

AD-A119 242 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
19318A MLRS, MISSILE NUMBERS BN-131, BN-125, BN-119, BN-108, BN--ETC(U)
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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 19318A MLRS, Missile Number BN-131,BN-125,BN-119,BN-108,BN-115, Round Number V-301/PQ-41 thru V-305/PQ-45 are presented in tabular form. ↗		

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INTRODUCTION

19318A MLRS, Missile Numbers BN-131, BN-125, BN-119, BN-108, and BN-115, Round Numbers V-301/PQ-41 thru V-305/PQ-45, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1455:00, 1455:05, 1455:10, 1455:14, and 1455:18 MDT, 16 Aug 1982. The scheduled launch times were 1445:00, 1445:04.5, 1445:09, 1445:13.5, and 1445:18 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 ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind directions 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

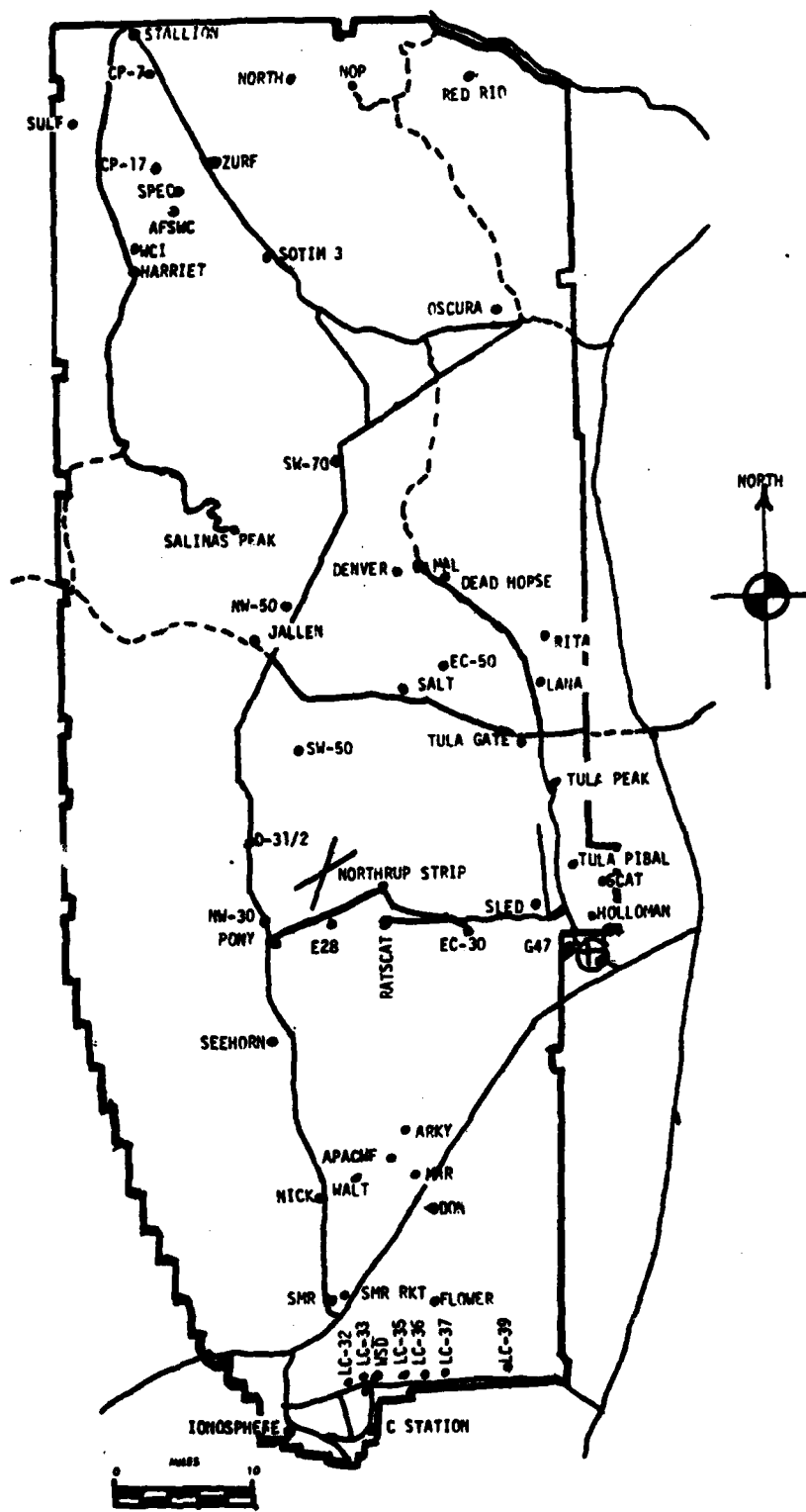
WSD	2 km
SMR	2 km

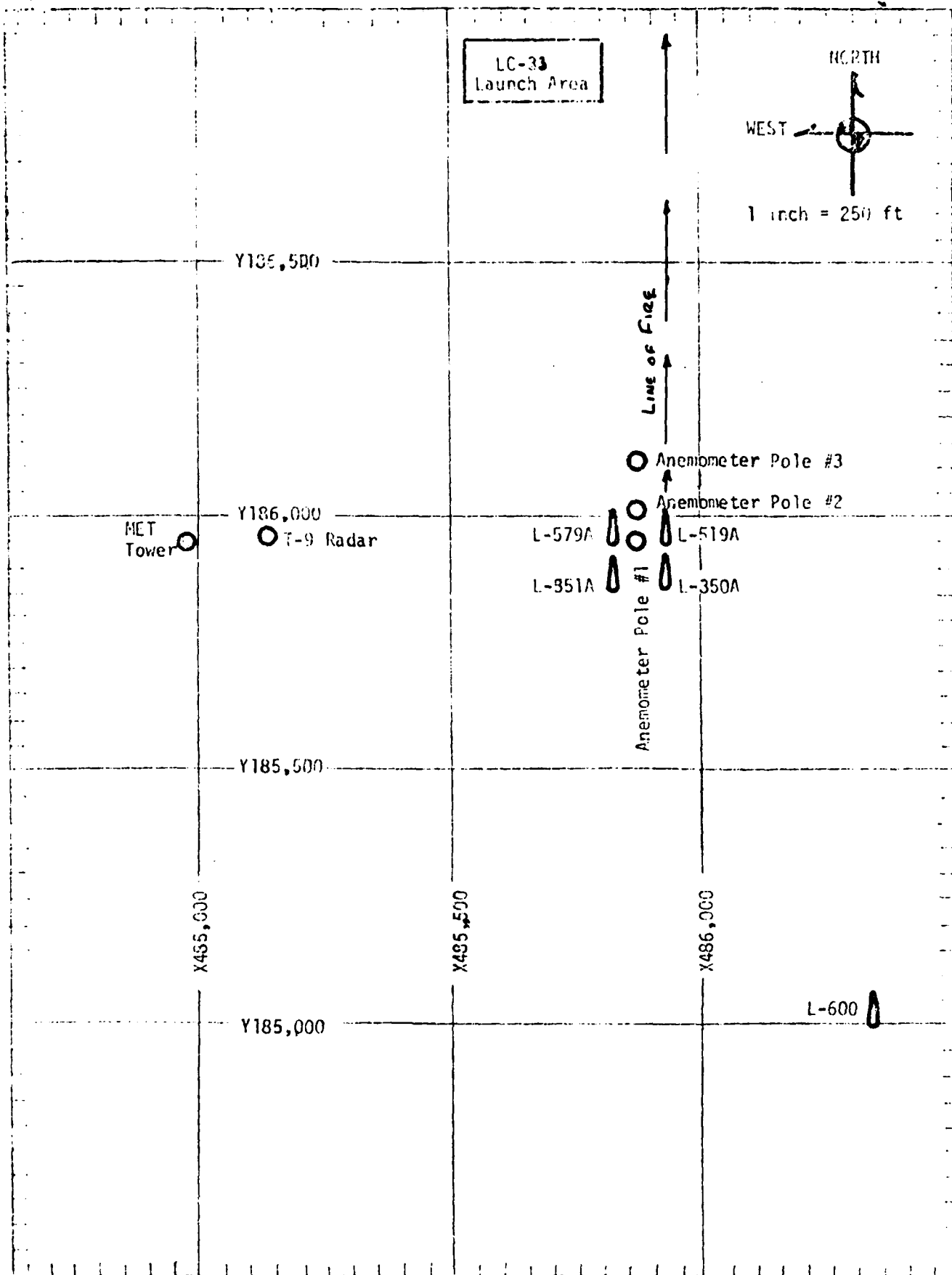
(2) Air structure data (rawinsonde) were collected at the following Met Sites:

SITE AND TIME

LC-37	1215 MDT
WSD	1330 MDT
LC-37	1345 MDT
WSD	1545 MDT

WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

TABLE <u>1</u>		STATION <u>LC-33 E&A</u>							
DATE <u>16</u> <u>AUG</u> <u>1982</u>		X= <u>484,982.64</u> Y= <u>185,957.73</u> H= <u>3995.00</u>							
DAY <u>16</u> MONTH <u>1982</u> YEAR									
TIME M D I	PRESSURE mbs	TEMPERATURE OF °C	DEW POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm/m ³	WIND DIRECTION degs Tn	WIND SPEED kts	CHARACTER kts	VISIBIL- ITY
1455	880.9	34.5	13.6	29	990	220	13		40 MI

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS	
	1st LAYER		2nd LAYER		3rd LAYER			
	AMT	TYPE	AMT	TYPE	AMT	TYPE		
	5	CU	6500'	3	CI	25,000'		CB N THRU E MOV NW
								CB SW THRU W MOV NW
								CB W THRU N MOV NW

PSYCHROMETRIC COMPUTATION

TIME:	1455	
DRY BULB TEMP.	34.5	
WET BULB TEMP.	20.2	
WET BULB DEPR.	14.3	
DEW POINT	13.6	
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
-30	222	14	-30	213	12	-30	222	17
-20	227	16	-20	235	10	-20	219	17
-10	233	16	-10	221	14	-10	228	17
0.0	225	14	0.0	226	12	0.0	226	19
+10	223	16	+10	218	14	+10	212	16

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
-30	216	10	-30	220	11
-20	216	09	-20	213	10
-10	202	07	-10	209	09
0.0	195	07	0.0	209	09
+10	189	08	+10	206	10

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
-30	209	14	-30	212	14
-20	207	13	-20	217	14
-10	195	12	-10	210	14
0.0	206	12	0.0	210	13
+10	207	12	+10	217	14

TABLE 4

TIME PILOT-BALLOON TRACKING DATA

DATE 16 August 1982

SITE: **MSD**
 TIME: **1511 MDT**
 WSTM COORDINATES:
 X= **488,717.25**
 Y= **184,862.84**
 H= **3,993.75**

SITE: **SMR**
 TIME: **1455 MDT**
 WSTM COORDINATES:
 X= **472,444.85**
 Y= **213,781.96**
 H= **4,000.99**

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	210	18
150	233	13
210	235	11
270	219	09
330	206	09
390	207	07
500	209	07
650	212	05
800	162	05
950	150	04
1150	122	08
1350	113	06
1550	155	05
1750	173	08
2000	150	10

Data obtained from Nike-Herc Radar
 Tracked pilot-balloon observation.

