AD-A122 588 193188 MLRS MISSILE NUMBERS BN-203 BN-132 BN-166 ROUND 1/1
NUMBERS V-342/PD-8..(U) ARMY ELECTRONICS RESEARCH AND
DEVELOPMENT COMMAND WSMR NM ATM.. D C KELLER OCT 82
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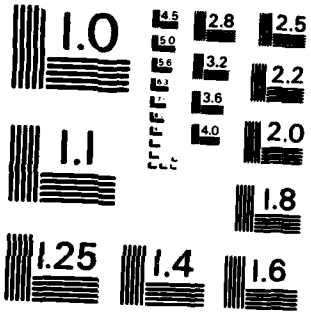

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS - 1963 - A

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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 19318B MLRS, Missile Numbers BN-203, BN-132, BN-165, Round Numbers V-342/PQ-82, V-343/PQ-83, V-344/PQ-84 are presented in tabular form

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INTRODUCTION

19318B MLRS, Missile Numbers BN-203, BN-132 and BN-165, Round Numbers V-342/PQ-82 V-343/PQ-83 and V-344/PQ-84, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1100:01, 1100:06 and 1100:10 MDT, 19 Oct 82. The scheduled launch times were 1100:00, 1100:04.5 and 1100:09 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 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 pilot-balloon observations at:

SITE AND ALTITUDE	
WSD	2km
DON	2km

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

SITE AND TIME	
LC-37	0800 MDT
WSD	0900 MDT
LC-37	1100 MDT

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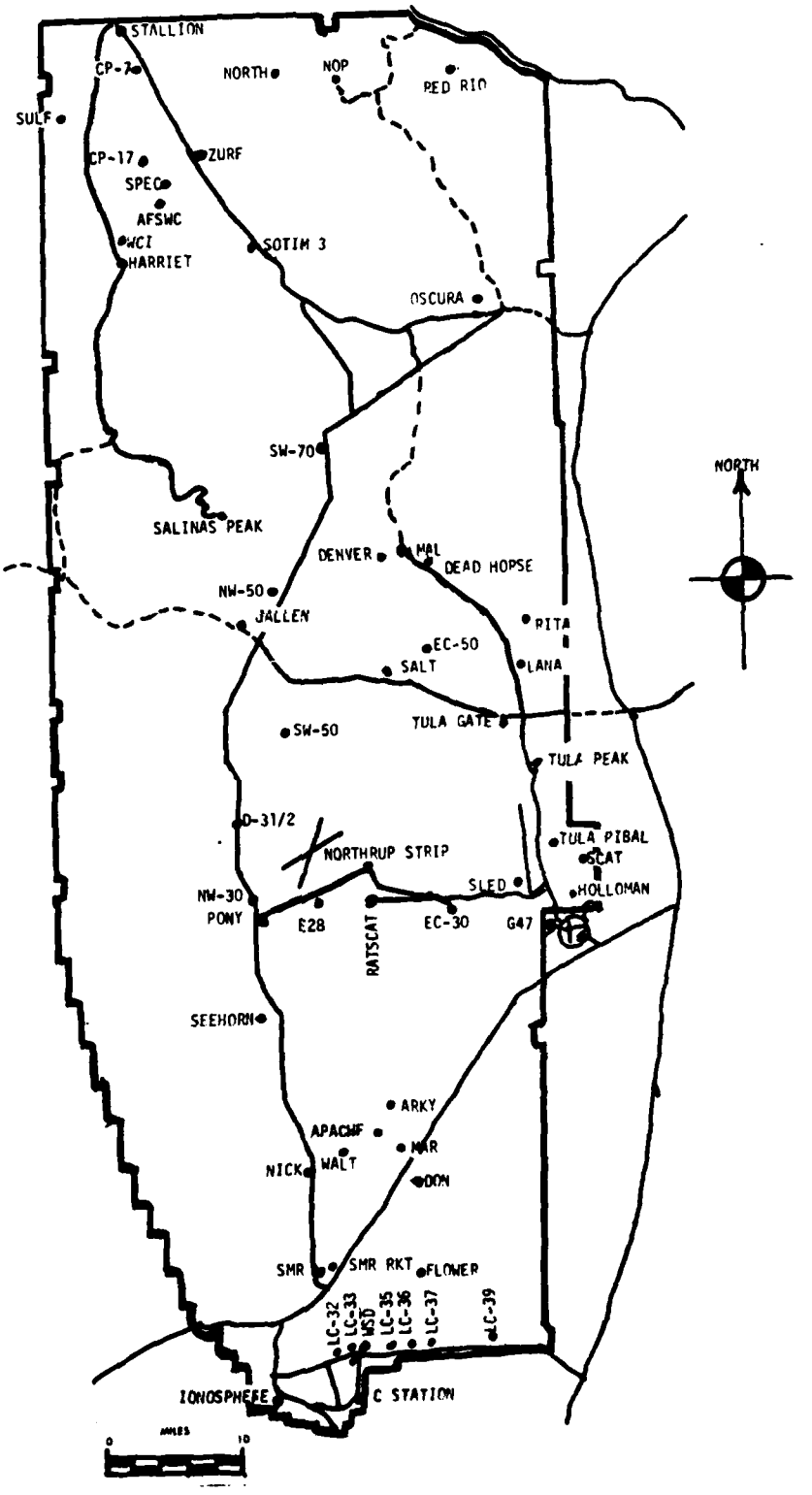
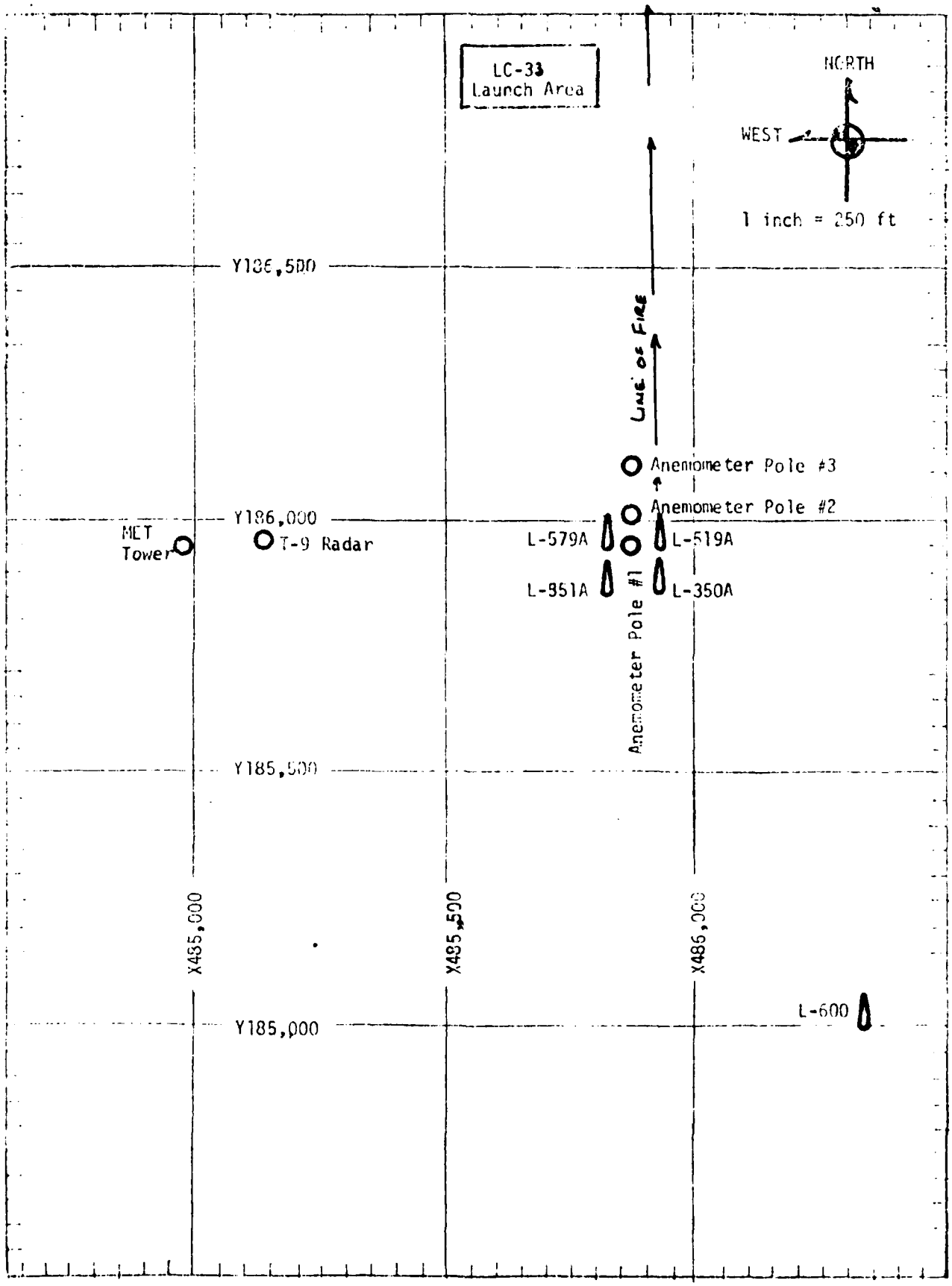
DTIC TAB
Unannounced
Justification
By
Distribution/
Availability Codes
Avail and/or
Dist Special
A

