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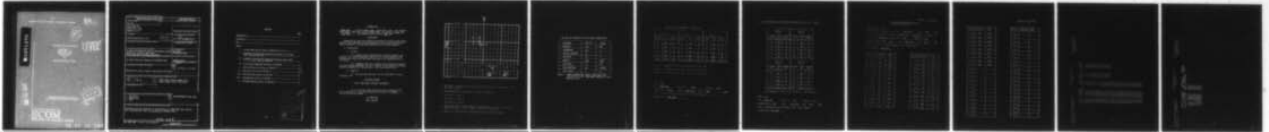
ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2  
19304 GSRS, MISSILE NUMBER 1136, ROUND NUMBER V-26, 7 MAY 1979.--ETC(U)  
MAY 79

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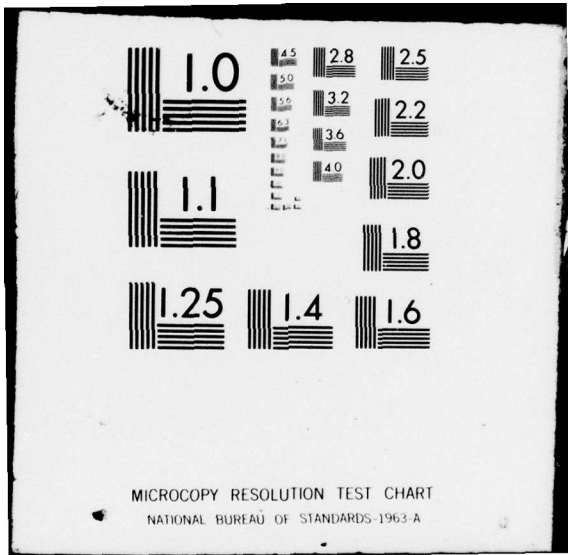
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NATIONAL BUREAU OF STANDARDS-1963-A

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MAY 1979

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METEOROLOGICAL DATA REPORT

19304 GSRS  
Missile No. 1136  
Round No. V-26  
7 May 1979  
by

WSMR Meteorological Team

LEVEL

DDC FILE COPY

ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

DDC  
FORM 12  
JUL 20 1979  
A

ECOM

UNITED STATES ARMY ELECTRONICS COMMAND

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1010	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 19304 GRS (FA) Missile No. 1136 Round No. V-26	5. TYPE OF REPORT & PERIOD COVERED	
	6. PERFORMING ORG. REPORT 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	9 Meteorological data rept.	
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of 19304 GRS (FA), Missile No. 1136, Round No. V-26, are presented in tabular form.		

420 663

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## INTRODUCTION

19304D GSRS , Missile Number 1136 , Round Number V-26 , was launched from LC-33 , White Sands Missile Range (WSMR), New Mexico, at 0830 MDT , 7 May 1979 . The scheduled launch time was 0830 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 ( $\text{gm}/\text{m}^3$ ), 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:

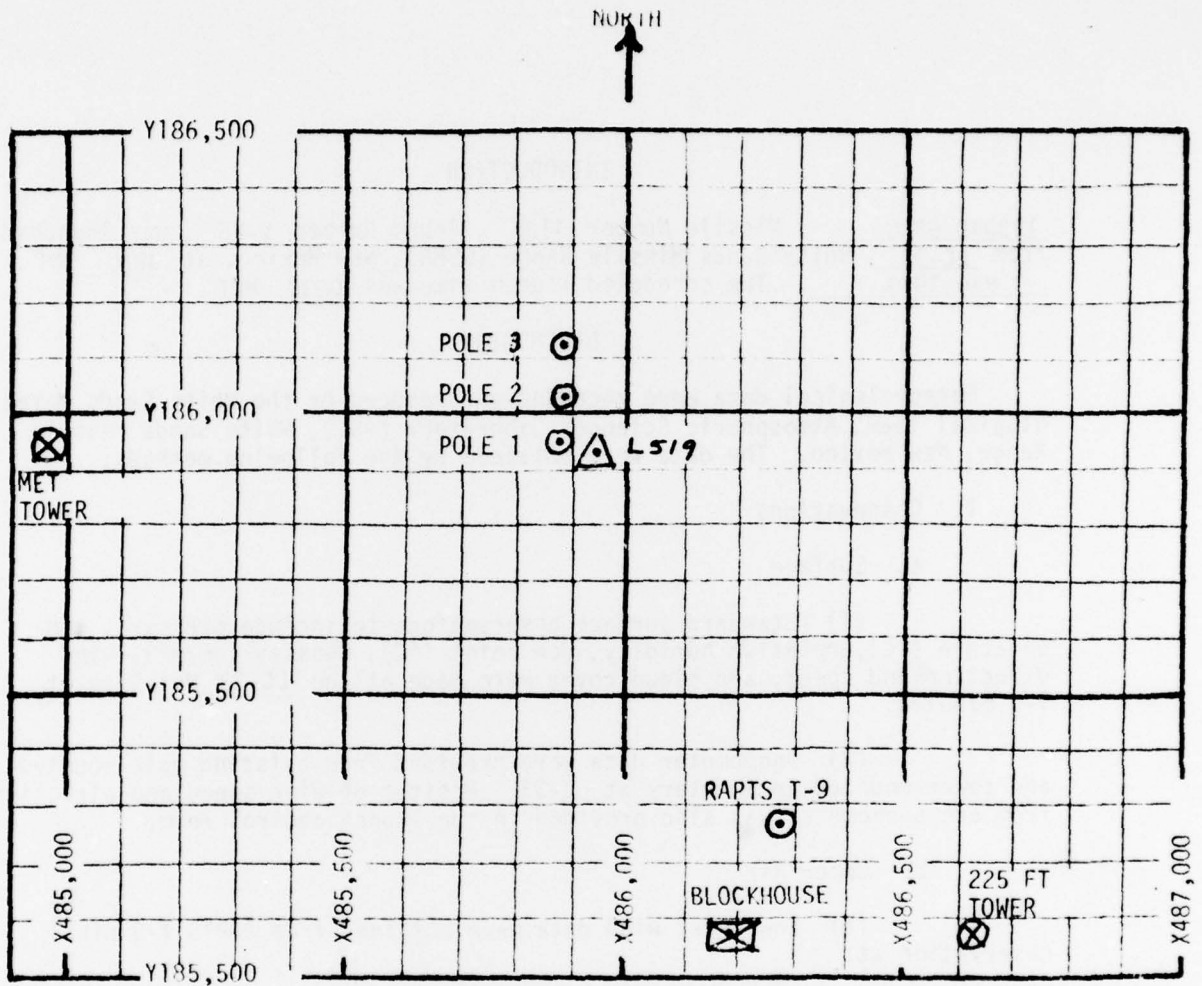
## SITE AND ALTITUDE

LC-33 1020 meters (30-meter increments)

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 117,000 feet in 500-foot increments.

## SITE AND TIME

SMR 0730 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. 225 FT WIND TOWER - 5 Bendix Model T-120 Anemometers at 35 ft, 88 ft, 128 ft, 168 ft and 200 ft with 5 X-Y visual indicators in Blockhouse.
4. RAPTS T-9 - Radar Automatic Pilot-Balloon Tracking System T-9 Radar

The data are presented in the following tabulations:

ELEVATION	3977.30	FT/MSL
PRESSURE	872.9	MBS
TEMPERATURE	22.6	°C
RELATIVE HUMIDITY	16	%
DEW POINT	-4.7	°C
DENSITY	1025	GM/M <sup>3</sup>
WIND SPEED	15	MPH
WIND DIRECTION	270	DEGREES
CLOUD COVER	2	Cs

TABLE I. SURFACE OBSERVATIONS TAKEN AT 0830 LOCAL TIME,  
7 MAY 1979 AT LC-33, 19304D GSRS, MISSILE NO. 1136,  
ROUND NO. V-26.

LC33 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	282	27	-30	310	20	-30	279	36
-20	281	27	-20	305	18	-20	279	36
-10	282	31	-10	313	25	-10	276	32
0.0	277	21	0.0	297	20	0.0	283	30
+10	277	25	+10	298	24	+10	282	34

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

TABLE III

TYPE 19304D GSRS MISSILE NO. 1136 ROUND NO. V-26

LAUNCHED FROM LC-33 DATE 7 May 1979 TIME 0830 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO THE FIRING AZIMUTH \_\_\_\_\_

OR TRUE NORTH TRUE NORTH

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	290	11	-30	260	35
-20	315	18	-20	271	37
-10	270	23	-10	281	35
0.0	287	23	0.0	275	34
+10	286	24	+10	267	35
LEVEL #3 102 ft			LEVEL #4 202 ft		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	275	31	-30	275	34
-20	284	38	-20	280	35
-10	288	35	-10	274	37
0.0	284	31	0.0	270	36
+10	294	26	+10	270	31

WTSM COORDINATES: X484, 82.64 Y185,957.73 H3983.00 (base)

TABLE III

TYPE 19304D GSRs MISSILE NO. 1136 POUND NO. V-26

LAUNCHED FROM LC-33 DATE 7 May 1979 TIME 0830 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO THE FIRING AZIMUTH

OR TRUE NORTH TRUE NORTH

PILOT BALLOON MEASURED WIND DATA  
(30 meter increments)

TABLE IV

RELEASED FROM LC-33 DATE 7 May 1979 TIME 0830 MDT

RELEASE POINT COORDINATES (WSTM) X= 486,037.24 Y= 182,350.16 H= 3977.30

MISSILE TYPE 19304 GSRS MISSILE NO. 1136 ROUND NO. V-26

MISSILE LAUNCHED FROM LC-33 DATE 7 May 1979 TIME 0830 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO THE FIRING AZIMUTH \_\_\_\_\_

