

AD-A073 390 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
193048 6SRS, MISSILE NUMBERS 1029, 1050, 1054, 1073, 1074, 1056--ETC(U)
JUL 79

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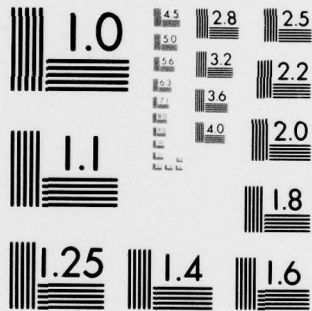
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DR 1039
JULY 1979

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METEOROLOGICAL DATA REPORT

19304B GSRS

Missile Nos. 1029, 1050, 1054, 1073, 1074, 1056

Round Nos. V-49, V-50, V-51, V-52, V-53, V-54

2 July 1979

by

White Sands Meteorological Team

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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM

UNITED STATES ARMY ELECTRONICS COMMAND

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1039	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number) 1.. Ballistics 2. Meteorology 3. Wind		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of 19304B GSRS, Missile Nos. 1029, 1050, 1054, 1073, 1074, 1056, Round, Nos. V-49, V-50, V-51, V-52, V-53, V-54, are presented in tabular form.		

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INTRODUCTION

19304B GSRS, Missile Numbers 1029,1050,1054,1073,1074,1056 Round Numbers V-49 thru V-54, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1430, 1430:02, 1430:05, 1430:07, 1430:09 and 1430:12 MDT, on 2 July 1979

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 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 RAPTS T-9 pibal observation at:

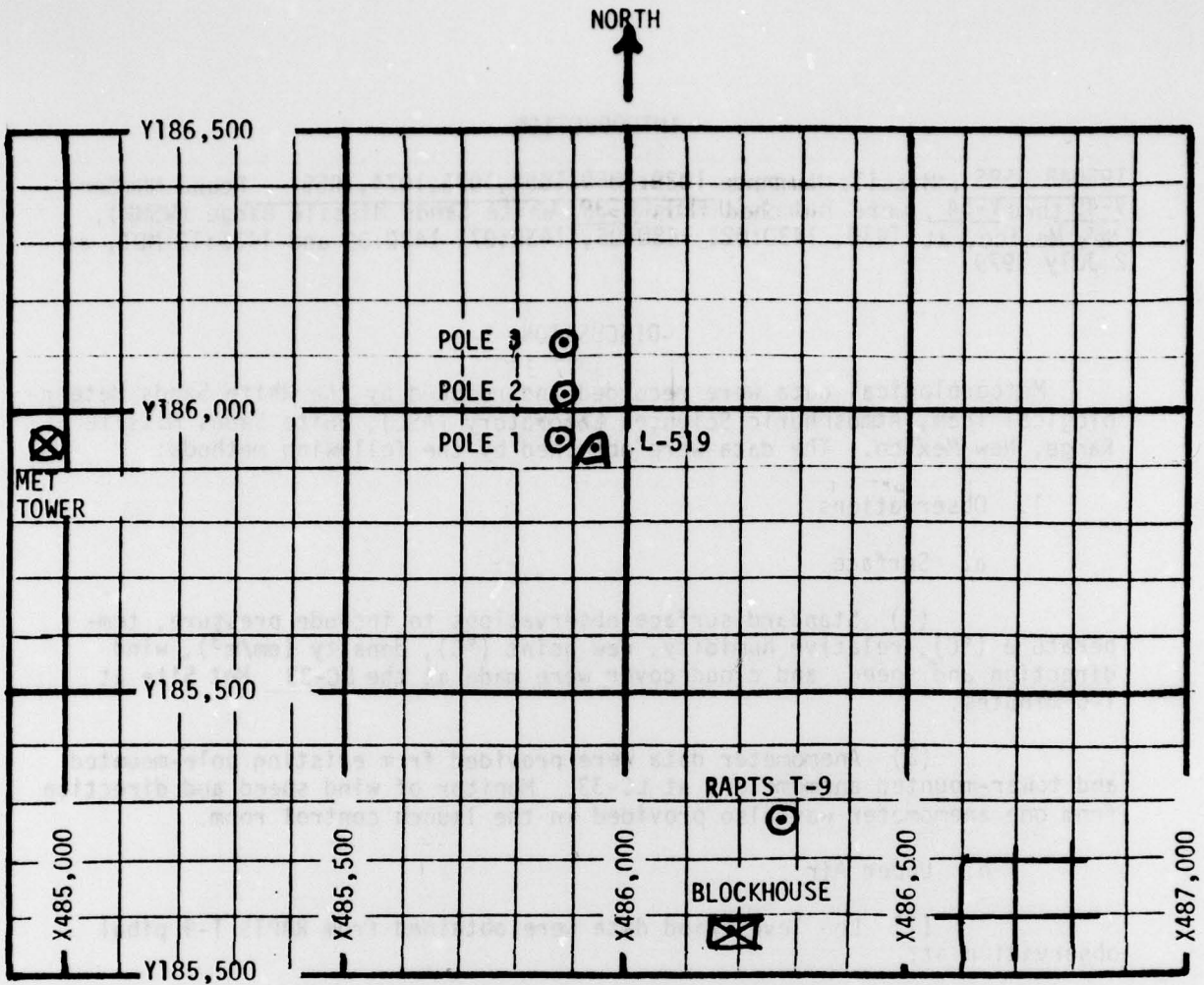
SITE AND ALTITUDE

LC-33 1050 meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 100,500 feet in 500-foot increments.

SITE AND TIME

SMR 1330 MST



1. MET TOWER - 4 Bendix Model T-120 Anemometers at 12 ft, 62 ft, 102 ft and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.
 - (a) Pole #1 - 38.7 ft
 - (b) Pole #2 - 53.0 ft
 - (c) Pole #3 - 83.6 ft
3. RAPTTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

TABLE 1. Surface Observations taken at LC-33, 2 July 1979
 at 1430 MDT, 19304B GSRS, Missile Nos., 1029,1050,
 1054,1073,1074,1056, Round Nos., V-49 thru V-54.

ELEVATION	3977.30	FT/MSL
PRESSURE	878.0	MBS
TEMPERATURE	33.2	°C
RELATIVE HUMIDITY	26	%
DEW POINT	11.0	°C
DENSITY	992	GM/M ³
WIND SPEED	02	MPH
WIND DIRECTION	035	DEGREES
CLOUD COVER	3 cu	
CLOUD COVER	1 ac	
CLOUD COVER	2 ci	

TABLE 2. LC-33 FIXED POLE ANEMOMETER-MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	000	00	-30	018	1.0	-30	356	4.0
-20	000	00	-20	000	00	-20	335	4.0
-10	000	00	-10	000	00	-10	285	3.0
0.0	000	00	0.0	029	2.0	0.0	307	4.0
+10	000	00	+10	068	3.0	+10	342	6.0

Type 19304B GSRS, Missile Nos., 1029, 1050, 1054, 1073, 1074, 1056, Round Nos., V-49 thru V-54, launched from LC33 on 2 July 1979 at 1430, 1430:02, 1430:05, 1430:07, 1430:09, 1430:12 MDT.

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

NOTE: Wind directions are referenced to the firing azimuth _____
 or true north true north .

TABLE 3. LC-33 METEOROLOGICAL TOWER ANEMOMETER-MEASURED WINDS (202 FT. TOWER)

LEVEL #1 12 ft.			LEVEL #2 62 ft.		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	297	4.0	-30	MISSING	4.0
-20	298	3.0	-20	MISSING	4.0
-10	298	3.0	-10	MISSING	2.0
0.0	303	2.0	0.0	MISSING	2.0
+10	303	2.0	+10		2.0
LEVEL #3 102 ft.			LEVEL #4 202 ft.		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	302	30	-30	312	2.0
-20	303	2.0	-20	317	2.0
-10	330	1.0	-10	312	2.0
0.0	317	2.0	0.0	297	2.0
+10	310	1.0	+10	309	2.0

WTSM Coordinates: X484,982.64 Y185,957.73 H3983.00 (base)

Type 19304B GSRS, Missile Nos., 1029, 1050, 1054, 1073, 1074, 1056, Round Nos., V-49 thru V-54 launched from LC-33 on 2 July 1979 at 1430, 1430:02 1430:05, 1430:07, 1430:09, 1430:12 MDT.

NOTE: Wind directions are referenced to the firing azimuth _____ or true north true north.

TABLE 4. PILOT-BALLOON-MEASURED WIND DATA (30-METER INCREMENTS)

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
SFC	035	2.0
30	038	1.5
60	040	1.0
90	043	0.5
120	CALM	
150	038	1.0
180	022	3.0
210	014	4.0
240	038	4.0
270	062	4.0
300	086	4.0
330	109	4.0
360	085	4.5

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
390	060	5.0
420	035	5.5
450	010	6.0
480	014	7.0
510	018	8.0
540	022	9.0
570	026	9.5
600	013	8.5
630	360	7.0
660	347	6.0
690	333	4.5
720	355	4.5
750	016	4.5

Release Point Coordinates (WSTM): X486,037.24 Y 182,350.16 H3977.30

Released from LC-33 on 2 July 1979 at 1430, 1430:02, 1430:05, 1430:09, and 1430:12.

