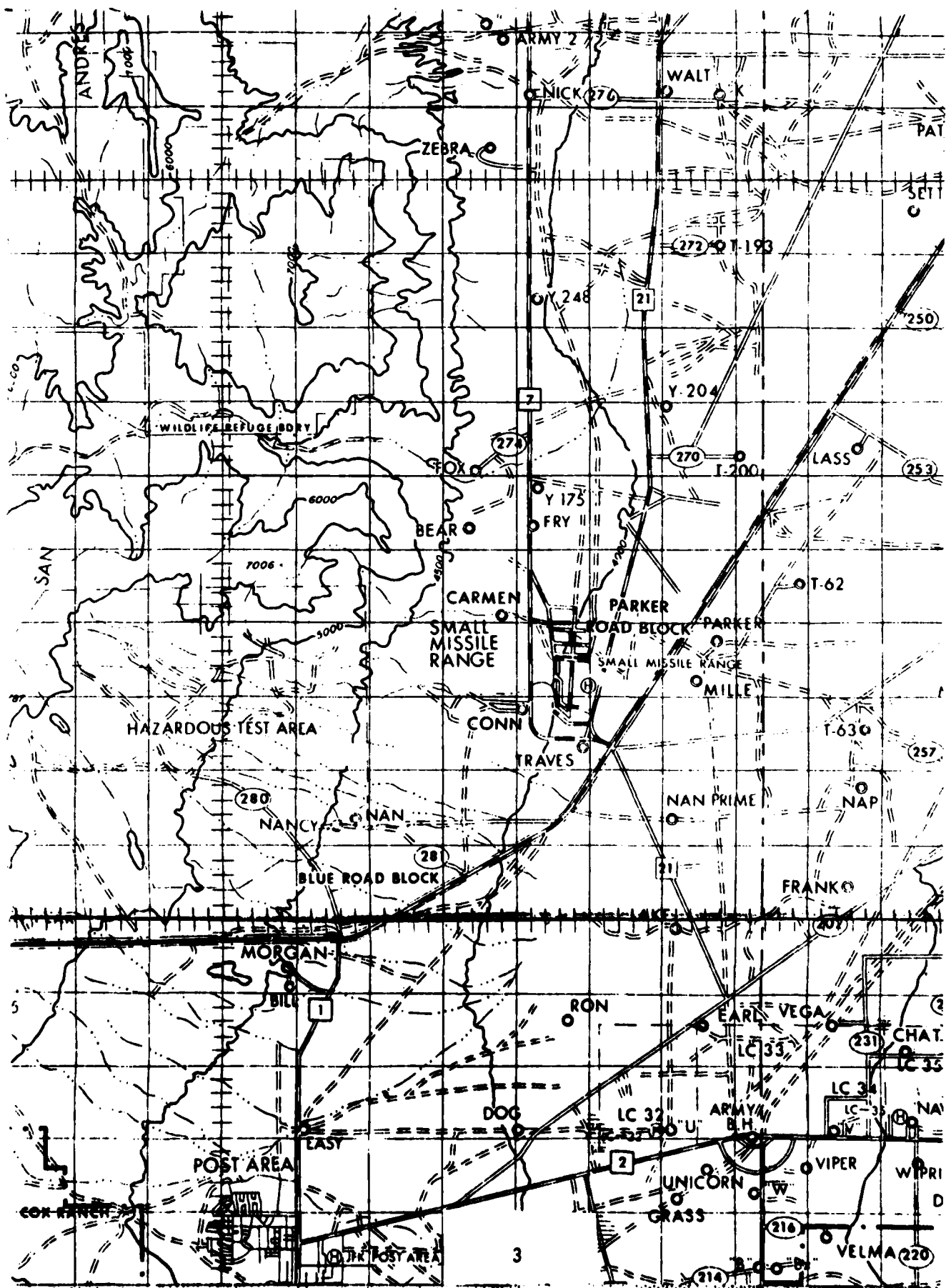


TABLE 1. Surface Observations taken at 1413 MST,
10 December 1979, at LC-33, 19701B MLRS,
Missile Number 066, Round Number B-59.