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	190	12
150	216	10
210	213	08
270	203	07
330	191	10
390	187	14
500	186	18
650	187	19
800	192	15
950	205	12
1150	220	15
1350	192	19
1550	173	12
1750	175	04
2000	165	06

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

TABLE-5

AIMING AND T-TIME COMPUTER MET MESSAGES
16 August 1982

LC-37 1215 MDT	WSD 1330 MDT
METCM1324063	METCM1324064
161830124882	161950122884
00187004 30790882	00320004 31180884
01204008 30690872	01236007 30830874
02218010 30390848	02346010 30590850
03235009 30010811	03285012 30220813
04226011 29560765	04266008 29790768
05245011 29110722	05243011 29210725
06226012 28690681	06253007 28680683
LC-37 1345 MDT	WSD 1545 MDT
METCM1324063	METCM1324064
161980124880	162180122881
00178006 31090880	00293006 31270881
01202011 30870871	01319016 30980872
02213014 30540847	02325010 30660848
03218012 30150809	03332011 30260811
04216016 29670765	04228005 29770766
05249015 29190722	05260011 29280723
06304008 28730680	06240011 28780682

GEODETIC COORDINATES
 32.40175 LAT N
 106.51232 LONG E

SIGNIFICANT LEVEL DATA
 2000100000
 LC-37

STATION ALTITUDE 4351.37 FEET MSL
 16 AUG. 62 1215 MDT
 ASCENSION NO. 73

TABLE-6

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
881.8	4051.4	32.7	14.3	55.0
865.9	4588.9	31.3	11.7	50.0
850.0	5132.9	29.0	11.1	55.0
765.7	6144.7	20.7	9.0	47.0
700.0	10666.8	14.1	0.5	60.0
612.7	14310.7	5.1	3.4	89.0
596.1	15048.1	3.7	1.7	67.0

STATION ALTITUDE 4031.0 FEET MSL
16 AUG. 52
ASCENSION NO. 74

UPLINK AIR DATA
200100070
LC-37

TABLE-7

GEODETIC COORDINATES
32.40175 LAT DEG
100.51232 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE IN DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY G/CM ³	WIND OF SPEED KNOTS	WIND DATA DIRECTION DEGREES (T)	INDEX OF REFRACTION
4051.4	801.8	32.7	53.0	997.5	065.7	105.0	1.000209
4500.0	800.5	31.5	50.5	980.9	082.1	115.1	1.000270
5000.0	855.9	29.6	32.3	970.0	079.0	122.5	1.000275
5500.0	859.2	28.0	34.7	960.1	070.1	127.5	1.000270
6000.0	824.8	26.6	37.1	952.9	070.5	131.1	1.000267
6500.0	810.6	25.2	39.4	946.0	074.9	130.0	1.000264
7000.0	790.7	23.9	41.7	929.0	073.4	120.5	1.000260
7500.0	785.0	22.5	44.0	917.4	071.0	127.5	1.000250
8000.0	769.6	21.1	46.3	905.9	070.2	127.7	1.000255
8500.0	750.1	19.8	48.3	894.1	069.0	120.2	1.000249
9000.0	742.8	18.5	51.4	882.4	067.1	121.1	1.000245
9500.0	729.7	17.2	54.0	873.0	065.0	134.0	1.000242
10000.0	710.8	15.8	56.6	859.4	064.1	135.5	1.000230
10500.0	704.2	14.5	59.1	848.2	062.5	135.1	1.000234
11000.0	691.5	13.3	62.7	830.7	061.1	131.1	1.000231
11500.0	679.0	12.0	66.0	825.1	059.0	120.2	1.000228
12000.0	660.7	10.8	70.6	810.7	058.2	125.2	1.000224
12500.0	654.6	9.6	74.0	802.5	050.7	125.7	1.000221
13000.0	642.0	8.3	78.0	791.4	050.5	122.0	1.000218
13500.0	631.1	7.1	82.5	789.0	050.0	112.2	1.000214
14000.0	619.7	5.9	86.5	769.9	052.5	112.2	1.000211
14500.0	600.4	4.7	88.5	759.1	051.0	112.2	1.000206
15000.0	597.2	3.8	87.1	747.9	049.0	112.2	1.000201

STATION ALTITUDE 951.37 FEET MSL
 16 AUG. 52
 ASCENSION NO. 78

MA. DATUM LEVELS
 2200100073
 LC-37

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LONG DEG

TABLE-8

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMID.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT	REL. HUMID.	DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	5129.	29.0	11.1	33.		124.0	6.5
800.0	6086.	24.2	10.2	41.		120.9	10.3
750.0	8724.	19.2	8.5	50.		129.1	10.9
700.0	10656.	14.1	6.5	60.		132.5	14.1
650.0	12694.	9.1	5.1	70.		123.3	10.8
600.0	14855.	4.0	2.1	87.			

