AD-A104 162 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
19304B MLRS, MISSILE NUMBER V-38-001, ROUND NUMBER V-182/IW-1, --ETC(U)
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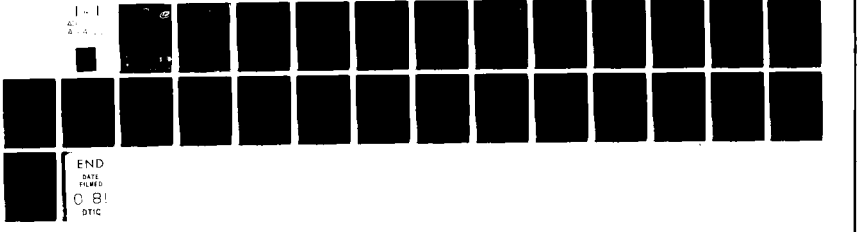

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METEOROLOGICAL DATA REPORT,
19304B MLRS,
Missile Number V-38-001,
Round Number V-182/IW-1,
10 Aug 1981

10 August 1981.

26

by

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AVN Number 349-9568

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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 19304B MLRS, Missile No. V-38-001, Round No. V-182/IW-1 presented in tabular form.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

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CONTENTS

INTRODUCTION

19304B MLRS, Missile Number V-38-001, Round Number V-182/IW-1, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1508:56 MDT, 10 Aug 81. The scheduled launch time was 1400 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 were obtained by the following methods:

1. Observations.

a. Surface:

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

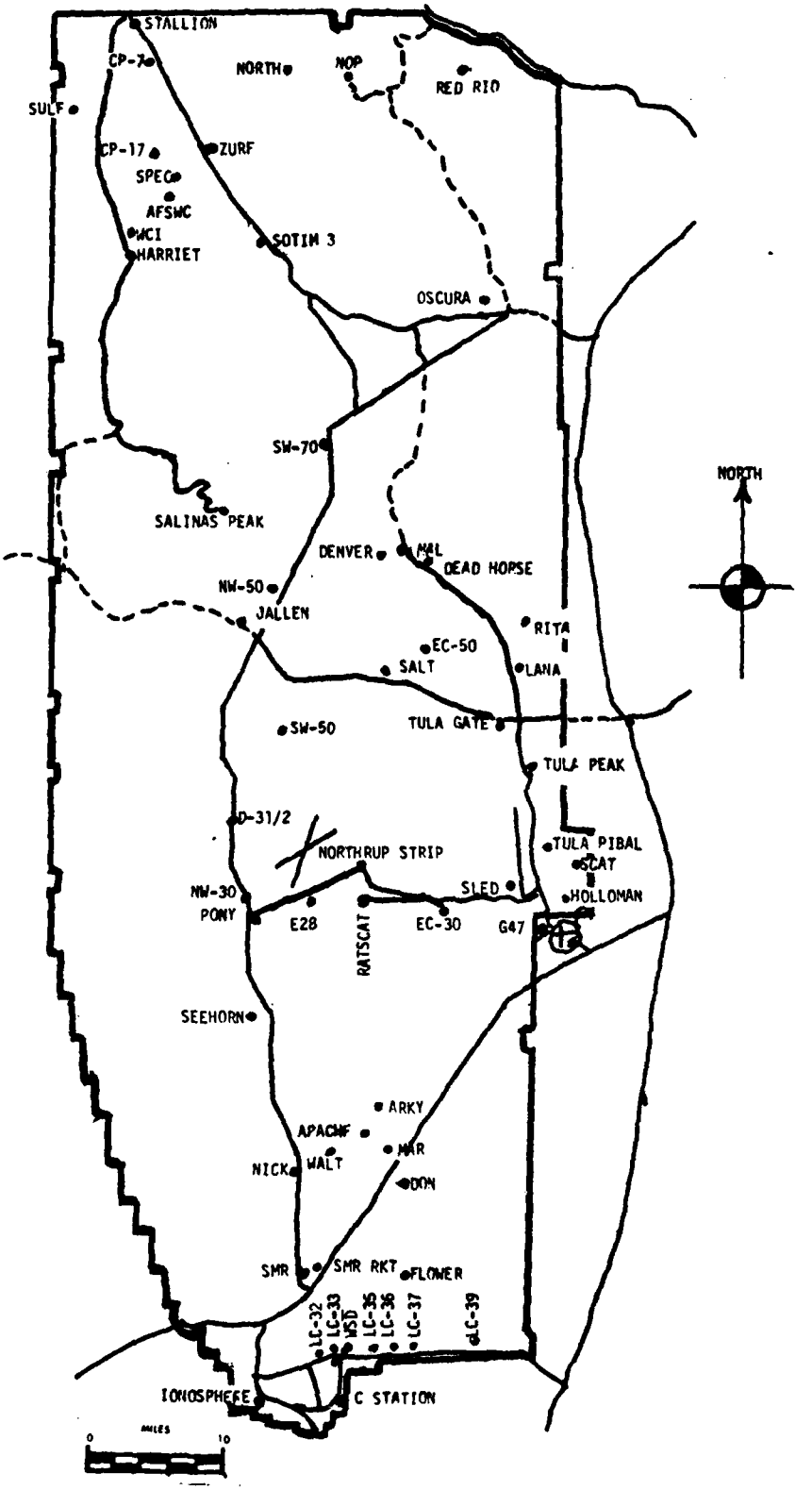
(1) Low level wind data were obtained from Pilot-Balloon observations at:

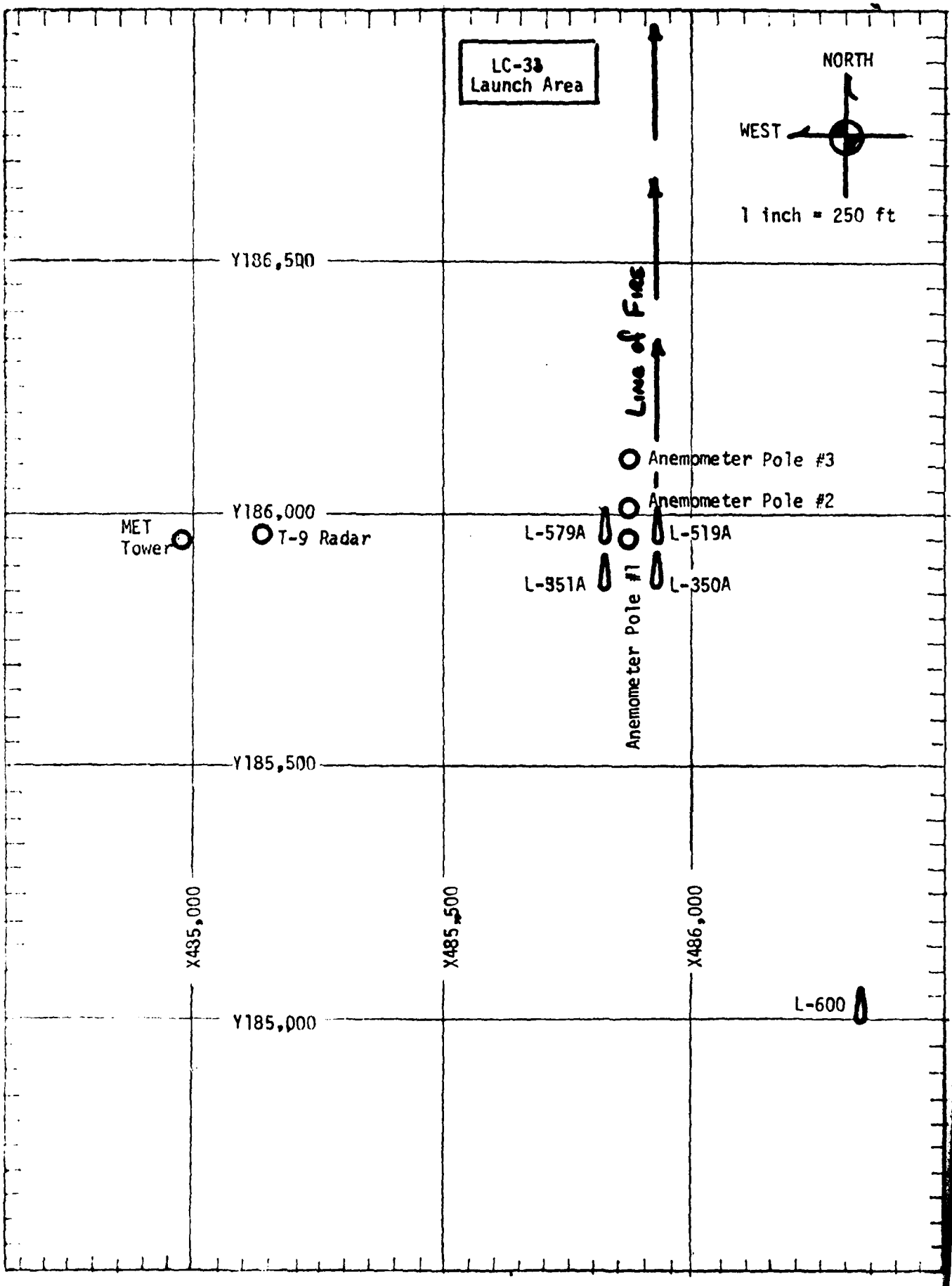
SITE AND ALTITUDE	
LC-33	2 KM
NICK	2 KM

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

SITE AND TIME	
LC-37	1200 MDT
WSD	1300 MDT
LC-37	1430 MDT
WSD	1515 MDT

WSMR METEOROLOGICAL SITES




LC-38
Launch Area
NORTH
WEST
1 inch = 250 ft
Y186,500
Line of Fire
Anemometer Pole #3
Anemometer Pole #2
Y186,000
MET
Tower
T-9 Radar
L-579A
L-519A
L-951A
L-350A
Anemometer Pole #1
Y185,500
X485,000
X485,500
X486,000
L-600
Y185,000

PROJECT SURFACE OBSERVATION

STATION LC-33

TABLE 1

X= 485,135.76 Y= 185,919.24 H= 3,988.57

DATE 10 (DAY) Aug (MONTH) 1981 (YEAR)

TIME M D J	PRESSURE mbs	TEMPERATURE °F	TEMPERATURE °C	DEW POINT °F	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/m³	WIND DIRECTION degs Tn	WIND SPEED kts	WIND CHARACTER kts	VISIBILITY
1509	882.1		31.5		14.4	36	1007	160	04		40

OBSTRUCTIONS TO VISIBILITY	CLOUDS 1st LAYER AMT	1st LAYER TYPE	1st LAYER HGT	2nd LAYER AMT	2nd LAYER TYPE	2nd LAYER HGT	3rd LAYER AMT	3rd LAYER TYPE	3rd LAYER HGT	REMARKS
	5	CU	6,000	5	CI	25,000				

PSYCHROMETRIC COMPUTATION

TIME: MDT	1509		
DRY BULB TEMP.	31.5		
WET BULB TEMP.	19.8		
WET BULB DEPR.	11.7		
DEW POINT	14.4		
RELATIVE HUMID.	36		

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
T-30	134	06	T-30	141	05	T-30	163	07
T-20	121	08	T-20	146	08	T-20	168	08
T-10	131	10	T-10	152	09	T-10	146	10
T0.0	142	10	T0.0	150	10	T0.0	156	11
T+10	119	07	T+10	132	07	T+10	150	11

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	118	10	T-30	157	11
T-20	099	13	T-20	180	16
T-10	108	13	T-10	169	15
T0.0	114	14	T0.0	171	16
T+10	115	13	T+10	176	16