OR TRUE NORTH TRUE NORTH

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
SFC	270	15.0
30	272	15.5
60	274	16.0
90	276	17.0
120	278	17.5
150	279	26.5
180	280	35.5
210	279	35.5
240	277	35.0
270	276	36.5
300	275	37.5
330	277	34.5
360	278	31.5

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
390	279	33.0
420	279	34.5
450	276	33.0
480	272	31.0
510	264	28.5
540	256	26.0
570	257	25.0
600	258	23.5
630	259	23.5
660	260	23.0
690	263	23.5
720	266	23.5
750	269	24.5

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
780	272	25.5
810	268	27.0
840	264	28.5
870	256	31.0
900	247	33.5
930	244	34.5
960	241	35.0
990	246	34.5
1020	250	33.5
1050		
1080		
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

HEIGHT mtrs 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  
 7 MAY 79  
 ASCENSION NO. 94

SIGNIFICANT LEVEL DATA  
 1270000094  
 S M R

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
872.0	3997.3	-2.8	20.0
861.0	4355.9	-3.9	21.0
850.0	4717.7	-4.1	21.0
819.0	5758.0	-5.8	20.0
788.4	6818.8	-7.8	19.0
737.8	8549.7	-11.1	20.0
700.0	10079.4	-14.3	20.0
615.8	13506.5	-18.8	20.0
606.8	13895.6	-20.4	19.0
598.0	14284.2	-17.0	18.0
563.2	15882.8	-20.1	18.0
500.0	18967.9	-20.2	19.0
465.6	20802.2	-30.0	20.0
450.2	21645.6	-30.0	25.0
400.0	24547.6	-35.3	30.0
371.0	26350.7	-39.3	29.0
324.8	29455.7	-46.9	29.0
300.0	31200.3	-50.6	30.0
282.2	32628.0		
250.0	35279.7		
227.4	37297.7		
207.4	39216.6		
200.0	39967.7		
188.4	41197.8		
166.2	43764.4		
157.8	44821.8		
150.0	45855.9		
138.0	47557.0		
134.2	48122.0		
119.4	50404.9		
105.6	52888.8		
100.0	53952.8		
95.6	54845.4		
86.6	58866.8		
71.6	60760.1		
70.0	61220.0		
63.2	63332.2		
55.0	66217.4		
53.6	66754.1		
50.0	68213.1		

STATION ALTITUDE 3997.30 FEET MSL  
7 MAY 79 0730 HRS MST  
ASCENSION NO. 94

SIGNIFICANT LEVEL DATA  
1270060094  
S M R

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
44.4	70709.0	-56.2	
41.8	71980.7	-54.7	
30.0	79008.7	-50.3	
20.0	87973.4	-42.8	
13.4	96943.2	-41.7	
11.1	101249.4	-33.4	
10.0	103670.1	-35.1	
7.0	111925.2	-34.7	
6.8	112600.7	-32.0	
5.6	117171.0	-30.0	

UPPER AIR DATA  
 1270060094  
 S M R

STATION ALTITUDE 3997.30 FEET MSL  
 7 MAY 79 0730 HRS MST  
 ASCENSION NO. 94

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES(TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
3997.3	872.0	21.0	-2.8	20.0	1030.5	668.9	240.0	14.0	1.000251
4000.0	871.9	21.0	-2.8	20.0	1030.5	668.9			1.000251
4500.0	856.6	18.8	-4.0	21.0	1020.1	666.3			1.000248
5000.0	841.5	17.9	-4.8	20.7	1005.1	665.3			1.000243
5500.0	825.6	16.8	-6.1	20.2	991.4	664.0			1.000238
6000.0	811.9	16.1	-7.0	19.8	976.3	663.1			1.000234
6500.0	797.5	15.9	-7.5	19.3	959.7	662.8			1.000230
7000.0	783.2	15.2	-8.2	19.1	944.7	662.1			1.000226
7500.0	769.2	13.9	-9.1	19.4	932.0	660.8			1.000222
8000.0	755.4	12.6	-10.0	19.6	919.6	659.0			1.000218
8500.0	741.8	11.3	-10.9	19.9	907.3	657.5			1.000215
9000.0	728.4	10.0	-11.9	20.0	895.1	655.9			1.000211
9500.0	715.1	8.6	-13.0	20.0	883.0	654.4			1.000207
10000.0	702.0	7.3	-14.1	20.0	871.1	652.8			1.000204
10500.0	689.1	6.4	-14.9	20.0	857.7	651.8			1.000200
11000.0	676.3	5.6	-15.5	20.0	844.2	650.8			1.000197
11500.0	663.8	4.9	-16.2	20.0	830.9	649.9			1.000194
12000.0	651.5	4.1	-16.8	20.0	817.9	649.0			1.000190
12500.0	639.4	3.3	-17.5	20.0	805.1	648.0			1.000187
13000.0	627.6	2.5	-18.1	20.0	792.4	647.1			1.000184
13500.0	616.0	1.7	-18.8	20.0	780.0	646.2			1.000181
14000.0	604.4	1.8	-19.5	18.7	765.1	645.3			1.000177
14500.0	593.2	4.9	-17.4	18.0	742.5	649.9			1.000173
15000.0	582.2	3.7	-18.4	18.0	731.9	648.5			1.000170
15500.0	571.3	2.5	-19.4	18.0	721.4	647.1			1.000167
16000.0	560.7	1.3	-20.3	18.0	711.1	645.7			1.000164
16500.0	550.0	-0.0	-21.3	18.2	701.0	644.1			1.000162
17000.0	539.6	-1.3	-22.3	18.4	691.0	642.5			1.000159
17500.0	529.3	-2.6	-23.3	18.5	681.2	641.0			1.000157
18000.0	519.3	-3.9	-24.3	18.7	671.5	639.4			1.000154
18500.0	509.4	-5.2	-25.3	18.8	662.0	637.9			1.000152
19000.0	499.8	-6.5	-26.3	19.0	652.8	636.3			1.000149
19500.0	490.0	-7.9	-27.3	19.3	643.4	634.8			1.000147
20000.0	480.5	-9.3	-28.3	19.6	634.2	632.9			1.000144
20500.0	471.2	-10.8	-29.3	19.8	625.3	631.2			1.000142
21000.0	461.9	-12.3	-29.9	21.2	616.6	629.4	13.8	205.7	1.000140
21500.0	452.8	-13.9	-30.0	25.1	608.3	627.4	20.0	103.6	1.000138
22000.0	443.7	-15.4	-30.6	24.0	599.5	625.8	24.7	54.9	1.000136
22500.0	434.8	-16.8	-31.5	26.5	590.7	623.9	25.2	25.6	1.000134
23000.0	426.0	-18.2	-32.4	27.3	582.0	622.1	357.4	11.0	1.000132