Type 19304B GSRS, Missile Nos., 1029, 1050, 1054, 1073, 1074, 1056 Round Nos., V-49 thru V-54 launched from LC-33 on 2 July 1979 at 1430, 1430:02, 1430:05, 1430:07, 1430:09, 1430:12.

NOTE: Wind directions are referenced to the firing azimuth _____ or true north true north.

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
780	037	4.5
810	058	4.0
840	044	3.0
870	029	2.0
900	015	1.0
930	CALM	
960	348	0.5
990	336	1.0
3 1020	324	1.5
1060	312	1.5
1080		
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
1440		
1470		
1500		
1530		
1560		
1590		
1620		
1650		
1680		
1710		
1740		
1770		
1800		
1830		
1860		
1890		
1920		
1950		
1980		
2010		
2040		
2070		

STATION ALTITUDE 3997.30 FEET MSL
 2 JULY 79
 ASCENSION NO. 224

SIGNIFICANT LEVEL DATA
 1830060224
 S M R

GEODETTIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
877.1	3997.3	31.6	13.8	34.0
850.0	4919.3	28.6	9.3	30.0
760.4	8122.2	19.8	8.8	49.0
700.0	10438.0	12.2	7.1	71.0
657.2	12165.6	7.4	5.9	90.0
633.2	13172.9	6.4	-1.2	58.0
600.6	14593.8	3.9	-2.3	64.0
564.6	16234.1	-6	-5.8	68.0
547.2	17055.4	-2.2	-7.7	66.0
530.2	17878.8	-3.3	-15.9	37.0
500.0	19396.0	-6.4	-19.6	34.0
466.2	21189.0	-8.4	-31.8	13.0
407.6	24564.3	-16.5	-36.4	13.0
400.0	25029.6	-16.9	-38.0	14.0
380.4	26267.3	-18.3	-42.3	10.0
306.6	31444.5	-30.1	-50.2	12.0
300.0	31953.0	-31.6		
250.0	36105.3	-42.5		
200.0	40961.1	-52.8		
189.4	42112.9	-55.3		
173.2	43988.7	-56.4		
157.8	45914.2	-61.6		
150.0	46947.7	-62.5		
129.4	49916.5	-67.7		
109.2	53266.9	-70.0		
100.0	55005.6	-67.5		
84.4	58397.0	-65.1		
81.4	59131.8	-61.2		
72.8	61414.0	-62.4		
70.0	62212.3	-59.8		
50.0	69230.7	-55.7		
47.2	70449.5	-53.6		
33.6	77740.6	-49.6		
30.0	80188.9	-50.7		
20.0	89016.0	-46.4		
11.8	100938.9	-34.1		

