AD-A131 981 19320B MLRS MISSILE NUMBER FV3-13 FV3-15 FV3-2 ROUND NUMBER 461/AT2-31 46..(U) ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WSMR NM ATM.. D C KELLER 07 JUL 83 1/1

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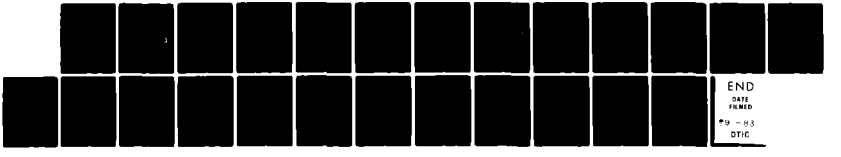

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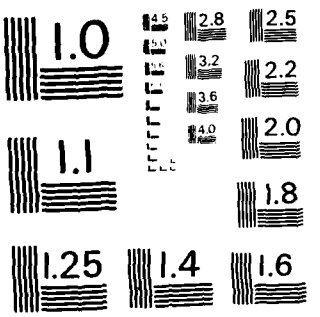

METEOROLOGICAL DATA REPORT
19320B MLRS
Missile Number FV3-13, FV3-15, FV3-2
Round Number 461/AT2-31, 462/AT2-32, 463/AT2-33
7 July 1983

by

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Phone Number (505) 679-9568
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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM
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 19320B MLRS, Missile Number FV3-18, FV3-15, FV3-2, Round Number 461/AT2-31, 462/AT2-32, 463/AT2-33 are presented in tabular form.

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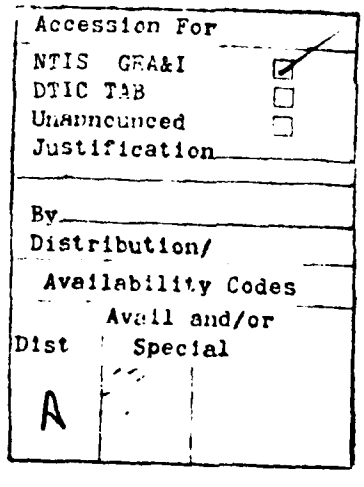


CONTENTS

INTRODUCTION

19320B MLRS, Missile Numbers FV3-18, FV3-15 and FV3-2, Round Numbers 461/AT2-31 462/AT2-32 and 463/AT2-33, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1302:27, 1302:36 and 1302:41 MDT, 7Jul 83. The scheduled launch times were 1300, 1300:04.5 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 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 anemomenters at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

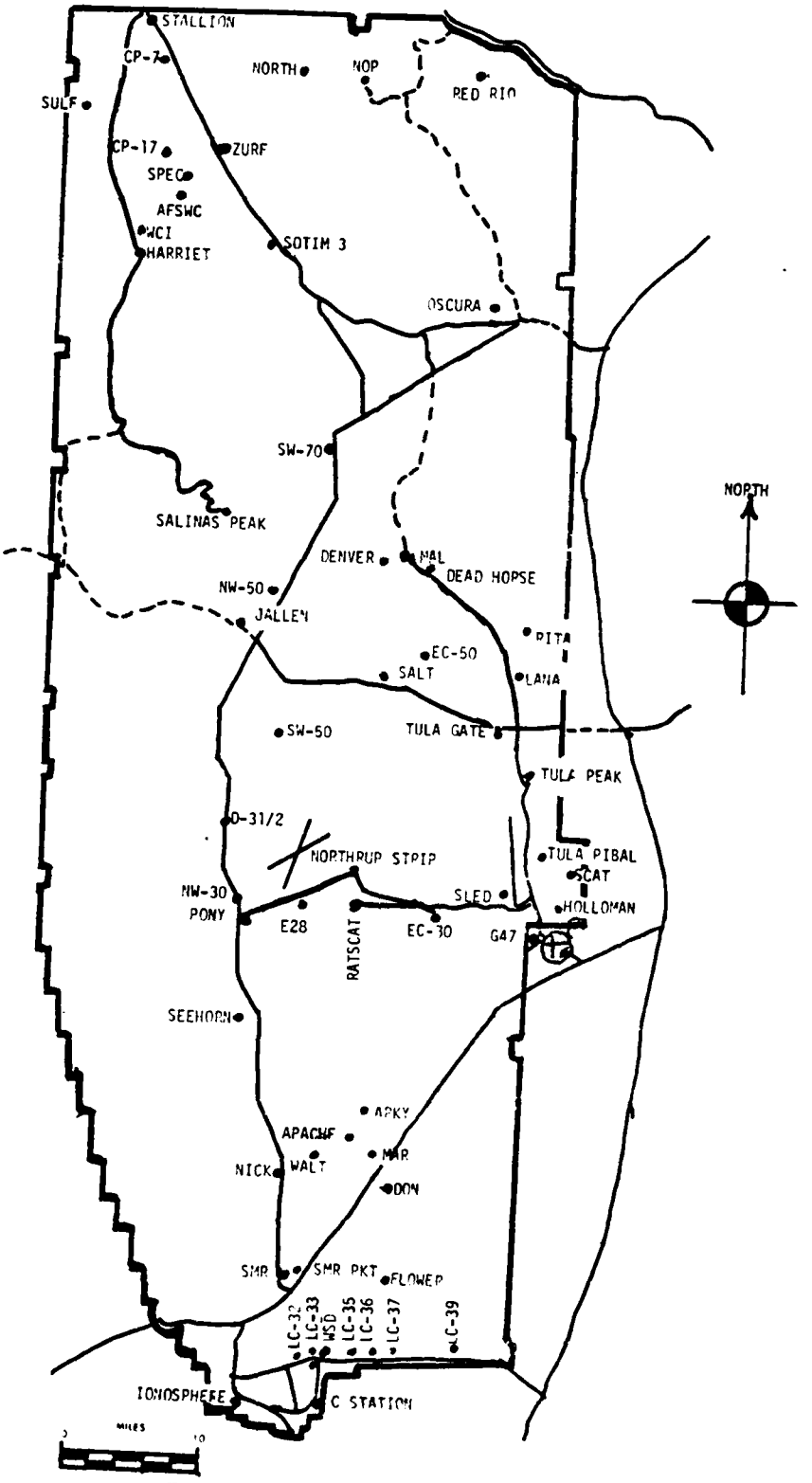
(1) Low level wind data were obtained from Pilot-balloon observations at:

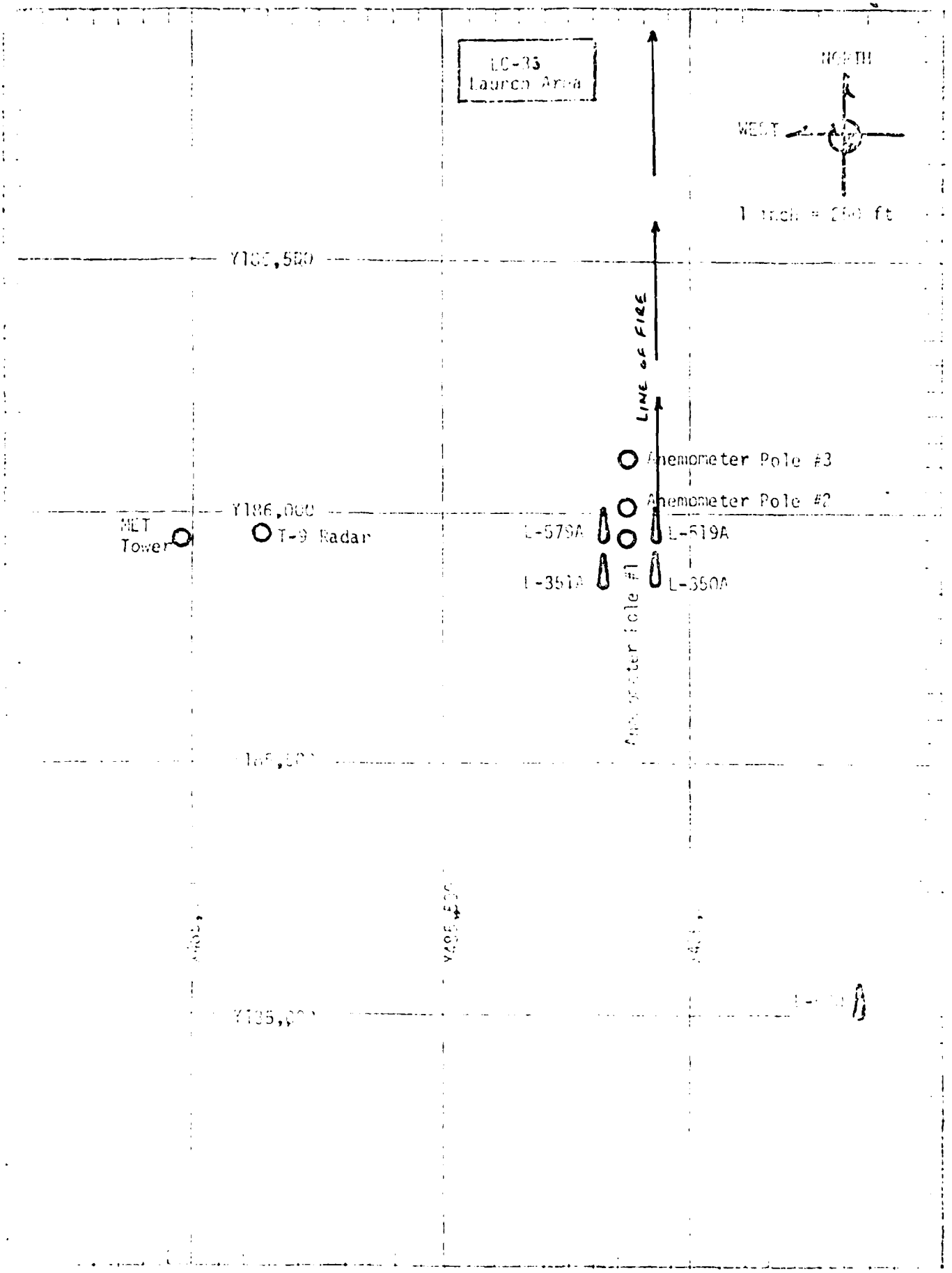
SITE AND ALTITUDE	
LC-33	2 km
SMR	2 km

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

SITE AND TIME	
LC-37	1030 MDT
WSD	1100 MDT
WSD	1300 MDT

WSMR METEOROLOGICAL SITES




LC-35
Launch Area
NORTH
WEST
1 inch = 250 ft
Y186,500
LINE OF FIRE
Anemometer Pole #3
Anemometer Pole #2
Y186,000
MLT
Tower
T-9 Radar
L-576A
L-519A
L-351A
L-350A
Anemometer Pole #1

PROJECT SURFACE OBSERVATION

TABLE 1 STATION LC-33

DATE 07 (DAY) Jul (MONTH) 83 (YEAR) X= 484,982.64 Y= 185,957.73 H= 3995.00

TIME MDT	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
1302	883.5		35.6		14.5	29		150	06		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
	6	CU	6500							

PSYCHROMETRIC COMPUTATION

TIME: MDT	1302		
DRY BULB TEMP.	35.6		
WET BULB TEMP.	21.0		
WET BULB DEPR.	14.6		
DEW POINT	14.5		
RELATIVE HUMID.	29		

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	145	04	T -30	139	00	T -30	132	05
T -20	145	04	T -20	153	00	T -20	147	05
T -10	145	06	T -10	135	01	T -10	170	06
T 0.0	145	10	T 0.0	153	06	T 0.0	170	09
T +10	145	10	T +10	139	06	T +10	162	07

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	MISG	MISG	T -30	177	05
T -20	MISG	MISG	T -20	156	04
T -10	MISG	MISG	T -10	144	04
T 0.0	MISG	MISG	T 0.0	138	04
T +10	MISG	MISG	T +10	149	05

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	162	05	T -30	171	05
T -20	149	04	T -20	163	05
T -10	145	04	T -10	164	04
T 0.0	147	04	T 0.0	162	04
T +10	143	04	T +10	162	05

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 07 July 1983

SITE: LC-33
TIME: 1302 MDT
WSTM COORDINATES:
X= 484,837.34
Y= 184,124.44
H= 3,975.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		CALM
150	122	06
210	120	07
270	116	07
330	113	08
390	110	08
500	114	09
650	126	10
800	128	09
950	119	08
1150	121	10
1350	121	10
1550	129	09
1750	135	10
2000	134	09

Data obtained from a Double Theodolite Tracked pilot-balloon observation.

SITE: SMR
TIME 1304 MDT
WSTM COORDINATES:
X= 472,441.28
Y= 214,137.54
H= 3,999.00

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SP KN
SURFACE	140	C
150	147	08
210	148	07
270	170	08
330	146	08
390	148	11
500	155	15
650	155	13
800	158	10
950	155	10
1150	148	09
1350	127	05
1550	145	05
1750	146	07
2000	147	07

Data obtained from a RAPTS T-9 Radar Tracked pilot-balloon observation.

