

AD-A082 447 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/6 4/2  
19304 MLRS MISSILE NUMBERS 1085, 1087, 1088, 1089, 1090, 1092, --ETC(U)  
NOV 79

UNCLASSIFIED ERADCOM/ASL-DR-1092

NL

1 of 1  
AD  
308-247

END
DATE
FORMED
5 80
DTIC

DISPOSITION INSTRUCTIONS

Destroy this report when it is no longer needed. Do not return to the originator.

DISCLAIMER

The findings in this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

The citation of trade names and names of manufacturers in this report is not to be construed as official Government indorsement or approval of commercial products or services referenced herein.

14

ERDC/OM/ASL

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR-1092	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 19304 MLRS Missile Numbers 1085, 1087, 1088, 1089, 1090, 1092 Round Numbers V-83 thru V-88		5. TYPE OF REPORT & PERIOD COVERED
7. AUTHOR(s) ② White Sands Meteorological Team		8. CONTRACT OR GRANT NUMBER(s) ⑩ DA Task 1F665702D127402
9. PERFORMING ORGANIZATION NAME AND ADDRESS [data rept.]		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Research & Development Cmd Atmospheric Sciences Laboratory White Sands M <sup>s</sup> sile Range, New Mexico 88002		12. REPORT DATE November 1979
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) US Army Electronics Research & Development Cmd Adelphi, MD 20783		13. NUMBER OF PAGES 19
16. DISTRIBUTION STATEMENT (of this Report) ⑪ 12/17		15. SECURITY CLASS. (of this report) UNCLASSIFIED
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Approved for public release; distribution unlimited.		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19304B RS, Missile Numbers 1085, 1087, 1088, 1089, 1090, 1092, Round Numbers V-83 thru V-88 are presented in tabular form.		

41066

Handwritten signature or initials

## CONTENTS

INTRODUCTION	-----	1
DISCUSSION	-----	1
LAUNCH AREA MAP	-----	2
GENERAL AREA MAP	-----	3
TABLES:		
1. Surface Observation taken at 1406 MST at LC-33	-----	4
2. Anemometer-Measured Wind Speed and Direction, LC-33 Fixed Pole, taken at 1406 MST	-----	5
3. Anemometer-Measured Wind Speed and Direction, Tower Levels 1, 2, 3, and 4, taken at 1406 MST	-----	5
4. LC-33 Pilot-Balloon-Measured Wind Data at 1406 MST	-----	6
5. Nick Site Pilot-Balloon-Measured Wind Data at 1406 MST	-----	7
6. SMR Significant Level Data at 1400 MST	-----	8
7. SMR Upper Air Data at 1400 MST	-----	10
8. SMR Mandatory Levels at 1400 MST	-----	15

## INTRODUCTION

19304B MLRS, Missile Numbers 1085, 1087, 1088, 1089, 1090 and 1092, Round Numbers V-83 thru V-88, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1406 MST, 16 Nov 79. The scheduled launch time was 1400 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 ( $\text{gm}/\text{m}^3$ ), 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