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

STATION ALTITUDE 3997.30 FEET MSL  
 7 MAY 79 0730 HRS MST  
 ASCENSION NO. 94

UPPER AIR DATA  
 127000094  
 S M R

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	417.4	-19.6	28.2	573.4	620.4	301.2	9.6	1.000130
24000.0	409.0	-21.1	29.1	565.0	618.6	274.9	15.1	1.000128
24500.0	400.8	-22.5	29.9	556.8	616.9	267.1	21.3	1.000126
25000.0	392.5	-23.6	29.7	547.9	615.5	264.3	26.9	1.000124
25500.0	384.4	-24.8	29.5	539.0	614.1	262.8	30.8	1.000122
26000.0	376.5	-25.9	29.2	530.3	612.6	261.8	33.6	1.000119
26500.0	368.6	-27.1	29.0	521.9	611.1	261.2	35.5	1.000117
27000.0	360.8	-28.5	29.0	513.7	609.4	261.0	36.5	1.000115
27500.0	353.2	-29.9	29.0	505.7	607.7	261.2	36.7	1.000114
28000.0	345.7	-31.3	29.0	497.8	605.9	262.0	34.4	1.000112
28500.0	338.4	-32.7	29.0	490.1	604.2	263.3	31.2	1.000110
29000.0	331.2	-34.0	29.0	482.5	602.4	266.5	27.1	1.000108
29500.0	324.2	-35.4	29.0	475.0	600.7	270.3	24.3	1.000106
30000.0	317.1	-36.7	29.3	467.1	599.1	273.6	23.2	1.000105
30500.0	310.2	-37.9	29.6	459.3	597.5	272.7	24.7	1.000103
31000.0	303.5	-39.2	29.9	451.7	596.0	270.7	26.9	1.000101
31500.0	296.8	-40.3	24.7**	444.1	594.5	268.3	29.9	1.000099
32000.0	290.2	-41.4	13.8**	436.3	593.0	267.3	32.8	1.000097
32500.0	283.8	-42.5	2.8**	428.7	591.6	266.6	35.7	1.000096
33000.0	277.4	-43.8		421.4	590.0	266.2	38.4	1.000094
33500.0	271.2	-45.1		414.2	588.4	265.9	39.9	1.000092
34000.0	265.1	-46.4		407.2	586.7	265.8	40.7	1.000091
34500.0	259.1	-47.7		400.3	585.0	266.8	40.4	1.000089
35000.0	253.2	-49.0		393.5	583.3	267.7	42.8	1.000088
35500.0	247.4	-50.3		386.8	581.6	268.3	45.3	1.000086
36000.0	241.7	-51.6		380.1	579.8	268.7	47.5	1.000085
36500.0	236.1	-53.0		373.5	578.1	269.6	46.9	1.000083
37000.0	230.6	-54.3		367.1	576.3	270.8	45.1	1.000082
37500.0	225.2	-55.5		360.5	574.7	272.0	42.2	1.000080
38000.0	219.9	-56.6		353.7	573.3	273.2	38.6	1.000079
38500.0	214.7	-57.7		347.0	571.9	273.9	35.6	1.000077
39000.0	209.6	-58.7		340.5	570.5	274.4	32.9	1.000076
39500.0	204.6	-59.0		332.8	570.1	273.1	34.4	1.000074
40000.0	199.7	-58.8		324.5	570.4	271.7	36.9	1.000072
40500.0	194.9	-59.7		316.1	569.2	269.0	40.7	1.000071
41000.0	190.2	-60.6		311.8	567.9	268.8	44.6	1.000069
41500.0	185.6	-61.0		304.9	567.4	264.7	46.5	1.000068
42000.0	181.2	-61.1		297.6	567.4	262.6	47.0	1.000066
42500.0	176.8	-61.1		290.4	567.3	260.6	47.5	1.000065
43000.0	172.5	-61.1		283.5	567.2	258.6	47.0	1.000063