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGES
07 July 1982

LC-37 1030 MDT		WSD 1100 MDT		WSD 1300 MDT	
METCM1324063		METCM1324064		METCM1324064	
071650124884		071700122884		071900122883	
00196003	30300884	00231002	30490884	00231005	30720883
01277004	30100874	01286006	30220874	01252009	30520874
02280008	29830850	02230006	29930850	02241007	30070849
03246012	29470811	03258009	29520812	03250009	29590811
04234011	29030765	04238012	29020766	04255005	29120766
05244010	28580721	05233010	28580722	05237008	28690722
06190011	28140679	06199010	28180680	06233004	28270680
07275006	27910639	07247005	27880640	07228006	27850640
08332003	27700601	08301005	27640602	08241004	27540602
09265011	27380565	09269008	27380565	09280008	27340565
10286016	27100531	10275094	27100531	10281012	27020531
11269022	26800498	11269019	26800499	11261020	26690498
12266030	26340453	12270027	26360453	12267028	26250452

STATION ALTITUDE 4051.7 FEET MSL
7 JULY 83 1030 MDT
ASCENSION NO. 97

SIGNIFICANT LEVEL DATA
1P601P0397
LL-97

TABLE 6

GEODETIC COORDINATES
37.46175 LAT DEG
106.31232 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
864.1	4051.4	27.7	13.3	41.0
857.7	4262.4	26.1	12.5	43.0
850.0	5186.9	23.3	11.7	48.0
796.1	7051.0	18.4	10.3	59.0
764.6	8184.4	15.5	8.7	64.0
715.7	10013.9	10.3	7.7	84.0
700.0	10623.1	9.1	7.7	91.0
684.2	11242.0	8.4	8.0	96.0
677.9	11492.0	8.1	1.8	74.0
665.4	11994.9	7.1	-2.6	50.0
627.5	13548.4	4.3	.1	74.0
627.3	13581.1	5.0	-6.2	44.0
594.8	15003.5	2.8	-5.6	53.0
588.6	15270.9	.2	-9.8	47.0
569.8	16070.6	-.3	-11.3	43.0
551.2	17015.5	-1.1	-9.0	55.0
508.5	19118.8	-4.4	-18.6	32.0
500.0	19554.9	-5.4	-15.4	45.0
492.7	19934.3	-5.9	-21.8	27.0
476.5	20796.7	-7.7	-29.1	16.0
468.7	21214.6	-8.1	-29.4	16.0
445.1	22526.8	-10.4	-30.1	18.0
400.0	25201.4	-16.9	-35.0	19.0

STATION ALTITUDE 4051.37 FEET MSL
7 JULY 83 1030 MDT
ASCENSION NO. 97

UPPER AIR DATA
1*301*0097
EC-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	684.1	27.7	13.3	41.0	1017.1	677.9	110.0	2.6	1.000291
4500.0	670.5	25.4	12.3	44.3	1009.5	675.2	139.6	4.4	1.000280
5000.0	655.5	23.4	11.9	47.0	997.3	673.5	153.5	5.7	1.000282
5500.0	640.7	22.5	11.5	49.8	984.6	671.9	157.6	9.2	1.000278