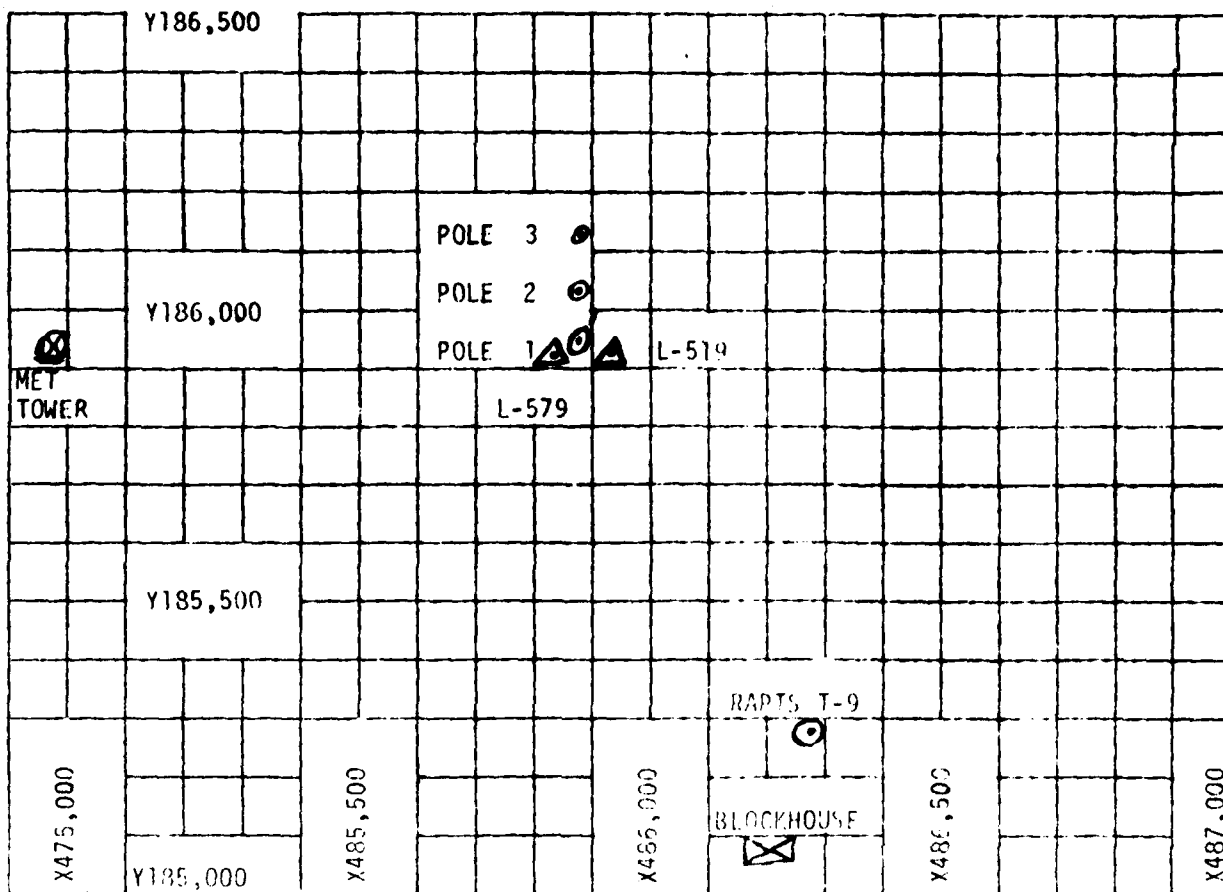
(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 87,000 feet in 500-foot increments.

#### SITE AND TIME

SMR	1400 MST
-----	----------

Accession For	
NTIS <input checked="" type="checkbox"/>	<input type="checkbox"/>
DDC TAB <input type="checkbox"/>	<input type="checkbox"/>
Unannounced	
Justification	
By _____	
Distribution / _____	
Availability _____	
Dist	Special
<b>A</b>	

NORTH



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.

