

AD-A102 260 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2  
19304D MLRS, MISSILE NUMBERS BK 001, V01-001, V01-002, ROUND NU--ETC(U)  
MAY 81 D C KELLER  
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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 19304D MLRS, Missile NO. BK 001, V01-001, and V01-002, Round No. V-14-/MD-7, V-141/MD-8 and V-142/MD-9 presented in tabular form.		

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## INTRODUCTION

19304D MLRS, Missile Numbers BK 001, V01-001, and V01-002, Round Numbers V-140/MD7, V-141/MD8, and V-142/MD9, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1315:28, 1315:32, and 1315:37 MDT, 11 May 1981. The scheduled launch times were 1300, 1300:04, and 1300:09 MDT.

## 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 was obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( C ), relative humidity, dew point ( C ), density ( $\text{gm/m}^3$ ), 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:

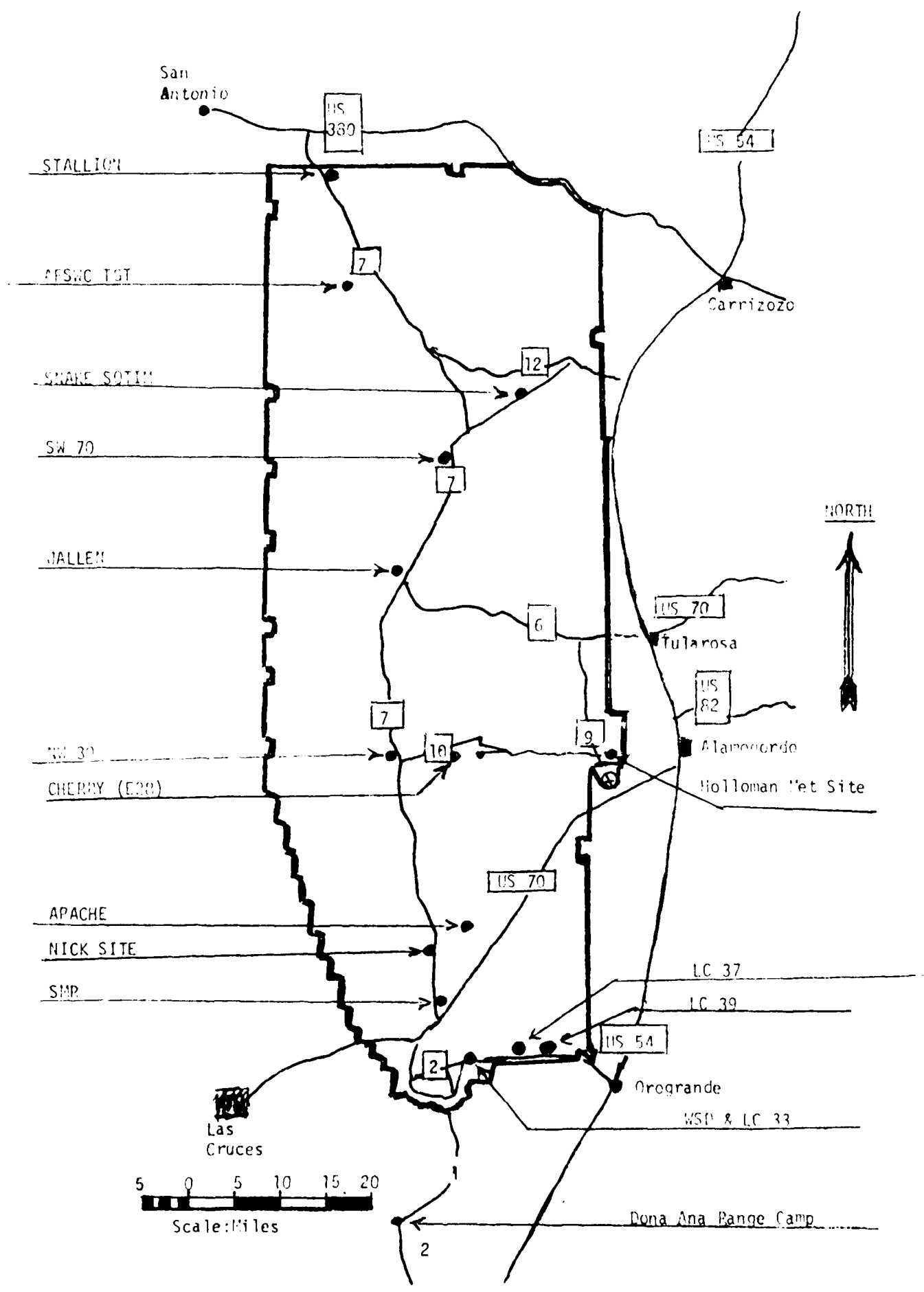
#### SITE AND ALITUDE

LC-33	2 KM
NICK	2 KM

(2) Air structure data (rawinsonde) were collected at the following Met Sites:

#### SITE AND TIME

LC-37	1000 MDT
WSD	1100 MDT
LC-37	1200 MDT
LC-37	1300 MDT





PROJECT SURFACE OBSERVATION

TABLE <u>1</u>		STATION <u>LC-33</u>	
DATE <u>11</u> <u>May</u> <u>81</u>	Y = <u>484,982.64</u>	Y = <u>185,957.73</u>	H = <u>3982.00</u>
TIME <u>M D I</u>	DAY <u>1</u>	MONTH <u>May</u>	YEAR <u>81</u>
	PRESSURE <u>876.0</u> mbs	TEMPERATURE <u>27.8</u> °C	DEW POINT <u>6.4</u> °C
		RELATIVE HUMIDITY <u>26</u> %	DENSITY <u>1008</u> gm/m <sup>3</sup>
			WIND DIRECTION <u>290</u> degs In
			WIND SPEED <u>08</u> kts
			CHARACTER <u></u> kts
			VISIBILITY <u>50</u>

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER AMT TYPE HGT	2nd LAYER AMT TYPE HGT	3rd LAYER AMT TYPE HGT				
	2 CS 22,000						

PSYCHROMETRIC COMPUTATION

TIME:	1315	
DRY BULB TEMP.	27.8	
WET BULB TEMP.	14.9	
WET BULB DEPR.	12.9	
DEW POINT	6.4	
RELATIVE HUMID.	26	

TABLE

2

LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.20 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.95 Y185,957.90 H4033.57 53.6 ft. AGL			POLE #3 X485,877.15 Y185,956.15 H4043.42 68.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	298	07	T-30	283	05	T-30	315	09
T-20	289	07	T-20	273	06	T-20	309	08
T-10	288	09	T-10	294	06	T-10	295	06
T0.0	287	07	T0.0	293	05	T0.0	297	09
T+10	298	09	T+10	283	03	T+10	280	09