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

UPPER AIR DATA
 1530060224
 S M R

STATION ALTITUDE 3997.30 FEET MSL
 2 JULY 79 1330 HRS MST
 ASCENSION NO. 224

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES(TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
3997.3	877.1	31.6	13.8	34.0	995.8	682.4	150.0	3.1	1.000287
4000.0	877.0	31.6	13.8	34.0	995.7	682.4	149.9	3.1	1.000286
4500.0	862.2	30.0	11.4	31.8	985.1	680.3	129.1	2.9	1.000275
5000.0	847.6	28.4	9.4	30.5	974.1	678.3	108.1	3.1	1.000266
5500.0	833.0	27.0	9.6	33.4	961.5	676.8	91.4	3.6	1.000265
6000.0	818.6	25.6	9.6	36.4	949.2	675.3	79.7	4.3	1.000262
6500.0	804.5	24.3	9.6	39.4	937.1	673.7	71.6	5.2	1.000260
7000.0	790.7	22.9	9.4	42.3	925.2	672.2	66.9	5.2	1.000257
7500.0	777.0	21.5	9.2	45.3	913.5	670.6	64.3	2.6	1.000254
8000.0	763.6	20.1	8.9	48.3	901.9	669.1	329.1	.2	1.000251
8500.0	750.2	18.6	8.7	52.6	890.8	667.3	253.9	2.5	1.000249
9000.0	736.9	16.9	8.4	57.3	880.0	665.4	248.6	3.9	1.000246
9500.0	723.9	15.3	8.1	62.1	869.4	663.5	246.3	5.4	1.000243
10000.0	711.0	13.6	7.6	66.8	858.9	661.6	249.3	5.7	1.000240
10500.0	698.4	12.0	7.1	71.7	848.5	659.7	238.0	5.0	1.000236
11000.0	685.8	10.6	6.8	77.2	837.2	658.1	258.1	5.9	1.000233
11500.0	673.4	9.2	6.5	82.7	826.2	656.5	273.1	8.6	1.000230
12000.0	661.2	7.9	6.0	88.2	815.3	654.8	269.4	11.7	1.000227
12500.0	649.1	7.1	3.7	79.4	803.2	653.7	232.7	15.3	1.000218
13000.0	637.3	6.6	.2	63.5	790.7	652.8	250.1	17.7	1.000206
13500.0	625.5	5.8	-1.5	59.4	778.5	651.8	249.9	19.6	1.000200
14000.0	614.0	4.9	-1.8	61.5	766.6	650.7	246.8	21.2	1.000197
14500.0	602.7	4.1	-2.2	63.6	754.9	649.7	244.5	22.7	1.000194
15000.0	591.5	2.8	-3.1	65.0	744.4	648.1	244.4	23.9	1.000190
15500.0	580.4	1.4	-4.2	66.2	734.3	646.5	244.6	25.0	1.000186
16000.0	569.6	.0	-5.3	67.4	724.3	644.8	244.6	25.0	1.000182
16500.0	558.9	-1.1	-6.4	67.4	713.9	643.4	244.6	25.0	1.000178
17000.0	548.4	-2.1	-7.5	66.1	703.1	642.2	244.1	24.3	1.000175
17500.0	538.0	-2.8	-11.7	50.3	692.0	641.1	242.7	22.9	1.000167
18000.0	527.7	-3.5	-16.2	36.8	681.0	640.1	241.8	21.7	1.000161
18500.0	517.6	-4.6	-17.4	35.8	670.6	638.8	243.3	21.0	1.000158
19000.0	507.7	-5.6	-15.6	34.8	660.4	637.6	244.2	21.1	1.000155
19500.0	498.0	-6.5	-20.2	32.8	650.0	636.4	244.0	23.7	1.000151
20000.0	488.3	-7.1	-22.9	26.9	638.9	635.7	241.3	23.1	1.000147
20500.0	478.9	-7.6	-26.1	21.1	628.0	635.0	235.9	22.2	1.000144
21000.0	469.7	-8.2	-30.0	15.2	617.2	634.3	231.6	17.9	1.000140
21500.0	460.5	-9.1	-32.4	13.0	607.4	633.1	223.7	14.9	1.000137
22000.0	451.4	-10.3	-33.4	13.0	598.2	631.6	215.8	13.0	1.000135
22500.0	442.5	-11.5	-34.4	13.0	589.1	630.2	212.1	12.9	1.000133
23000.0	433.8	-12.7	-35.3	13.0	580.2	628.7	204.3	13.3	1.000131

STATION ALTITUDE 3997.30 FEET MSL
 2 JULY 79
 ASCENSION NO. 244

UPPER AIR DATA
 1830060224
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GW/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES(TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
23500.0	425.2	-13.9	-36.3	13.0	571.4	627.3	210.1	14.7	1.000129
24000.0	416.9	-15.1	-37.3	13.0	562.7	625.8	212.5	16.6	1.000127
24500.0	408.6	-16.3	-38.2	13.0	554.2	624.4	212.8	18.6	1.000125
25000.0	400.5	-16.9	-39.0	13.9	544.3	623.7	211.7	20.4	1.000123
25500.0	392.4	-17.4	-39.5	12.5	534.5	623.0	210.2	21.4	1.000120
26000.0	384.5	-18.0	-41.3	10.9	525.0	622.3	208.2	21.7	1.000118
26500.0	376.7	-18.6	-42.6	10.1	516.0	621.3	205.3	22.2	1.000116
27000.0	369.0	-20.0	-43.4	10.3	507.6	619.9	201.9	22.9	1.000114
27500.0	361.4	-21.1	-44.1	10.5	499.4	618.5	199.3	23.9	1.000112
28000.0	353.9	-22.2	-44.8	10.7	491.3	617.1	197.2	25.0	1.000110
28500.0	346.6	-23.4	-45.6	10.9	483.4	615.7	195.0	25.0	1.000108
29000.0	339.5	-24.5	-46.4	11.1	475.6	614.3	192.8	24.7	1.000106
29500.0	332.5	-25.7	-47.1	11.2	468.0	612.9	192.1	24.5	1.000105
30000.0	325.6	-26.8	-47.9	11.4	460.4	611.5	191.9	24.2	1.000103
30500.0	318.9	-27.9	-48.7	11.6	453.0	610.1	190.4	23.6	1.000101
31000.0	312.3	-29.1	-49.5	11.8	445.6	608.8	202.4	23.2	1.000100
31500.0	305.9	-30.3	-51.3	10.7**	438.7	607.2	207.0	23.1	1.000098
32000.0	299.4	-31.7			432.0	605.3	210.7	23.0	1.000096
32500.0	292.9	-33.0			424.9	603.7	211.9	23.5	1.000095
33000.0	286.5	-34.3			418.0	602.0	208.5	24.4	1.000093
33500.0	280.3	-35.7			411.2	600.4	207.7	25.2	1.000092
34000.0	274.2	-37.0			404.5	598.7	209.6	26.0	1.000090
34500.0	268.3	-38.3			397.9	597.0	210.0	26.4	1.000089
35000.0	262.4	-39.6			391.4	595.4	214.6	25.8	1.000087
35500.0	256.7	-40.9			385.1	593.7	216.7	25.6	1.000086
36000.0	251.2	-42.2			378.9	592.0	221.9	26.5	1.000084
36500.0	245.5	-43.5			372.2	590.6	224.9	27.7	1.000083
37000.0	239.9	-44.4			365.4	589.2	228.1	33.6	1.000081
37500.0	234.5	-45.5			358.8	587.9	230.3	39.5	1.000080
38000.0	229.2	-46.5			352.2	586.5	230.1	45.4	1.000078
38500.0	223.9	-47.6			345.9	585.1	229.5	51.2	1.000077
39000.0	218.9	-48.6			339.6	583.7	229.5	51.2	1.000076
39500.0	213.9	-49.7			333.5	582.4	229.2	51.2	1.000074
40000.0	209.0	-50.8			327.4	581.0	229.7	49.9	1.000073
40500.0	204.3	-51.8			321.5	579.6	230.4	48.4	1.000072
41000.0	199.6	-52.9			315.7	578.2	231.3	47.7	1.000070
41500.0	195.0	-54.0			309.9	576.8	232.4	47.8	1.000069
42000.0	190.4	-55.1			304.1	575.3	233.1	47.3	1.000068
42500.0	185.9	-55.5			297.8	574.7	232.3	44.4	1.000066
43000.0	181.6	-55.8			291.0	574.3	231.5	41.5	1.000065