ELEVATION	3977.30	FT/MSL
PRESSURE	876.1	hPa
TEMPERATURE	20.6	°C
RELATIVE HUMIDITY	25	%
DEW POINT	-0.1	°C
DENSITY	1037.8	GM/M ³
WIND SPEED	18	KTS
WIND DIRECTION	250	DEGREES
CLOUD COVER	CLEAR	

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 Y186,032.00 H4033.57 53.0 ft. AGL			POLE #3 X435,877.29 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	277	16	-30	280	16	-30	271	20
-20	272	24	-20	276	17	-20	263	23
-10	270	24	-10	273	18	-10	264	22
0.0	270	22	0.0	274	18	0.0	258	19
+10	274	23	+10	276	17	+10	260	20

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	261	16	-30	268	23
-20	256	15	-20	264	18
-10	252	14	-10	264	22
0.0	250	18	0.0	264	21
+10	250	17	+10	265	18

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 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	263	23	-30	253	23
-20	262	21	-20	255	23
-10	264	21	-10	250	22
0.0	264	20	0.0	255	20
+10	264	17	+10	259	18

PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM LC-33

DATE 10 December 1979

TIME 1353 MST

TRACKER

COORDINATES (WSTM)

$$\chi = 486,037.24$$
$$\gamma = 182,350.16$$

4 = 3977.30

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH

HEIGHTS ARE METERS AGL XX OR FEET AGL .

[illegible][illegible][illegible]

PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM LC-33

DATE 10 December 1979

TIME 1413

TRACKER

COORDINATES (WSTM)

$$X = 486,037.24$$

Y 182,350.16

3977.30

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH

HEIGHTS ARE METERS AGL XX OR FEET AGL. .

[illegible][illegible][illegible]

STATION ALTITUDE 3997.30 FEET MSL
10 DEC. 79 1415 HRS MST
ASCENSION NO. 38/

SIGNIFICANT LEVEL DATA
3440060367
S M R

GEODETIC COORDINATES
32.46034 LAT UEG
106.42307 LONG DEG

TABLE 6

PRESSURE GEOMETRIC ALTITUDE WILLIAMS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
875.1	3997.3	21.0
850.0	4815.4	23.0
716.6	9475.2	39.0
700.0	10098.9	26.0
673.7	11113.8	25.0
651.6	11996.1	18.0
624.6	13112.5	27.0
607.0	13862.9	18.0
572.4	15395.1	14.0
500.0	18858.5	14.0
443.4	21849.7	16.0
413.8	23537.6	16.0
400.0	24358.3	16.0
378.6	25674.8	17.0
344.8	27871.8	18.0
331.6	28772.6	
312.6	30119.5	

