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19701B MLRS, MISSILE NUMBER 066, ROUND NUMBER B-59.(U)
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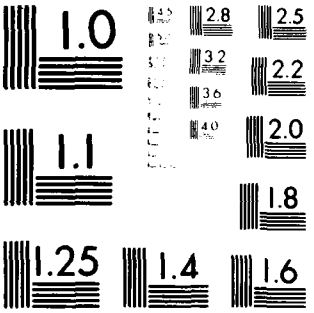

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METEOROLOGICAL DATA REPORT

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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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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Accession For
Unannounced
Justification
By
Distribution/
Availability Codes
Avail and/or
Dist special
A-23

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 (^{o}C), relative humidity, dew point (^{o}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:

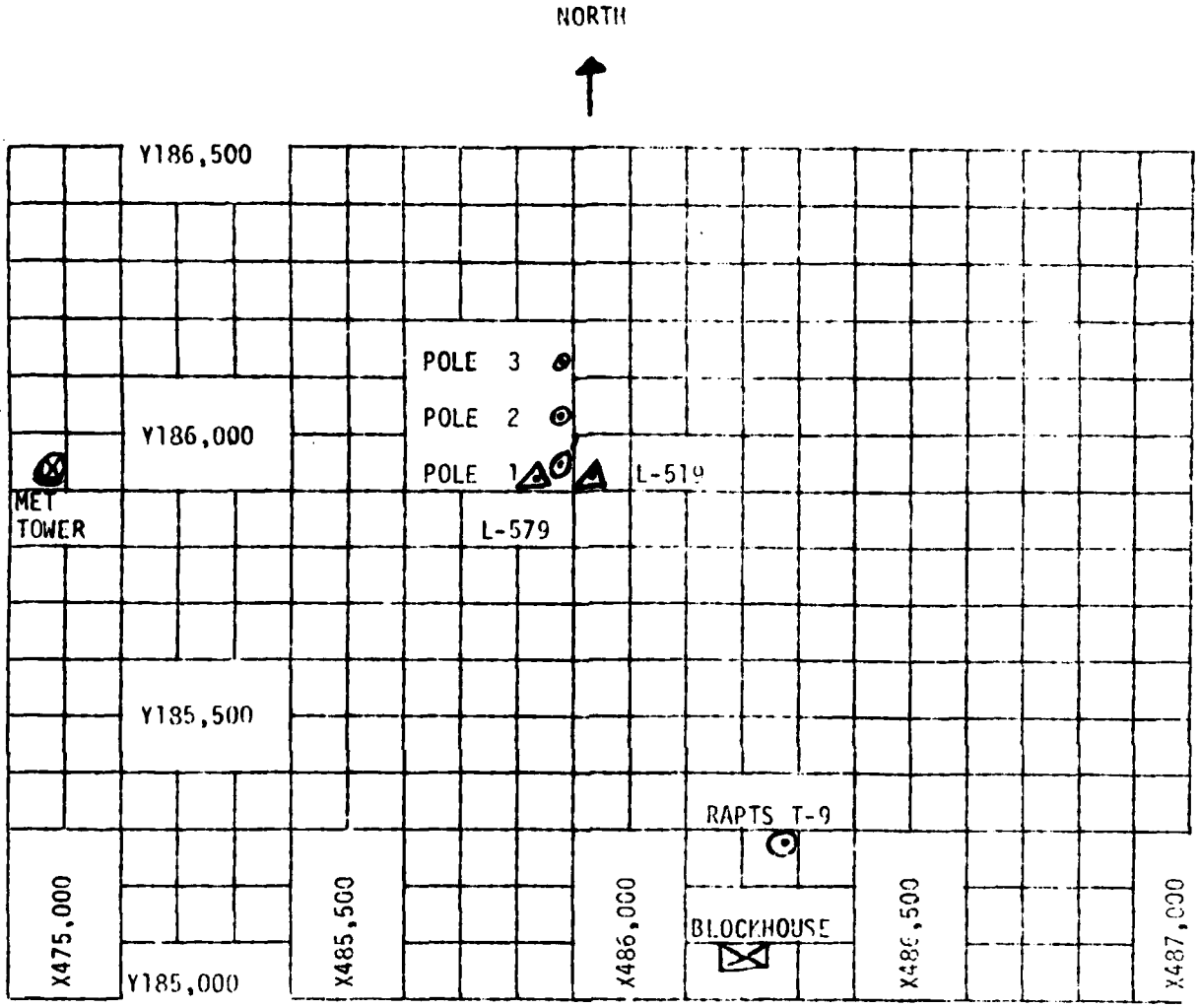
SITE AND ALTITUDE

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-feet 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.