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
T-30	148	10	T-30	157	15
T-20	167	16	T-20	158	15
T-10	164	15	T-10	157	14
T0.0	169	16	T0.0	154	15
T+10	172	15	T+10	168	15

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 10 Aug 81

SITE: LC-33
TIME: 1509 MDT
WSTM COORDINATES:
X= 484,837.34
Y= 184,124.44
H= 3,975.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	145	07
150	161	11
210	160	11
270	156	11
330	153	12
390	152	12
500	148	13
650	146	13
800	150	12
950	153	09
1150	146	08
1350	151	10
1550	147	15
1750	145	16
2000	142	13

SITE: NICK
TIME: 1509 MDT
WSTM COORDINATES:
X= 470,734.56
Y= 255,775.64
H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	145	04
150	152	09
210	154	10
270	156	10
330	159	10
390	158	10
500	152	09
650	138	08
800	134	12
950	138	15
1150	142	15
1350	140	16
1550	141	15
1750	136	12
2000	141	11

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGES
10 Aug 1981

LC-37 1200 MDT		WSD 1300 MDT		LC-37 1430 MDT		WSD 1514 MDT	
METCM1324063		METCM1324064		METCM1324063		METCM1324064	
101800122882		101900124884		102050122880		102120124882	
00178002	30510882	00204004	30530884	00231004	30670880	00240010	30670882
01167005	30320873	01249008	30400874	01257005	30490871	01259015	30520872
02317003	29910848	02265010	30100850	02233009	30090846	02266011	30170848
03241007	29500810	03258009	29710812	03263012	29680809	03272012	29790810
04244005	29020764	04255009	29240766	04279011	29180763	04278012	29310765
05243007	28630720	05172008	28830722	05236009	28730719	05286009	28810721
06201007	28300678	06120005	28440681	06227006	28330678	06211005	28420679
07243002	27950639	07223002	28090641	07037003	27950638	07154005	28040640
08199004	27600601	08243003	27720603	08035003	27610600	08116004	27680602
09149004	27200564	09173004	27330567	09085007	27310564	09195008	27280566
10098006	26900530	10213007	27030532	10194008	27020530	10247008	27000531
11065005	26760497	11297005	26730500	11320005	26760497	11423005	26740499
12461005	26260452	12443007	26290454	12433009	26290451	12436011	26280453

STATION ALTITUDE 4051.37 FEET MSL
10 AUG. 81 1200 HRS MDT
ASCENSION NO. 181

SIGNIFICANT LEVEL DATA
2220180181
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 6

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
882.4	4051.4	29.8	14.7	40.0
850.0	5138.4	24.0	12.0	47.0
773.0	7834.2	16.3	9.7	65.0
746.2	8817.8	13.3	10.1	81.0
700.0	10580.7	10.4	5.6	72.0
666.4	11922.8	7.6	3.3	74.0
657.6	12283.1	7.1	.5	63.0
632.4	13336.6	4.8	-1.8	62.0
615.6	14057.5	3.6	-6.1	49.0
582.8	15511.3	.4	-8.5	51.0
550.6	17000.2	-3.7	-10.3	60.0
519.0	18532.9	-4.8	-22.7	23.0
500.0	19494.7	-6.4	-25.6	20.0
480.4	20519.6	-8.1	-24.6	25.0
435.6	23000.1	-12.5	-29.3	23.0
400.0	25123.2	-17.2	-34.2	21.0
371.4	26941.6	-20.7	-30.7	40.0
337.8	29229.6	-25.2	-42.0	19.0
300.0	32030.7	-31.6	-47.0	20.0

STATION ALTITUDE 4051.37 FEET MSL
10 AUG. 81 1200 HRS MDT
ASCENSION NO. 181

UPPER AIR DATA
222O160181
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 7

