

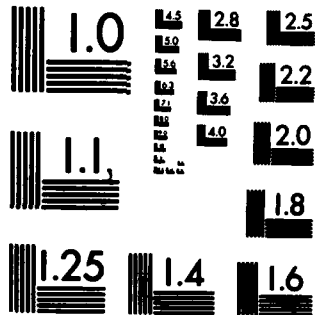
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193188 MLRS MISSILE NUMBER BN-198 BN-158 BN-170 BN-209 1/1
BN-194 BN-215 ROUN..(U) ARMY ELECTRONICS RESEARCH AND
DEVELOPMENT COMMAND WSMR NM ATM.. D C KELLER 04 MAR 83
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NATIONAL BUREAU OF STANDARDS-1963-A

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METEOROLOGICAL DATA REPORT

19318B MLRS

Missile Number BN-198, BN-158, BN-170,
BN-209, BN-194, BN-215

Round Number V-443/OT-49 Thru V-448/OT-54
4 March 1983

by

DONALD C. KELLER

Program Support Coordinator

Phone Number (505) 679-9568

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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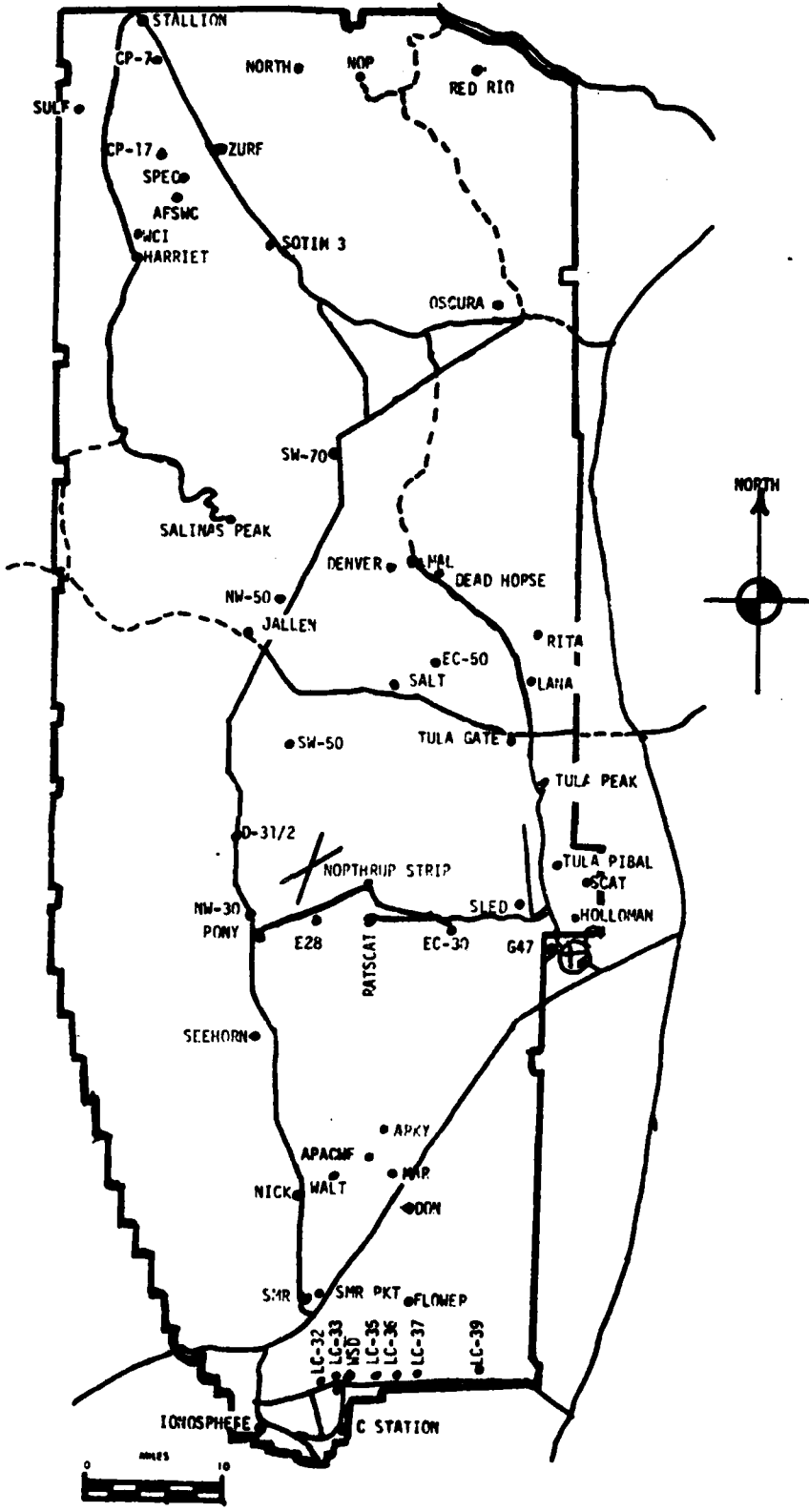
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 193188 MLRS, Missile Number BN-193, BN-158, BN-170, BN-209, BN-194, BN-215, Round Number V-443/OT-49 Thru V-448/OT-54 are presented in tabular form.		