6000.0	626.1	21.2	11.2	52.8	971.8	670.4	144.0	11.7	1.000275
6500.0	611.7	19.3	10.8	55.7	959.2	668.9	137.4	12.9	1.000271
7000.0	597.5	18.3	10.3	58.7	946.8	667.3	133.2	13.7	1.000267
7500.0	583.5	17.3	9.7	61.0	934.4	665.8	130.1	13.2	1.000262
8000.0	569.8	16.6	9.0	63.2	922.1	664.3	131.1	10.4	1.000258
8500.0	555.9	14.6	8.0	67.4	910.0	662.7	134.9	8.9	1.000254
9000.0	542.4	13.6	8.4	72.9	898.2	661.1	140.9	8.8	1.000251
9500.0	529.1	11.8	8.1	76.4	886.5	659.4	138.3	9.4	1.000248
10000.0	516.1	10.3	7.7	83.8	875.0	657.8	133.8	10.3	1.000245
10500.0	503.1	9.3	7.7	89.6	862.2	656.6	124.3	10.8	1.000242
11000.0	490.3	7.6	6.7	94.1	852.0	654.5	115.5	11.3	1.000237
11500.0	477.7	6.3	3.7	83.4	841.0	652.7	109.4	11.2	1.000226
12000.0	465.3	7.1	-2.6	50.1	824.6	653.1	110.3	10.1	1.000230
12500.0	453.0	5.9	-1.2	60.5	812.7	651.8	123.3	8.0	1.000230
13000.0	441.0	4.7	-.2	70.9	801.0	650.5	143.7	5.5	1.000228
13500.0	429.2	4.9	-4.8	49.6	788.4	650.4	170.4	4.4	1.000196
14000.0	417.5	4.4	-6.0	46.7	773.4	649.7	189.4	3.2	1.000191
14500.0	406.1	3.6	-5.9	49.8	761.1	648.9	184.5	3.1	1.000189
15000.0	394.9	2.8	-5.8	53.0	749.1	648.0	170.0	3.7	1.000187
15500.0	383.8	1.7	-7.4	50.5	738.2	646.0	152.3	6.0	1.000182
16000.0	372.9	.6	-9.1	48.0	727.4	645.3	149.4	8.7	1.000178
16500.0	362.1	-.2	-10.9	44.1	716.0	644.2	151.2	11.7	1.000173
17000.0	351.5	-1.1	-9.6	54.5	704.7	643.3	156.5	13.8	1.000173
17500.0	341.1	-1.9	-11.0	49.7	693.5	642.3	161.0	15.6	1.000168
18000.0	330.8	-2.8	-15.1	44.2	682.5	641.2	160.4	16.4	1.000164
18500.0	320.7	-3.4	-15.4	38.8	671.6	640.2	157.4	17.3	1.000159
19000.0	310.8	-4.2	-17.9	33.3	661.0	639.2	152.9	19.5	1.000155
19500.0	301.1	-5.3	-15.8	43.4	650.7	638.0	151.4	21.1	1.000154
20000.0	291.4	-6.0	-22.3	26.2	640.4	637.0	151.3	23.6	1.000148
20500.0	282.0	-7.1	-26.3	19.8	630.7	635.6	152.6	25.7	1.000144
21000.0	272.7	-7.9	-29.2	16.0	620.5	634.6	153.4	26.9	1.000141
21500.0	263.5	-8.6	-29.5	16.4	610.0	633.8	151.9	27.6	1.000139
22000.0	254.4	-9.5	-29.8	17.2	600.2	632.7	149.3	28.9	1.000135
22500.0	245.6	-10.3	-30.1	18.0	590.4	631.7	148.2	30.4	1.000134
23000.0	236.8	-11.5	-30.9	18.2	581.4	630.2	148.1	32.0	1.000132
23500.0	228.2	-12.8	-31.8	18.4	572.6	628.8	148.4	33.1	1.000130