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 DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	882.4	29.8	14.7	40.0	1007.4	680.5	100.0	1.9	1.000294
4500.0	868.9	27.4	13.7	42.9	1000.2	677.7	112.1	2.5	1.000289
5000.0	854.1	24.7	12.4	46.1	992.4	674.5	120.1	3.3	1.000283
5500.0	839.2	23.0	11.8	49.4	981.1	672.5	125.1	4.0	1.000279
6000.0	824.6	21.5	11.5	52.8	968.7	670.9	128.5	4.8	1.000275
6500.0	810.2	20.1	11.1	56.1	956.5	669.2	130.9	5.6	1.000271
7000.0	796.0	18.7	10.6	59.4	944.5	667.6	133.1	6.1	1.000268
7500.0	782.2	17.3	10.1	62.8	932.6	665.9	136.2	5.7	1.000263
8000.0	768.4	15.8	9.8	67.7	920.9	664.2	139.9	5.3	1.000260
8500.0	754.8	14.3	10.1	75.8	909.1	662.5	144.9	6.1	1.000259
9000.0	741.3	13.0	9.6	80.1	896.9	661.0	148.7	7.2	1.000255
9500.0	728.0	12.2	8.4	77.5	883.7	660.0	139.3	7.4	1.000248
10000.0	714.9	11.4	7.1	75.0	870.7	658.9	129.5	7.4	1.000241
10500.0	702.1	10.5	5.8	72.4	857.8	657.8	120.1	6.4	1.000235
11000.0	689.3	9.5	4.9	72.6	845.5	656.6	112.6	5.9	1.000229
11500.0	676.8	8.5	4.0	73.4	833.4	655.3	107.7	5.5	1.000225
12000.0	664.5	7.5	2.7	71.6	821.4	654.0	111.2	4.3	1.000219
12500.0	652.3	6.6	.1	62.8	809.4	652.8	121.0	3.0	1.000210
13000.0	640.3	5.5	-1.1	62.3	797.8	651.4	136.5	2.4	1.000205
13500.0	628.6	4.5	-2.8	59.1	786.2	650.2	142.3	2.1	1.000200
14000.0	616.9	3.7	-5.7	50.0	774.4	649.0	126.1	1.9	1.000192
14500.0	605.4	2.6	-6.8	49.6	763.0	647.7	106.1	2.5	1.000188
15000.0	594.1	1.5	-7.7	50.3	751.9	646.4	94.3	3.3	1.000185
15500.0	583.0	.4	-8.5	51.0	740.9	645.0	89.6	4.3	1.000181
16000.0	572.0	-.9	-9.1	54.0	730.6	643.4	85.2	5.0	1.000179
16500.0	561.2	-2.3	-9.7	57.0	720.5	641.8	78.7	5.1	1.000176
17000.0	550.6	-3.7	-10.3	60.0	710.5	640.1	71.2	5.2	1.000173
17500.0	540.1	-4.1	-13.4	47.9	698.1	639.5	63.5	5.4	1.000167
18000.0	529.8	-4.4	-17.2	35.9	686.0	639.0	57.2	5.4	1.000161
18500.0	519.7	-4.8	-22.3	23.8	674.1	638.4	50.9	5.2	1.000156
19000.0	509.7	-5.6	-24.1	21.5	663.2	637.5	44.3	4.9	1.000152
19500.0	499.9	-6.4	-25.6	20.0	652.5	636.4	36.2	4.5	1.000149
20000.0	490.2	-7.2	-25.0	22.5	641.9	635.5	20.1	3.4	1.000147
20500.0	480.8	-8.1	-24.6	24.9	631.4	634.5	343.0	2.2	1.000145
21000.0	471.4	-9.0	-25.5	24.6	621.2	633.4	271.2	3.0	1.000143
21500.0	462.2	-9.8	-26.4	24.2	611.1	632.3	252.0	5.3	1.000140
22000.0	453.1	-10.7	-27.4	23.8	601.2	631.3	245.6	7.6	1.000137
22500.0	444.3	-11.6	-28.3	23.4	591.5	630.2	241.5	7.6	1.000135
23000.0	435.6	-12.5	-29.3	23.0	581.9	629.1	238.1	7.3	1.000133
23500.0	426.9	-13.6	-30.4	22.5	572.8	627.8	218.5	6.3	1.000130

STATION ALTITUDE 4051.37 FEET MSL
10 AUG. 81 1200 HRS MDT
ASCENSION NO. 181

UPPER AIR DATA
22201A0181
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 7 CON'T

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
24000.0	418.5	-14.7	-31.6	22.1	563.4	626.4	203.1	6.6	1.000128
24500.0	410.1	-15.8	-32.8	21.6	555.0	625.1	199.4	8.1	1.000126
25000.0	402.0	-16.9	-33.9	21.1	546.4	623.7	201.6	9.9	1.000124
25500.0	393.9	-17.9	-33.1	24.9	537.5	622.5	207.3	12.0	1.000122
26000.0	385.9	-18.9	-32.0	30.2	528.6	621.3	209.5	13.3	1.000120
26500.0	378.2	-19.9	-31.2	35.4	519.8	620.2	209.6	13.8	1.000118
27000.0	370.5	-20.8	-31.0	39.5	511.3	619.0	211.5	14.4	1.000117
27500.0	362.9	-21.8	-33.1	34.9	502.8	617.8	215.1	15.3	1.000114
28000.0	355.5	-22.8	-35.4	30.3	494.4	616.5	220.1	16.1	1.000112
28500.0	348.2	-23.8	-37.9	25.7	486.2	615.3	227.9	16.8	1.000110
29000.0	341.0	-24.7	-40.6	21.1	478.2	614.1	232.6	18.0	1.000108
29500.0	334.0	-25.8	-42.5	19.1	470.3	612.7	231.0	20.2	1.000106
30000.0	327.0	-27.0	-43.3	19.3	462.6	611.3	231.0	21.5	1.000104
30500.0	320.1	-28.1	-44.2	19.5	455.0	609.9	233.5	21.4	1.000102
31000.0	313.4	-29.2	-45.1	19.6	447.6	608.5			1.000100
31500.0	306.8	-30.4	-46.0	19.8	440.2	607.0			1.000099
32000.0	300.4	-31.5	-46.9	20.0	433.1	605.6			1.000097

STATION ALTITUDE 4051.37 FEET MSL
10 AUG. 81 1200 HRS MDT
ASCENSION NO. 181

MANDATORY LEVELS
22201 80181
LC-37
TABLE 8

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	5135.	24.0	12.0	47.	121.7	5.5
800.0	6862.	19.1	10.8	58.	132.3	6.2
750.0	8669.	13.7	10.1	79.	146.4	6.5
700.0	10570.	10.4	5.6	72.	118.5	6.3
650.0	12584.	6.4	-.2	63.	123.4	2.9
600.0	14723.	2.1	-7.2	50.	99.5	2.8
550.0	17006.	-3.7	-10.5	59.	70.9	5.2
500.0	19467.	-6.4	-25.6	20.	36.6	4.5
450.0	22146.	-11.0	-27.7	24.	244.2	7.8
400.0	25081.	-17.2	-34.2	21.	203.0	10.3
350.0	28326.	-23.5	-37.2	27.	225.9	16.5
300.0	31966.	-31.6	-47.0	20.		