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
T-30	300	06	T-30	290	10
T-20	315	06	T-20	286	10
T-10	314	09	T-10	292	11
T0.0	293	08	T0.0	287	11
T+10	275	07	T+10	277	10

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 182 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	288	09	T-30	291	10
T-20	282	10	T-20	281	10
T-10	278	10	T-10	251	12
T0.0	275	09	T0.0	264	11
T+10	268	09	T+10	260	09

TABLE 4

T-TIME PILOT-BALLOON TRACKING DATA

DATE 11 May 1981

SITE: LC-33  
 TIME: 1315 MDT  
 UTM COORDINATES:  
 X= 485,135.76  
 Y= 185,919.24  
 H= 3988.57

SITE: NICK  
 TIME: 1315 MDT  
 UTM COORDINATES:  
 X= 470,734.56  
 Y= 255,775.64  
 H= 4126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	290	08
100	282	13
210	273	18
270	272	19
330	273	18
390	269	16
500	258	14
600	276	10
700	262	16
850	254	18
1100	252	17
1300	252	19
1550	254	21
1750	254	23
2000	261	23

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	229	03
100	252	08
210	255	10
270	257	12
330	258	13
390	258	14
500	256	14
600	255	13
700	258	11
850	263	10
1100	274	08
1300	276	09
1550	272	11
1750	271	11
2000	263	10

Data obtained from  
 RAPTS T-9 radar  
 Tracked Pilot-Balloon

Data obtained from  
 Single Theodolite  
 Tracked Pilot-Balloon

AIMING AND T-TIME COMPUTER MET MESSAGES  
11 May 1981

LC-37 1000 MDT  
METCM1324063  
111600124877  
00284006 29510877  
01324008 29220866  
02349009 29080841  
03483014 28870803  
04497022 28500765  
05502024 28030712  
**06489021 27630670**  
07479023 27280629  
08474023 26900591  
09462025 26520555  
10469029 26190520  
11466030 25810487

WSD 1100 MDT  
METCM1324064  
111700122878  
00284009 29940878  
01295012 29760868  
02320010 29410843  
03465011 28940805  
04501021 28570758  
05500026 28140714  
**06495023 27730672**  
07490022 27300632  
08503025 26920593  
09486027 26600557  
10466032 26390522  
11473033 25950489

LC-37 1200 MDT  
METCM1324063  
111800124876  
00320006 30080876  
01334008 29770866  
02339010 29460841  
03363011 29100803  
04453012 28620757  
05451018 28140713  
06479018 27650670  
07484032 27250630  
08489030 26940592  
09469035 26710555  
10468032 26390521  
11473036 25980488

LC-37 1300 MDT  
METCM1324063  
111900124875  
00462010 30210875  
01503031 29930865  
02502017 29640840  
03501018 29250802  
04473015 28740756  
05441014 28260712  
06458018 27760670  
07461016 27270630  
08471030 26830592  
09501035 26580555  
10488032 26270520  
11476035 25870488

STATION ALTITUDE 4051.37 FEET MSL  
 11 MAY 81 1000 HRS MDT  
 ASCENSION NO. 79

SIGNIFICANT LEVEL DATA  
 1310180079  
 LC-37  
 TABLE 6

GEODETTIC COORDINATES  
 32.40175 LAT DEG  
 106.31232 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
676.5	4051.4	21.0	3.2	31.0
373.1	4161.2	18.5	2.4	34.0
350.0	4013.3	16.6	1.9	37.0
334.7	5421.4	16.9	.1	32.0
325.1	5744.6	16.5	-1.1	30.0
773.4	7540.1	12.8	-9.6	20.0
700.0	10251.9	5.4	-13.5	24.0
643.0	12511.7	.6	-19.2	21.0
617.2	13587.2	-1.7	-19.6	24.0
533.6	17333.4	-10.3	-20.9	20.0
525.6	17715.8	-10.5	-29.0	20.0
500.0	18972.7	-13.3	-31.4	20.0
411.9	23701.3	-26.7	-30.1	33.0
400.0	24396.1	-27.8	-30.2	36.0
382.6	25443.1	-30.1	-30.8	42.0
368.8	26301.0	-31.7	-30.8	49.0
348.6	27602.5	-35.3	-41.8	51.0
329.3	28900.2	-38.4	-46.0	44.0
316.4	29801.1	-40.3	-48.6	40.0
310.4	30229.9	-41.5	-49.7	40.0
300.0	30087.3	-43.9		