STATION ALTITUDE 4051.77 FEET MSL
7 JULY 85 1030 MDT
ASCENSION NO. 97

UPPER AIR DATA
18801P0097
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 7 Cont'd

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	419.7	-14.6	-32.8	18.6	567.9	627.3	149.2	33.3	1.000128
24500.0	411.4	-15.2	-33.7	18.7	555.4	625.8			1.000126
25000.0	403.2	-16.4	-34.6	18.9	547.0	624.3			1.000124

STATION ALTITUDE 4051.?7 FEET MSL
7 JULY 83 1030 MDT
ASCENSION NO. 97

MANDATORY LEVELS
18601?0097
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31?32 LON DEG

TABLE 8

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	5167.	23.3	11.7	48.	156.5	7.6
800.0	6907.	18.8	10.4	58.	133.9	13.7
750.0	8714.	14.0	8.6	70.	137.5	8.8
700.0	10610.	9.1	7.7	91.	122.0	10.9
650.0	12617.	5.6	-.9	63.	127.4	7.5
600.0	14754.	3.2	-5.8	52.	176.6	3.4
550.0	17050.	-1.2	-9.2	54.	157.2	14.1
500.0	19527.	-5.4	-15.4	45.	151.3	21.3
450.0	22217.	-9.9	-29.9	18.	148.8	29.6
400.0	25158.	-16.9	-35.0	19.		

STATION ALTITUDE 3989.00 FEET MSL
7 JULY 95 1100
ASCENSION NO. 341

SIGNIFICANT LEVEL DATA
188U020741
WHITE SANDS

GEODETIC COORDINATES
32.40343 LAT DEG
106.37033 LON DEG

TABLE 9

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
984.2	3989.0	30.0	13.7	37.0
978.2	4186.0	27.4	12.6	40.0
950.0	5132.4	24.2	11.2	46.0
934.1	8519.1	14.1	8.9	71.0
744.3	9882.2	13.3	7.5	68.0
700.3	10569.8	9.0	5.9	81.0
695.5	10745.7	8.5	5.6	83.0
667.0	11080.3	7.2	4.7	80.0
665.1	11155.6	7.0	4.0	81.0
674.8	11565.6	7.1	.9	55.0
560.4	12149.1	6.9	-1.0	57.0
622.7	13429.2	3.6	-.6	74.0
615.1	14055.1	3.0	-12.4	31.0
597.8	14814.9	2.7	-3.4	64.0
561.8	16459.5	-.4	-9.6	50.0
545.3	17216.8	-1.3	-7.6	62.0
512.3	18845.3	-4.6	-11.8	57.0
500.0	19499.6	-5.1	-16.3	41.0
458.2	20117.1	-4.8	-27.4	15.0
405.3	21352.3	-8.0	-30.0	15.0
400.0	25152.3	-16.9	-36.7	16.0