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3997.30 FEET MSL  
 7 MAY 79 0730 HRS MST  
 ASCENSION NO. 94

UPPER AIR DATA  
 1270050094  
 S M R

GEODETIC COORDINATES  
 32.45034 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 (TH)	WIND SPEED KNOTS	INDEX OF REFRACTION
4350.0	168.4	-61.2			275.7	567.2	250.5	46.7	1.000062
4400.0	164.3	-61.6			270.5	560.7	254.0	47.2	1.000060
4450.0	160.3	-62.3			264.9	565.7	252.8	48.0	1.000059
4500.0	156.4	-62.5			258.7	565.4	251.1	49.0	1.000058
4550.0	152.6	-61.6			251.4	565.6	249.5	50.1	1.000056
4600.0	148.9	-61.2			244.8	567.2	247.7	51.1	1.000055
4650.0	145.3	-61.7			239.4	565.5	245.5	51.9	1.000053
4700.0	141.8	-62.2			234.2	565.8	243.4	52.8	1.000052
4750.0	138.4	-62.7			229.1	565.1	241.6	53.1	1.000051
4800.0	135.0	-64.1			225.0	563.2	239.8	53.5	1.000050
4850.0	131.7	-64.9			220.3	562.3	240.1	53.3	1.000049
4900.0	128.5	-65.3			215.3	561.6	241.1	52.8	1.000048
4950.0	125.3	-65.8			210.5	561.0	242.8	52.0	1.000047
5000.0	122.2	-66.3			205.8	560.4	245.4	50.8	1.000046
5050.0	119.2	-66.8			201.2	559.7	247.9	49.6	1.000045
5100.0	116.2	-67.7			197.0	558.4	249.3	47.7	1.000044
5150.0	113.3	-68.6			192.9	557.2	250.9	45.8	1.000043
5200.0	110.5	-69.5			188.9	556.0	251.5	43.7	1.000042
5250.0	107.7	-70.4			185.0	554.7	252.2	41.7	1.000041
5300.0	105.0	-71.1			181.0	553.8	252.8	41.0	1.000040
5350.0	102.3	-71.1			176.5	553.8	253.4	40.4	1.000039
5400.0	99.8	-70.8			171.7	554.2	254.4	40.8	1.000038
5450.0	97.3	-67.2			164.5	559.1	255.4	41.6	1.000037
5500.0	94.9	-64.2			158.2	563.1	257.5	42.8	1.000035
5550.0	92.6	-62.7			153.3	565.1	260.0	44.2	1.000034
5600.0	90.4	-61.2			148.5	567.1	262.5	45.9	1.000033
5650.0	88.2	-59.7			143.9	569.2	264.9	48.1	1.000032
5700.0	86.0	-58.8			139.8	570.4	267.0	50.4	1.000031
5750.0	84.0	-59.5			135.9	569.4	268.6	52.9	1.000030
5800.0	81.9	-60.3			134.1	568.4	270.0	55.3	1.000030
5850.0	80.0	-61.0			131.3	567.4	272.7	56.1	1.000029
5900.0	78.0	-61.7			128.6	565.5	275.4	57.0	1.000029
5950.0	76.1	-62.5			125.9	565.5	277.3	52.3	1.000028
6000.0	74.3	-63.2			123.3	564.5	279.5	46.9	1.000027
6050.0	72.5	-63.9			120.7	563.5	277.3	38.9	1.000027
6100.0	70.8	-62.7			117.1	565.2	272.2	30.4	1.000026
6150.0	69.1	-60.7			113.3	567.8	264.3	24.7	1.000025
6200.0	67.4	-59.9			110.1	566.9	253.5	20.8	1.000025
6250.0	65.8	-59.1			107.1	570.0	244.1	17.4	1.000024
6300.0	64.2	-58.3			104.1	571.1	237.7	14.0	1.000023