STATION ALTITUDE 3389.00 FEET MSL
19 AUG. 61 1303 HRS MDT
ASCENSION NO. 343

SIGNIFICANT LEVEL DATA
2220N2954W
WHITE SANDS

GEOGRAPHIC COORDINATES
32.49043 LAT DEG
106.57033 LON DEG

TABLE 9

PRESSURE MILLIBARS	GEOPOTENTIAL ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT	RELATIVE PERCENT
834.0	5089.0	30.2	13.5	36.0
807.0	6537.1	28.2	12.5	38.0
778.0	8132.8	26.0	11.7	41.0
754.8	9413.8	15.8	5.7	67.0
708.0	10604.5	11.3	4.7	64.0
685.0	12607.1	8.0	3.5	73.0
656.2	12361.3	7.6	.3	60.0
639.2	13061.2	5.5	-8.1	42.0
592.6	16470.2	-.7	-10.1	49.0
546.6	17235.3	-2.4	-15.4	30.0
538.4	17629.5	-3.1	-15.3	45.0
526.9	18191.8	-3.0	-25.2	16.0
510.1	19047.9	-6.2	-26.5	15.0
475.0	20862.4	-8.3	-29.6	16.0
470.4	21110.8	-8.2	-30.9	14.0
407.6	24700.0	-16.6	-36.4	16.0
400.6	25177.3	-16.9	-36.7	29.0

STATION ALTITUDE 3,989.00 FEET MSL
10 AUG. 81 13[illegible] MDT
ASCENSION NO. 345

UPPER AIR DATA
22200Z0943
WHITE SANDS

GEODETIC COORDINATES
32.40N43 LAT DEG
106.37W33 LON DEG

TABLE 10

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	RELATIVE HUMIDITY PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	994.5	30.2	13.5	36.0	1000.5	668.4	110.0	4.1	1.000269
4000.0	993.7	30.2	13.5	36.0	1000.2	668.7	115.4	4.1	1.000268
4500.0	956.7	28.4	12.6	37.9	997.4	673.6	130.6	5.5	1.000265
5000.0	955.9	26.5	11.9	40.3	980.6	676.5	139.6	7.1	1.000279
5500.0	933.1	24.9	11.7	43.8	974.7	674.7	145.6	8.8	1.000276
6000.0	932.5	23.4	11.7	47.7	962.5	673.0	148.1	10.3	1.000274
6500.0	911.1	21.9	11.4	51.3	950.6	671.3	145.9	9.0	1.000271
7000.0	790.0	20.4	11.1	55.4	933.3	669.6	144.4	6.2	1.000268
7500.0	784.2	18.9	10.7	59.2	927.3	667.8	144.6	8.0	1.000264
8000.0	780.5	17.3	10.3	63.0	916.0	666.1	140.4	8.0	1.000260
8500.0	752.2	15.8	9.7	66.9	904.0	664.3	134.6	8.3	1.000256
9000.0	741.7	14.8	9.5	66.3	892.3	662.9	118.6	7.7	1.000250
9500.0	720.4	13.7	7.4	65.6	880.9	661.6	103.1	7.6	1.000243
10000.0	710.4	12.6	6.2	64.9	867.8	660.2	91.4	7.1	1.000237
10500.0	700.6	11.5	5.0	64.1	855.6	658.9	80.7	6.7	1.000232
11000.0	689.9	10.4	4.4	66.5	843.9	657.5	75.0	5.8	1.000228
11500.0	677.4	9.2	4.0	69.7	832.1	656.1	70.4	5.0	1.000224
12000.0	666.2	8.0	3.5	73.0	820.5	654.7	77.2	3.8	1.000220
12500.0	655.0	7.4	-.4	57.8	809.1	653.6	89.9	2.7	1.001209
13000.0	641.0	6.6	-3.2	49.6	798.1	652.5	118.7	2.1	1.000201
13500.0	629.3	5.7	-6.1	42.1	784.3	651.3	151.6	2.2	1.000194
14000.0	617.6	4.6	-6.8	43.3	772.7	650.0	143.6	2.6	1.000190
14500.0	606.1	3.6	-7.4	44.4	761.4	648.8	134.2	2.9	1.000187
15000.0	594.8	2.5	-8.1	45.6	750.2	647.5	117.9	3.5	1.000184
15500.0	583.7	1.4	-8.7	46.7	739.1	646.2	109.0	3.9	1.000181
16000.0	572.8	.3	-9.4	47.9	728.3	644.9	105.2	3.8	1.000177
16500.0	562.2	-.8	-10.3	48.5	717.8	643.6	107.5	4.1	1.000174
17000.0	551.5	-1.9	-13.7	40.8	707.2	642.1	113.2	5.0	1.000169
17500.0	541.1	-2.9	-13.9	42.9	696.4	640.9	118.5	5.8	1.000166
18000.0	531.8	-3.8	-19.8	25.9	685.9	640.0	120.0	6.6	1.000159
18500.0	522.7	-3.7	-20.0	15.8	675.9	639.0	121.4	6.2	1.000154
19000.0	513.7	-4.9	-27.2	15.4	666.4	638.2	143.9	5.7	1.000151
19500.0	504.9	-6.1	-23.4	15.0	657.1	637.8	139.5	4.8	1.000149
20000.0	496.3	-6.9	-28.1	15.5	648.5	636.6	140.2	3.9	1.000146
20500.0	488.8	-7.7	-29.3	15.7	639.0	635.8	217.9	3.0	1.000144
21000.0	479.4	-8.2	-30.3	14.9	629.1	634.2	247.0	3.9	1.000141
21500.0	469.2	-9.1	-31.5	14.2	618.9	633.1	255.5	5.4	1.000138
22000.0	459.0	-10.3	-32.2	14.5	609.5	631.7	251.7	7.1	1.000136
22500.0	448.1	-11.5	-33.6	14.8	599.3	630.3	246.0	9.0	1.000134
23000.0	438.3	-12.6	-34.9	15.1	589.3	629.0	238.6	9.8	1.000132

STATION ALTITUDE 3989.0 FEET MSL
19 AUG. 81 13[illegible] HRS MDT
ASCENSION NO. 543

UPPER AIR DATA
22200.0543
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 10 CON'T