UPPER AIR DATA

STATION ALTITUDE 3939.00 FEET MSL
7 JULY 8_ 1100 MDT
ASCENSION NO. 341

18c0020741
WHITE SANDS
TABLE 10

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
3939.0	684.[illegible]	[illegible].0	13.7	37.0	1009.2	680.6	130.0	1.9	1.000290
4000.0	683.9	[illegible].7	13.7	37.2	1008.4	680.4	130.[illegible]	[illegible].0	1.000290
4500.0	668.8	16.3	12.4	42.0	1004.2	676.3	135.2	[illegible].[illegible]	1.000285
5000.0	653.[illegible]	[illegible].6	12.0	45.2	992.7	674.4	137.4	4.7	1.000281
5500.0	639.0	13.1	11.7	48.7	980.5	672.6	138.6	6.0	1.000278
6000.0	624.3	11.6	11.5	52.4	968.2	670.9	141.6	7.4	1.000275
6500.0	609.9	10.1	11.1	56.1	956.1	669.2	149.[illegible]	8.9	1.000271
7000.0	595.7	18.6	10.7	59.8	944.2	667.5	144.8	10.3	1.000268
7500.0	781.8	17.1	10.2	63.5	932.5	665.8	136.4	11.[illegible]	1.000264
8000.0	768.1	15.6	9.6	67.2	921.0	664.0	130.[illegible]	11.9	1.000260
8500.0	754.6	14.2	9.0	70.9	909.7	662.2	131.5	12.2	1.000255
9000.0	741.1	13.0	7.4	65.9	897.[illegible]	660.8	130.2	10.9	1.000248
9500.0	727.6	11.7	7.0	72.8	885.3	659.3	126.[illegible]	9.5	1.000244
10000.0	714.7	10.5	6.5	76.6	873.3	657.8	120.5	8.4	1.000240
10500.0	701.8	9.2	6.0	80.5	861.6	656.3	120.1	8.[illegible]	1.000236
11000.0	689.0	8.0	4.9	80.7	849.6	654.8	119.6	9.2	1.000231
11500.0	676.4	7.0	1.4	67.6	838.0	653.3	118.7	9.7	1.000219
12000.0	664.1	6.9	-.5	59.0	827.2	653.1	118.8	9.1	1.000214
12500.0	651.8	6.0	-.8	61.7	815.8	652.0	119.4	8.0	1.000209
13000.0	639.8	4.7	-.6	68.3	799.4	650.5	131.7	5.9	1.000207
13500.0	628.0	3.5	-1.6	69.1	788.2	649.1	157.0	4.3	1.000203
14000.0	616.4	3.1	-11.0	34.8	776.1	648.0	156.2	4.7	1.000186
14500.0	604.9	2.8	-6.5	50.3	761.8	647.9	170.1	4.3	1.000188
15000.0	593.6	2.4	-4.1	62.4	748.5	647.6	164.0	4.1	1.000189
15500.0	582.5	1.4	-5.9	58.2	737.2	646.3	161.5	4.7	1.000184
16000.0	571.6	.5	-7.6	53.9	726.2	645.1	161.1	5.7	1.000179
16500.0	560.9	-.4	-9.4	50.6	715.1	644.0	157.2	8.5	1.000175
17000.0	550.4	-1.0	-5.1	58.5	707.0	643.4	155.[illegible]	11.2	1.000174
17500.0	539.9	-1.9	-5.3	61.1	691.8	642.4	154.7	12.7	1.000171
18000.0	529.7	-2.9	-9.6	59.6	681.3	641.1	154.2	13.7	1.000167
18500.0	519.6	-3.9	-10.9	58.1	671.0	639.9	153.7	14.1	1.000163
19000.0	509.7	-4.7	-12.6	53.2	660.4	638.8	153.[illegible]	15.4	1.000159
19500.0	500.0	-5.1	-16.3	41.0	649.0	638.2	153.6	17.4	1.000156
20000.0	490.4	-4.9	-24.3	19.9	636.4	638.3	153.1	20.2	1.000145
20500.0	481.0	-5.6	-25.2	15.0	626.4	637.2	152.5	22.8	1.000143
21000.0	471.7	-7.1	-29.3	15.0	617.4	635.6	152.[illegible]	24.9	1.000140
21500.0	462.6	-8.3	-30.3	15.0	608.3	634.1	152.[illegible]	25.8	1.000136
22000.0	453.[illegible]	-9.[illegible]	-31.1	15.2	599.0	632.7	152.0	26.6	1.000136
22500.0	444.5	-10.7	-32.0	15.3	589.8	631.3	150.4	27.5	1.000134
23000.0	435.8	-11.[illegible]	-32.[illegible]	15.4	581.8	629.8	149.2	29.0	1.000131