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

SIGHTING DATA
2007.0400
DATE JAN 00

TABLE-9

STATION ALTITUDE 549.000 FEET MSL
1330 PDT
16 AUG. 62
ASCENSION NO. 403

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES	WET BULB DEGREES	
683.5 396.0	36.7	13.5	25.0
675.5 426.0	32.9	9.7	24.0
650.0 513.4	31.2	10.0	27.0
699.0 657.0	26.4	7.9	31.0
793.4 692.3	27.2	9.1	32.0
721.0 971.4	17.4	6.9	50.0
700.0 1069.4	14.2	6.0	61.0
657.3 1242.4	8.9	5.0	50.0
596.9 1503.6	3.3	-0.5	17.0

STATION ALTITUDE 3989.00 FEET MSL
16 AUG. 82
ASCENSION NO. 403

UPPER AIR DATA
2280020403
WHITE SANDS
TABLE-10

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE WETPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	883.5	36.7	13.5	25.0	980.8	688.0	180.0	4.1	1.000281
4000.0	883.2	36.5	13.3	25.0	986.9	687.8	179.6	4.1	1.000280
4500.0	868.4	32.4	9.8	24.8	984.8	682.8	171.2	4.7	1.000269
5000.0	853.6	31.5	10.0	26.5	971.2	681.8	164.7	5.4	1.000267
5500.0	839.4	30.0	9.5	28.0	959.5	680.1	159.6	6.1	1.000263
6000.0	825.1	28.3	8.8	29.4	948.5	678.2	155.7	6.9	1.000259
6500.0	811.1	26.7	8.0	30.8	937.8	676.2	152.6	7.7	1.000254
7000.0	797.2	26.9	9.1	32.5	920.4	670.7	150.1	8.5	1.000254
7500.0	783.4	25.2	8.9	35.7	909.8	674.7	148.0	9.3	1.000252
8000.0	769.8	23.4	8.7	38.9	899.3	672.8	146.3	10.2	1.000249
8500.0	750.5	21.7	8.3	42.2	889.0	670.7	144.2	10.2	1.000246
9000.0	743.4	19.9	7.8	45.4	878.9	668.7	141.6	9.9	1.000242
9500.0	730.5	18.2	7.2	48.6	869.0	666.7	139.3	9.6	1.000239
10000.0	717.6	16.5	6.9	53.2	858.7	664.7	136.6	9.4	1.000236
10500.0	704.9	14.8	6.9	58.8	848.2	662.9	136.2	9.0	1.000234
11000.0	692.3	13.3	6.7	64.3	837.5	661.1	136.3	8.5	1.000232
11500.0	679.9	11.7	6.4	69.8	826.9	659.3	134.9	8.1	1.000229
12000.0	667.6	10.2	6.0	75.3	816.4	657.5	130.2	7.8	1.000226
12500.0	655.6	8.7	5.5	79.9	805.9	655.8	125.2	7.6	1.000223
13000.0	643.6	7.7	4.3	79.3	794.4	654.5	117.0	7.8	1.000217
13500.0	631.8	6.6	3.2	78.8	783.1	653.1	108.3	8.4	1.000212
14000.0	620.2	5.5	2.0	78.2	771.9	651.7			1.000207
14500.0	608.8	4.4	.9	77.6	760.9	650.4			1.000202
15000.0	597.6	3.4	-.3	77.0	750.0	649.1			1.000197

STATION ALTITUDE 3989.00 FEET MSL
16 AUG. 82 1330 MDT
ASCENSION NO. 403

MANDATORY LEVELS
2280020403
WHITE SANDS
TABLE-11

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	5129.	31.2	10.0	27.	163.2	5.6
800.0	6895.	27.1	9.0	32.	150.6	8.3
750.0	8748.	20.8	8.0	44.	143.0	10.0
700.0	10685.	14.2	6.8	61.	136.2	8.8
650.0	12720.	8.3	4.9	80.	122.3	7.5
600.0	14876.	3.6	-0.0	77.		