DTIC COPY INSPECTED 3

WSMR METEOROLOGICAL SITES




LC-33
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-351A
L-350A
Anemometer Pole #1
Y185,500
X485,000
X485,500
X486,000
L-600
Y185,000

PROJECT SURFACE OBSERVATION

TABLE 1

STATION LC-33 E & A

DATE 19 (DAY) Oct (MONTH) 82 (YEAR)

X= 484,982.64 Y= 185,957.73 H= 3995.00

TIME M D T	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
1100	882.0		19.5		-1.8	23	1048	010	04		50

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
	0	AC	13,000	1	CI	25,000				

PSYCHROMETRIC COMPUTATION

TIME:	1100		
DRY BULB TEMP.	19.5		
WET BULB TEMP.	8.9		
WET BULB DEPR.	10.6		
DEW POINT	-1.8		
RELATIVE HUMID.	23%		

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 X485,874.29 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 KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	015	05	T-30	018	05	T-30	346	07
T-20	015	04	T-20	016	03	T-20	346	07
T-10	015	04	T-10	019	04	T-10	348	07
T0.0	015	05	T0.0	019	05	T0.0	348	07
T+10	015	04	T+10	013	03	T+10	353	06

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 KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	034	05	T-30	010	06
T-20	028	05	T-20	012	05
T-10	033	05	T-10	008	05
T0.0	032	04	T0.0	018	04
T+10	039	05	T+10	018	04

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	021	05	T-30	003	04
T-20	031	05	T-20	006	05
T-10	033	05	T-10	014	04
T0.0	028	04	T0.0	015	04
T+10	024	05	T+10	358	05

* POLE #1 DIRS. ARE ESTIMATED

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 19 Oct 82

SITE: WSD
TIME: 1100 MDT
WSTM COORDINATES:
X= 488,852.29
Y= 184,982.45
H= 3,993.75

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	360	04
150	001	06
210	002	06
270	004	07
330	006	08
390	006	09
500	006	11
650	012	11
800	018	10
950	012	10
1150	358	11
1350	326	07
1550	285	07
1750	295	09
2000	293	12

SITE: DON
TIME 1100 MDT
WSTM COORDINATES:
X= 511,988.37
Y= 247,396.36
H= 3,996.83

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		CALM
150	348	04
210	355	05
270	006	06
330	013	07
390	014	08
500	014	10
650	006	11
800	349	10
950	339	10
1150	317	11
1350	306	13
1550	305	15
1750	297	16
2000	MISG	

All data obtained from Single Theodolite Tracked pilot-balloon observations

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGES

19 Oct 82

LC-37 0800 MDT

METCM1324063

191400124879

00302001	28090879
01626008	28700868
02637007	29240843
03543012	29010804
04523025	28670758
05521026	28240714
06514014	27890672
07509017	27580632
08475017	27200594
09459021	26900558
10470028	26620523
11468035	26360491
12470040	24840445

WSD 0900 MDT

METCM1324064

191500122881

00000000	28720881
01387001	29080871
02023006	29220846
03606007	29030807
04519019	28650761
05515027	28270716
06520019	27870674
07482014	27600634
08470020	27310596
09473026	27000560
10484029	26700525
11482033	26360493
12483037	25780446