STATION ALTITUDE 3997.30 FEET MSL  
 7 MAY 79 0730 HRS MST  
 ASCENSION NO. 94

UPPER AIR DATA  
 1270060094  
 S W R

GEODETTIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
03500.0	62.7	-57.8		101.4	571.7	228.9	11.0	1.000023	
04000.0	61.2	-58.1		99.1	571.3	221.3	8.9	1.000022	
04500.0	59.7	-58.4		96.9	570.9	209.5	7.0	1.000022	
05000.0	58.3	-58.7		94.7	570.5	215.0	7.6	1.000021	
05500.0	56.9	-59.0		92.6	570.1	220.2	8.3	1.000021	
06000.0	55.6	-59.3		90.5	569.7	231.3	9.6	1.000020	
06500.0	54.3	-58.0		87.8	571.5	241.5	11.6	1.000020	
07000.0	53.0	-56.6		85.2	573.3	248.6	13.7	1.000019	
07500.0	51.7	-56.3		83.1	573.7	253.7	16.0	1.000019	
08000.0	50.5	-56.0		81.0	574.1	256.9	17.6	1.000018	
08500.0	49.3	-55.9		79.1	574.2	257.9	17.2	1.000018	
09000.0	48.2	-56.0		77.3	574.1	258.8	16.6	1.000017	
09500.0	47.0	-56.1		75.5	574.0	254.3	12.4	1.000017	
70000.0	45.9	-56.1		73.7	573.9	245.5	8.4	1.000016	
70500.0	44.8	-56.2		72.0	573.9	212.2	5.9	1.000016	
71000.0	43.8	-55.9		70.2	574.3	168.2	6.9	1.000016	
71500.0	42.8	-55.3		68.4	575.1	153.5	9.7	1.000015	
72000.0	41.8	-54.7		66.8	575.8	150.2	12.2	1.000015	
72500.0	40.8	-54.4		65.0	576.2	150.0	14.2	1.000014	
73000.0	39.9	-54.1		63.4	576.8	153.8	15.1	1.000014	
73500.0	38.9	-53.8		61.8	577.0	157.1	16.1	1.000014	
74000.0	38.0	-53.4		60.3	577.4	166.5	15.5	1.000013	
74500.0	37.2	-53.1		58.8	577.9	176.5	15.3	1.000013	
75000.0	36.3	-52.8		57.4	578.3	186.8	14.6	1.000013	
75500.0	35.5	-52.5		56.0	578.7	197.9	13.8	1.000012	
76000.0	34.6	-52.2		54.8	579.1	210.2	13.0	1.000012	
76500.0	33.8	-51.9		53.3	579.5	225.1	11.3	1.000012	
77000.0	33.0	-51.6		52.0	579.9	245.8	10.7	1.000012	
77500.0	32.3	-51.3		50.7	580.3	265.9	10.2	1.000011	
78000.0	31.5	-51.0		49.4	580.7	285.8	10.9	1.000011	
78500.0	30.8	-50.7		48.2	581.1	294.9	12.0	1.000011	
79000.0	30.1	-50.3		47.1	581.5	297.9	12.7	1.000010	
79500.0	29.4	-49.9		45.9	582.0	299.5	12.3	1.000010	
80000.0	28.8	-49.5		44.8	582.8	294.4	7.8	1.000010	
80500.0	28.1	-49.1		43.7	583.1	277.0	3.6	1.000010	
81000.0	27.5	-48.7		42.6	583.7	170.9	2.2	1.000009	
81500.0	26.9	-48.3		41.8	584.2	138.8	6.4	1.000009	
82000.0	26.3	-47.8		40.6	584.8	130.2	11.0	1.000009	
82500.0	25.7	-47.4		39.8	585.3	139.0	11.0	1.000009	
83000.0	25.1	-47.0		38.8	585.9	143.8	11.0	1.000009	