GEODETIC COORDINATES  
 32.40175 LAT DEG  
 106.31232 LON DEG

UPPER AIR DATA  
 1310180079  
 LC-37  
 TABLE 7

STATION ALTITUDE 4051.37 FEET MSL  
 11 MAY 81 1000 HRS MST  
 ASCENSION NO. 79

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES(TM)	SPEED KNOTS	
4051.4	870.5	21.0	31.0	1034.6	669.3	160.0	6.0	1.000264
4500.0	862.6	17.6	35.4	1030.2	665.4	186.7	4.9	1.000262
5000.0	847.4	16.7	36.1	1015.5	664.2	221.5	5.3	1.000257
5500.0	832.4	16.8	31.5	997.3	664.3	244.0	7.1	1.000249
6000.0	817.5	16.0	28.6	982.7	663.2	258.1	9.7	1.000242
6500.0	802.9	14.9	25.8	968.9	661.9	268.9	13.4	1.000236
7000.0	788.6	13.9	23.0	955.3	660.6	274.8	17.0	1.000230
7500.0	774.5	12.9	20.2	941.9	659.4	277.9	19.0	1.000224
8000.0	760.4	11.5	20.7	929.2	657.8	280.4	21.0	1.000220
8500.0	746.6	10.2	21.4	916.7	656.2	282.0	22.6	1.000217
9000.0	733.0	8.8	22.2	904.4	654.6	283.0	23.9	1.000213
9500.0	719.6	7.5	22.9	892.3	653.0	282.1	24.2	1.000210
10000.0	706.5	6.1	23.6	880.4	651.4	280.8	23.9	1.000207
10500.0	693.5	4.9	23.7	868.0	649.9	278.1	22.1	1.000203
11000.0	680.6	3.8	23.0	855.2	648.7	275.9	21.6	1.000200
11500.0	667.9	2.7	22.3	842.6	647.4	274.0	22.4	1.000196
12000.0	655.5	1.7	21.7	830.1	646.1	273.4	24.1	1.000192
12500.0	643.3	.6	21.0	817.9	644.9	272.3	26.4	1.000189
13000.0	631.2	-4	22.4	805.6	643.6	270.6	24.4	1.000186
13500.0	619.3	-1.5	23.8	793.5	642.3	268.9	21.4	1.000183
14000.0	607.4	-2.6	23.6	781.6	641.0	268.2	19.5	1.000180
14500.0	595.7	-3.8	23.0	769.9	639.6	266.1	20.2	1.000177
15000.0	584.2	-4.9	22.5	758.4	638.2	263.5	23.4	1.000174
15500.0	573.0	-6.1	22.0	747.0	636.8	261.1	24.9	1.000171
16000.0	562.0	-7.2	21.4	735.9	635.4	258.8	26.0	1.000168
16500.0	551.2	-8.4	20.9	724.9	634.1	259.0	26.4	1.000165
17000.0	540.6	-9.5	20.4	714.0	632.7	259.2	26.9	1.000162
17500.0	530.1	-10.4	20.0	702.5	631.6	260.1	27.9	1.000160
18000.0	519.7	-11.1	20.0	690.7	630.7	261.0	28.8	1.000157
18500.0	509.5	-12.2	20.0	680.0	629.4	262.7	29.2	1.000154
19000.0	499.4	-13.4	20.1	669.5	628.0	263.8	29.7	1.000152
19500.0	489.3	-14.8	21.4	659.6	626.3	263.4	30.2	1.000149
20000.0	479.4	-16.2	22.8	649.8	624.6	262.8	30.8	1.000147
20500.0	469.7	-17.6	24.2	640.1	622.8	262.2	31.6	1.000145
21000.0	460.1	-19.0	25.6	630.6	621.1	261.6	32.2	1.000142
21500.0	450.8	-20.5	26.9	621.3	619.4	261.2	32.8	1.000140
22000.0	441.6	-21.9	28.3	612.2	617.6	262.0	33.4	1.000138
22500.0	432.7	-23.3	29.7	603.1	615.9	263.1	34.1	1.000136
23000.0	423.9	-24.7	31.1	594.3	614.1	264.8	35.3	1.000134
23500.0	415.3	-26.1	32.4	585.6	612.4	266.2	36.7	1.000132

UPPER AIR DATA  
 1310180079  
 LC-37  
 TABLE 7 CON'T

STATION ALTITUDE 4051.37 FEET MSL  
 11 MAY 81 10 00 HRS MDT  
 ASCENSION NO. 79

GEOMETRIC COORDINATES  
 32.40175 LAT DEG  
 196.31232 LONG 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 DEGREES CENTIGRADE				DIRECTION DEGREES (TH)	SPEED KNOTS	
24000.0	406.7	-27.2	-38.1	34.3	575.9	611.1	266.2	38.0	1.000130
24500.0	398.2	-28.0	-38.2	36.6	565.9	610.0	266.3	40.9	1.000127
25000.0	389.9	-29.1	-38.5	39.5	556.5	608.6	266.7	42.6	1.000125
25500.0	381.7	-30.2	-38.8	42.5	547.2	607.3	265.9	43.9	1.000123
26000.0	373.6	-31.1	-38.8	46.5	537.6	606.1	263.7	44.8	1.000121
26500.0	365.6	-32.3	-39.3	49.3	528.6	604.7	262.4	45.2	1.000119
27000.0	357.8	-33.6	-40.4	50.1	520.3	603.0	261.6	45.2	1.000117
27500.0	350.1	-35.0	-41.6	50.8	512.1	601.2	263.3	44.3	1.000115
28000.0	342.6	-36.2	-43.1	48.9	503.7	599.7	265.5	43.3	1.000113
28500.0	335.1	-37.4	-44.7	46.2	495.3	598.1	266.1	45.1	1.000111
29000.0	327.8	-38.6	-46.3	43.6	486.9	596.7	266.4	47.0	1.000109
29500.0	320.7	-39.7	-47.7	41.3	478.4	595.3	265.9	49.2	1.000107
30000.0	313.6	-40.9	-49.1	40.0	470.3	593.8			1.000105
30500.0	306.7	-42.4	-54.2	25.7**	462.8	591.9			1.000103

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

STATION ALTITUDE 4051.37 FEET MSL  
 11 MAY 81  
 ASCENSION NO. 79

MANDATORY LEVELS  
 1310180079  
 LC-37  
 TABLE 8

GEOLOGIC COORDINATES  
 32.40175 LAT DEG  
 106.31232 LONG DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET			DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4910.	16.6	37.	215.9	5.1
800.0	6600.	14.7	25.	270.4	14.2
750.0	8376.	10.5	21.	281.0	22.2
700.0	10242.	5.4	24.	279.5	23.0
650.0	12213.	1.2	21.	272.9	25.1
600.0	14307.	-3.4	23.	267.3	19.1
550.0	16543.	-8.5	21.	259.0	26.4
500.0	18946.	-13.3	20.	263.8	29.6
450.0	21541.	-20.6	27.	261.2	32.8
400.0	24356.	-27.8	36.	266.3	40.5
350.0	27461.	-35.0	51.	263.3	44.3
300.0	30926.	-43.9			

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



GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LONG DEG

SIGNIFICANT LEVEL DATA  
 131002033Z  
 WHITE SANDS  
 TABLE 9

STATION ALTITUDE 3989.00 FEET MSL  
 11 MAY 81 1100 HRS MDT  
 ASCENSION NO. 332

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
677.8	3989.0	24.8	36.0
550.0	4908.5	20.7	25.0
700.0	10277.5	6.7	21.0
630.8	13047.1	-7	27.0
612.8	13805.3	-2.0	26.0
560.6	16104.9	-8.2	34.0
551.6	16518.8	-7.3	18.0
542.8	16931.2	-6.7	18.0
500.0	19016.8	-12.5	18.0
429.0	22789.1	-22.6	27.0
400.0	24465.5	-26.7	24.0
316.6	29479.1	-39.3	30.0
300.0	31085.8	-42.3	
250.0	35064.5	-51.5	
233.2	36541.0	-54.8	
200.0	39751.0	-58.3	
187.4	41098.9	-58.8	
178.0	42166.2	-57.8	
169.4	43192.4	-59.2	
150.0	45705.0	-59.2	
140.2	47101.4	-59.1	
114.8	51189.0	-63.8	
101.2	53752.0	-61.8	
100.0	53996.6	-60.3	
89.2	56365.5	-57.1	
75.0	59039.7	-62.8	
70.0	61344.2	-62.5	
67.2	62181.6	-59.6	
62.0	63841.4	-60.6	
50.0	68314.2	-55.9	