LC-37 1100 MDT

METCM1324063

191700124882

00640004	29450882
01001004	29390872
02014008	29220847
03021010	28930808
04565007	28540761
05538010	28140717
06489021	27800674
07457020	27570634
08468025	27360596
09472029	27092560
10494026	26760526
11492030	26360493
12476031	25760447

STATION ALTITUDE 4051.37 FEET MSL
19 OCT. 82 0800 MDT
ASCENSION NO. 105

SIGNIFICANT LEVEL DATA
292010310
LC-37
TABLE 6

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT
878.6	4051.4	7.0	-1.9	53.0
867.8	4389.2	13.1	2.6	49.0
858.0	4706.3	19.3	2.2	32.0
850.0	4970.4	19.2	-6.4	17.0
780.2	7366.8	15.0	-9.1	18.0
733.0	9087.5	11.0	-11.7	19.0
700.0	10340.1	7.2	-15.5	18.0
669.0	11559.6	5.4	-17.7	17.0
633.7	13006.9	2.6	-19.9	17.0
590.1	14885.4	-1.8	-24.2	16.0
515.1	18400.0	-7.8	-27.3	19.0
500.0	19159.3	-8.8	-28.7	18.0
467.9	20840.4	-11.7	-32.4	16.0
400.0	24718.2	-21.4	-35.3	27.0

STATION ALTITUDE 4051.37 FEET MSL
19 OCT. 82 0800 MDT
ASCENSION NO. 105

UPPER AIR DATA
2920180105
LC-37

TABLE 7

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 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 DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	878.6	7.0	-1.9	53.0	1090.0	652.6	170.0	1.0	1.000269
4500.0	864.4	15.3	2.8	43.1	1040.6	662.7			1.000266
5000.0	849.1	19.1	-6.4	17.9	1010.3	666.6			1.000242
5500.0	834.1	18.3	-7.0	17.2	995.4	665.6			1.000238
6000.0	819.3	17.4	-7.6	17.4	980.8	664.6			1.000234
6500.0	804.8	16.5	-8.1	17.6	966.3	663.6			1.000230
7000.0	790.5	15.6	-8.7	17.8	952.1	662.5			1.000227
7500.0	776.4	14.7	-9.3	18.1	938.3	661.4			1.000223
8000.0	762.5	13.5	-10.0	18.4	925.3	660.1			1.000219
8500.0	748.8	12.4	-10.8	18.7	912.4	658.7	293.7	25.6	1.000216
9000.0	735.3	11.2	-11.6	18.9	899.7	657.4	292.8	25.5	1.000212
9500.0	722.0	9.7	-12.9	18.7	888.0	655.6	291.9	25.4	1.000208
10000.0	708.8	8.2	-14.5	18.3	876.6	653.8	291.5	24.4	1.000205
10500.0	695.9	7.0	-15.8	17.9	864.6	652.3	291.8	21.7	1.000201
11000.0	683.1	6.2	-16.7	17.5	850.9	651.5	292.3	19.0	1.000198
11500.0	670.5	5.5	-17.5	17.0	837.5	650.6	291.0	17.7	1.000194
12000.0	658.1	4.5	-18.3	17.0	824.8	649.5	289.0	16.6	1.000191
12500.0	645.8	3.6	-19.1	17.0	812.4	648.5	286.7	15.6	1.000188
13000.0	633.9	2.6	-19.9	17.0	800.1	647.2	282.6	15.7	1.000184
13500.0	622.0	1.4	-21.1	16.7	788.5	645.8	278.5	15.9	1.000181
14000.0	610.3	.3	-22.2	16.5	777.0	644.4	274.5	16.2	1.000178
14500.0	598.8	-.9	-23.4	16.2	765.9	643.0	269.2	16.7	1.000175
15000.0	587.5	-2.0	-24.3	16.1	754.4	641.7	264.3	17.3	1.000172
15500.0	576.2	-2.8	-24.7	16.5	742.3	640.7	260.2	18.2	1.000170
16000.0	565.2	-3.7	-25.2	17.0	730.4	639.7	260.3	19.9	1.000167
16500.0	554.4	-4.6	-25.6	17.4	718.7	638.6	260.3	21.6	1.000164
17000.0	543.8	-5.4	-26.0	17.8	707.1	637.6	261.0	23.5	1.000161
17500.0	533.3	-6.3	-26.5	18.2	695.8	636.6	262.7	25.9	1.000159
18000.0	523.1	-7.1	-27.0	18.7	684.7	635.6	264.1	28.3	1.000156
18500.0	513.1	-7.9	-27.5	18.9	673.6	634.6	264.5	30.5	1.000153
19000.0	503.1	-8.6	-28.4	18.2	662.2	633.6	264.0	32.7	1.000151
19500.0	493.3	-9.4	-29.5	17.6	651.3	632.8	263.5	34.9	1.000148
20000.0	483.7	-10.3	-30.5	17.0	640.7	631.8	263.3	36.1	1.000145
20500.0	474.2	-11.1	-31.6	16.4	630.2	630.7	263.2	36.9	1.000143
21000.0	464.9	-12.1	-32.4	16.5	620.2	629.5	263.0	37.8	1.000140
21500.0	455.6	-13.4	-32.6	17.9	610.7	628.0	263.6	38.2	1.000138
22000.0	446.5	-14.6	-32.9	19.3	601.4	626.5	264.6	38.7	1.000136
22500.0	437.5	-15.9	-33.2	20.7	592.2	625.0			1.000134
23000.0	428.8	-17.1	-33.6	22.1	583.2	623.5			1.000132
23500.0	420.2	-18.4	-34.1	23.5	574.3	622.0			1.000130