UPPER AIR DATA  
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STATION ALTITUDE 3997.30 FEET MSL  
 7 MAY 79 0730 HRS MST  
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GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42507 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY G/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT DEGREES				DIRECTION, DEGREES (T)	SPEED KNOTS	
83500.0	24.5	-46.6			37.7	586.4	150.7	11.2	1.000008
84000.0	24.0	-46.1			36.8	587.0	160.7	11.0	1.000008
84500.0	23.4	-45.7			35.9	587.5	164.0	10.9	1.000008
85000.0	22.9	-45.3			35.0	588.1	164.7	12.1	1.000008
85500.0	22.4	-44.9			34.2	588.6	161.7	14.4	1.000008
86000.0	21.9	-44.5			33.3	589.1	159.0	16.8	1.000007
86500.0	21.4	-44.0			32.5	589.7	160.8	17.3	1.000007
87000.0	20.9	-43.6			31.7	590.2	162.7	17.4	1.000007
87500.0	20.4	-43.2			31.0	590.8	164.8	17.1	1.000007
88000.0	20.0	-42.8			30.2	591.3	171.0	13.3	1.000007
88500.0	19.5	-42.7			29.5	591.4	181.9	9.8	1.000007
89000.0	19.1	-42.7			28.9	591.4	190.9	8.0	1.000006
89500.0	18.7	-42.6			28.2	591.5	204.6	8.5	1.000006
90000.0	18.3	-42.6			27.6	591.6	211.5	9.2	1.000006
90500.0	17.9	-42.5			27.0	591.7	210.5	7.2	1.000006
91000.0	17.5	-42.4			26.4	591.8	192.4	3.1	1.000006
91500.0	17.1	-42.4			25.8	591.8	89.0	2.3	1.000006
92000.0	16.7	-42.3			25.2	591.9	59.9	5.2	1.000006
92500.0	16.3	-42.2			24.7	592.0	46.7	8.4	1.000005
93000.0	16.0	-42.2			24.1	592.1	42.9	11.5	1.000005
93500.0	15.6	-42.1			23.6	592.1	46.0	9.8	1.000005
94000.0	15.3	-42.1			23.0	592.2	50.4	8.0	1.000005
94500.0	14.9	-42.0			22.5	592.3	57.3	6.3	1.000005
95000.0	14.6	-41.9			22.0	592.4	60.3	6.0	1.000005
95500.0	14.3	-41.9			21.5	592.5	63.0	5.7	1.000005
96000.0	14.0	-41.8			21.0	592.5	67.3	5.4	1.000005
96500.0	13.7	-41.8			20.6	592.6	63.0	4.8	1.000005
97000.0	13.4	-41.6			20.1	592.6	55.2	4.3	1.000004
97500.0	13.1	-40.6			19.6	594.1	49.3	3.8	1.000004
98000.0	12.8	-39.7			19.1	595.3	39.8	3.9	1.000004
98500.0	12.5	-38.7			18.6	596.5	38.0	4.5	1.000004
99000.0	12.2	-37.7			18.1	597.7	37.0	5.0	1.000004
99500.0	11.9	-36.8			17.7	599.0	35.1	4.9	1.000004
100000.0	11.6	-35.8			17.2	600.2	27.5	3.8	1.000004
100500.0	11.5	-34.8			16.8	601.4	14.1	2.8	1.000004
101000.0	11.2	-33.9			16.3	602.6	352.5	2.0	1.000004
101500.0	11.0	-33.6			16.0	603.0	253.5	.1	1.000004
102000.0	10.7	-33.6			15.6	602.6	176.3	2.0	1.000003
102500.0	10.5	-34.3			15.3	602.1	175.3	4.0	1.000003
103000.0	10.3	-34.6			15.0	601.7	177.3	6.5	1.000003

STATION ALTITUDE 3997.30 FEET MSL  
 7 MAY 79 0730 HRS MST  
 ASCENSION NO. 94

UPPER AIR DATA  
 1270050094  
 S M R

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (T.M)	WIND SPEED KNOTS	INDEX OF REFRACTION
10350.0	10.1	-35.0		14.7	601.2	178.5	9.2	1.000003
10400.0	9.9	-35.1		14.4	601.1	179.2	12.0	1.000003
10450.0	9.6	-35.1		14.1	601.1	179.8	14.0	1.000003
10500.0	9.4	-35.0		13.8	601.2	180.4	15.4	1.000003
10550.0	9.2	-35.0		13.5	601.2	180.9	16.8	1.000003
10600.0	9.0	-35.0		13.2	601.2	179.7	17.7	1.000003
10650.0	8.8	-35.0		12.9	601.2	172.2	17.4	1.000003
10700.0	8.7	-34.9		12.7	601.3	164.5	17.3	1.000003
10750.0	8.5	-34.9		12.4	601.3	157.0	17.6	1.000003
10800.0	8.3	-34.9		12.1	601.3	153.3	16.3	1.000003
10850.0	8.1	-34.9		11.9	601.4	160.8	14.9	1.000003
10900.0	7.9	-34.8		11.6	601.4	163.6	13.5	1.000003
10950.0	7.8	-34.8		11.4	601.4	160.0	11.8	1.000003
11000.0	7.6	-34.8		11.1	601.5	149.8	10.2	1.000002
11050.0	7.4	-34.8		10.9	601.5	135.9	9.0	1.000002
11100.0	7.3	-34.7		10.6	601.5	120.2	9.3	1.000002
11150.0	7.1	-34.7		10.4	601.6	109.5	11.7	1.000002
11200.0	7.0	-34.4		10.2	602.0	102.8	14.3	1.000002
11250.0	6.8	-32.4		9.9	604.3	99.0	17.0	1.000002
11300.0	6.7	-31.8		9.7	603.2	97.6	15.5	1.000002
11350.0	6.5	-31.6		9.4	602.5	97.2	14.0	1.000002
11400.0	6.4	-31.4		9.2	605.7	90.6	12.6	1.000002
11450.0	6.3	-31.2		9.0	608.0			1.000002
11500.0	6.1	-31.0		8.8	608.3			1.000002
11550.0	6.0	-30.7		8.6	606.6			1.000002
11600.0	5.9	-30.5		8.5	608.8			1.000002
11650.0	5.8	-30.3		8.3	607.1			1.000002
11700.0	5.6	-30.1		8.1	607.4			1.000002