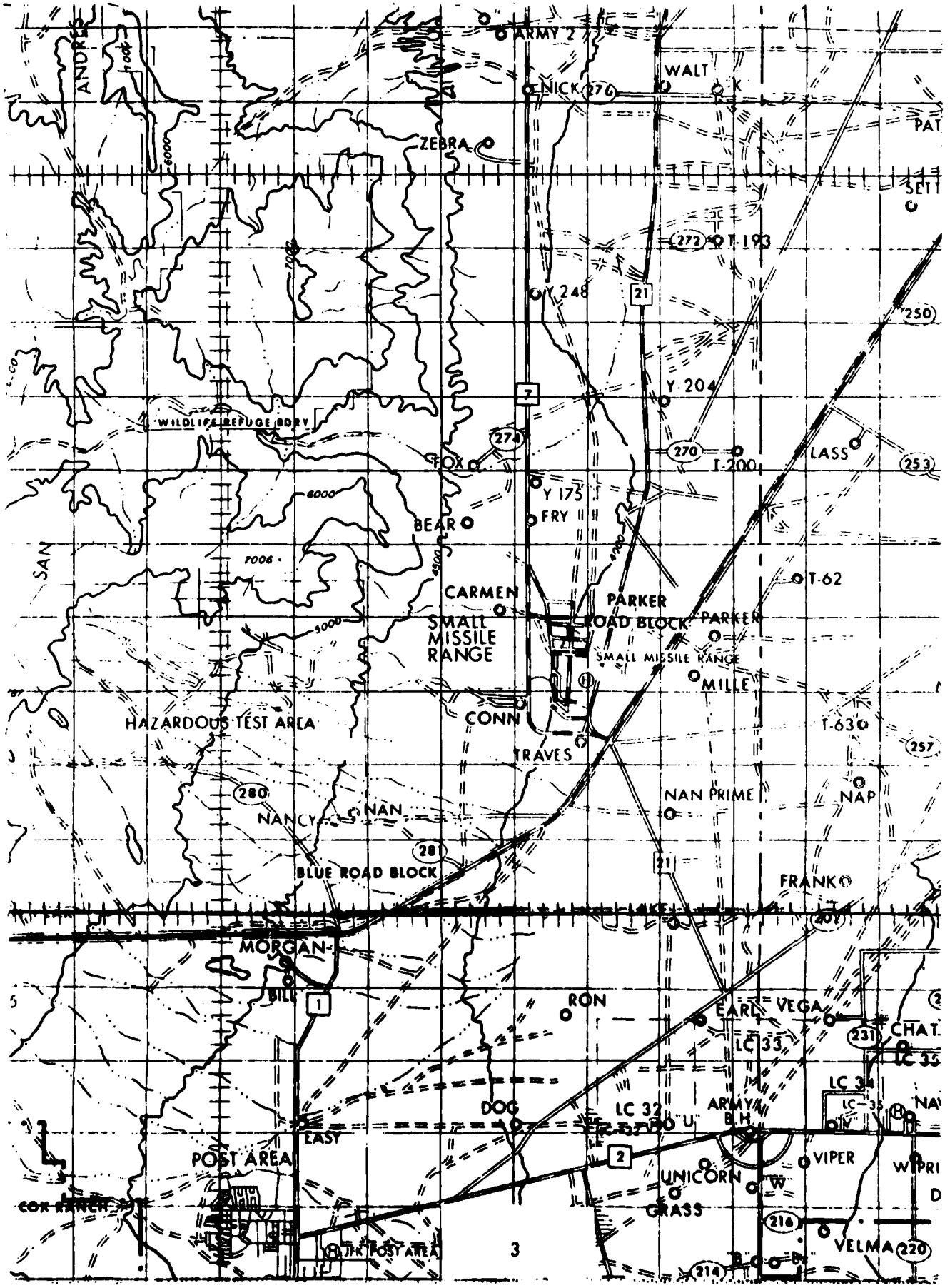

ARMY 2
WALT
NICK
ZEBRA
T-193
Y 248
Y-204
WILDLIFE REFUGE BDRY
FOX
T-200
LASS
Y 175
FRY
BEAR
T-62
CARMEN
PARKER
ROAD BLOCK
SMALL MISSILE RANGE
MILLE
HAZARDOUS TEST AREA
CONN
T-63
TRAVES
NAN PRIME
NAP
NANCY
NAN
BLUE ROAD BLOCK
FRANK
MORGAN
BILL
RON
EARL
VEGA
CHAT
LC 33
LC 34
DOG
LC 32
ARMY B.H.
EASY
POST AREA
VIPER
UNICORN
GRASS
COX RANCH
VELMA
JFK POST AREA