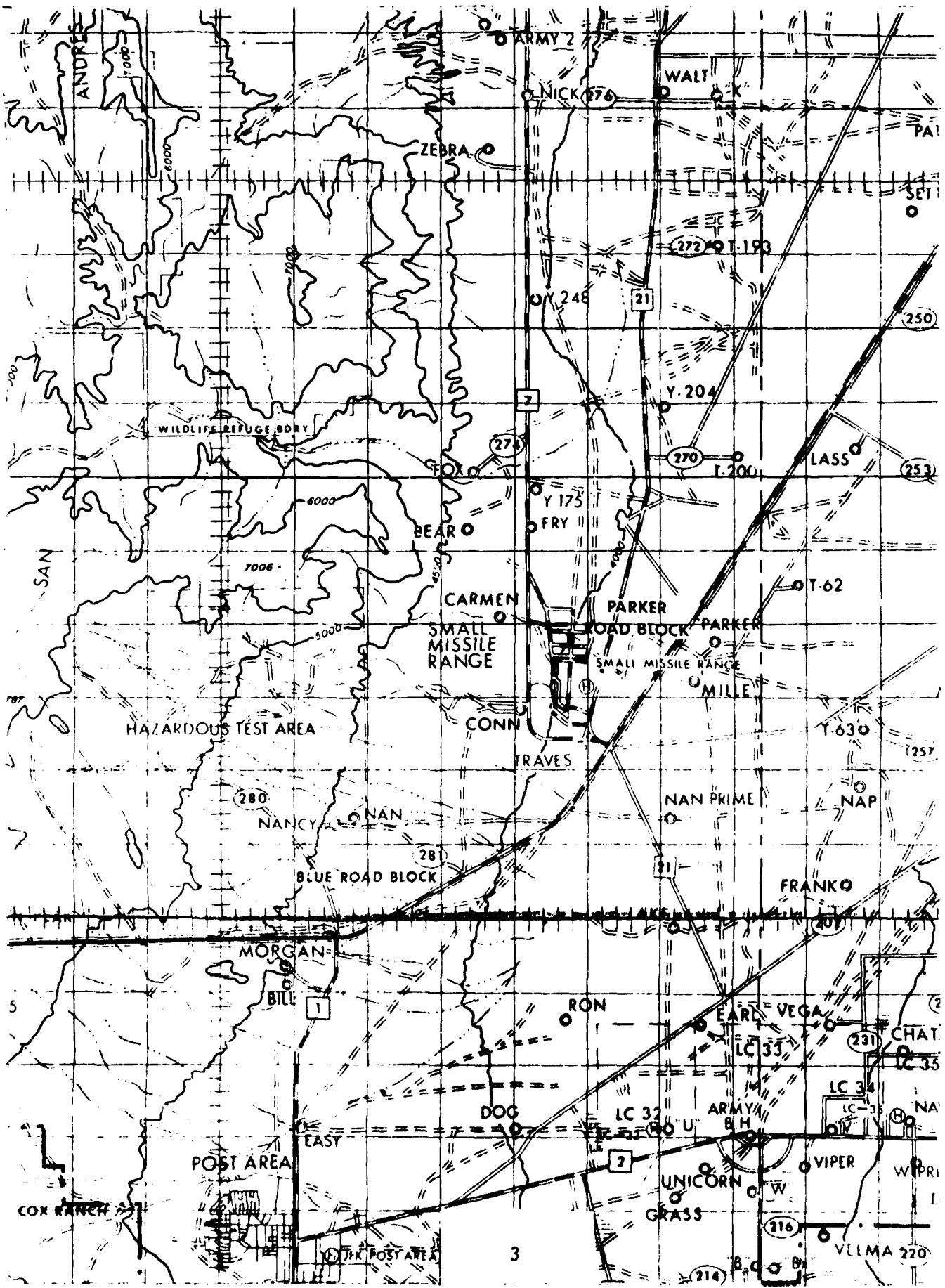


TABLE 1. Surface Observations taken at 1406 MST, 16 November 1979, at LC-33, 193048 MLRS, Missile Numbers 1085, 1087, 1088, 1089, 1090, and 1092, Round Numbers V-83 thru V-88.

ELEVATION	3977.30	FT/MSL
PRESSURE	884.4	MBS
TEMPERATURE	17.1	°C
RELATIVE HUMIDITY	35	%
DEW POINT	1.5	°C
DENSITY	1060	GM/M <sup>3</sup>
WIND SPEED	12	KTS
WIND DIRECTION	162	DEGREES
CLOUD COVER	1	Ac

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 H4763.92 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	129	08	-30	130	05	-30	141	07
-20	145	09	-20	143	07	-20	142	12
-10	166	08	-10	148	06	-10	151	09
0.0	162	10	0.0	156	08	0.0	164	10
+10	135	10	+10	135	09	+10	150	09

TABLE 3

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	159	06	-30	170	09
-20	161	09	-20	165	11
-10	149	MISG	-10	163	MISG
0.0	149	MISG	0.0	170	MISG
+10	159	MISG	+10	177	MISG

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 102 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	159	11	-30	173	10
-20	161	12	-20	173	10
-10	168	MISG	-10	168	MISG
0.0	177	MISG	0.0	167	MISG
+10	173	MISG	+10	180	MISG