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

UPPER AIR DATA
29201 0105
LC-37

STATION ALTITUDE 4051.37 FEET MSL
19 OCT. 82 0800 MDT
ASCENSION NO. 105

GEODETIC COORDINATES
32.40175 LAT DEG
106.51232 LON DEG

TABLE 7 Cont'd

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
24000.0	411.8	-19.6	-34.6	25.0	565.0	620.4			1.000128
24500.0	403.5	-20.9	-35.1	26.4	557.0	618.9			1.000126

MANDATORY LEVELS
2920180105
LC-37
TABLE 8

STATION ALTITUDE 4051.37 FEET MSL
19 OCT. 82 0800 MDT
ASCENSION NO. 105

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	4967.	19.2	-6.4	17.	9999.0	9999.0XX
800.0	6664.	16.2	-8.3	18.	9999.0	9999.0XX
750.0	8450.	12.5	-10.7	19.	293.8	25.6
700.0	10330.	7.2	-15.5	18.	291.7	22.6
650.0	12317.	3.9	-18.9	17.	287.7	15.9
600.0	14433.	-.8	-23.2	16.	269.8	16.6
550.0	16693.	-4.9	-25.8	18.	260.3	22.3
500.0	19132.	-8.8	-28.7	18.	263.8	33.3
450.0	21785.	-14.1	-32.8	19.	264.3	38.5
400.0	24677.	-21.4	-35.3	27.		

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3989.00 FEET MSL
19 OCT. 82 0900 MDT
ASCENSION NO. 508

SIGNIFICANT LEVEL DATA
292002050
WHITE SANDS
TABLE 9

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
881.0	3989.0	13.0	5.4	60.0
872.0	4274.9	18.1	-6.6	18.0
850.0	4992.5	18.6	-7.7	16.0
834.3	5516.7	18.8	-8.3	15.0
740.2	8939.3	11.3	-13.6	16.0
700.0	10359.9	7.8	-17.2	15.0
661.8	11868.2	3.9	-17.0	20.0
615.5	13796.3	1.7	-22.9	14.0
571.9	15726.4	-2.6	-26.4	14.0
555.1	16502.4	-3.4	-25.5	16.0
530.1	17694.6	-5.9	-28.3	15.0
500.0	19192.0	-8.7	-30.6	15.0
452.8	21690.7	-14.6	-34.8	16.0
423.8	23327.7	-18.5	-31.4	31.0
400.0	24737.3	-21.8	-35.7	27.0