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	MBS
TEMPERATURE	20.6	^{o}C
RELATIVE HUMIDITY	25	
DEW POINT	-0.1	^{o}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 Y186,012.00 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	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, 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) X= 486,037.24 Y= 182,350.16 H= 3977.30

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH

HEIGHTS ARE METERS AGL XX OR FEET AGL____.

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	264	16
90	MISG	MISG
150	280	13
210	278	22
270	275	19
330	274	20
390	273	20
500	269	17
650	261	19
800	250	18
950	247	18
1150	250	19
1350	252	19
1550	257	18
1750	260	18
2000	257	18

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS

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 H 3977.30

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH

HEIGHTS ARE METERS AGL XX OR FEET AGL ____.

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	250	18						
90	MISG	MISG						
150	293	13						
210	275	23						
270	276	19						
330	264	20						
390	284	20						
500	273	19						
650	267	18						
800	253	17						
950	250	18						
1150	250	19						
1350	248	19						
1550	251	22						
1750	258	24						
2000	262	22						

STATION ALTITUDE 3997.30 FEET MSL
10 DEC. 79 1415 HRS MST
ASCENSION NO. 387

SIGNIFICANT LEVEL DATA
3440060387
S M R

TABLE 6

GEODETIC COORDINATES
32.46034 LAT DEG
106.42307 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
875.1	3997.3	20.2	-2.8	21.0
850.0	4815.4	16.8	-4.4	23.0
716.6	9475.2	3.3	-9.3	39.0
700.0	10098.9	2.7	-14.6	26.0
673.7	11113.8	1.2	-16.6	25.0
651.6	11996.1	1.7	-20.0	18.0
624.6	13112.5	-.4	-17.1	27.0
607.0	13862.9	-.9	-22.2	18.0
572.4	15395.1	-3.4	-27.0	14.0
500.0	18858.5	-11.2	-33.3	14.0
443.4	21849.7	-18.3	-37.6	16.0
413.8	23537.6	-21.0	-40.1	16.0
400.0	24358.3	-23.2	-41.9	16.0
378.6	25674.8	-26.3	-43.9	17.0
344.8	27871.8	-32.6	-48.8	18.0
331.6	28772.6	-35.0		
312.6	30119.5	-37.8		