STATION ALTITUDE 3997.30 FEET MSL  
 16 NOV. 79 1400 HRS MST  
 ASCENSION NO. 374

SIGNIFICANT LEVEL DATA  
 3200060374  
 S M R

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

TABLE 6

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
883.8	3997.3	-1.1	29.0
850.0	5022.0	-4.4	28.0
795.4	6099.8	-4.4	41.0
765.6	7929.6	-4.4	50.0
745.8	8531.6	-2.2	72.0
700.0	10318.9	-2.6	77.0
679.6	11099.2	-5.2	89.0
670.2	11464.3	-5.3	78.0
652.0	12183.3	-13.2	85.0
589.6	14777.9	-13.8	68.0
531.0	15152.3	-19.2	70.0
563.8	15914.3	-27.2	50.0
555.4	16293.6	-27.1	25.0
522.4	17831.3	-28.2	32.0
500.0	18919.1	-29.1	37.0
490.2	19408.0	-35.9	33.0
474.2	20225.0	-32.6	20.0
443.8	21837.2	-30.8	39.0
436.2	22253.2	-34.4	54.0
406.8	23916.3	-33.5	54.0
400.0	24313.9	-35.1	64.0
365.4	25185.7	-43.5	67.0
357.8	26306.1	-50.8	41.0
318.6	29534.7		35.0
300.0	30877.2		
250.0	34996.2		
242.4	35569.0		
200.0	39688.7		
182.8	41574.3		
174.0	42606.0		
150.0	45692.8		
133.4	48090.1		
100.0	53919.2		
70.0	61122.6		
62.2	63510.8		
57.2	65225.8		
50.0	68003.1		
47.4	69098.8		
38.0	73687.4		
35.6	75056.4		

STATION ALTITUDE 3997.30 FEET MSL  
15 NOV. 79 1400 HRS MST  
ASCENSION NO. 374

SIGNIFICANT LEVEL DATA  
3200060374  
S M R  
TABLE 6 (cont)

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LON DEG

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
30.0	71664.0	-55.0	
29.0	87577.2	-50.9	