STATION ALTITUDE 3989.00 FEET MSL  
 11 MAY 81 1100 HRS MDT  
 ASCENSION NO. 332

UPPER AIR DATA  
 1310020332  
 WHITE SANDS  
 TABLE 10

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
3989.0	877.8	24.8	8.7	36.0	1021.3	674.1	160.0	8.9	1.000276
4000.0	877.5	24.0	8.6	35.9	1021.1	674.0	160.3	8.9	1.000275
4500.0	862.2	22.5	4.0	29.9	1012.3	671.1	175.8	7.5	1.000261
5000.0	847.2	20.5	-2	24.9	1002.5	668.4	196.3	6.8	1.000250
5000.0	832.0	19.2	-1.6	24.6	989.1	666.9	218.0	7.1	1.000245
6000.0	817.1	17.9	-2.9	24.2	975.9	665.3	239.9	8.4	1.000240
6500.0	802.5	16.5	-4.2	23.8	962.9	663.8	263.1	11.7	1.000235
7000.0	788.1	15.2	-5.5	23.4	950.1	662.2	273.6	15.5	1.000230
8000.0	774.0	13.9	-6.8	23.1	937.5	660.7	278.0	18.4	1.000226
8000.0	760.1	12.6	-8.1	22.7	925.0	659.1	280.2	20.6	1.000221
8500.0	746.5	11.3	-9.4	22.3	912.7	657.6	280.9	22.1	1.000217
9000.0	733.1	10.0	-10.7	22.0	900.6	656.0	280.9	23.6	1.000213
9500.0	720.0	8.7	-12.0	21.6	888.6	654.5	280.7	25.1	1.000210
10000.0	707.1	7.4	-13.3	21.2	876.9	652.9	280.0	25.3	1.000206
10500.0	694.2	6.1	-14.3	21.5	865.0	651.4	279.3	25.3	1.000203
11000.0	681.2	4.8	-14.8	22.6	853.0	649.8	279.0	23.8	1.000200
11500.0	668.6	3.4	-15.4	23.6	841.2	648.2	277.9	22.4	1.000197
12000.0	656.1	2.1	-16.0	24.7	829.6	646.7	274.2	21.0	1.000194
12500.0	643.9	.8	-16.6	25.8	818.1	645.1	273.6	20.8	1.000191
13000.0	631.9	-0.6	-17.3	26.9	806.9	643.5	275.8	21.6	1.000188
13500.0	620.0	-1.5	-18.3	26.4	794.3	642.4	281.2	22.8	1.000184
14000.0	608.2	-2.5	-19.0	26.7	782.3	641.2	284.7	23.8	1.000181
14500.0	596.5	-3.9	-19.5	28.4	771.1	639.5	283.1	23.9	1.000179
15000.0	585.1	-5.2	-20.0	30.2	760.1	637.9	281.3	25.0	1.000176
15500.0	573.9	-6.6	-20.5	31.9	749.4	636.3	278.8	26.3	1.000173
16000.0	562.9	-7.9	-21.1	33.6	738.7	634.7	275.3	28.0	1.000171
16500.0	552.0	-7.3	-21.1	18.7	723.1	635.3	270.4	29.5	1.000165
17000.0	541.3	-6.9	-27.2	18.0	707.9	635.8	265.1	31.1	1.000161
17500.0	530.8	-8.3	-28.3	18.0	697.8	634.2	263.6	31.4	1.000159
18000.0	520.4	-9.7	-29.5	18.0	687.8	632.5	262.3	31.8	1.000156
18500.0	510.3	-11.1	-30.6	18.0	678.0	630.8	263.6	32.2	1.000154
19000.0	500.3	-12.5	-31.8	18.0	668.4	629.1	264.9	32.5	1.000151
19500.0	490.3	-13.8	-32.3	19.2	658.3	627.5	265.6	33.2	1.000149
20000.0	480.4	-15.1	-32.8	20.3	648.5	625.9	266.2	33.9	1.000147
20500.0	470.8	-16.5	-33.3	21.5	638.8	624.2	265.6	34.3	1.000144
21000.0	461.3	-17.8	-33.9	22.7	629.2	622.6	264.9	34.7	1.000142
21500.0	452.0	-19.1	-34.6	23.9	619.8	621.0	265.0	34.6	1.000140
22000.0	443.0	-20.5	-35.3	25.1	610.6	619.3	265.2	34.5	1.000138
22500.0	434.1	-21.8	-36.0	26.3	601.5	617.7	267.1	34.4	1.000136
23000.0	425.2	-23.1	-37.0	26.6	592.3	616.1	269.2	34.5	1.000133

STATION ALTITUDE 3989.00 FEET MSL  
 11 MAY 81 11 00 HRS MST  
 ASCENSION NO. 332

UPPER AIR DATA  
 1310020332  
 WHITE SANDS  
 TABLE 10 CONT

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DLPPOINT CENTIGRADE	REL HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	410.5	-24.3	-38.4	25.7	583.0	614.6	271.6	35.7	1.000131
24000.0	407.8	-25.6	-39.8	24.8	573.8	613.1	273.3	36.9	1.000129
24500.0	399.4	-26.8	-41.1	24.0	564.7	611.5	273.8	38.2	1.000127
25000.0	390.9	-27.9	-41.9	24.6	555.2	610.1	274.0	39.8	1.000125
25500.0	382.5	-29.1	-42.8	25.1	546.0	608.6	273.7	42.0	1.000122
26000.0	374.3	-30.3	-43.6	25.7	536.9	607.2	272.9	44.0	1.000120
26500.0	366.3	-31.4	-44.4	26.3	527.9	605.7	271.6	45.4	1.000118
27000.0	358.5	-32.6	-45.2	26.8	519.2	604.3	270.4	46.5	1.000116
27500.0	350.9	-33.8	-46.1	27.4	510.5	602.8	269.4	46.4	1.000114
28000.0	343.4	-34.9	-46.9	27.9	502.1	601.3	268.4	46.5	1.000112
28500.0	336.0	-36.1	-47.8	28.5	493.8	599.9	267.9	47.8	1.000111
29000.0	328.9	-37.3	-48.6	29.0	485.6	598.4	267.5	49.0	1.000109
29500.0	321.8	-38.4	-49.5	29.6	477.6	596.9	265.9	49.3	1.000107
30000.0	314.9	-39.6	-51.3	27.0**	469.7	595.4	264.2	49.6	1.000105
30500.0	307.9	-40.8	-57.5	14.6**	461.8	593.8	263.9	49.9	1.000103
31000.0	301.2	-42.1	-72.3	2.1**	454.0	592.2	264.0	50.2	1.000101
31500.0	294.4	-43.3			446.1	590.7	264.4	52.9	1.000099
32000.0	287.7	-44.4			438.2	589.2	264.7	56.5	1.000098
32500.0	281.2	-45.6			430.4	587.7	264.5	59.8	1.000096
33000.0	274.8	-46.7			422.8	586.2	264.2	62.9	1.000094
33500.0	268.6	-47.9			415.3	584.7	264.5	65.2	1.000093
34000.0	262.5	-49.0			408.0	583.2	265.3	66.9	1.000091
34500.0	256.6	-50.2			400.9	581.7	266.0	68.4	1.000089
35000.0	250.7	-51.4			393.8	580.2	266.5	66.9	1.000088
35500.0	244.9	-52.5			386.6	578.7	267.0	65.3	1.000086
36000.0	239.2	-53.6			379.6	577.3	267.1	65.9	1.000085
36500.0	233.7	-54.7			372.6	575.8	267.0	66.9	1.000083
37000.0	228.1	-55.3			364.8	575.0	267.1	66.9	1.000081
37500.0	222.7	-55.8			357.1	574.3	267.5	68.6	1.000080
38000.0	217.5	-56.4			349.5	573.6	267.8	70.1	1.000078
38500.0	212.3	-56.9			342.1	572.8	268.2	67.8	1.000076
39000.0	207.3	-57.5			334.9	572.1	268.8	65.5	1.000075
39500.0	202.4	-58.0			327.8	571.4	269.2	65.5	1.000073
40000.0	197.6	-58.4			320.5	570.9	269.6	66.3	1.000071
40500.0	192.9	-58.8			313.2	570.7	269.7	67.4	1.000070
41000.0	188.3	-58.8			306.0	570.4	269.6	68.8	1.000068
41500.0	183.8	-58.4			298.2	570.9	269.4	70.3	1.000066
42000.0	179.4	-58.0			290.5	571.5	268.9	69.7	1.000065
42500.0	175.2	-58.3			283.9	571.1	268.4	68.5	1.000063
43000.0	171.0	-58.9			278.1	570.2	267.8	67.1	1.000062