STATION ALTITUDE 3989.00 FEET MSL
19 OCT. 82 0900 MDT
ASCENSION NO. 508

UPPER AIR DATA
292002050
WHITE SANDS
TABLE 10

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 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 DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	881.0	13.0	5.4	60.0	1068.4	660.3	.0	.0	1.000280
4000.0	880.7	13.2	5.2	58.4	1067.3	660.5	12.0	.0	1.000279
4500.0	865.0	18.3	-6.9	17.4	1032.5	665.6	12.0	2.3	1.000246
5000.0	849.8	18.6	-7.7	16.0	1013.1	665.9	12.0	4.5	1.000241
5500.0	834.8	18.8	-8.3	15.0	994.7	666.1	12.0	6.7	1.000236
6000.0	819.9	17.7	-9.1	15.1	980.6	664.9	357.5	6.5	1.000232
6500.0	805.3	16.6	-9.9	15.3	966.9	663.6	329.6	6.8	1.000228
7000.0	790.9	15.5	-10.7	15.4	953.4	662.3	304.0	9.5	1.000225
7500.0	776.8	14.3	-11.4	15.6	940.2	660.9	295.8	14.2	1.000221
8000.0	762.9	13.2	-12.2	15.7	927.1	659.6	293.1	18.9	1.000218
8500.0	749.3	12.1	-13.0	15.9	914.2	658.3	292.2	23.7	1.000214
9000.0	735.8	10.9	-14.0	15.9	901.4	657.0	291.2	25.9	1.000211
9500.0	722.5	9.8	-15.1	15.6	888.7	655.6	290.6	27.0	1.000207
10000.0	709.3	8.6	-16.3	15.2	876.1	654.3	290.8	25.6	1.000203
10500.0	696.4	7.4	-17.1	15.5	863.8	652.9	292.2	23.5	1.000200
11000.0	683.5	6.1	-17.0	17.1	851.8	651.4	294.9	20.9	1.000198
11500.0	670.9	4.9	-16.9	18.8	840.0	649.9	291.5	19.2	1.000195
12000.0	658.5	3.7	-17.3	19.6	827.7	648.6	285.9	17.6	1.000192
12500.0	646.3	3.2	-18.8	18.0	814.1	647.9	276.6	16.2	1.000188
13000.0	634.2	2.6	-20.3	16.5	800.6	647.2	271.7	15.1	1.000184
13500.0	622.4	2.0	-21.9	14.9	787.4	646.5	268.6	14.5	1.000181
14000.0	610.7	1.2	-23.3	14.0	774.9	645.5	267.4	15.7	1.000177
14500.0	599.2	.1	-24.1	14.0	763.5	644.2	264.1	18.4	1.000174
15000.0	587.9	-1.0	-25.0	14.0	752.2	642.9	262.4	21.3	1.000172
15500.0	576.9	-2.1	-25.9	14.0	741.0	641.5	263.5	23.8	1.000169
16000.0	565.9	-2.9	-26.0	14.7	729.1	640.6	265.2	25.1	1.000166
16500.0	555.2	-3.4	-25.6	16.0	716.6	640.0	267.1	26.0	1.000164
17000.0	544.5	-4.4	-26.7	15.6	705.6	638.8	269.1	26.9	1.000161
17500.0	534.1	-5.5	-27.8	15.2	694.9	637.5	271.2	28.2	1.000158
18000.0	523.8	-6.5	-28.8	15.0	684.0	636.3	273.3	30.0	1.000155
18500.0	513.7	-7.4	-29.5	15.0	673.1	635.2	273.0	31.7	1.000153
19000.0	503.8	-8.3	-30.3	15.0	662.5	634.1	272.2	32.7	1.000150
19500.0	493.9	-9.4	-31.1	15.1	652.2	632.8	271.0	32.7	1.000148
20000.0	484.2	-10.6	-31.9	15.3	642.3	631.3	270.9	33.3	1.000145
20500.0	474.7	-11.8	-32.8	15.5	632.5	629.9	271.6	34.0	1.000143
21000.0	465.4	-13.0	-33.6	15.7	622.9	628.5	273.2	35.0	1.000141
21500.0	456.2	-14.1	-34.4	15.9	613.5	627.1	273.2	35.3	1.000138
22000.0	447.2	-15.3	-33.7	18.8	604.1	625.6	272.5	35.9	1.000137
22500.0	438.2	-16.5	-32.5	23.4	594.7	624.2	271.2	36.9	1.000135
23000.0	429.5	-17.7	-31.7	28.0	585.5	622.7	269.9	38.8	1.000133