STATION ALTITUDE 3997.30 FEET MSL
10 DEC. 79 1415 HRS MST
ASCENSION NO. 381

UPPER AIR DATA
3440060387
S M R
TABLE 7

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3997.3	875.1	20.2	21.0	1037.0	668.0	210.0	9.9	1.000253
4000.0	875.0	20.2	21.0	1036.9	668.0	210.1	9.9	1.000253
4500.0	859.6	18.1	22.2	1026.0	665.5	224.9	9.7	1.000249
5000.0	844.3	16.3	23.6	1014.3	663.4	239.5	10.1	1.000246
5500.0	828.9	14.8	25.4	1000.9	661.7	252.2	11.1	1.000243
6000.0	813.9	13.4	27.1	987.7	660.1	256.0	12.3	1.000239
6500.0	799.1	11.9	28.8	974.7	658.4	251.0	13.5	1.000236
7000.0	784.6	10.5	30.5	961.9	656.7	250.4	14.3	1.000233
7500.0	770.4	9.0	32.2	949.4	655.0	252.3	14.7	1.000229
8000.0	756.4	7.6	33.9	937.0	653.3	256.1	16.0	1.000226
8500.0	742.7	6.1	35.7	924.8	651.6	260.1	17.7	1.000222
9000.0	729.2	4.7	37.4	912.8	649.9	262.1	19.4	1.000219
9500.0	715.9	3.3	39.5	900.8	648.2	263.2	21.1	1.000215
10000.0	702.6	2.0	28.1	886.0	647.5	264.8	23.4	1.000208
10500.0	689.3	2.1	25.6	871.7	646.7	266.5	26.3	1.000203
11000.0	676.0	1.4	25.1	857.8	645.8	268.2	29.6	1.000200
11500.0	663.9	1.4	21.9	841.7	645.8	269.7	30.6	1.000195
12000.0	651.3	1.7	18.0	825.2	646.1	270.8	30.6	1.000190
12500.0	639.3	.8	22.1	812.4	645.0	270.7	30.2	1.000188
13000.0	627.3	-2	26.1	799.8	643.9	268.9	30.8	1.000186
13500.0	615.4	-7	22.4	786.2	643.3	268.9	31.6	1.000182
14000.0	603.8	-1.1	17.6	772.8	642.7	265.7	31.2	1.000177
14500.0	592.4	-1.9	16.3	760.5	641.8	264.6	30.5	1.000174
15000.0	581.1	-2.8	15.0	748.3	640.8	263.5	29.0	1.000171
15500.0	570.1	-3.6	14.0	736.5	639.7	262.0	27.7	1.000167
16000.0	559.0	-4.8	14.0	725.3	638.4	260.0	26.7	1.000165
16500.0	548.2	-5.9	14.0	714.3	637.0	257.0	25.8	1.000162
17000.0	537.6	-7.0	14.0	703.5	635.7	255.8	25.2	1.000159
17500.0	527.2	-8.1	14.0	692.8	634.3	253.8	24.5	1.000157
18000.0	517.0	-9.3	14.0	682.4	632.9	251.4	24.6	1.000154
18500.0	507.0	-10.4	14.0	672.1	631.6	249.1	25.7	1.000152
19000.0	497.2	-11.5	14.1	661.8	630.2	247.6	27.1	1.000149
19500.0	487.3	-12.7	14.4	651.7	628.8	247.7	29.1	1.000147
20000.0	477.0	-13.9	14.8	641.6	627.3	248.3	30.1	1.000145
20500.0	466.1	-15.1	15.1	631.6	625.9	249.9	29.6	1.000142
21000.0	456.8	-16.3	15.4	622.1	624.4	251.4	29.2	1.000140
21500.0	449.7	-17.5	15.8	612.6	623.0	252.8	28.7	1.000138
22000.0	440.7	-18.5	16.0	602.8	621.7	253.8	27.9	1.000136
22500.0	431.8	-19.3	16.0	592.5	620.7	254.7	27.1	1.000133
23000.0	423.0	-20.1	16.0	582.3	619.7	255.8	25.2	1.000131

STATION ALTITUDE 3997.30 FEET MSL
10 DEC. 79
ASCENSION NO. 387

UPPER AIR DATA
3440060387
S M K

GEODETTIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 7 (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	414.4	-20.9	16.0	572.3	618.7	256.2	23.9	1.000129
24000.0	408.0	-22.2	16.0	563.6	617.1	254.3	24.4	1.000127
24500.0	397.6	-23.5	16.1	554.9	615.5	251.6	25.3	1.000124
25000.0	389.4	-24.7	16.5	546.0	614.1	248.3	26.7	1.000122
25500.0	381.4	-25.9	16.9	537.3	612.6	245.9	27.8	1.000120
26000.0	373.4	-27.2	17.1	528.9	611.0	244.2	29.1	1.000118
26500.0	365.3	-28.7	17.4	520.8	609.2	242.4	29.8	1.000117
27000.0	357.8	-30.1	17.6	512.8	607.4	240.7	29.0	1.000115
27500.0	350.3	-31.5	17.8	505.0	605.6	239.3	27.7	1.000113
28000.0	342.9	-32.9	15.4**	497.2	603.8	238.1	25.3	1.000111
28500.0	335.5	-34.3	5.4**	489.3	602.1	235.3	23.0	1.000109
29000.0	328.3	-35.5		481.2	600.6	230.5	20.9	1.000107
29500.0	321.2	-36.5		472.9	599.3			1.000105
30000.0	314.2	-37.6		464.6	598.0			1.000103

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

STATION ALTITUDE 3997.30 FEET MSL
 10 DEC. 79
 ASCENSION NO. 387

MANDATORY LEVELS
 3440060367
 S M R

GEODETTIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

TABLE 8

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	4812.	16.8	-4.4	23.	234.2	9.8	
800.0	6490.	12.0	-5.6	29.	251.0	13.5	
750.0	8246.	6.9	-7.6	35.	258.2	16.8	
700.0	10099.	2.7	-14.6	20.	265.2	23.9	
650.0	12048.	1.6	-19.8	19.	270.8	30.5	
600.0	14150.	-1.4	-23.1	17.	265.4	31.1	
550.0	16437.	-5.7	-28.9	14.	258.2	26.0	
500.0	18832.	-11.2	-33.3	14.	247.6	26.4	
450.0	21454.	-17.4	-37.3	16.	252.7	28.7	
400.0	24318.	-23.2	-41.9	16.	252.7	24.9	
350.0	27474.	-31.6	-48.0	18.	239.3	27.7	