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

UPPER AIR DATA  
 1310020332  
 WHITE SANDS  
 TABLE 10 CONT

STATION ALTITUDE 3989.00 FEET MSL  
 13 MAY 81  
 ASCENSION NO. 332

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES C	DEWPOINT DEGREES C	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
43500.0	160.9	-59.2			271.7	569.8	267.4	64.8	1.000061
44000.0	162.9	-59.2			265.3	569.8	267.0	62.5	1.000059
44500.0	159.0	-59.2			258.9	569.8	260.8	60.7	1.000058
45000.0	155.2	-59.2			252.7	569.8	260.5	59.2	1.000056
45500.0	151.5	-59.2			246.7	569.8	260.3	57.6	1.000055
46000.0	147.9	-59.2			240.8	569.9	260.1	56.3	1.000054
46500.0	144.3	-59.1			235.0	569.9	265.9	55.0	1.000052
47000.0	140.9	-59.1			229.3	570.0	265.8	53.7	1.000051
47500.0	137.5	-59.6			224.2	569.4	265.9	52.4	1.000050
48000.0	134.2	-60.1			219.4	568.6	260.0	51.1	1.000049
48500.0	130.9	-60.7			214.7	567.8	260.7	49.8	1.000048
49000.0	127.8	-61.3			210.1	567.1	267.6	48.6	1.000047
49500.0	124.7	-61.9			205.6	566.3	268.5	47.3	1.000046
50000.0	121.7	-62.4			201.2	565.5	263.5	46.0	1.000045
50500.0	118.7	-63.0			196.8	564.7	270.7	44.7	1.000044
51000.0	115.9	-63.6			192.6	564.0	271.2	43.9	1.000043
51500.0	113.1	-63.6			187.9	564.0	271.4	43.3	1.000042
52000.0	110.3	-63.2			183.0	564.5	271.7	42.5	1.000041
52500.0	107.6	-62.8			178.2	565.1	272.6	40.3	1.000040
53000.0	105.0	-62.4			173.6	565.6	273.6	38.2	1.000039
53500.0	102.5	-62.0			169.0	566.1	275.0	35.0	1.000038
54000.0	100.0	-60.3			163.6	568.4	277.0	31.0	1.000036
54500.0	97.6	-59.6			159.2	569.3	279.7	27.0	1.000035
55000.0	95.3	-58.9			154.9	570.2	278.3	24.1	1.000035
55500.0	93.0	-58.3			150.8	571.1	270.6	21.2	1.000034
56000.0	90.8	-57.6			146.7	572.0	273.0	19.2	1.000033
56500.0	88.6	-57.3			143.0	572.3	267.0	18.5	1.000032
57000.0	86.5	-58.1			140.1	571.3	260.7	17.9	1.000031
57500.0	84.4	-58.9			137.3	570.2	257.6	18.9	1.000031
58000.0	82.4	-59.7			134.5	569.2	255.2	20.1	1.000030
58500.0	80.4	-60.5			131.8	568.1	253.3	21.1	1.000029
59000.0	78.5	-61.3			129.1	567.0	252.8	21.7	1.000029
59500.0	76.6	-62.1			126.5	566.0	252.3	22.3	1.000028
60000.0	74.8	-62.8			123.8	565.0	252.3	22.7	1.000028
60500.0	73.0	-62.7			120.8	565.2	255.7	21.4	1.000027
61000.0	71.2	-62.6			117.8	565.3	259.6	20.1	1.000026
61500.0	69.5	-62.0			114.6	566.2	263.8	19.0	1.000026
62000.0	67.8	-60.2			110.9	568.5	265.4	18.7	1.000025
62500.0	66.2	-59.8			108.0	569.0	267.1	18.3	1.000024
63000.0	64.6	-60.1			105.6	568.6	267.7	16.6	1.000024

UPPER AIR DATA  
 1310020332  
 WHITE SANDS  
 TABLE TO CON'T

STATION ALTITUDE 3989.00 FEET MSL  
 11 MAY 81 1100 HRS MDT  
 ASCENSION NO. 332

GEOMETRIC ALTITUDE MSL FEET

GEOMETRIC ALTITUDE MSL FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
63500.0	63.0	-60.4		103.2	568.2	264.2	11.6	1.000023
64000.0	61.5	-60.4		100.8	568.2	255.5	6.7	1.000022
64500.0	60.1	-59.9		98.1	568.9	229.8	2.9	1.000022
65000.0	58.6	-59.4		95.6	569.6	146.5	2.1	1.000021
65500.0	57.2	-58.9		93.1	570.3	110.2	4.8	1.000021
66000.0	55.9	-58.3		90.6	571.0	120.2	4.3	1.000020
66500.0	54.6	-57.8		88.3	571.7	164.4	3.0	1.000020
67000.0	53.3	-57.3		86.0	572.4			1.000019
67500.0	52.0	-56.8		83.7	573.1			1.000019
68000.0	50.8	-56.2		81.5	573.8			1.000018