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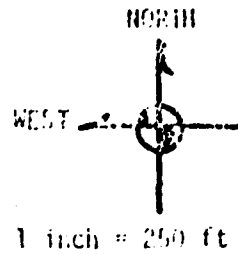
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WSMR METEOROLOGICAL SITES



IC-13
Launch Area



Y186,500

LINE OF FIRE

Anemometer Pole #3

Anemometer Pole #2

MET
Tower

Y186,000

T-9 Radar

L-579A

L-519A

L-851A

L-350A

Anemometer Pole #1

Y185,500

X485,000

X495,500

X486,000

Y185,000

L-600

PROJECT SURFACE OBSERVATION

STATION LC-33 E&A

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

TABLE 1

DATE 4 MAR 83

MONTH YEAR

TIME M S I	PRESSURE mbs	TEMPERATURE CF	TEMPERATURE CG	DEW POINT CF	DEW POINT CG	RELATIVE HUMIDITY %	DENSITY gm/cm ³	DIRECTION degs Tn	WIND SPEED kts	CHARACTER kts	VISIBIL- ITY

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS			
	1st LAYER		2nd LAYER		3rd LAYER					
	AMT	TYPE	HGT	AMT	TYPE	HGT				
	5	SC	2,500	1	AS	12,000	2	CS	20,000	RNU N-E-S

PSYCHROMETRIC COMPUTATION

TIME: MST	1617
DRY BULB TEMP.	12.8
WET BULB TEMP.	6.8
WET BULB DEPR.	6.0
DEW POINT	0.8
RELATIVE HUMID.	44

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	246	30	T -30	234	21	T -30	252	22
T -20	237	25	T -20	249	19	T -20	250	19
T -10	241	17	T -10	235	23	T -10	250	22
T .0	249	26	T .0	234	16	T .0	250	28
T +10	261	24	T +10	241	25	T +10	250	23

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	267	21	T -30	248	25
T -20	268	22	T -20	253	25
T -10	259	15	T -10	248	27
T .0	259	26	T .0	258	32
T +10	273	28	T +10	253	30

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	268	28	T -30	261	33
T -20	242	24	T -20	254	22
T -10	252	23	T -10	265	24
T .0	265	34	T .0	261	36
T +10	270	28	T +10	267	32

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 4 March 1983

STATION: LC-33

SITE:

TIME: 1617 MST

TIME

WSTM COORDINATES:

WSTM COORDINATES:

X= 484,837.34

X=

Y= 184,124.44

Y=

H= 3,975.57

H=

LAYER MIDPOINT	DIRECTION	SPEED	LAYER MIDPOINT	DIRECTION	SPEED
METERS AGL	DEGREES	KNOTS	METERS AGL	DEGREES	KNOTS
SURFACE	260	26	SURFACE		
150	260	26	150		
210	260	26	210		
270	262	29	270		
330	264	35	330		
390	265	39	390		
500	265	43	500		
650	266	50	650		
800	267	47	800		
950	268	35	950		
1150	272	35	1150		
1350	273	35	1350		
1550	283	34	1550		
1750	289	34	1750		
2000	295	31	2000		

TABLE 5

AIMING COMPUTER MET MESSAGES

4 March 1983

WSD 1231 MST
 METCM1324064
 041950122865
 00409012 23660865
 01432030 28410854
 02450020 28090829
 03466021 27720789
 04463023 27250742
 05493022 26810697
 06499034 26460653
 07493030 26050612
 08509039 25710573
 09516031 25350537