STATION ALTITUDE 3959.0 FEET MSL
7 JULY 83 1100 MDT
ASCENSION NO. 341

UPPER AIR DATA
1°o00?0341
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 10 Cont'd

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	427.2	-13.6	-33.8	15.6	571.9	628.4	149.3	30.7	1.000129
24000.0	418.0	-14.2	-34.6	15.7	562.2	627.0	150.4	32.6	1.000127
24500.0	410.5	-15.4	-35.5	15.6	554.6	625.6			1.000125
25000.0	402.4	-16.5	-36.4	15.0	546.2	624.1			1.000123

STATION ALTITUDE 3969.00 FEET MSL
7 JULY 83 1100 MDT
ASCENSION NO. 341

MANDATORY LEVELS
18803Z0341
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 11

PRESSURE	GEOPOTENTIAL	TEMPERATURE		REL.HUM.	WIND DATA	
		AIR	DEWPOINT	PERCENT	DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE			DEGREES(TN)	KNOTS
850.0	5129.	24.2	11.9	46.	137.7	5.0
800.0	6957.	19.1	10.8	59.	147.2	9.9
750.0	8863.	13.8	8.3	70.	131.2	11.9
700.0	10859.	9.0	5.9	81.	120.1	8.6
650.0	12964.	5.8	-.8	63.	119.6	7.6
600.0	14699.	2.7	-4.3	50.	167.6	4.2
550.0	16995.	-1.1	-8.1	59.	155.7	11.2
500.0	19472.	-5.1	-16.3	41.	157.7	17.3
450.0	22169.	-10.0	-31.5	15.	151.4	25.9
400.0	25110.	-16.9	-36.7	16.		

STATION ALTITUDE 3989.0 FEET MSL
7 JULY 83 1300 MDT
ASCENSION NO. 342

SIGNIFICANT LEVEL DATA
19800342
WHITE SANDS

TABLE 12

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
863.4	3989.0	31.9	13.2	32.0
872.6	4350.0	28.2	11.3	35.0
850.0	5111.9	25.7	11.1	40.0
809.2	6522.3	20.6	10.4	52.0
744.5	8866.2	14.5	7.3	62.0
700.0	10558.2	10.1	6.4	76.0
678.3	11407.9	8.1	5.6	84.0
660.3	12157.1	6.1	5.0	94.0
630.4	13402.2	3.2	2.5	95.0
606.2	14444.1	1.2	-.7	87.0
597.3	14835.9	.9	-5.0	75.0
579.5	15637.0	1.2	-4.8	64.0
536.8	17645.8	-3.8	-8.6	69.0
529.4	18056.7	-3.5	-6.2	70.0
520.0	18472.4	-4.4	-13.5	49.0
511.7	18888.7	-5.4	-17.8	37.0
500.0	19484.8	-6.3	-24.0	23.0
463.7	21358.0	-12.8	-31.5	19.0
400.0	25112.1	-17.6	-34.6	21.0