GEOMETRIC ALTITUDE FEET MSL	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	DEW POINT	RELATIVE PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	427.7	-13.3	-38.5	15.3	574.4	627.5	291.9	10.6	1.000130
24000.0	413.3	-15.0	-35.3	15.6	565.6	626.1			1.000128
24500.0	411.1	-16.1	-36.1	15.9	557.0	624.6			1.000126
25000.0	402.9	-16.8	-32.4	24.2	547.3	623.9			1.000124

STATION ALTITUDE 5989.00 FEET MSL
10 AUG. 81 1300 MDT
ASCENSION NO. 343

RADIATORY LEVELS
22200.0543
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 11

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
859.0	5129.	26.8	11.7	41.	141.2	7.6
800.0	6867.	20.8	11.2	54.	144.3	8.2
750.0	8394.	15.8	9.3	67.	129.0	8.0
700.0	10094.	11.3	4.7	64.	79.7	6.5
650.0	12012.	7.2	-1.1	56.	95.4	2.5
600.0	14159.	3.0	-7.8	45.	124.7	5.2
550.0	17051.	-2.3	-14.2	39.	116.0	5.1
500.0	19520.	-6.2	-28.5	15.	100.7	4.8
450.0	22293.	-10.8	-32.0	15.	248.8	8.0
409.0	25135.	-16.9	-30.7	29.		

STATION ALTITUDE 4651.7 FEET MSL
10 AUG. 1
ASCENSION NO. 12

14[illegible] MDT

SIGNIFICANT LEVEL DATA
[illegible]
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.51232 LON DEG

TABLE12

PRESSURE MILLIBARS	GEOPOTENTIAL ALTITUDE FEET MSL	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
858.4	4651.4	31.8	13.5	33.0
850.0	5480.2	26.5	13.9	46.0
794.4	6481.9	21.2	11.8	55.0
761.8	7019.1	17.1	10.2	64.0
700.0	10562.8	11.1	7.6	79.0
655.4	12360.1	7.1	2.2	71.0
612.8	14166.2	3.7	-6.0	49.0
587.8	15276.8	1.5	-8.3	56.0
571.0	16015.7	.2	-19.6	44.0
555.0	16791.5	-1.0	-6.3	67.0
533.8	17567.5	-2.7	-6.9	73.0
515.0	18743.7	-3.8	-24.6	16.0
500.0	19503.9	-5.3	-25.8	18.0
484.2	20336.5	-6.2	-26.8	18.0
439.2	22819.3	-12.0	-26.0	25.0
400.0	25154.2	-16.2	-33.9	20.0
389.4	25817.5	-17.8	-35.2	20.0
382.4	26264.4	-17.4	-33.9	13.0
300.0	32690.6	-31.0	-46.5	20.0

STATION ALTITUDE 4451.47 FEET MSL
10 AUG. 81 1430 HRS MDT
ASCENSION NO. 1.2

UPPER AIR DATA
2-201 ISE
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31252 LON DEG

TABLE 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	RELATIVE HUMIDITY PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	844.4	21.8	1.5	33.1	999.0	662.6	150.0	4.1	1.000266
4500.0	807.9	20.5	1.9	38.7	991.1	660.1	155.9	5.4	1.000267
5000.0	768.3	20.9	14.0	45.0	982.5	657.2	159.6	6.9	1.000266
5500.0	737.7	20.3	13.5	48.1	971.1	653.4	162.2	8.5	1.000262
6000.0	702.3	19.8	12.9	50.0	959.2	649.6	163.9	10.1	1.000258
6500.0	667.1	22.3	12.3	53.1	947.5	645.9	167.0	11.2	1.000253
7000.0	634.1	20.8	11.7	55.8	936.9	642.2	153.9	12.0	1.000249
7500.0	601.2	19.3	11.1	58.2	926.0	638.4	156.1	12.2	1.000245
8000.0	570.5	17.7	10.5	62.0	915.3	634.5	156.4	12.1	1.000241
8500.0	540.9	16.4	10.0	65.8	904.6	630.9	156.2	11.1	1.000236
9000.0	512.5	15.1	9.5	69.0	894.3	627.4	155.6	9.9	1.000232
9500.0	484.3	13.8	8.9	72.2	883.7	623.9	154.7	8.7	1.000228
10000.0	457.3	12.5	8.3	75.4	873.0	620.4	152.9	7.5	1.000224
10500.0	431.6	11.3	7.7	78.6	862.5	616.9	141.1	6.1	1.000220
11000.0	406.9	10.1	7.3	77.1	852.7	613.4	143.9	5.9	1.000233
11500.0	383.4	9.0	4.3	74.3	843.0	610.0	99.5	6.6	1.000226
12000.0	360.1	7.9	3.3	72.6	833.3	606.6	89.0	7.2	1.000220
12500.0	338.0	6.8	1.6	69.3	823.8	603.2	81.5	5.0	1.000215
13000.0	316.3	5.9	-.5	65.2	814.2	599.9	83.3	3.2	1.000206
13500.0	296.2	5.6	-2.8	57.1	804.8	596.7	85.0	2.9	1.000199
14000.0	276.6	4.0	-5.2	51.0	795.1	593.4	11.6	3.4	1.000193
14500.0	257.8	3.0	-6.1	51.1	785.5	590.2	14.2	3.8	1.000189
15000.0	239.9	2.0	-6.2	54.3	776.0	587.1	10.9	4.3	1.000186
15500.0	222.9	1.1	-7.5	52.4	766.7	583.9	12.0	5.3	1.000182
16000.0	207.0	.2	-10.5	44.3	757.5	580.7	43.1	6.6	1.000176
16500.0	191.2	-.5	-7.7	58.4	748.5	577.6	58.9	7.2	1.000177
17000.0	176.6	-1.5	-6.5	68.6	739.6	574.5	75.3	8.1	1.000176
17500.0	162.9	-2.6	-6.8	72.5	730.8	571.4	91.0	7.5	1.000174
18000.0	150.3	-3.1	-11.4	52.7	722.4	568.4	111.0	7.4	1.000165
18500.0	138.3	-3.6	-16.8	29.4	713.8	565.3	129.4	6.4	1.000157
19000.0	126.9	-4.3	-25.0	18.9	705.4	562.3	143.2	6.0	1.000151
19500.0	116.2	-5.3	-25.3	18.0	697.1	559.3	173.2	4.8	1.000149
20000.0	106.2	-5.8	-26.3	18.0	688.9	556.3	202.8	4.8	1.000146
20500.0	96.8	-6.6	-25.6	18.5	680.9	553.3	220.8	5.4	1.000144
21000.0	87.9	-7.7	-25.4	19.9	673.0	550.4	242.3	6.7	1.000142
21500.0	79.6	-8.9	-24.0	21.3	665.3	547.5	248.0	7.7	1.000139
22000.0	71.9	-10.1	-23.8	22.7	657.8	544.6	247.7	8.7	1.000137
22500.0	64.7	-11.3	-23.7	24.1	650.4	541.8	244.4	9.9	1.000135
23000.0	58.0	-12.3	-23.6	24.0	643.1	538.9	241.3	11.1	1.000133
23500.0	51.8	-13.2	-23.5	23.5	636.0	536.2	237.0	12.0	1.000130