WSD 1341 MST
 METCM1324064
 042070122864
 00427018 28650864
 01454022 28390853
 02463032 28070828
 03472031 27710788
 04482032 27280741
 05483042 26920696
 06486033 26470653
 07494036 26090612
 08491041 25740573
 09491042 25370536

LC-37 1413 MST
 METCM1324063
 042120124862
 00267008 28720862
 01327007 28410852
 02410017 28180826
 03435030 27820787
 04467027 27340740
 05463031 26870695
 06497032 26440652
 07503044 26060611
 08502046 25780572
 09495042 25410536

WSD 1537 MST
 METCM1324064
 042260122863
 00471020 28820863
 01478038 28570853
 02469028 28260827
 03471023 27870788
 04484035 27390741
 05511033 27070696
 06522027 26630653
 07523029 26180612
 08512036 25750573
 09491042 25330536

STATION ALTITUDE 3489.00 FEET MSL
 4 DIA. 03 1231 10% 05T
 ASCENDING NO. 114

STRENGTH LEVEL DATA
 063000Z
 0117 56005

GEOMETRIC COORDINATES
 42.400000 LAT NFG
 106.370000 LONG WFG

TABLE 6

PRECIPITATION MILLIMETERS	GEOMETRIC ALTITUDE METERS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
864.0	3489.0	12.8	2.6
850.0	4462.1	9.2	-1.2
794.3	6289.9	3.8	-2.9
736.9	8273.1	-1.9	-2.3
700.0	9608.5	-5.4	-5.7
675.7	10631.3	-7.7	08.0
653.0	11321.0	-8.2	98.0
637.1	12017.1	-11.1	80.0
619.1	12739.2	-12.3	60.0
599.2	13271.2	-17.5	59.0
550.9	15638.9	-18.3	65.0
526.4	16750.7	-20.7	43.0
500.0	17494.3	-23.8	21.0

STATION ALTITUDE 3489.00 FEET MSL
 9 MAR 63 1231 HRS MST
 ASCENSION NO. 118

Upper Air Data
 On 30020118
 WHITE SANDS

GEODETIC COORDINATES
 42-40093 LAT NFG
 106-57033 LONG WFG

TABLE 7

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED KNOTS	SOUND SOURCE	WIND DATA		INDEX OF REFRACTION
							DIRECTION DEGREES (TH)	SPEED KNOTS	
3989.0	864.8	12.0	50.0	1050.2	654.0		210.0	12.0	1.000268
4000.0	864.5	12.7	50.0	1050.1	654.7		210.3	12.0	1.000268
4500.0	848.8	9.1	48.3	1045.1	655.3		224.0	12.5	1.000259
5000.0	833.2	7.6	52.7	1031.3	653.6		236.2	13.6	1.000256
5500.0	817.9	6.1	57.1	1017.7	651.9		250.1	15.2	1.000253
6000.0	802.0	4.7	61.5	1004.3	650.1		253.9	17.2	1.000249
6500.0	786.0	3.2	67.5	990.9	648.4		260.1	19.4	1.000247
7000.0	773.3	1.8	75.8	977.3	646.8		261.9	20.7	1.000244
7500.0	758.6	.3	88.1	964.0	645.1		262.9	21.8	1.000241
8000.0	744.6	-1.1	92.5	950.9	643.4		263.8	22.9	1.000239
8500.0	730.5	-2.5	97.2	937.8	641.7		267.1	23.7	1.000235
9000.0	716.6	-3.8	97.5	924.0	640.1		270.6	24.7	1.000229
9500.0	702.9	-5.1	97.9	911.6	638.5		273.8	25.7	1.000225
10000.0	689.4	-6.3	98.0	898.1	637.1		277.3	26.6	1.000220
10500.0	676.1	-7.4	98.0	884.7	635.7		280.6	27.6	1.000216
11000.0	663.1	-8.0	98.0	869.4	635.0		282.5	29.0	1.000211
11500.0	650.2	-8.9	95.7	855.8	633.8		280.5	31.7	1.000207
12000.0	637.5	-11.0	89.2	846.1	631.2		279.0	33.9	1.000201
12500.0	625.0	-11.9	69.6	832.6	630.0		278.2	34.7	1.000195
13000.0	612.6	-12.8	59.9	819.2	628.8		278.5	35.8	1.000190
13500.0	600.5	-13.0	59.7	806.1	627.4		279.8	37.1	1.000187
14000.0	588.5	-14.9	59.5	793.3	626.3		280.4	39.3	1.000183
14500.0	576.8	-15.9	59.3	780.6	625.0		281.4	39.4	1.000180
15000.0	565.3	-16.9	59.1	768.2	623.8		283.3	35.8	1.000177
15500.0	554.0	-18.0	62.7	755.9	622.5		286.3	31.4	1.000174
16000.0	542.8	-19.1	57.9	743.9	621.1		288.4	29.4	1.000170
16500.0	531.8	-20.2	48.0	732.0	619.8		288.9	24.4	1.000167
17000.0	521.0	-21.3	38.6	720.5	618.3			33.0	1.000163
17500.0	510.3	-22.6	29.7	709.3	616.8				1.000160