THIS PAGE IS BEST QUALITY PRACTICABLE  
FROM COPY FURNISHED TO DDC

UPPER AIR DATA  
 3200060374  
 S M R  
 TABLE 7

STATION ALTITUDE 3997.30 FEET MSL  
 16 NOV. 79 1400 HRS MST  
 ASCENSION NO. 374

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
							DIRECTION DEGREES(TN)	SPEED KNOTS	
3997.3	863.8	17.0	-1.1	29.0	1058.6	664.4	180.0	5.1	1.000261
4000.0	863.7	17.0	-1.1	29.0	1058.5	664.4	180.0	5.1	1.000261
4500.0	853.0	15.5	-2.6	28.5	1045.2	662.6	183.6	5.6	1.000256
5000.0	852.5	14.0	-4.1	28.1	1032.0	660.9	186.6	6.1	1.000251
5500.0	837.1	12.5	-4.2	31.0	1019.0	659.1	189.1	6.7	1.000248
6000.0	824.0	10.9	-4.1	34.6	1006.1	657.2	190.5	7.2	1.000245
6500.0	807.1	9.3	-4.2	38.1	993.5	655.4	188.3	7.7	1.000243
7000.0	782.5	7.7	-4.4	41.9	980.9	653.6	188.2	8.0	1.000240
7500.0	777.9	6.3	-4.4	45.2	967.6	652.0	191.2	8.2	1.000237
8000.0	763.6	5.0	-4.0	52.2	954.2	650.5	190.3	7.8	1.000235
8500.0	749.5	4.2	-1.2	67.9	938.7	649.7	186.0	7.1	1.000237
9000.0	735.9	3.4	-0.9	73.1	923.7	648.9	161.8	6.9	1.000234
9500.0	721.9	2.7	-1.4	74.6	909.1	647.9	139.9	7.7	1.000230
10000.0	708.4	1.9	-1.9	76.1	894.7	647.0	123.3	9.1	1.000226
10500.0	695.2	.8	-2.2	79.8	881.4	645.8	116.9	10.2	1.000223
11000.0	682.2	-0.7	-2.5	87.5	869.8	644.0	115.5	10.8	1.000220
11500.0	669.3	-2.0	-5.2	78.3	857.7	642.3	114.5	12.1	1.000212
12000.0	656.6	-2.8	-5.2	83.2	844.0	641.3	113.8	13.6	1.000209
12500.0	644.0	-3.7	-6.2	82.9	830.9	640.2	110.7	14.5	1.000205
13000.0	631.7	-4.8	-7.7	79.6	818.3	638.9	108.7	15.3	1.000200
13500.0	619.5	-5.8	-9.3	76.4	805.8	637.6	110.3	14.7	1.000196
14000.0	607.7	-6.8	-10.8	73.1	793.5	636.3	113.1	14.4	1.000191
14500.0	596.0	-7.8	-12.4	69.8	781.4	635.0	117.8	14.6	1.000187
15000.0	584.5	-9.0	-13.6	69.2	769.7	633.6	119.5	14.6	1.000183
15500.0	573.1	-10.0	-16.1	60.9	757.9	632.3	119.5	14.6	1.000178
16000.0	561.9	-10.9	-20.6	44.4	745.7	631.2	118.9	14.5	1.000173
16500.0	550.9	-11.5	-27.1	25.9	733.1	630.3	118.3	14.3	1.000167
17000.0	540.0	-12.5	-27.1	28.2	721.3	629.1	118.3	14.0	1.000164
17500.0	529.3	-13.5	-27.1	30.5	709.7	628.0	117.6	13.5	1.000162
18000.0	518.9	-14.5	-27.3	32.8	698.6	626.6	114.4	12.3	1.000159
18500.0	508.5	-15.9	-28.3	35.1	688.3	625.0	115.1	10.3	1.000157
19000.0	498.4	-17.0	-28.7	36.3	677.3	623.7	122.9	7.7	1.000154
19500.0	488.4	-16.9	-29.8	31.5	665.7	623.7	149.3	4.7	1.000151
20000.0	478.6	-18.1	-33.8	23.6	653.4	622.3	209.3	4.4	1.000148
20500.0	468.9	-19.3	-35.0	23.2	643.3	620.8	238.8	6.6	1.000145
21000.0	459.3	-20.6	-33.8	29.1	633.4	619.2	249.3	9.3	1.000143
21500.0	450.0	-21.8	-33.1	35.0	623.6	617.7	246.6	10.7	1.000141
22000.0	440.8	-23.1	-31.9	44.1	614.0	616.1	242.8	11.8	1.000139
22500.0	431.7	-24.4	-31.4	52.3	604.4	614.5	236.5	12.1	1.000137
23000.0	422.7	-25.7	-32.4	52.9	594.9	613.0	231.7	12.6	1.000135

UPPER AIR DATA  
 3200050374  
 S M R  
 TABLE 7 (cont)