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STATION ALTITUDE 5997.30 FEET MSL
 2 JULY 79
 ASCENSION NO. 224

UPPER AIR DATA
 1630060224
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES(TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
43500.0	177.3	-56.1	.	284.6	573.9	226.9	38.4	1.000063	
44000.0	173.1	-56.4	.	278.3	573.5	220.8	35.6	1.000062	
44500.0	169.0	-57.8	.	273.3	571.7	216.4	34.8	1.000061	
45000.0	164.9	-59.1	.	268.5	569.9	214.1	35.4	1.000060	
45500.0	161.0	-60.5	.	263.7	568.1	212.5	36.0	1.000059	
46000.0	157.1	-61.7	.	258.9	566.5	212.3	36.4	1.000058	
46500.0	153.3	-62.1	.	253.1	566.0	212.1	36.9	1.000056	
47000.0	149.6	-62.6	.	247.5	565.3	210.4	34.8	1.000055	
47500.0	145.9	-63.5	.	242.5	564.1	208.4	32.7	1.000054	
48000.0	142.3	-64.3	.	237.5	562.9	207.4	31.5	1.000053	
48500.0	138.8	-65.2	.	232.6	561.8	207.1	31.1	1.000052	
49000.0	135.4	-66.1	.	227.9	560.6	207.0	30.9	1.000051	
49500.0	132.1	-67.0	.	223.2	559.4	207.5	32.0	1.000050	
50000.0	128.9	-67.8	.	218.5	558.3	209.0	33.1	1.000049	
50500.0	125.6	-68.1	.	213.4	557.9	207.4	33.1	1.000048	
51000.0	122.5	-68.4	.	208.4	557.4	206.7	33.0	1.000046	
51500.0	119.4	-68.8	.	203.6	556.9	205.4	32.5	1.000045	
52000.0	116.4	-69.1	.	196.6	556.5	203.4	31.5	1.000044	
52500.0	113.5	-69.5	.	194.2	556.0	201.3	30.4	1.000043	
53000.0	110.7	-69.8	.	189.6	555.5	199.0	27.9	1.000042	
53500.0	107.9	-69.7	.	184.8	555.7	196.3	25.4	1.000041	
54000.0	105.2	-68.9	.	179.5	559.7	193.1	23.5	1.000040	
54500.0	102.6	-68.2	.	174.4	557.7	189.5	21.8	1.000039	
55000.0	100.0	-67.5	.	169.5	556.7	185.6	20.6	1.000038	
55500.0	97.6	-67.2	.	165.0	559.2	181.6	20.4	1.000037	
56000.0	95.1	-66.8	.	160.6	559.6	178.0	20.4	1.000036	
56500.0	92.8	-66.4	.	155.4	560.1	176.1	20.4	1.000035	
57000.0	90.5	-66.1	.	152.3	560.6	174.8	20.6	1.000034	
57500.0	88.3	-65.7	.	148.3	561.1	173.3	20.6	1.000033	
58000.0	86.1	-65.4	.	144.3	561.5	170.6	20.3	1.000032	
58500.0	84.0	-64.6	.	140.2	562.7	169.3	20.0	1.000031	
59000.0	81.9	-61.9	.	135.1	566.2	163.9	20.4	1.000030	
59500.0	79.9	-61.4	.	131.5	566.9	171.2	21.1	1.000029	
60000.0	78.0	-61.7	.	128.5	566.6	173.3	21.9	1.000029	
60500.0	76.1	-61.9	.	125.6	566.2	173.1	21.1	1.000028	
61000.0	74.3	-62.2	.	122.7	565.9	172.8	20.3	1.000027	
61500.0	72.5	-62.1	.	119.7	565.9	165.2	18.4	1.000027	
62000.0	70.7	-60.5	.	115.9	568.1	154.7	15.4	1.000026	
62500.0	69.1	-59.6	.	112.7	569.3	150.3	13.6	1.000025	
63000.0	67.4	-59.3	.	109.9	569.6	130.4	13.1	1.000024	