STATION ALTITUDE 3489.00 FEET (SI)
 4 MAR. 63 1231 HRS. (L)
 ASCENSION NO. 11A

COORDINATE LEVELS
 00-3002011A
 WOLFE SPRING

TABLE 8

MILLIBARS	PRESSURE OF POTENTIAL FEET	TEMPERATURE ADP DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
				DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4459.	0.2	44.	223.0	12.4
800.0	6094.	4.4	62.	255.2	17.6
750.0	7804.	-2.1	89.	263.4	22.4
700.0	9509.	-5.7	94.	274.5	25.9
650.0	11407.	-9.0	94.	280.5	31.7
600.0	13509.	-13.0	60.	274.9	37.2
550.0	15660.	-18.4	64.	287.5	29.9
500.0	17070.	-23.8	21.		

STATION ALTITUDE 3989.00 FEET MSL
 4 MAR. 43
 ASCENSION NO. 119

SIGNIFICANT LEVEL DATA
 0630020114
 WHITE SANDS
 TABLE 9

STATION ALTITUDE 3989.00 FEET MSL
 4 MAR. 43
 ASCENSION NO. 119

GEODETIC COORDINATES
 32.40043 LAT NFG
 106.37033 LON WFG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT
863.5	3989.0	12.8	1.8	47.0
850.0	4420.6	8.9	-1.2	49.0
826.2	5190.0	6.7	-1.4	56.0
777.7	6809.9	2.3	-3.2	67.0
756.6	7538.0	.4	-3.5	75.0
729.7	8488.7	-2.1	-4.1	86.0
700.0	9571.3	-3.8	-9.0	67.0
654.9	11284.7	-8.7	-12.3	75.0
616.9	12798.3	-12.2	-12.6	97.0
587.9	14003.7	-14.7	-15.1	97.0
500.0	17970.1	-23.4	-23.7	97.0