STATION ALTITUDE 3997.30 FEET MSL  
 16 NOV. 79 1400 HRS MST  
 ASCENSION NO. 374

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR 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	414.0	-20.9	53.5	585.6	611.4	228.5	13.2	1.000133
24000.0	405.4	-20.2	56.1	576.3	609.8	227.5	14.3	1.000130
24500.0	396.8	-20.3	64.6	566.9	608.4	227.9	15.7	1.000128
25000.0	388.5	-20.6	66.4	557.7	606.9	228.3	17.6	1.000126
25500.0	380.2	-21.7	62.2	548.5	605.4	228.8	19.7	1.000124
26000.0	372.1	-22.9	54.7	539.4	603.9	228.1	21.1	1.000122
26500.0	364.1	-24.1	47.1	530.5	602.4	227.1	22.2	1.000119
27000.0	356.3	-25.2	40.8	521.7	601.0	228.4	21.3	1.000117
27500.0	348.5	-26.4	39.6	512.9	599.4	230.8	19.6	1.000115
28000.0	340.9	-27.7	38.5	504.3	597.9	234.6	16.7	1.000113
28500.0	333.5	-28.9	37.4	495.9	596.3	240.7	13.3	1.000111
29000.0	326.2	-30.1	36.2	487.6	594.8	246.6	8.7	1.000109
29500.0	319.1	-31.3	35.1	479.4	593.2	263.1	4.1	1.000107
30000.0	312.0	-32.6	22.9**	469.4	592.8	340.3	3.5	1.000105
30500.0	305.1	-34.0	9.8**	459.5	592.5	11.6	7.2	1.000102
31000.0	298.3	-35.4		449.9	592.1	12.9	10.0	1.000100
31500.0	291.6	-36.8		441.1	591.3	12.9	12.7	1.000098
32000.0	285.1	-38.5		432.4	590.4	12.1	14.9	1.000096
32500.0	278.7	-40.1		423.9	589.6	8.9	16.9	1.000094
33000.0	272.5	-41.7		415.6	588.8	.2	18.9	1.000093
33500.0	266.3	-43.4		407.4	587.9	353.7	21.3	1.000091
34000.0	260.4	-45.0		399.4	587.1	351.6	24.4	1.000089
34500.0	254.5	-46.7		391.5	586.3	349.9	27.6	1.000087
35000.0	248.8	-48.2		383.6	585.6	348.9	29.9	1.000085
35500.0	243.2	-49.3		375.1	585.5	348.1	32.2	1.000084
36000.0	237.6	-50.1		367.7	584.4	350.8	36.3	1.000082
36500.0	232.1	-51.0		360.7	583.2	352.8	40.5	1.000080
37000.0	226.7	-51.9		353.9	582.0	353.2	42.7	1.000079
37500.0	221.5	-52.9		347.1	580.8	1.4	44.9	1.000077
38000.0	216.4	-53.8		340.6	579.6	2.3	44.4	1.000076
38500.0	211.4	-54.7		334.1	578.4	2.8	43.4	1.000074
39000.0	206.5	-55.6		327.8	577.2	3.1	43.0	1.000073
39500.0	201.8	-56.5		321.5	576.0	3.4	43.0	1.000072
40000.0	197.1	-57.4		315.0	575.1	4.7	41.7	1.000070
40500.0	192.4	-58.3		308.3	574.4	7.5	39.0	1.000069
41000.0	187.9	-59.3		301.8	573.7	10.5	36.3	1.000067
41500.0	183.4	-60.3		295.4	573.0	11.7	33.1	1.000066
42000.0	179.1	-61.3		288.2	573.3	13.1	29.9	1.000064
42500.0	174.9	-62.3		280.9	573.7	8.4	28.9	1.000063
43000.0	170.7	-63.3		274.7	573.3	2.2	28.7	1.000061

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

UPPER AIR DATA  
 3200060374  
 S M R  
 TABLE 7 (cont.)