STATION ALTITUDE 997.30 FEET MSL
 2 JULY 79 1330 HRS MST
 ASCENSION NO. 224

UPPER AIR DATA
 183006U224
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GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED SOUND KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
63500.0	65.8	-59.1		107.1	570.0	127.2	12.8	1.000024
64000.0	64.3	-58.8		104.4	570.4	129.4	12.5	1.000023
64500.0	62.7	-58.5		101.8	570.8	135.8	12.5	1.000023
65000.0	61.3	-58.2		99.3	571.2	144.4	12.8	1.000022
65500.0	59.8	-57.9		96.8	571.6	144.4	12.4	1.000022
66000.0	58.4	-57.6		94.4	572.0	135.8	11.2	1.000021
66500.0	57.0	-57.3		92.0	572.4	125.5	10.4	1.000020
67000.0	55.6	-57.0		89.7	572.8	119.7	10.0	1.000020
67500.0	54.3	-56.7		87.4	573.1	113.7	9.7	1.000019
68000.0	53.0	-56.4		85.3	573.5	111.6	9.5	1.000019
68500.0	51.8	-56.1		83.1	573.9	114.4	11.0	1.000019
69000.0	50.6	-55.8		81.0	574.3	118.9	12.6	1.000018
69500.0	49.4	-55.2		78.9	575.1	118.0	14.2	1.000018
70000.0	48.2	-54.4		76.8	576.2	117.0	15.1	1.000017
70500.0	47.1	-53.6		74.7	577.3	115.7	16.0	1.000017
71000.0	46.0	-53.3		72.9	577.6	114.4	16.7	1.000016
71500.0	44.8	-53.0		71.1	578.0	113.0	16.4	1.000016
72000.0	43.9	-52.7		69.4	578.4	111.6	16.1	1.000015
72500.0	42.9	-52.5		67.7	578.7	110.4	15.9	1.000015
73000.0	41.9	-52.2		66.1	579.1	113.5	16.4	1.000015
73500.0	40.9	-51.9		64.5	579.4	110.5	16.9	1.000014
74000.0	40.0	-51.7		62.9	579.8	110.7	17.4	1.000014
74500.0	39.1	-51.4		61.4	580.2	111.7	17.4	1.000014
75000.0	38.2	-51.1		59.9	580.5	114.7	17.4	1.000013
75500.0	37.3	-50.8		58.4	580.9	115.1	17.4	1.000013
76000.0	36.4	-50.6		57.0	581.2	105.4	18.1	1.000013
76500.0	35.6	-50.3		55.6	581.6	98.4	19.1	1.000012
77000.0	34.8	-50.0		54.3	582.0	92.2	20.4	1.000012
77500.0	34.0	-49.7		53.0	582.3	86.7	22.4	1.000012
78000.0	33.2	-49.7		51.8	582.5	85.8	24.5	1.000012
78500.0	32.4	-49.9		50.6	582.5	83.4	26.6	1.000011
79000.0	31.7	-50.2		49.5	581.7	83.2	26.9	1.000011
79500.0	31.0	-50.4		48.4	581.5	83.5	27.1	1.000011
80000.0	30.3	-50.6		47.4	581.2	83.3	27.2	1.000011
80500.0	29.6	-50.5		46.3	581.2	83.0	27.4	1.000010
81000.0	28.9	-50.3		45.2	581.6	82.6	27.7	1.000010
81500.0	28.2	-50.1		44.1	581.9	82.2	28.0	1.000010
82000.0	27.6	-49.8		43.1	582.2	82.1	28.6	1.000010
82500.0	27.0	-49.6		42.0	582.5	82.5	29.7	1.000009
83000.0	26.4	-49.3		41.0	582.8	82.8	30.7	1.000009