STATION ALTITUDE 3989.00 FEET MSL
 4 MAR. 43
 ASCENSION NO. 119

UPPER AIR DATA
 0630020114
 WHITE SANDS

GEODETIC COORDINATES
 32.400043 LAT NFG
 106.37033 LON WFG

TABLE 10

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED KNOTS	WIND DIRECTION DEGREES(TN)	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT					SPEED KNOTS	REFRACTION	
3989.0	863.5	12.8	1.8	47.0	1048.8	659.4	240.0	240.0	18.1	1.000266
4000.0	863.2	12.7	1.7	47.1	1048.7	659.7	240.1	240.1	18.1	1.000266
4500.0	847.5	8.7	-1.2	49.7	1045.0	654.8	246.3	246.3	19.6	1.000259
5000.0	832.0	7.2	-1.4	54.3	1031.1	653.2	251.5	251.5	21.4	1.000256
5500.0	816.7	5.9	-1.7	58.1	1017.2	651.5	255.9	255.9	23.3	1.000253
6000.0	801.6	4.5	-2.2	61.5	1003.3	649.9	259.7	259.7	25.3	1.000249
6500.0	786.8	3.1	-2.8	64.9	989.6	648.3	262.8	262.8	27.4	1.000245
7000.0	772.1	1.8	-3.2	69.1	976.0	646.8	265.5	265.5	29.5	1.000242
7500.0	757.7	.5	-3.5	74.6	962.3	645.2	267.9	267.9	31.8	1.000238
8000.0	743.4	-.8	-3.8	80.3	948.7	643.7	269.3	269.3	32.5	1.000235
8500.0	729.4	-2.1	-4.2	85.8	935.3	642.1	270.5	270.5	32.7	1.000232
9000.0	715.5	-2.9	-6.4	77.0	920.5	641.1	271.7	271.7	32.9	1.000225
9500.0	701.9	-3.7	-8.7	68.3	905.9	640.1	272.8	272.8	33.0	1.000218
10000.0	688.4	-5.0	-9.8	63.0	893.0	638.4	273.4	273.4	33.7	1.000214
10500.0	675.2	-6.5	-10.8	71.3	880.6	636.7	273.9	273.9	34.5	1.000211
11000.0	662.2	-7.9	-11.7	73.7	868.4	635.0	274.3	274.3	35.3	1.000207
11500.0	649.4	-9.2	-12.3	78.1	855.8	633.4	274.7	274.7	36.1	1.000204
12000.0	636.7	-10.4	-12.3	85.4	842.8	632.0	275.1	275.1	36.8	1.000201
12500.0	624.2	-11.5	-12.5	92.7	829.9	630.6	275.5	275.5	37.4	1.000198
13000.0	611.9	-12.6	-13.0	97.0	817.1	629.3	275.9	275.9	37.9	1.000195
13500.0	599.8	-13.7	-14.0	97.0	804.2	628.0	276.3	276.3	38.5	1.000191
14000.0	588.0	-14.7	-15.1	97.0	791.6	626.7	276.6	276.6	39.1	1.000187
14500.0	576.1	-15.8	-16.2	97.0	778.9	625.3	276.6	276.6	39.7	1.000183
15000.0	564.5	-16.9	-17.2	97.0	766.5	624.0	276.5	276.5	40.4	1.000180
15500.0	553.1	-18.0	-18.3	97.0	754.3	622.6	276.5	276.5	41.0	1.000176
16000.0	541.9	-19.1	-19.4	97.0	742.3	621.3	276.5	276.5	41.0	1.000173
16500.0	530.9	-20.2	-20.5	97.0	730.5	619.9	276.5	276.5	41.0	1.000170
17000.0	520.2	-21.3	-21.6	97.0	718.9	618.5	276.5	276.5	41.0	1.000167
17500.0	509.7	-22.4	-22.7	97.0	707.5	617.2	276.5	276.5	41.0	1.000164

STATION ALTITUDE 3989.00 FEET MSL
 4 MAR. 43
 ASCENSION NO. 119

MANDATORY WINDS
 06318Z 0343
 WHITE SANDS

TABLE 11

GEODETIC COORDINATES
 32.41043 LAT NFG
 106.37033 LON WFG

PRESSURE MILLIBARS	POTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	WIND DIRECTION DEGREES(TN)	WIND SPEED KNOTS
850.0	4418.	8.9	245.4	19.4
800.0	6051.	4.4	260.0	25.5
750.0	7762.	-0.2	268.8	32.5
700.0	9562.	-3.8	273.0	33.1
650.0	11464.	-9.1	274.6	30.1
600.0	13480.	-13.6	276.3	30.5
550.0	15633.	-18.3		
500.0	17946.	-23.4		

STATION ALTITUDE 4051.37 FEET MSL
 4 MAR. 63 1413 HRS MST
 ASCENSION NO. 32

STIGMIFOLIUM LEVEL DATA
 0630140032
 LC-37

TABLE 12

GEODTIC COORDINATES
 32.40175 LAT DEG
 106.31232 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
862.0	4051.4	13.1	1.5	45.0
855.9	4246.4	10.2	-1.8	43.0
850.0	4435.3	9.8	-1.9	44.0
830.4	5070.1	8.3	-1.8	49.0
763.2	7335.1	2.1	-4.2	63.0
716.6	8992.3	-2.9	-4.5	89.0
700.0	9601.5	-4.4	-5.9	89.0
662.4	11020.8	-8.7	-9.0	98.0
653.2	11377.7	-8.4	-8.5	99.0
636.0	12055.6	-10.4	-11.7	94.0
593.0	13813.2	-14.5	-14.6	99.0
584.6	14168.9	-14.5	-14.7	98.0
543.0	15996.6	-18.1	-18.7	95.0
534.8	16369.7	-19.4	-20.4	92.0
500.0	18000.2	-24.0	-26.3	81.0