STATION ALTITUDE 3997.30 FEET MSL  
 16 NOV. 79 1400 HRS MST  
 ASCENSION NO. 374

GEODETTIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 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	
43500.0	166.7	-57.1			268.8	572.6	356.9	29.6	1.000060
44000.0	162.7	-57.6			263.0	572.0	353.0	31.6	1.000059
44500.0	158.9	-58.1			257.3	571.3	349.6	33.1	1.000057
45000.0	155.1	-58.6			251.8	570.6	346.7	32.2	1.000056
45500.0	151.4	-59.1			246.4	570.0	343.6	31.4	1.000055
46000.0	147.8	-59.9			241.3	569.0	340.3	28.7	1.000054
46500.0	144.2	-60.8			236.5	567.7	336.2	25.7	1.000053
47000.0	140.7	-61.7			231.8	566.5	334.2	24.7	1.000052
47500.0	137.3	-62.6			227.2	565.3	334.9	25.5	1.000051
48000.0	134.0	-63.5			222.7	564.0	335.3	26.4	1.000050
48500.0	130.7	-63.7			217.4	563.8	335.4	27.7	1.000048
49000.0	127.5	-63.7			212.1	563.8	335.5	29.0	1.000047
49500.0	124.4	-63.7			207.0	563.7	333.7	28.1	1.000046
50000.0	121.4	-63.8			201.9	563.7	331.2	26.7	1.000045
50500.0	118.4	-63.8			197.0	563.7	328.7	25.1	1.000044
51000.0	115.5	-63.8			192.2	563.7	326.1	23.1	1.000043
51500.0	112.7	-63.8			187.6	563.7	323.3	21.4	1.000042
52000.0	110.0	-63.8			183.0	563.6	322.0	20.9	1.000041
52500.0	107.3	-63.9			178.5	563.6	320.5	20.4	1.000040
53000.0	104.6	-63.9			174.2	563.6	324.8	20.2	1.000039
53500.0	102.1	-63.9			170.0	563.6	330.1	20.0	1.000038
54000.0	99.5	-63.9			165.8	563.5	333.3	18.5	1.000037
54500.0	97.2	-64.0			161.8	563.5	335.2	15.7	1.000036
55000.0	94.9	-64.0			157.9	563.4	336.5	13.2	1.000035
55500.0	92.5	-64.1			154.1	563.3	331.0	12.4	1.000034
56000.0	90.2	-64.1			150.3	563.3	324.8	11.7	1.000033
56500.0	88.0	-64.2			146.7	563.2	325.9	11.7	1.000033
57000.0	85.9	-64.2			143.1	563.1	329.0	11.9	1.000032
57500.0	83.8	-64.2			139.7	563.1	328.0	11.9	1.000031
58000.0	81.7	-64.3			136.3	563.0	319.7	11.8	1.000030
58500.0	79.7	-64.3			133.0	562.9	311.4	11.9	1.000030
59000.0	77.8	-64.4			129.8	562.9	303.9	12.8	1.000029
59500.0	75.9	-64.4			126.6	562.8	297.6	14.0	1.000028
60000.0	74.0	-64.5			123.5	562.7	295.5	14.9	1.000028
60500.0	72.2	-64.5			120.6	562.7	297.2	15.4	1.000027
61000.0	70.4	-64.6			117.6	562.6	298.8	15.8	1.000026
61500.0	68.7	-64.5			114.7	562.8	302.7	15.0	1.000026
62000.0	67.0	-64.3			111.8	563.0	307.0	14.2	1.000025
62500.0	65.4	-64.1			109.0	563.3	312.4	13.3	1.000024
63000.0	63.8	-63.9			106.2	563.6	319.1	12.3	1.000024

UPPER AIR DATA  
 3200060374  
 S M R  
 TABLE 7 (cont)

STATION ALTITUDE 3997.30 FEET MSL  
 16 NOV. 79 1400 HRS MST  
 ASCENSION NO. 374

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 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
6300.0	52.2	-63.7		103.5	563.8	324.9	11.4	1.000023
6400.0	50.7	-62.5		103.4	565.4	323.2	9.9	1.000022
6500.0	49.3	-61.3		97.4	567.1	320.8	8.5	1.000022
6500.0	57.8	-60.1		94.5	568.7	304.6	8.1	1.000021
6500.0	56.4	-59.6		92.1	569.4	285.4	9.2	1.000021
6600.0	55.1	-59.7		89.9	569.2	272.6	11.0	1.000020
66500.0	53.8	-59.8		87.8	569.1	273.9	14.0	1.000020
67000.0	52.5	-59.9		85.7	568.9	274.7	17.0	1.000019
67500.0	51.2	-60.0		83.7	568.8	278.5	18.1	1.000019
68000.0	50.0	-60.1		81.8	568.6	286.4	17.3	1.000018
68500.0	48.8	-60.9		80.1	567.6	294.8	16.8	1.000018
69000.0	47.6	-61.6		78.5	566.6	305.6	15.1	1.000017
69500.0	46.5	-61.3		76.4	567.1	319.3	13.8	1.000017
70000.0	45.4	-60.6		74.4	568.0	332.6	13.3	1.000017
70500.0	44.3	-59.9		72.4	568.9	338.7	12.6	1.000016
71000.0	43.3	-59.3		70.5	569.7	345.4	12.1	1.000016
71500.0	42.2	-58.6		68.6	570.6	349.3	11.2	1.000015
72000.0	41.2	-57.9		65.7	571.5	351.0	9.9	1.000015
72500.0	40.2	-57.3		64.9	572.4	353.3	8.7	1.000014
73000.0	39.3	-56.6		63.2	573.3	357.5	6.9	1.000014
73500.0	38.3	-55.9		61.5	574.2	4.7	5.3	1.000014
74000.0	37.4	-56.0		60.1	574.0	3.5	3.7	1.000013
74500.0	36.6	-56.6		58.8	573.3	318.4	3.4	1.000013
75000.0	35.7	-57.1		57.6	572.5	286.3	4.9	1.000013
75500.0	34.9	-56.9		56.2	572.9	276.3	6.9	1.000013
76000.0	34.0	-56.6		54.8	573.3	272.9	8.7	1.000012
76500.0	33.2	-56.3		53.4	573.7	270.7	10.5	1.000012
77000.0	32.5	-56.0		52.1	574.1	269.2	10.3	1.000012
77500.0	31.7	-55.7		50.8	574.5	267.7	9.8	1.000011
78000.0	30.9	-55.4		49.5	574.9	266.4	9.4	1.000011
78500.0	30.2	-55.1		48.3	575.3	266.6	8.8	1.000011
79000.0	29.5	-54.8		47.1	575.6	266.9	8.3	1.000010
79500.0	28.8	-54.6		46.0	575.9	272.4	7.7	1.000010
80000.0	28.2	-54.4		44.8	576.2	284.6	7.3	1.000010
80500.0	27.5	-54.1		43.8	576.6	297.7	7.2	1.000010
81000.0	26.9	-53.9		42.7	576.9	303.8	7.9	1.000010
81500.0	26.3	-53.7		41.7	577.2	306.9	8.8	1.000009
82000.0	25.6	-53.4		40.7	577.5	309.4	9.7	1.000009
82500.0	25.1	-53.2		39.7	577.8	293.5	8.3	1.000009
83000.0	24.5	-52.9		38.7	578.1	272.9	7.6	1.000009