UPPER AIR DATA
3440060367
S M R

STATION ALTITUDE 3997.30 FEET MSL
10 DEC. 79 1415 HRS MST
ASCENSION NO. 387

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 7

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3997.3	875.1	20.2	-2.8	21.0	1037.0	668.0	210.0	9.9	1.000253
4000.0	875.0	20.2	-2.8	21.0	1036.9	668.0	210.1	9.9	1.000253
4500.0	859.6	18.1	-3.8	22.2	1026.0	665.5	224.9	9.7	1.000249
5000.0	844.3	16.3	-4.5	23.6	1014.3	663.4	239.5	10.1	1.000246
5500.0	828.9	14.8	-4.8	25.4	1000.9	661.7	252.2	11.1	1.000243
6000.0	813.9	13.4	-5.2	27.1	987.7	660.1	256.0	12.3	1.000239
6500.0	799.1	11.9	-5.6	28.8	974.7	658.4	251.0	13.5	1.000236
7000.0	784.6	10.5	-5.1	30.5	961.9	656.7	250.4	14.3	1.000233
7500.0	770.4	9.0	-6.7	32.2	949.4	655.0	252.3	14.7	1.000229
8000.0	756.4	7.6	-7.3	33.9	937.0	653.3	256.1	16.0	1.000226
8500.0	742.7	6.1	-7.9	35.7	924.8	651.6	260.1	17.7	1.000222
9000.0	729.2	4.7	-8.6	37.4	912.8	649.9	262.1	19.4	1.000219
9500.0	715.9	3.3	-9.5	38.5	900.8	648.2	263.2	21.1	1.000215
10000.0	702.6	2.8	-13.8	28.1	886.0	647.5	264.8	23.4	1.000208
10500.0	689.5	2.1	-15.5	25.6	871.7	646.7	266.5	26.3	1.000203
11000.0	676.6	1.4	-16.4	25.1	857.8	645.8	268.2	29.6	1.000200
11500.0	663.9	1.4	-18.0	21.9	841.7	645.8	269.7	30.6	1.000195
12000.0	651.5	1.7	-20.0	18.0	825.2	646.1	270.8	30.6	1.000190
12500.0	639.3	.8	-18.5	22.1	812.4	645.0	270.7	30.2	1.000188
13000.0	627.3	-.2	-17.3	26.1	799.8	643.9	268.9	30.8	1.000186
13500.0	615.4	-.7	-19.5	22.4	786.2	643.3	266.9	31.6	1.000182
14000.0	603.8	-1.1	-22.6	17.6	772.8	642.7	265.7	31.2	1.000177
14500.0	592.4	-1.9	-24.1	16.3	760.5	641.8	264.6	30.5	1.000174
15000.0	581.1	-2.8	-25.7	15.0	748.3	640.8	263.5	29.0	1.000171
15500.0	570.1	-3.6	-27.2	14.0	736.5	639.7	262.0	27.7	1.000167
16000.0	559.0	-4.8	-28.1	14.0	725.3	638.4	260.0	26.7	1.000165
16500.0	548.2	-5.9	-29.0	14.0	714.3	637.0	257.8	25.8	1.000162
17000.0	537.6	-7.0	-29.9	14.0	703.5	635.7	255.8	25.2	1.000159
17500.0	527.2	-8.1	-30.8	14.0	692.8	634.3	253.8	24.5	1.000157
18000.0	517.0	-9.3	-31.8	14.0	682.4	632.9	251.4	24.6	1.000154
18500.0	507.0	-10.4	-32.7	14.0	672.1	631.6	249.1	25.7	1.000152
19000.0	497.2	-11.5	-33.5	14.1	661.8	630.2	247.6	27.1	1.000149
19500.0	487.5	-12.7	-34.3	14.4	651.7	628.8	247.7	29.1	1.000147
20000.0	477.6	-13.9	-35.0	14.8	641.6	627.3	248.3	30.1	1.000145
20500.0	468.1	-15.1	-35.8	15.1	631.6	625.9	249.9	29.6	1.000142
21000.0	458.8	-16.3	-36.5	15.4	622.1	624.4	251.4	29.2	1.000140
21500.0	449.7	-17.5	-37.3	15.8	612.6	623.0	252.8	28.7	1.000138
22000.0	440.7	-18.5	-38.0	16.0	602.8	621.7	253.8	27.9	1.000136
22500.0	431.8	-19.3	-38.7	16.0	592.5	620.7	254.7	27.1	1.000133
23000.0	423.0	-20.1	-39.4	16.0	582.3	619.7	255.8	25.2	1.000131

STATION ALTITUDE 3997.30 FEET MSL
10 DEC. 79 1415 HRS MST
ASCENSION NO. 387

UPPER AIR DATA
3440060387
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 7 (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	414.4	-20.9	-40.0	16.0	572.3	618.7	256.2	23.9	1.000129
24000.0	406.0	-22.2	-41.1	16.0	563.6	617.1	254.3	24.4	1.000127
24500.0	397.6	-23.5	-42.1	16.1	554.9	615.5	251.6	25.3	1.000124
25000.0	389.4	-24.7	-42.9	16.5	546.0	614.1	248.3	26.7	1.000122
25500.0	381.4	-25.9	-43.7	16.9	537.3	612.6	245.9	27.8	1.000120
26000.0	373.4	-27.2	-44.6	17.1	528.9	611.0	244.2	28.8	1.000118
26500.0	365.5	-28.7	-45.7	17.4	520.8	609.2	242.4	29.1	1.000117
27000.0	357.8	-30.1	-46.8	17.6	512.8	607.4	240.7	29.0	1.000115
27500.0	350.3	-31.5	-47.9	17.8	505.0	605.6	239.3	27.7	1.000113
28000.0	342.9	-32.9	-50.4	15.4**	497.2	603.8	238.1	25.3	1.000111
28500.0	335.5	-34.3	-59.9	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 1415 HRS MST
ASCENSION NO. 387

MANDATORY LEVELS
3440060367
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 8

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA 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	10039.	2.7	-14.6	26.	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