STATION ALTITUDE 4051.37 FEET MSL
 4 MAR. 43
 ASCENSION NO. 32

UPPER AIR DATA
 063018003P
 LC-37
 TABLE 13

GEOMETRIC ALTITUDE MSL FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT DEGREES	REF. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	862.0	13.1	1.5	45.0	1045.9	460.1	150.0	0.0	1.000264
4500.0	848.0	9.6	-1.0	44.5	1042.1	655.9	177.0	6.9	1.000257
5000.0	832.5	8.5	-1.8	40.4	1027.4	654.6	208.0	7.8	1.000255
5500.0	817.2	7.1	-2.1	51.7	1013.3	653.0	228.1	10.3	1.000251
6000.0	802.1	5.8	-2.6	54.7	999.5	651.4	239.5	13.6	1.000247
6500.0	787.3	4.4	-3.2	57.8	986.0	649.8	246.3	17.2	1.000243
7000.0	772.8	3.0	-3.8	60.9	972.6	648.1	250.7	21.0	1.000240
7500.0	758.4	1.6	-4.1	65.6	959.5	646.5	253.8	24.8	1.000236
8000.0	744.1	.1	-4.1	73.4	946.6	644.7	256.0	28.7	1.000234
8500.0	730.1	-1.4	-4.2	81.3	933.9	642.9	258.2	29.2	1.000231
9000.0	716.4	-2.9	-4.5	89.0	921.4	641.2	260.5	28.4	1.000228
9500.0	702.7	-4.2	-5.7	89.0	908.1	639.6	262.9	27.7	1.000223
10000.0	689.2	-5.6	-6.8	91.5	895.6	637.9	266.3	27.9	1.000219
10500.0	676.0	-7.1	-7.8	94.7	883.5	636.0	270.2	29.2	1.000215
11000.0	662.9	-8.6	-8.9	97.9	871.5	634.2	273.8	30.5	1.000211
11500.0	650.1	-8.9	-9.1	98.1	855.3	633.9	277.5	33.6	1.000207
12000.0	637.4	-10.7	-11.4	94.4	844.8	631.6	280.6	37.0	1.000202
12500.0	624.8	-11.8	-12.4	95.3	831.7	630.2	282.0	40.2	1.000198
13000.0	612.5	-12.8	-13.2	96.7	818.6	629.0	282.5	43.4	1.000195
13500.0	600.4	-13.9	-14.1	98.1	805.7	627.7	282.8	45.7	1.000191
14000.0	588.6	-14.5	-14.7	98.5	791.7	626.9	282.7	46.9	1.000187
14500.0	576.8	-15.2	-15.5	97.5	777.9	626.1	282.6	47.6	1.000184
15000.0	565.3	-16.1	-16.5	96.6	765.4	624.9	282.2	46.3	1.000180
15500.0	554.0	-17.1	-17.6	95.8	753.0	623.7	281.8	45.0	1.000177
16000.0	542.9	-18.1	-18.7	95.0	740.9	622.5	280.3	44.5	1.000173
16500.0	531.9	-19.8	-20.8	91.1	730.7	620.4	278.6	44.1	1.000170
17000.0	521.1	-21.2	-22.7	87.7	719.9	618.6			1.000166
17500.0	510.4	-22.6	-24.5	84.4	709.2	616.9			1.000163
18000.0	500.0	-24.0	-26.3	81.0	698.7	615.1			1.000160

STATION ALTITUDE 4051.37 FFEET MSL
 4 MAR. 63 1413 HRS MST
 ASCENSION NO. 32

MANDATORY LEVELS
 0630180032
 LC-37

GEONETIC COORDINATES
 32.40175 LAT DFG
 106.31232 LON DFG

TABLE 14

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION (DEGREES(TN))	SPEED KNOTS
850.0	4432.	9.8	-1.9	44.	172.5	7.0
800.0	6073.	5.6	-2.7	55.	240.7	14.1
750.0	7790.	.7	-4.1	70.	255.2	27.1
700.0	9592.	-4.4	-5.9	89.	263.4	27.6
650.0	11491.	-8.0	-9.1	94.	277.5	33.6
600.0	13505.	-13.9	-14.1	94.	282.8	45.7
550.0	15662.	-17.5	-18.0	94.	281.3	44.8
500.0	17976.	-24.0	-26.3	81.		