STATION ALTITUDE = 51.37 FEET MSL
10 AUG. 71 145 GMT
ASCENSION NO. 002

GMT & ALTITUDE
2,201 miles
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 13 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE °K	TEMPERATURE DEGREES CENTIGRADE	RELATIVE HUMIDITY PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
24000.0	413.9	-14.1	-58.9	22.5	563.7	627.1	204.0	13.1	1.000128
24500.0	413.6	-15.0	-59.2	21.4	554.0	626.8	202.1	14.2	1.000126
25000.0	408.5	-15.9	-59.5	20.3	544.9	624.9	200.7	15.4	1.000123
25500.0	399.0	-17.0	-59.6	20.0	536.3	623.6	197.5	16.5	1.000121
26000.0	389.5	-17.6	-59.5	19.2	526.6	622.6	194.7	17.0	1.000119
26500.0	378.7	-17.9	-59.3	18.1	516.8	622.4	193.4	17.2	1.000117
27000.0	370.9	-19.1	-57.2	18.3	506.4	621.0	194.7	17.4	1.000115
27500.0	363.2	-20.3	-52.1	18.4	503.3	619.6	199.3	17.6	1.000113
28000.0	355.7	-21.5	-51.0	18.6	494.2	618.1	200.6	18.2	1.000111
28500.0	348.4	-22.6	-38.9	18.8	484.4	616.7	200.9	19.0	1.000109
29000.0	341.2	-23.8	-36.8	18.9	476.8	615.3	202.2	18.8	1.000107
29500.0	334.2	-25.0	-41.7	19.1	469.6	613.8	203.6	18.6	1.000105
30000.0	327.3	-26.1	-42.6	19.3	461.5	612.4	204.6	17.8	1.000104
30500.0	320.6	-27.3	-43.5	19.5	454.1	610.9			1.000102
31000.0	313.9	-28.5	-44.5	19.6	446.9	609.4			1.000100
31500.0	307.5	-29.6	-45.4	19.8	439.6	607.8			1.000099
32000.0	301.1	-30.8	-46.3	20.0	432.6	606.3			1.000097

STATION ELEVATION 9,51•7 FEET MSL
10 AUG. 71 1434 GMT
ASCENSION NO. 156

RAOB TOPY LEVELS
2 SOUNDING
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 14

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	RELATIVE HUMIDITY PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	5076.	20•5	13•9	45•	140•2	7.2
800.0	6819.	21•4	11•9	55•	151•0	11.7
750.0	8640.	16•0	9•0	67•	156•1	10.7
700.0	10552.	11•1	7•0	79•	138•0	6.0
650.0	12570.	6•7	1•3	66•	79•5	4.7
600.0	14713.	2•6	-6•1	53•	15•0	4.0
550.0	17007.	-1•5	-6•5	69•	73•6	8.1
500.0	19471.	-5•3	-25•6	16•	175•1	4.8
450.0	22171.	-10•6	-27•5	25•	246•3	9.2
400.0	25111.	-16•2	-33•5	20•	254•8	15.7
350.0	28374.	-22•4	-39•7	19•	260•3	16.8
300.0	32025.	-31•0	-46•3	28•		

STATION ALTITUDE 3989.00 FEET MSL
10 AUG. 81 1514 HRS MDT
ASCENSION NO. 544

SIGNIFICANT LEVEL DATA
22200/0544
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 15

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
882.6	3989.0	31.6	12.9	32.0
850.0	5090.2	26.6	12.3	41.0
830.8	5751.3	24.9	11.8	44.0
793.2	7078.7	20.9	10.7	52.0
737.4	9132.5	14.6	8.3	66.0
700.0	10570.8	10.0	8.6	91.0
683.6	11220.0	9.8	3.8	66.0
657.2	12292.0	7.2	-.0	60.0
631.0	13389.1	4.8	-.4	69.0
613.8	14129.5	3.7	-5.0	53.0
588.6	15244.6	1.1	-5.8	60.0
572.0	15999.8	-.3	-9.4	50.0
563.8	16379.5	-1.1	-6.2	68.0
547.2	17161.5	-2.8	-14.8	39.0
539.2	17545.4	-2.8	-20.0	25.0
500.0	19501.0	-5.9	-24.6	21.0
415.6	24182.0	-15.1	-32.0	22.0
400.0	25132.3	-15.9	-34.7	18.0

STATION ALTITUDE 3989.00 FEET MSL
10 AUG. 81 1514 HRS MDT
ASCENSION NO. 544

UPPER AIR DATA
22200205544
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 16