STATION ALTITUDE 3989.00 FEET MSL  
 11 MAY 81 1100 HRS MST  
 ASCENSION NO. 032

MANDATORY LEVELS  
 1310020332  
 WHITE SANDS  
 TABLE 11

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LONG DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	AIR TEMPERATURE DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
					DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4905.	20.7	-0.0	25.	192.2	6.8
800.0	6608.	16.3	-4.4	24.	266.5	12.7
750.0	8392.	11.7	-9.1	22.	280.7	21.8
700.0	10267.	6.7	-14.0	21.	279.6	25.3
650.0	12244.	1.4	-16.3	25.	272.4	20.4
600.0	14338.	-3.5	-19.3	28.	283.5	23.9
550.0	16572.	-7.2	-27.4	18.	269.4	29.7
500.0	18990.	-12.5	-31.8	18.	264.9	32.5
450.0	21595.	-19.4	-34.7	24.	265.0	34.6
400.0	24425.	-26.7	-41.1	24.	273.7	38.1
350.0	27541.	-33.9	-46.2	27.	269.2	45.4
300.0	31024.	-42.3			264.0	50.2
250.0	34988.	-51.5			266.5	66.7
200.0	39656.	-58.3			269.4	65.9
175.0	42412.	-58.3			268.4	68.5
150.0	45582.	-59.2			268.2	57.1
125.0	49318.	-61.8			268.3	47.5
100.0	53830.	-60.3			276.9	31.2
80.0	58427.	-60.7			253.2	21.2
70.0	61134.	-62.5			262.3	19.4
60.0	64286.	-59.9			231.1	3.0
50.0	68057.	-55.9				

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

STATION ALTITUDE 4051.37 FEET MSL  
 11 MAY 61  
 ASCENSION NO. 80

SIGNIFICANT LEVEL DATA  
 1310180060  
 LC-37

GEODETIC COORDINATES  
 32.40175 LAT DEG  
 106.51232 LON DEG

TABLE 12

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
875.6	4051.4	3.8	23.0
872.4	4156.9	1.4	22.0
850.0	4900.0	.7	25.0
832.2	5500.2	-.4	25.0
812.6	6172.0	-2.3	25.0
793.2	6848.6	-6.4	20.0
763.2	7919.1	-4.1	30.0
700.0	10277.4	-8.6	33.0
659.0	11890.3	-8.6	47.0
639.8	12670.8	-.2	37.0
630.8	13043.1	-14.1	36.0
613.0	13793.1	-1.7	32.0
568.8	15734.0	-6.3	25.0
560.4	16117.2	-5.4	20.0
552.0	16506.7	-5.6	19.0
518.0	18133.8	-9.4	18.0
500.0	19028.7	-11.7	20.0
454.0	21429.6	-18.3	27.0
438.6	22272.9	-20.9	29.0
430.6	22719.5	-22.0	28.0
416.0	23551.6	-23.7	25.0
400.0	24490.5	-25.9	24.0
345.6	27916.3	-34.2	27.0
318.8	29759.7	-38.4	30.0
300.0	31123.9	-42.4	

STATION ALTITUDE 4051.37 FEET MSL  
 11 MAY 81  
 ASCENSION NO. 80

UPPER AIR DATA  
 1310180080  
 LC-37

GEODETIC COORDINATES  
 32.40175 LAT DEG  
 106.31232 LON DEG

TABLE 13

GEOGRAPHIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
4051.4	873.6	26.6	3.8	23.0	1014.1	675.7	180.0	6.0	1.000260
4500.0	862.0	23.1	1.1	23.4	1010.6	671.5	186.6	7.0	1.000254
5000.0	847.0	21.3	.5	25.0	999.3	669.4	191.9	8.2	1.000250
5500.0	832.2	20.2	-4	25.0	985.6	668.1	195.9	9.5	1.000246
6000.0	817.6	18.6	-1.8	25.0	973.9	666.2	200.2	10.2	1.000241
6500.0	803.1	17.3	-4.2	22.6	961.2	664.7	208.5	9.6	1.000234
7000.0	788.9	16.1	-5.9	21.4	948.3	663.2	217.8	9.3	1.000229
7500.0	774.8	14.5	-4.7	26.1	936.5	661.4	232.3	9.7	1.000228
8000.0	760.9	12.9	-4.2	30.1	924.7	659.6	245.6	11.0	1.000227
8500.0	747.1	11.5	-5.2	30.7	912.5	657.9	253.7	12.9	1.000223
9000.0	733.6	10.1	-6.1	31.4	900.5	656.3	255.1	15.5	1.000219
9500.0	720.2	8.7	-7.1	32.0	888.6	654.8	255.7	17.8	1.000215
10000.0	707.2	7.3	-8.0	32.6	876.9	653.0	255.0	19.3	1.000211
10500.0	694.2	5.8	-8.5	34.9	865.4	651.2	255.1	20.7	1.000208
11000.0	681.3	4.3	-8.4	39.3	854.1	649.5	260.9	20.8	1.000206
11500.0	668.7	2.7	-8.4	43.6	842.9	647.6	266.5	21.1	1.000204
12000.0	656.3	1.3	-9.2	45.6	831.7	645.9	273.7	22.3	1.000201
12500.0	644.0	.2	-12.1	39.2	819.6	644.5	276.1	24.6	1.000195
13000.0	631.8	-8	-13.9	36.1	807.2	643.3	275.6	27.6	1.000190
13500.0	619.9	-1.4	-15.3	33.6	793.7	642.6	275.9	30.6	1.000186
14000.0	608.1	-2.2	-16.9	31.3	781.1	641.6	276.6	32.2	1.000182
14500.0	596.5	-3.4	-18.6	29.5	769.6	640.2	275.0	32.0	1.000179
15000.0	585.1	-4.6	-20.4	27.6	758.3	638.7	271.0	31.5	1.000175
15500.0	574.0	-5.7	-22.2	25.8	747.2	637.3	266.9	33.2	1.000172
16000.0	563.0	-5.7	-24.2	21.5	732.8	637.3	264.8	33.9	1.000168
16500.0	552.1	-5.6	-25.5	19.0	718.5	637.4	263.4	34.0	1.000164
17000.0	541.5	-6.8	-26.6	18.7	707.7	636.0	262.8	33.2	1.000161
17500.0	531.0	-7.9	-27.8	18.4	697.1	634.6	263.2	33.3	1.000159
18000.0	520.7	-9.1	-28.9	18.1	686.7	633.2	263.7	33.5	1.000156
18500.0	510.6	-10.3	-29.6	18.8	676.5	631.7	264.4	33.6	1.000154
19000.0	500.6	-11.6	-30.0	19.9	666.5	630.1	265.2	33.7	1.000151
19500.0	490.6	-13.0	-30.5	21.4	656.7	628.5	265.6	35.0	1.000149
20000.0	480.9	-14.4	-31.0	22.8	647.1	626.8	265.8	36.2	1.000147
20500.0	471.3	-15.7	-31.5	24.3	637.6	625.1	265.3	37.3	1.000145
21000.0	461.9	-17.1	-32.1	25.7	628.3	623.5	265.0	38.0	1.000142
21500.0	452.7	-18.5	-32.7	27.2	619.1	621.8	264.7	37.8	1.000140
22000.0	443.5	-20.1	-33.7	28.4	610.3	619.9	265.3	39.1	1.000138
22500.0	434.5	-21.5	-34.8	28.5	601.2	618.1	267.0	38.3	1.000136
23000.0	425.6	-22.6	-36.4	27.0	591.6	616.8	269.7	34.8	1.000133
23500.0	416.9	-23.6	-37.9	25.2	581.8	615.5	270.0	34.1	1.000131