STATION ALTITUDE 3997.30 FEET MSL
 2 JULY 79 1330 HRS MST
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UPPER AIR DATA
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GEODETTIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (T-N)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
83500.0	25.8	-49.1			40.1	583.1	83.4	31.8	1.000009
84000.0	25.2	-49.8			39.1	583.5	83.8	33.1	1.000009
84500.0	24.6	-48.6			38.2	583.8	85.8	34.5	1.000008
85000.0	24.1	-48.4			37.3	584.1	85.9	35.8	1.000008
85500.0	23.5	-48.1			36.4	584.4	88.2	36.4	1.000008
86000.0	23.0	-47.9			35.5	584.7	89.3	37.1	1.000008
86500.0	22.5	-47.6			34.7	585.0	90.5	37.7	1.000008
87000.0	21.9	-47.4			33.9	585.4	90.3	38.2	1.000008
87500.0	21.4	-47.1			33.1	585.7	89.8	38.6	1.000007
88000.0	21.0	-46.9			32.3	586.0	89.3	39.0	1.000007
88500.0	20.5	-46.7			31.5	586.3	88.9	39.2	1.000007
89000.0	20.0	-46.4			30.8	586.6	88.6	39.3	1.000007
89500.0	19.6	-45.9			30.0	587.3	88.4	39.4	1.000007
90000.0	19.1	-45.4			29.3	587.9	87.8	39.5	1.000007
90500.0	18.7	-44.9			28.6	588.6	85.8	39.6	1.000006
91000.0	18.3	-44.4			27.9	589.3	82.9	39.7	1.000006
91500.0	17.9	-43.8			27.2	589.9	82.0	39.9	1.000006
92000.0	17.5	-43.3			26.6	590.6	79.5	40.9	1.000006
92500.0	17.1	-42.8			25.9	591.3	77.7	42.1	1.000006
93000.0	16.8	-42.3			25.3	591.9	75.7	43.3	1.000006
93500.0	16.4	-41.8			24.7	592.6	75.0	44.4	1.000005
94000.0	16.0	-41.3			24.1	593.2	75.8	45.3	1.000005
94500.0	15.7	-40.7			23.5	593.9	75.5	46.2	1.000005
95000.0	15.3	-40.2			23.0	594.6	77.4	47.0	1.000005
95500.0	15.0	-39.7			22.4	595.2	80.5	46.3	1.000005
96000.0	14.7	-39.2			21.9	595.9	83.8	45.8	1.000005
96500.0	14.4	-38.7			21.3	596.5	85.9	45.3	1.000005
97000.0	14.0	-38.2			20.8	597.2	85.9	44.0	1.000005
97500.0	13.7	-37.6			20.3	597.9	92.9	42.1	1.000005
98000.0	13.4	-37.1			19.8	598.5	96.2	40.4	1.000004
98500.0	13.1	-36.6			19.4	599.2			1.000004
99000.0	12.9	-36.1			18.9	599.8			1.000004
99500.0	12.6	-35.6			18.4	600.5			1.000004
100000.0	12.3	-35.1			18.0	601.1			1.000004
100500.0	12.0	-34.6			17.6	601.8			1.000004

STATION ALTITUDE 3997.30 FEET MSL
 2 JULY 79 1330 HRS MST
 ASCENSION NO. 224

MRN SIGNIFICANT LEVEL DATA
 1330060224
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

GEOPOTENTIAL ALTITUDE DECAMETERS	DIRECTION DEG (TN)	SPEED MPS	WIND DATA		E-W MPS	DEW PT DEP DEG C	TEMPERATURE		PRESSURE MILLIBARS
			N-S MPS	TEMPERATURE AIR DEG C					
3060.	999.**	9999.**	-9999.**	-9999.**	-9999.**	99	-34.1	1.180+1	
2700.	89.	20.	-0.	-20.	-20.	99	-46.4	2.000+1	
2434.	83.	14.	-2.	-14.	-14.	99	-50.7	3.000+1	
2360.	87.	12.	-1.	-12.	-12.	99	-49.6	3.360+1	
2139.	116.	6.	4.	-7.	-7.	99	-53.6	4.720+1	
2102.	118.	7.	3.	-6.	-6.	99	-55.7	5.000+1	
1990.	147.	7.	6.	-4.	-4.	99	-59.8	7.000+1	
1865.	170.	10.	10.	-2.	-2.	99	-62.4	7.280+1	
1796.	170.	11.	10.	-2.	-2.	99	-61.2	8.140+1	
1774.	169.	10.	10.	-2.	-2.	99	-65.1	8.440+1	
1671.	186.	11.	11.	1.	1.	99	-67.5	1.000+2	