GLONALIC COORDINATES
52.40175 LAT DEG
106.51232 LONG DEG

SIGNIFICANT LEVEL DATA

230100Z79
LC-37

TABLE-12

STATION ALTITUDE 4051.7 FEET MSL
16 AUG. 82 1345 HDT
ASCENSION NO. 79

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
880.2 4051.4	36.1 12.3	4.0
867.2 4494.3	32.9 10.3	25.0
850.0 5085.2	30.8 10.2	28.0
723.8 9707.2	17.3 0.4	50.0
700.0 10643.0	14.7 0.0	04.0
644.4 12923.7	8.3 0.4	88.0
631.6 13289.2	7.4 0.3	94.0
627.6 13641.3	6.8 4.0	00.0
591.2 15069.0	3.9 -0.1	75.0

STATION ALTITUDE 4651.27 FEET MSL
16 AUG. 62 1345 MDT
ASCENSION NO. 79

UPPER AIR DATA
2280160079
C-3/
TABLE-13

GEODETIC COORDINATES
32.40175 LAT DEG
106.51252 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEW POINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND M/SEC	WIND DIRECTION DEGREES (T)	WIND SPEED KNOTS	INDEX OF REFRACTION
4051.4	860.2	36.1	12.3	24.0	983.4	687.2	100.0	6.0	1.000277
4500.0	867.0	32.9	10.3	25.0	981.0	683.4	105.5	7.0	1.000269
5000.0	852.5	31.1	10.2	27.6	970.7	681.4	110.1	8.1	1.000267
5500.0	837.8	29.6	10.4	30.5	956.0	679.0	113.0	9.2	1.000260
6000.0	823.4	28.1	10.6	33.5	940.5	676.2	116.3	10.4	1.000264
6500.0	809.2	26.7	10.6	36.6	934.0	676.0	116.4	11.6	1.000262
7000.0	795.2	25.2	10.5	39.6	922.9	675.0	120.2	12.8	1.000260
7500.0	781.5	23.7	10.3	42.6	911.5	673.3	122.9	13.4	1.000257
8000.0	766.1	22.3	10.0	45.7	900.2	671.7	126.0	13.7	1.000254
8500.0	754.8	20.8	9.6	48.7	889.1	670.0	129.0	14.0	1.000251
9000.0	741.8	19.4	9.2	51.7	876.2	668.3	132.7	13.6	1.000247
9500.0	729.0	17.9	8.7	54.7	867.5	666.0	137.2	13.2	1.000244
10000.0	716.3	16.5	8.3	58.5	850.5	664.9	142.2	12.6	1.000241
10500.0	703.6	15.1	8.1	62.8	843.4	663.3	146.0	11.8	1.000238
11000.0	691.0	13.7	7.9	67.8	834.3	661.7	150.0	10.6	1.000235
11500.0	678.6	12.3	7.5	73.0	823.3	660.1	153.9	9.6	1.000232
12000.0	666.4	10.9	7.3	78.3	812.5	658.5	161.4	8.7	1.000229
12500.0	654.4	9.5	6.8	83.5	801.9	656.6	166.0	8.2	1.000226
13000.0	642.6	8.1	6.5	89.3	791.4	655.2	151.0	7.7	1.000223
13500.0	630.9	7.0	5.4	89.2	780.2	653.9			1.000217
14000.0	619.3	6.1	3.4	83.2	769.0	652.5			1.000209
14500.0	607.9	5.1	1.8	79.4	757.9	651.2			1.000203
15000.0	596.7	4.0	.1	75.5	747.0	649.9			1.000197