UPPER AIR DATA  
 1310180080  
 LC-37

STATION ALTITUDE 4051.37 FEET MSL  
 11 MAY 81  
 ASCENSION NO. 89

1200 HRS MDT

GEODETIC COORDINATES  
 32.40175 LAT DEG  
 106.31232 LONG DEG

TABLE 13 CONT

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	
24000.0	400.3	-24.8	-39.2	24.5	572.5	614.1	270.1	34.1	1.000129
24500.0	399.8	-25.9	-40.4	24.0	563.3	612.6	270.1	34.1	1.000127
25000.0	391.4	-27.1	-41.3	24.4	554.1	611.1	270.1	34.1	1.000124
25500.0	383.1	-28.3	-42.2	24.9	545.1	609.6	269.9	34.5	1.000122
26000.0	375.0	-29.6	-43.1	25.3	536.3	608.1	270.0	33.4	1.000120
26500.0	367.1	-30.8	-44.0	25.8	527.6	606.6	270.5	30.3	1.000118
27000.0	359.4	-32.0	-44.9	26.2	519.1	605.0	272.0	24.2	1.000116
27500.0	351.8	-33.2	-45.8	26.6	510.7	603.5	269.5	35.8	1.000114
28000.0	344.3	-34.4	-46.7	27.1	502.4	602.0	267.4	54.8	1.000112
28500.0	336.9	-35.5	-47.4	27.9	493.8	600.6	260.1	69.7	1.000111
29000.0	329.6	-36.7	-48.2	28.8	485.5	599.1	265.5	58.2	1.000109
29500.0	322.4	-37.8	-49.0	29.6	477.3	597.7	265.1	52.9	1.000107
30000.0	315.4	-39.1	-51.7	24.7**	469.4	596.0	264.8	51.7	1.000105
30500.0	308.5	-40.6	-57.7	13.7**	462.0	594.1			1.000103
31000.0	301.7	-42.0	-70.6	2.7**	454.7	592.3			1.000101

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

STATION ALTITUDE 4051.37 FFF1 MSU  
 11 MAY 81 1200 HRS MDI  
 ASCLNSION NO. 80

MANDATORY LEVELS  
 1311180080  
 LC-37  
 TABLE 14

GEODETIC COORDINATES  
 32.40175 LAT LEG  
 106.51252 LON LEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4896.	21.5	.7	25.	191.0	0.0
800.0	6605.	17.1	-4.9	22.	210.4	9.5
750.0	8392.	11.8	-5.0	31.	253.3	12.4
700.0	10267.	6.5	-8.6	33.	254.7	20.2
650.0	12241.	.7	-10.6	42.	276.6	23.2
600.0	14335.	-3.0	-18.1	30.	276.2	32.4
550.0	16579.	-5.8	-25.7	19.	263.3	33.9
500.0	19002.	-11.7	-30.1	20.	265.2	33.8
450.0	21614.	-19.0	-33.0	28.	264.7	37.7
400.0	24450.	-25.9	-40.4	24.	270.1	34.1
350.0	27574.	-33.5	-46.0	27.	268.9	40.2
300.0	31062.	-42.4				

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

STATION ALTITUDE 4051.37 FEET MSL  
 11 MAY 61  
 ASCENSION NO. 81

SIGNIFICANT LEVEL DATA  
 1310180081  
 LC-37  
 TABLE 15

GEODETIC COORDINATES  
 32.40175 LAT LFG  
 106.31232 LON DEG

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
874.6	28.4	14.0
869.6	25.6	17.0
850.0	23.5	20.0
776.2	16.1	20.0
748.6	13.0	21.0
721.4	10.1	24.0
700.0	8.0	24.0
686.2	6.1	26.0
659.8	2.8	30.0
617.0	-2.1	40.0
600.0	-4.2	43.0
583.4	-5.9	38.0
566.8	-6.4	26.0
550.4	-7.7	20.0
518.4	-10.5	18.0
500.0	-12.6	19.0
479.2	-15.4	19.0
434.4	-21.8	27.0
412.8	-25.0	27.0
400.0	-26.7	25.0
377.8	-30.0	25.0
331.2	-37.7	29.0
305.6	-42.8	
300.0	-43.4	