** WIND DATA NOT COMPUTED DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 997.30 FEET MSL
 2 JULY 79
 ASCENSION NO. 224

MANDATORY LEVELS
 1330050224
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

PRESSURE GEOPOTENTIAL MILLIBARS	FEET	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
				DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4915.	28.6	30.	111.4	3.0
800.0	4500.	23.6	40.	65.3	5.5
750.0	4085.	18.5	53.	253.8	2.5
700.0	3670.	12.2	71.	258.7	5.0
650.0	3255.	7.1	81.	263.1	15.0
600.0	2840.	3.8	64.	244.3	23.0
550.0	2425.	-1.9	60.	244.3	24.6
500.0	2010.	-6.4	34.	244.0	22.3
450.0	1595.	-10.5	13.	215.3	12.7
400.0	1180.	-16.9	14.	211.7	20.4
350.0	765.	-22.9	11.	196.0	25.1
300.0	350.	-31.6		210.2	23.0
250.0	6025.	-42.5		222.4	28.7
200.0	40861.	-52.8		231.2	47.6
175.0	43659.	-56.3		223.9	37.0
150.0	46819.	-62.5		210.7	35.1
125.0	50455.	-68.2		207.3	33.1
100.0	54834.	-67.5		185.7	20.6
80.0	59289.	-61.4		171.0	21.1
70.0	62003.	-59.8		148.4	14.6
60.0	65177.	-57.9		146.2	12.7
50.0	68968.	-55.7		117.8	13.3
40.0	73685.	-51.7		110.6	17.4
30.0	79842.	-50.7		83.3	27.3
25.0	83757.	-48.8		84.9	33.4
20.0	88594.	-46.4		88.7	39.3
15.0	94955.	-39.7		79.8	46.5

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MRN MANDATORY LEVELS
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GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

GEOPOTENTIAL ALTITUDE DECAMETERS	DIRECTION DEG (TN)	SPEED MPS	WIND DATA		E-W MPS	UW PT DLP DEG C	TEMPERATURE		PRESSURE MILLIBARS
			N-S MPS	MPS			AIR DEG C		
2894.	80.	24.	-4.	-24.	-24.	99	-39.7	1.500+1	
2700.	84.	20.	-0.	-20.	-23.	99	-46.4	2.000+1	
2553.	85.	17.	-2.	-17.	-17.	99	-48.8	2.500+1	
2434.	83.	14.	-2.	-14.	-14.	99	-50.7	3.000+1	
2246.	111.	9.	3.	-8.	-8.	99	-51.7	4.000+1	
2102.	118.	7.	3.	-8.	-8.	99	-55.7	5.000+1	
1987.	146.	7.	5.	-4.	-4.	99	-57.9	6.000+1	
1890.	148.	7.	6.	-4.	-4.	99	-59.8	7.000+1	
1807.	171.	11.	11.	-2.	-2.	99	-61.4	8.000+1	
1671.	186.	11.	1.	1.	1.	99	-67.5	1.000+2	
1538.	207.	17.	15.	8.	8.	99	-68.2	1.250+2	
1427.	211.	18.	16.	9.	9.	99	-62.5	1.500+2	
1331.	224.	19.	14.	13.	13.	99	-56.3	1.750+2	
1245.	231.	25.	15.	19.	19.	99	-52.8	2.000+2	
1098.	222.	14.	10.	9.	9.	99	-42.5	2.500+2	
972.	210.	12.	10.	8.	8.	99	-31.6	3.000+2	
861.	196.	13.	12.	4.	4.	22	-22.9	3.500+2	
762.	212.	11.	9.	6.	6.	21	-16.9	4.000+2	
672.	215.	7.	5.	4.	4.	23	-10.5	4.500+2	
590.	244.	11.	5.	10.	10.	13	-6.4	5.000+2	
515.	244.	13.	5.	11.	11.	05	-1.9	5.500+2	
445.	244.	12.	5.	11.	11.	06	3.8	6.000+2	
380.	263.	8.	1.	8.	8.	03	7.1	6.500+2	
318.	257.	3.	1.	3.	3.	05	12.2	7.000+2	
259.	254.	1.	0.	1.	1.	10	18.5	7.500+2	
203.	69.	3.	-1.	-3.	-3.	14	23.8	8.000+2	
150.	111.	2.	1.	-1.	-1.	19	28.6	8.500+2	