STATION ALTITUDE 3989.00 FEET MSL
19 OCT. 82 0900 MDT
ASCENSION NO. 508

UPPER AIR DATA
2920020508
WHITE SANDS
TABLE 10 Cont'd

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 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 DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	420.8	-18.9	-31.9	30.5	576.4	621.3			1.000131
24000.0	412.3	-20.1	-33.4	29.1	567.3	619.9			1.000128
24500.0	403.9	-21.2	-34.9	27.7	558.4	618.4			1.000126

MANDATORY LEVELS

STATION ALTITUDE 3989.0 FEET MSL
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ASCENSION NO. 508

292002050G
WHITE SANDS
TABLE 11

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	4989.	18.6	-7.7	16.	12.0	4.4
800.0	6687.	16.2	-10.2	15.	317.8	7.6
750.0	8471.	12.1	-13.0	16.	292.2	23.5
700.0	10350.	7.8	-17.2	15.	291.5	24.2
650.0	12335.	3.4	-18.3	19.	279.7	16.6
600.0	14453.	.2	-24.1	14.	264.3	18.1
550.0	16720.	-3.9	-26.1	16.	268.0	26.4
500.0	19165.	-8.7	-30.6	15.	271.8	32.7
450.0	21811.	-15.0	-34.2	17.	273.0	35.5
400.0	24696.	-21.8	-35.7	27.		

SIGNIFICANT LEVEL DATA
2920020509
WHITE SANDS
TABLE 12

STATION ALTITUDE 3989.0 FEET MSL
19 OCT. 82 1100 MDT
ASCENSION NO. 509

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
881.8	3989.0	21.0	-.3	24.0
850.0	5026.5	18.8	-6.7	17.0
814.9	6207.6	16.3	-8.8	17.0
700.0	10373.6	6.4	-14.3	21.0
659.6	11966.3	3.5	-17.9	19.0
650.9	12320.1	3.0	-8.9	41.0
634.0	13019.4	2.3	-20.9	16.0
582.9	15238.0	-.5	-22.5	17.0
533.7	17536.8	-4.7	-26.6	16.0
500.0	19210.7	-8.9	-30.7	15.0
448.8	21928.6	-15.3	-30.4	26.0
434.0	22758.5	-17.5	-28.9	36.0
426.9	23164.2	-18.5	-32.4	28.0
400.0	24748.7	-22.7	-36.1	28.0