STATION ALTITUDE 3989.00 FEET MSL
 4 MAR. 43
 ASCENSION NO. 121

STATION ALTITUDE DATA
 0630020121
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT NFG
 106.37033 LONG WFG

TABLE 15

GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REF. HUM. PERCENT
862.8	14.2	49.0
850.0	10.8	46.0
761.7	2.2	68.0
733.1	-1.0	47.0
700.0	-2.3	58.0
657.8	-6.7	58.0
587.4	-14.5	73.0
553.6	-18.0	64.0
520.3	-21.9	92.0
500.0	-23.5	73.0

STATION ALTITUDE 3989.00 FFFT WSL
 4 MAR. 63 1537 HRS MST
 ASCENSION NO. 121

UPPER AIR DATA
 0630020121
 WHITE SANDS
 TABLE 16

GEODETIC COORDINATES
 32.40043 LAT DFG
 106.37053 LON DFG

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)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	862.8	14.2	3.7	49.0	1042.4	661.5	265.0	20.0	1.000269
4000.0	862.5	14.1	3.5	48.9	1042.3	661.4	265.0	20.0	1.000268
4500.0	840.9	10.5	-4	46.7	1037.3	657.0	265.2	21.3	1.000259
5000.0	831.3	9.1	-7	50.5	1023.5	655.3	265.4	22.6	1.000256
5500.0	816.1	7.6	-1.0	54.2	1009.9	653.6	265.6	23.8	1.000252
6000.0	801.1	6.2	-1.5	57.9	996.6	651.9	265.8	25.1	1.000249
6500.0	786.4	4.7	-2.0	61.6	983.4	650.2	265.9	26.3	1.000245
7000.0	771.9	3.2	-2.6	65.3	970.5	648.5	267.2	27.6	1.000241
7500.0	757.6	1.8	-3.0	70.6	957.8	646.7	271.3	28.8	1.000238
8000.0	743.4	.2	-2.9	80.0	945.2	644.9	275.0	30.2	1.000236
8500.0	729.5	-1.1	-3.5	83.9	931.9	643.3	278.3	31.7	1.000232
9000.0	715.7	-1.7	-6.1	71.9	916.5	642.5	281.2	31.4	1.000224
9500.0	702.1	-2.2	-8.9	59.9	901.3	641.8	284.1	31.3	1.000217
10000.0	688.7	-3.4	-10.5	58.0	888.3	640.3	287.1	31.2	1.000212
10500.0	675.5	-4.8	-11.8	58.0	875.8	638.6	289.2	30.8	1.000208
11000.0	662.6	-6.2	-13.1	58.0	863.6	636.9	290.7	30.1	1.000204
11500.0	649.8	-7.5	-14.0	59.6	851.2	635.3	292.2	29.3	1.000201
12000.0	637.1	-8.9	-14.8	62.2	838.9	633.6	293.4	28.9	1.000197
12500.0	624.6	-10.3	-15.6	64.9	826.8	632.0	292.6	30.1	1.000194
13000.0	612.4	-11.6	-16.4	67.5	814.9	630.3	291.9	31.3	1.000191
13500.0	600.4	-13.0	-17.3	70.1	803.2	628.7	291.3	32.5	1.000188
14000.0	588.6	-14.4	-18.2	72.7	791.6	627.0	289.4	34.0	1.000185
14500.0	576.9	-15.6	-19.7	70.3	779.6	625.5	287.3	35.6	1.000181
15000.0	565.4	-16.8	-21.4	67.2	767.6	624.0	285.4	37.3	1.000177
15500.0	554.1	-18.0	-23.0	64.1	755.8	622.6			1.000174
16000.0	542.8	-19.2	-22.8	72.9	744.2	621.0			1.000171
16500.0	531.8	-20.5	-22.8	82.1	732.8	619.4			1.000169
17000.0	521.0	-21.8	-22.8	91.4	721.7	617.8			1.000167
17500.0	510.3	-22.7	-24.8	82.8	709.4	616.7			1.000163

STATION ALTITUDE 3089.00 FEET MSL
 4 MAR. 83
 ASCENSION NO. 121

MANDATORY LEVELS
 0030020121
 WHITE SANDS

GEODETIC COORDINATES
 12.40043 LAT NFG
 106.37033 LON WFG

TABLE 17

PRESSURE GEOPOTENTIAL MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	W.P. HUM. PERCENT	WIND DATA	
			DIRECTION (DEGREES(TN))	SPEED KNOTS
850.0	10.8	46.	265.2	21.0
800.0	6.0	58.	265.8	25.2
750.0	.9	76.	273.3	29.5
700.0	-2.3	58.	284.6	31.3
650.0	-7.5	60.	292.2	29.4
600.0	-13.0	70.	291.3	32.5
550.0	-18.4	67.		
500.0	-23.5	73.		