STATION ALTITUDE 3959.00 FEET MSL
7 JULY 83 1100 MDT
ASCENSION NO. 342

UPPER AIR DATA
1980207Z42
WHITE SANDS

TABLE 13

GEODETIC COORDINATES
32.40043 LAT DEG
106.47033 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
3939.0	683.4	71.9	13.2	32.0	1002.3	682.6	130.0	5.1	1.000285
4000.0	683.1	71.8	13.1	32.1	1002.3	682.5	130.0	5.1	1.000285
4500.0	665.1	27.7	11.3	38.0	999.3	677.7	131.1	5.5	1.000279
5000.0	653.3	76.1	11.1	39.3	987.6	675.9	132.1	6.0	1.000276
5500.0	838.6	74.3	11.0	43.3	976.3	673.9	132.9	6.4	1.000274
6000.0	824.1	72.5	10.6	47.6	965.3	671.8	133.6	6.9	1.000271
6500.0	809.8	70.7	10.4	51.8	954.5	669.8	134.5	7.3	1.000268
7000.0	795.6	19.4	9.8	54.0	943.0	668.2	140.0	7.6	1.000264
7500.0	781.6	18.1	9.2	56.2	929.7	666.7	150.4	6.5	1.000259
8000.0	767.8	16.8	8.5	58.3	917.6	665.1	150.5	5.8	1.000255
8500.0	754.3	15.5	7.8	60.4	905.6	663.6	140.0	6.0	1.000250
9000.0	740.9	14.2	7.3	63.3	893.7	662.1	128.5	6.8	1.000246
9500.0	727.6	12.9	7.1	68.0	881.6	660.6	127.7	6.2	1.000243
10000.0	714.6	11.6	6.8	72.7	869.7	659.1	128.4	5.7	1.000240
10500.0	701.7	10.3	6.5	77.4	858.0	657.6	133.4	5.8	1.000237
11000.0	689.0	9.1	6.0	81.1	846.1	656.2	136.7	5.8	1.000233
11500.0	676.5	7.9	5.5	85.2	834.4	654.7	136.3	5.8	1.000229
12000.0	664.1	6.6	5.3	91.9	823.1	653.2	135.0	5.7	1.000227
12500.0	651.9	5.3	4.5	94.3	811.6	651.7	130.9	5.3	1.000222
13000.0	639.9	4.1	3.4	94.7	800.2	650.2	127.9	5.0	1.000217
13500.0	628.1	3.0	2.2	94.2	788.9	648.8	127.6	4.8	1.000211
14000.0	616.4	2.1	.7	90.4	777.2	647.6	126.7	4.6	1.000205
14500.0	604.9	1.2	-1.0	85.3	765.5	646.4	124.1	4.2	1.000199
15000.0	593.6	1.0	-3.4	72.7	753.1	646.0	132.9	4.1	1.000196
15500.0	582.5	1.1	-4.5	65.9	737.7	646.1	144.2	4.7	1.000196
16000.0	571.5	.3	-5.5	64.9	726.2	645.1	137.9	6.8	1.000182
16500.0	560.8	-.9	-6.5	66.1	715.8	643.6	136.7	8.8	1.000179
17000.0	550.2	-2.2	-7.4	67.4	705.6	642.1	137.0	10.7	1.000175
17500.0	539.8	-3.4	-8.4	68.6	695.5	640.5	137.4	11.8	1.000172
18000.0	529.5	-3.5	-8.4	69.9	682.5	640.4	138.3	12.5	1.000169
18500.0	519.4	-4.5	-13.7	46.2	677.5	639.1	136.2	13.5	1.000161
19000.0	509.5	-5.6	-18.8	34.4	668.6	637.6	137.9	14.6	1.000155
19500.0	499.7	-6.3	-24.0	23.0	652.0	636.6	149.8	17.2	1.000150
20000.0	490.0	-7.2	-25.0	22.4	641.4	635.5	147.9	20.0	1.000147
20500.0	480.4	-8.1	-26.0	21.9	631.1	634.4	148.4	23.0	1.000144
21000.0	471.1	-9.0	-27.1	21.4	620.9	633.4	149.1	25.7	1.000142
21500.0	461.9	-9.9	-28.1	20.8	610.9	632.3	150.1	26.7	1.000139
22000.0	452.9	-10.8	-29.1	20.3	601.0	631.2	150.9	27.7	1.000137
22500.0	444.1	-11.6	-30.2	19.7	591.3	630.1	151.7	28.4	1.000134
23000.0	435.4	-12.5	-31.2	19.2	581.7	629.1	150.7	29.4	1.000132

UPPER AIR DATA
1°80320342
WHITE SANDS

STATION ALTITUDE 3946.00 FEET MSL
7 JULY 83 1100 MDT
ASCENSION NO. 342

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 13

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	426.8	-13.6	-32.0	19.3	572.7	627.7	150.1	30.1	1.000130
24000.0	418.3	-14.9	-32.8	19.9	564.0	626.2	150.2	30.4	1.000128
24500.0	410.0	-16.1	-33.6	20.4	555.4	624.7			1.000126
25000.0	401.9	-17.3	-34.4	20.9	547.0	623.2			1.000124

STATION ALTITUDE 3969.00 FEET MSL
7 JULY 83 1100 MDT
ASCENSION NO. 342

MANDATORY LEVELS
19800707342
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 14

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
856.0	5109.	25.7	11.1	40.	132.3	6.1
800.0	6841.	19.8	10.0	53.	138.3	7.5
750.0	8653.	15.0	7.4	61.	136.1	6.2
700.0	10558.	10.1	6.4	78.	134.0	5.8
650.0	12567.	5.1	4.3	94.	130.2	5.2
600.0	14699.	1.0	-2.3	79.	127.2	4.2
550.0	16990.	-2.2	-7.4	67.	157.0	10.8
500.0	19457.	-6.3	-24.0	23.	150.0	17.1
450.0	22136.	-11.0	-29.5	20.	151.2	27.9
400.0	25069.	-17.6	-34.6	21.		

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