STATION ALTITUDE 4551.37 FEET MSL
 16 AUG. 82
 ASCENSION NO. 79

MANDATORY LEVELS
 220100079
 LC-37

TABLE-14

PRESSURE EQUIVALENTIAL		TEMPERATURE		REL. HUMIDITY		ALLO DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT DEGREES	PERCENT	WIND DIRECTION	WIND SPEED	WIND ANGLE
850.0	5081.	30.8	10.2	20.	110.0	0.3	
800.0	6048.	25.7	10.0	39.	119.7	1.4	
750.0	8095.	20.3	9.5	50.	130.2	14.2	
700.0	10632.	14.7	6.0	64.	147.7	11.5	
650.0	12674.	9.9	6.7	85.	155.1	0.0	
600.0	14836.	4.3	0.0	77.			

STATION ALTITUDE 3989.00 FEET MSL
16 AUG. 62 1545 MDT
ASCENSION NO. 405

SIGNIFICANT LEVEL DATA

2280020005

WHITE SANDS

TABLE-15

GEODETIC COORDINATES
32-40043 LAT DEG
106-37033 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
881.2	3989.0	37.5	11.5	41.0
875.1	4193.9	34.3	10.0	35.0
850.0	5060.2	31.4	14.5	30.0
784.9	7385.3	24.8	10.7	41.0
727.3	9560.6	18.7	7.5	48.0
700.0	10634.4	15.2	6.0	54.0
655.0	12471.7	10.2	4.0	68.0
604.0	14667.0	3.4	3.1	98.0
571.6	16133.1	0.2	-0.1	98.0
540.4	17606.0	-3.5	-3.0	95.0
525.2	18348.3	-4.3	-4.4	99.0
521.3	18542.2	-1.7	-1.0	99.0
513.0	18960.8	-5.0	-0.5	90.0
500.0	19624.1	-5.5	-5.0	99.0
495.0	19852.8	-5.2	-5.5	99.0
493.4	19863.1	-0.5	-0.0	99.0
491.3	20080.1	-7.4	-7.5	99.0
488.4	20232.4	-6.3	-0.4	99.0
485.5	20385.1	-9.2	-9.5	99.0
481.2	20612.5	-7.6	-7.7	99.0
472.8	21062.4	-9.5	-14.5	67.0
460.2	21748.4	-10.4	-15.5	66.0
446.4	22516.0	-13.1	-30.5	22.0
400.0	25242.5	-17.8	-33.0	23.0