STATION ALTITUDE 4051.37 FEET MSL  
 11 MAY 81  
 ASCENSION NO. 81

UPPER AIR DATA  
 1310180081  
 LC-37

GEOMETRIC ALTITUDE 4051.37 FEET MSL  
 1300 HRS MDT  
 12.50175 LAT DEG  
 16.51232 LONG DEG

TABLE 16

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	TEMPERATURE DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
4051.4	874.6	28.4	-1.6	14.0	1008.0	677.3	260.0	9.9	1.000247
4500.0	861.1	24.7	-1.0	18.3	1004.6	673.2	268.1	11.5	1.000248
5000.0	846.1	23.1	-1.0	20.0	992.4	671.4	274.8	13.5	1.000246
5500.0	831.3	21.7	-2.2	20.0	979.9	669.7	279.7	15.7	1.000241
6000.0	816.7	20.2	-3.4	20.0	967.6	668.0	281.5	16.9	1.000236
6500.0	802.4	18.8	-4.6	20.0	955.5	666.3	280.2	16.6	1.000232
7000.0	788.3	17.4	-5.8	20.0	943.5	664.6	278.7	16.2	1.000228
7500.0	774.4	15.9	-7.0	20.1	931.7	662.9	273.6	14.6	1.000224
8000.0	760.6	14.4	-7.9	20.6	920.0	661.1	267.2	13.3	1.000220
8500.0	747.0	12.8	-8.8	21.2	908.5	659.3	259.5	12.7	1.000217
9000.0	733.5	11.4	-9.2	22.7	896.6	657.7	254.5	13.3	1.000214
9500.0	720.2	10.0	-9.6	24.0	884.8	656.0	252.3	15.0	1.000211
10000.0	707.1	8.7	-10.7	24.0	872.7	654.5	251.3	17.1	1.000207
10500.0	694.2	7.2	-11.6	24.8	861.4	652.8	249.8	18.8	1.000204
11000.0	681.4	5.5	-12.1	26.7	850.7	650.8	253.4	20.3	1.000201
11500.0	668.8	3.9	-12.6	28.6	839.7	648.9	259.5	19.7	1.000199
12000.0	656.4	2.4	-13.0	30.8	828.7	647.1	263.4	14.6	1.000196
12500.0	644.0	1.0	-13.2	33.6	817.2	645.5	263.5	11.1	1.000193
13000.0	631.9	-0.4	-13.4	36.4	806.0	643.9	259.6	13.8	1.000191
13500.0	620.1	-1.7	-13.8	39.3	794.9	642.2	255.0	22.2	1.000188
14000.0	608.3	-3.2	-14.4	41.5	783.9	640.5	255.9	26.9	1.000185
14500.0	596.7	-4.5	-15.5	42.0	773.0	638.9	261.5	30.2	1.000182
15000.0	585.3	-5.7	-17.5	38.6	761.6	637.4	270.1	32.6	1.000178
15500.0	574.0	-6.2	-20.4	31.3	748.4	636.8	278.0	33.6	1.000173
16000.0	563.0	-6.7	-23.6	24.6	735.6	636.1	281.4	34.4	1.000169
16500.0	552.1	-7.6	-26.2	20.6	723.8	635.0	281.3	34.6	1.000165
17000.0	541.4	-8.5	-27.6	19.4	712.2	633.9	280.1	34.0	1.000162
17500.0	530.8	-9.4	-28.8	18.8	700.8	632.8	277.6	34.1	1.000159
18000.0	520.5	-10.3	-29.9	18.1	689.6	631.7	274.3	33.4	1.000156
18500.0	510.3	-11.4	-30.7	18.4	679.0	630.4	271.7	33.6	1.000154
19000.0	500.3	-12.6	-31.3	19.0	668.6	629.0	269.7	34.5	1.000151
19500.0	490.4	-13.9	-32.4	19.0	658.7	627.4	268.7	35.2	1.000149
20000.0	480.6	-15.2	-33.5	19.0	648.9	625.8	269.4	35.3	1.000147
20500.0	471.0	-16.5	-33.9	20.4	639.2	624.2	270.1	35.4	1.000144
21000.0	461.5	-17.9	-34.3	22.1	629.5	622.5	271.0	35.1	1.000142
21500.0	452.1	-19.2	-34.7	23.7	620.1	620.9	271.3	35.0	1.000140
22000.0	443.0	-20.5	-35.2	25.4	610.7	619.3	270.8	35.1	1.000138
22500.0	434.1	-21.8	-35.7	27.0	601.6	617.7	270.6	35.4	1.000136
23000.0	425.2	-23.1	-36.9	27.0	592.3	616.0	270.6	35.7	1.000133
23500.0	416.4	-24.5	-38.0	27.0	583.2	614.4	271.1	36.0	1.000131

STATION ALTITUDE 4051.37 FEET MSL  
 11 MAY 81 13 00 HRS MDT  
 ASCENSION NO. 81

UPPER AIR DATA  
 1310180081  
 LC-37

ALPHABETIC COORDINATES  
 42.49175 LAT DEG  
 106.51232 LONG DEG

TABLE 16 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES(TN)	SPEED KNOTS	
24000.0	407.8	-25.7	26.2	573.9	612.9	271.5	36.4	1.000129
24500.0	399.3	-26.8	25.0	564.6	611.5	269.9	38.4	1.000127
25000.0	391.0	-28.0	25.0	555.5	610.0	268.7	40.9	1.000125
25500.0	382.8	-29.2	25.0	546.6	608.5	267.8	44.1	1.000123
26000.0	374.7	-30.5	25.3	537.8	606.9	267.5	44.7	1.000121
26500.0	366.6	-31.8	25.9	529.0	605.3	267.4	44.5	1.000119
27000.0	358.4	-33.0	26.6	520.4	603.7	267.3	43.8	1.000117
27500.0	351.1	-34.3	27.2	512.0	602.1	267.7	40.6	1.000115
28000.0	343.6	-35.6	27.9	503.7	600.5	269.9	39.9	1.000113
28500.0	336.2	-36.8	28.5	495.5	598.9	270.9	39.1	1.000111
29000.0	328.9	-38.1	26.5**	487.5	597.2	268.8	40.0	1.000109
29500.0	321.7	-39.5	18.5**	479.7	595.4			1.000107
30000.0	314.6	-41.0	10.5**	472.0	593.6			1.000105
30500.0	307.7	-42.4	2.4**	464.4	591.8			1.000103
31000.0	300.8	-43.3		456.0	590.6			1.000102

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

STATION ALTITUDE 4051.37 FEET MSL  
 11 MAY 81 1300 HRS MDT  
 ASCENSION NO. 81

MANDATORY LEVELS  
 1310180081  
 LC-37  
 TABLE 17

GEODETIC COORDINATES  
 32.40175 LAT DEG  
 106.31232 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.	WIND DATA	
MILLIBARS	FEET	AIR	DEWPOINT	PERCENT	DIRECTION	SPEED
		DEGREES	CENTIGRADE		DEGREES(TN)	KNOTS
850.0	4868.	23.5	-7.7	20.	273.2	13.0
800.0	6586.	18.6	-4.8	20.	280.0	16.6
750.0	8382.	13.2	-8.7	21.	261.3	12.8
700.0	10265.	8.0	-11.3	24.	250.5	18.0
650.0	12247.	1.7	-13.1	32.	264.6	10.9
600.0	14341.	-4.2	-14.9	43.	258.7	29.5
550.0	16576.	-7.7	-26.7	20.	281.1	34.6
500.0	18987.	-12.6	-31.4	19.	269.7	34.5
450.0	21590.	-19.5	-34.8	24.	271.2	35.0
400.0	24420.	-26.7	-40.7	25.	270.1	38.2
350.0	27533.	-34.5	-46.7	27.	267.9	39.2
300.0	31000.	-43.4				