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
3989.0	882.6	31.6	12.9	32.0	1002.5	682.3	135.0	9.9	1.000284
4000.0	882.3	31.6	12.9	32.1	1002.3	682.2	135.1	9.9	1.000284
4500.0	867.3	29.3	12.7	36.2	992.6	679.7	140.4	10.7	1.000282
5000.0	852.6	27.0	12.4	40.3	983.2	677.1	145.0	11.6	1.000280
5500.0	838.0	25.5	12.0	42.9	971.2	675.4	148.8	12.6	1.000276
6000.0	823.6	24.2	11.6	45.5	959.0	673.9	151.6	13.3	1.000273
6500.0	809.4	22.6	11.2	48.5	947.3	672.1	153.2	13.7	1.000269
7000.0	795.4	21.1	10.8	51.5	935.7	670.4	154.1	12.9	1.000265
7500.0	781.4	19.6	10.3	54.9	924.2	668.6	154.8	11.8	1.000261
8000.0	767.7	18.1	9.8	58.3	912.8	666.8	155.7	11.7	1.000258
8500.0	754.2	16.5	9.2	61.7	901.6	665.0	157.2	11.8	1.000253
9000.0	740.9	15.0	8.5	65.1	890.6	663.2	159.3	12.0	1.000249
9500.0	727.7	13.4	8.6	72.4	879.4	661.4	159.1	10.7	1.000247
10000.0	714.6	11.8	8.7	81.1	868.4	659.6	156.6	8.2	1.000246
10500.0	701.8	10.2	8.6	89.8	857.5	657.8	145.1	5.7	1.000244
11000.0	689.1	9.9	5.6	74.5	844.0	657.0	118.9	3.7	1.000231
11500.0	676.6	9.1	2.8	64.4	831.5	655.9	105.0	3.2	1.000221
12000.0	664.3	7.9	1.0	61.6	820.3	654.3	90.1	3.0	1.000214
12500.0	652.2	6.7	-.1	61.7	808.8	652.9	90.3	3.6	1.000210
13000.0	640.2	5.7	-.2	65.8	797.1	651.7	88.9	4.2	1.000207
13500.0	628.4	4.6	-1.0	66.6	785.4	650.4	80.2	4.6	1.000203
14000.0	616.8	3.9	-4.1	55.8	773.4	649.3	74.8	4.9	1.000195
14500.0	605.3	2.8	-5.2	55.3	762.1	648.0	73.7	4.5	1.000190
15000.0	594.0	1.7	-5.6	58.5	751.1	646.7	81.5	4.7	1.000188
15500.0	582.9	.6	-7.0	56.6	740.0	645.4	95.7	5.7	1.000183
16000.0	572.0	-.3	-9.4	50.0	728.9	644.1	107.2	6.8	1.000178
16500.0	561.2	-1.4	-7.4	63.5	717.6	643.0	116.5	8.0	1.000178
17000.0	550.6	-2.4	-12.7	45.0	707.4	641.5	126.1	8.4	1.000169
17500.0	540.1	-2.8	-19.3	26.7	695.4	640.9	135.3	8.9	1.000162
18000.0	529.8	-3.5	-21.1	24.1	684.0	640.0	147.6	7.2	1.000158
18500.0	519.7	-4.3	-22.3	23.0	672.9	639.0	167.1	5.8	1.000155
19000.0	509.8	-5.1	-23.4	22.0	662.1	638.0	200.1	4.5	1.000152
19500.0	500.0	-5.9	-24.6	21.0	651.4	637.1	236.5	5.1	1.000149
20000.0	490.2	-6.9	-25.4	21.1	641.0	635.9	249.9	5.9	1.000147
20500.0	480.7	-7.9	-26.2	21.2	630.8	634.7	257.1	7.0	1.000144
21000.0	471.3	-8.8	-27.0	21.3	620.8	633.5	253.3	8.6	1.000142
21500.0	462.0	-9.8	-27.7	21.4	611.0	632.3	249.9	10.1	1.000139
22000.0	453.0	-10.8	-28.5	21.5	601.3	631.1	246.3	11.5	1.000137
22500.0	444.1	-11.8	-29.3	21.6	591.7	630.0	241.9	12.7	1.000135
23000.0	435.5	-12.8	-30.1	21.7	582.4	628.8	236.9	13.8	1.000133

STATION ALTITUDE 3989.00 FEET MSL
10 AUG. 81 1514 HRS MDT
ASCENSION NO. 544

UPPER AIR DATA
2220020544
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 16 CON'T

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	426.9	-13.8	-30.9	21.9	573.2	627.8			1.000130
24000.0	418.6	-14.7	-31.7	22.0	564.1	626.4			1.000128
24500.0	410.3	-15.4	-32.8	20.7	554.3	625.6			1.000126
25000.0	402.1	-15.8	-34.3	18.6	544.2	625.1			1.000123

STATION ALTITUDE 3989.00 FEET MSL
10 AUG. 81 1514 HRS MDT
ASCENSION NO. 544

MANDATORY LEVELS
2220020544
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 17

PRESSURE	GEOPOTENTIAL	TEMPERATURE		REL.HUM.	WIND DATA	
		AIR	DEWPOINT		DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE		PERCENT	DEGREES(TN)	KNOTS
850.0	5086.	26.6	12.3	41.	145.7	11.8
800.0	6830.	21.6	10.9	51.	153.9	13.3
750.0	8652.	16.1	9.0	63.	157.9	11.9
700.0	10560.	10.0	8.6	91.	142.7	5.3
650.0	12576.	6.6	-.1	62.	90.3	3.7
600.0	14718.	2.3	-5.4	57.	73.2	4.4
550.0	17006.	-2.5	-13.1	44.	126.5	8.4
500.0	19473.	-5.9	-24.6	21.	236.2	5.1
450.0	22154.	-11.1	-28.8	22.	245.2	12.0
400.0	25090.	-15.9	-34.7	18.		