GEODETIC COORDINATES
32-40043 LAT DEG
106.37033 LON DEG

UPPER AIR DATA
2200020400
WHITE SANDS
TABLE-16

STATION ALTITUDE 3400 FEET MSL
16 AUG. 42
ASCENSION NO. 405

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND M/SEC	WIND DATA DIRECTION VELOCITY (KNOTS)	INDEX OF REFRACTION
3489.0	881.2	37.5	21.0	982.4	686.0	105.0	1.000272
4000.0	860.9	37.3	21.7	982.5	689.5	105.1	1.000274
4500.0	860.2	33.3	35.4	977.0	684.7	109.0	1.000291
5000.0	851.7	31.6	35.9	960.4	682.0	172.5	1.000264
5500.0	837.3	30.2	36.9	954.0	680.9	175.5	1.000278
6000.0	823.1	28.7	38.0	943.2	679.2	176.1	1.000275
6500.0	809.1	27.3	39.1	931.8	677.5	179.3	1.000267
7000.0	795.3	25.9	40.2	920.6	675.9	180.0	1.000262
7500.0	781.0	24.5	41.4	909.4	674.2	185.0	1.000257
8000.0	766.2	23.1	43.0	890.0	672.5	143.0	1.000253
8500.0	754.6	21.7	44.0	880.7	670.9	142.0	1.000248
9000.0	741.7	20.3	46.2	875.7	669.2	140.7	1.000244
9500.0	728.6	18.9	47.8	864.0	667.5	141.5	1.000239
10000.0	716.0	17.3	50.5	854.4	665.7	143.5	1.000235
10500.0	703.4	15.6	53.2	844.1	663.7	142.8	1.000231
11000.0	690.8	14.2	56.6	833.3	662.1	140.3	1.000228
11500.0	678.4	12.8	60.6	822.2	660.5	134.2	1.000225
12000.0	666.3	11.5	64.4	811.4	658.9	132.4	1.000222
12500.0	654.3	10.1	68.4	800.8	657.3	130.4	1.000218
13000.0	642.3	8.6	75.2	790.4	655.5	129.4	1.000216
13500.0	630.6	7.0	82.1	780.2	653.7	128.5	1.000214
14000.0	619.1	5.5	88.9	770.2	651.9	125.3	1.000211
14500.0	607.7	3.9	95.7	760.4	650.0	118.6	1.000208
15000.0	596.5	2.7	98.0	749.9	648.5	115.2	1.000203
15500.0	585.4	1.6	98.0	739.0	647.1	109.0	1.000198
16000.0	574.5	.5	98.0	728.4	645.8	105.4	1.000194
16500.0	563.7	-.7	98.0	718.0	644.2	100.6	1.000189
17000.0	553.0	-2.0	98.0	707.9	642.7	111.5	1.000184
17500.0	542.6	-3.2	98.0	698.0	641.1	116.6	1.000180
18000.0	532.3	-3.9	97.5	688.3	640.2	121.3	1.000177
18500.0	522.2	-2.3	97.0	679.0	642.4	122.1	1.000176
19000.0	512.2	-5.8	96.2	669.5	637.9	120.6	1.000169
19500.0	502.4	-5.6	98.4	652.1	636.2	128.1	1.000166
20000.0	492.8	-2.4	99.0	631.7	632.5	134.4	1.000167
20500.0	483.3	-8.4	99.0	614.5	634.7	134.2	1.000159
21000.0	474.0	-9.2	71.4	624.3	633.4	135.9	1.000151
21500.0	464.7	-10.1	66.4	614.4	632.4	135.7	1.000147
22000.0	455.6	-11.3	51.6	605.5	630.0	136.0	1.000142
22500.0	446.7	-13.0	22.1	596.0	628.4	138.6	1.000136
23000.0	437.8	-13.9	22.2	586.1	627.4	141.0	1.000134

STATION ALTITUDE 3400.00 FEET MSL
 16 AUG. 82
 ASCENSION NO. 405

UPPER AIR DATA
 2200020003
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE-16 cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ WATER	SPEED OF SOUND M/SEC	WIND DATA DIRECTION DEGREES (IN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	429.1	-14.8	22.4	576.3	620.0			1.000131
24000.0	420.5	-15.7	22.5	568.7	620.3			1.000129
24500.0	412.1	-16.5	22.7	559.3	624.2			1.000127
25000.0	403.9	-17.4	22.9	550.0	623.1			1.000125

STATION ALTITUDE 3489.00 FEET MSL
 16 AUG. 62 1545 PDT
 ASCENSION NO. 405

MANUATORY LEVELS
 2200.040J
 WHITE SANDS
 TABLE-17

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

PRESSURE GEOPOTENTIAL MILLIBARS	FET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUMIDITY PERCENT	WIND DATA	
				DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	5057.	31.4	30.	172.0	7.0
800.0	6028.	26.4	40.	172.0	7.9
750.0	6681.	21.2	45.	141.5	9.2
700.0	10624.	15.2	54.	141.7	10.8
650.0	12668.	9.6	71.	130.0	6.9
600.0	14827.	3.0	90.	114.9	11.5
550.0	17124.	-2.3	98.	112.9	14.1
500.0	19596.	-5.5	99.	130.0	18.5
450.0	22279.	-12.4	34.	137.0	19.6
400.0	25199.	-17.8	23.		

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