UPPER AIR DATA
2920020509
WHITE SANDS
TABLE 13

STATION ALTITUDE 3989.00 FEET MSL
19 OCT. 82 1100 MDT
ASCENSION NO. 509

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

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	881.8	21.0	-.3	24.0	1041.7	669.0	360.0	4.1	1.000258
4000.0	881.5	21.0	-.4	23.9	1041.3	669.0	.1	4.1	1.000258
4500.0	860.0	19.9	-3.3	20.6	1027.2	667.6	4.2	5.7	1.000250
5000.0	850.8	18.9	-6.6	17.2	1013.3	666.3	6.5	7.3	1.000242
5500.0	835.8	17.8	-7.5	17.0	999.1	665.0	7.9	8.9	1.000238
6000.0	821.0	16.7	-8.4	17.0	985.1	663.8	9.8	9.7	1.000234
6500.0	806.3	15.6	-9.1	17.3	971.3	662.5	8.8	10.0	1.000230
7000.0	791.7	14.4	-9.7	17.8	957.7	661.1	4.5	9.5	1.000227
7500.0	777.4	13.2	-10.4	18.2	944.4	659.7	349.3	7.7	1.000223
8000.0	763.3	12.0	-11.0	18.7	931.2	658.3	324.9	6.4	1.000220
8500.0	749.5	10.9	-11.7	19.2	918.2	656.9	302.2	6.7	1.000216
9000.0	736.0	9.7	-12.4	19.7	905.5	655.6	296.3	7.9	1.000213
9500.0	722.7	8.5	-13.1	20.2	892.9	654.2	301.5	9.7	1.000210
10000.0	709.6	7.3	-13.8	20.6	880.5	652.8	298.6	12.0	1.000206
10500.0	696.7	6.2	-14.6	20.8	868.0	651.4	289.2	15.1	1.000203
11000.0	683.8	5.3	-15.7	20.2	854.8	650.4	277.9	18.2	1.000199
11500.0	671.2	4.3	-16.8	19.6	841.8	649.3	271.1	20.4	1.000196
12000.0	658.8	3.5	-16.7	21.1	828.9	648.2	267.0	20.8	1.000193
12500.0	646.5	2.8	-11.3	34.6	814.9	647.7	263.0	20.8	1.000194
13000.0	634.5	2.3	-20.4	16.7	801.8	646.8	260.7	21.0	1.000185
13500.0	622.6	1.7	-21.2	16.2	788.6	646.1	261.2	21.3	1.000181
14000.0	610.9	1.1	-21.6	16.4	775.6	645.3	260.5	21.5	1.000178
14500.0	599.4	.4	-22.0	16.7	762.8	644.6	261.4	23.3	1.000175
15000.0	588.2	-.2	-22.3	16.9	750.2	643.8	263.6	26.9	1.000172
15500.0	577.1	-1.0	-23.0	16.9	738.2	642.9	264.9	29.6	1.000169
16000.0	566.1	-1.9	-23.9	16.7	726.0	641.8	264.6	30.0	1.000166
16500.0	555.4	-2.8	-24.8	16.5	715.2	640.7	265.8	29.4	1.000164
17000.0	544.8	-3.7	-25.7	16.2	704.0	639.6	272.6	29.4	1.000161
17500.0	534.5	-4.6	-26.5	16.0	693.0	638.5	276.0	27.6	1.000158
18000.0	524.2	-5.9	-27.8	15.7	682.8	637.1	277.6	25.6	1.000155
18500.0	514.0	-7.1	-29.0	15.4	672.9	635.6	277.4	23.9	1.000153
19000.0	504.1	-8.4	-30.2	15.1	663.0	634.0	277.9	25.1	1.000150
19500.0	494.3	-9.6	-30.5	15.2	653.1	632.6	276.7	26.6	1.000148
20000.0	484.6	-10.3	-30.3	18.2	643.1	631.2	274.2	28.0	1.000146
20500.0	475.0	-11.9	-30.1	20.2	633.3	629.8	270.6	29.0	1.000144
21000.0	465.7	-13.1	-30.1	22.2	623.6	628.3	269.2	29.7	1.000142
21500.0	456.5	-14.3	-30.2	24.3	614.1	626.9	269.2	30.2	1.000140
22000.0	447.5	-15.5	-30.2	26.9	604.3	625.5	270.9	30.7	1.000138
22500.0	438.6	-16.8	-29.3	32.9	595.7	623.9	266.0	32.5	1.000136
23000.0	429.8	-18.1	-30.9	31.2	586.7	622.3	266.3	34.8	1.000133

STATION ALTITUDE 3989.00 FEET MSL
19 OCT. 82 1100 MDT
ASCENSION NO. 509

UPPER AIR DATA
2920020509
WHITE SANDS
TABLE 13 Cont'd

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 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 DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	421.1	-19.4	-33.2	28.0	577.8	620.7			1.000131
24000.0	412.5	-20.7	-34.4	28.0	569.1	619.1			1.000129
24500.0	404.1	-22.0	-35.5	28.0	560.5	617.4			1.000127

STATION ALTITUDE 3989.00 FEET MSL
19 OCT. 82 1100 MDT
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MANDATORY LEVELS
292002050 9
WHITE SANDS
TABLE 14

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	5023.	18.8	-6.7	17.	6.6	7.3
800.0	6716.	15.1	-9.4	17.	7.5	9.9
750.0	8493.	10.9	-11.7	19.	302.2	6.7
700.0	10363.	6.4	-14.3	21.	291.3	14.2
650.0	12543.	3.0	-9.4	40.	264.2	20.8
600.0	14460.	.5	-21.9	17.	261.3	23.0
550.0	16735.	-3.3	-25.2	16.	269.1	29.3
500.0	19184.	-8.9	-30.7	15.	278.2	25.7
450.0	21828.	-15.1	-30.4	26.	270.4	30.6
400.0	24707.	-22.7	-36.1	26.		

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