STATION ALTITUDE 3997.30 FEET MSL  
 16 NOV. 79 1400 HRS MST  
 ASCENSION NO. 374

UPPER AIR DATA  
 3200660374  
 S M R  
 TABLE 7 (cont.)

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) DEGREES	SPEED KNOTS	INDEX OF REFRACTION
83500.0	23.9	-52.7		37.8	578.4	254.0	7.8	1.000008
84000.0	23.4	-52.5		36.9	578.7	242.5	7.6	1.000008
84500.0	22.8	-52.2		36.0	579.0	231.1	7.8	1.000008
85000.0	22.3	-52.0		35.1	579.4	231.2	8.6	1.000008
85500.0	21.8	-51.8		34.3	579.7	236.6	9.6	1.000008
86000.0	21.3	-51.5		33.4	580.0			1.000007
86500.0	20.8	-51.3		32.6	580.3			1.000007
87000.0	20.3	-51.0		31.8	580.6			1.000007

STATION ALTITUDE 3997.30 FEET MSL  
 16 NOV. 79  
 ASCENSION NO. 374

MANDATORY LEVELS  
 3200060374  
 S M R  
 TABLE 8

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
					DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5078.	13.8	-4.4	28.	187.0	6.2
800.0	6738.	8.5	-4.3	40.	187.3	7.9
750.0	8474.	4.2	-1.3	67.	187.1	7.2
700.0	10309.	1.4	-2.2	77.	117.4	10.0
650.0	12250.	-3.3	-5.5	84.	112.2	14.1
600.0	14314.	-7.5	-11.8	71.	116.1	14.5
550.0	16519.	-11.6	-27.1	26.	118.3	14.3
500.0	18993.	-17.0	-28.2	37.	121.1	8.2
450.0	21469.	-21.8	-33.1	35.	246.6	10.7
400.0	24274.	-28.9	-33.5	64.	227.7	15.2
350.0	27361.	-36.2	-44.9	40.	230.3	19.9
300.0	30816.	-42.0			12.4	9.2
250.0	34821.	-47.2			349.1	29.3
200.0	39594.	-54.9			3.4	43.0
175.0	42379.	-56.3			8.8	29.0
150.0	45570.	-59.3			342.5	30.7
125.0	49265.	-63.7			334.2	28.4
100.0	53754.	-63.9			332.9	19.1
80.0	58236.	-64.3			313.1	11.8
70.0	60914.	-64.6			299.5	15.7
60.0	64015.	-61.9			322.2	9.3
50.0	67749.	-60.1			285.9	17.3
40.0	72323.	-57.1			353.8	8.4
30.0	78320.	-55.0			266.7	8.7
25.0	82159.	-53.2			294.2	8.3
20.0	86900.	-50.9				

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