STATION ALTITUDE 3997.30 FEET MSL  
 7 MAY 79 0730 HRS MST  
 ASCENSION NO. 94

MRN SIGNIFICANT LEVEL DATA  
 1270000094  
 S M R

GEODETIC COORDINATES  
 32.43034 LAT DEG  
 106.42307 LON DEG

GEOCENTRAL ALTITUDE DECAMETERS	DIRECTION DEG (TN)	SPEED MPS	WIND DATA		DEW PT DEP DEG C	TEMPERATURE		PRESSURE MILLIBARS
			N-S MPS	E-W MPS		AIR DEG C		
3550.	9999.**	9999.**	-9999.**	-9999.**	99	-30.0	5.000+0	
3412.	98.	9.	1.	-9.	99	-32.0	6.800+0	
3392.	103.	7.	2.	-7.	99	-34.7	7.000+0	
3143.	179.	5.	5.	-0.	99	-35.1	1.000+1	
3070.	350.	1.	-1.	0.	99	-33.4	1.110+1	
2940.	56.	2.	-1.	-2.	99	-41.7	1.340+1	
2669.	171.	7.	7.	-1.	99	-42.8	2.000+1	
2400.	298.	7.	-3.	0.	99	-50.3	3.000+1	
2185.	150.	6.	5.	-3.	99	-54.7	4.180+1	
2147.	192.	3.	3.	1.	99	-56.2	4.440+1	
2071.	257.	9.	2.	9.	99	-55.9	5.000+1	
2027.	245.	7.	3.	0.	99	-56.7	5.360+1	
2011.	236.	5.	3.	0.	99	-59.4	5.500+1	
1924.	231.	6.	4.	5.	99	-57.7	6.320+1	
1860.	269.	14.	0.	14.	99	-61.2	7.000+1	
1845.	275.	18.	-2.	10.	99	-64.3	7.160+1	
1728.	266.	26.	2.	20.	99	-58.6	8.000+1	
1666.	257.	22.	5.	21.	99	-64.7	9.560+1	
1639.	254.	21.	6.	20.	99	-71.1	1.000+2	

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

STATION ALTITUDE 3997.30 FEET MSL  
 7 MAY 79  
 ASCENSION NO. 94

MANDATORY LEVELS  
 1270060094  
 S M R

GEODETTIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	TEMPPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4714.	18.6	-4.1	21.	9999.0	9999.0XX
800.0	6407.	15.9	-7.4	19.	9999.0	9999.0XX
750.0	8193.	12.1	-10.3	20.	9999.0	9999.0XX
700.0	10070.	7.1	-14.3	20.	9999.0	9999.0XX
650.0	12056.	4.0	-16.9	20.	9999.0	9999.0XX
600.0	14178.	4.3	-17.8	18.	9999.0	9999.0XX
550.0	16488.	.0	-21.3	18.	9999.0	9999.0XX
500.0	18961.	-6.5	-26.2	19.	9999.0	9999.0XX
450.0	21824.	-14.4	-30.0	25.	23.8	78.3
400.0	24507.	-22.6	-35.3	30.	266.8	21.7
350.0	27674.	-30.5	-42.6	29.	261.4	36.3
300.0	31198.	-39.8	-50.6	30.	269.5	28.4
250.0	35203.	-49.7			268.1	44.3
200.0	39872.	-59.7			271.9	36.6
175.0	42600.	-61.1			259.8	47.3
150.0	45733.	-61.0			248.5	50.8
125.0	49407.	-65.8			242.9	52.0
100.0	53787.	-71.1			254.2	40.7
80.0	58310.	-61.0			272.6	56.1
70.0	61011.	-61.2			269.4	27.5
60.0	64184.	-58.3			212.8	7.4
50.0	67957.	-55.9			257.2	17.4
40.0	72623.	-54.1			152.9	14.9
30.0	78731.	-50.3			298.1	12.7
25.0	82665.	-46.9			148.5	11.0
20.0	87561.	-42.8			169.9	13.8
15.0	93940.	-42.0			55.1	6.8
10.0	103106.	-35.1			178.7	9.9
7.0	111273.	-34.7			104.1	13.6

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

STATION ALTITUDE 3997.30 FEET MSL  
 7 MAY 79 0730 HRS MST  
 ASCENSION NO. 94

MRN MANDATORY LEVELS  
 1270000094  
 S M R

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

GEOCENTRAL ALTITUDE DECAMETERS	DIRECTION DEG (TN)	WIND DATA		E-W MPS	DEW PT DEP DEG C	TEMPERATURE		PRESSURE MILLIBARS
		SPEED MPS	N-S MPS			AIR DEG C		
3392.	104.	7.	2.	-7.	99	-34.7	7.000+0	
2143.	179.	5.	5.	-0.	99	-35.1	1.000+1	
2863.	55.	3.	-2.	-3.	99	-42.0	1.500+1	
2669.	170.	7.	7.	-1.	99	-42.8	2.000+1	
2520.	148.	6.	5.	-3.	99	-46.9	2.500+1	
2400.	298.	7.	-3.	0.	99	-50.3	3.000+1	
2214.	153.	8.	7.	-3.	99	-54.1	4.000+1	
2071.	257.	9.	2.	9.	99	-55.9	5.000+1	
1956.	213.	4.	3.	2.	99	-58.3	6.000+1	
1860.	269.	14.	0.	14.	99	-61.2	7.000+1	
1777.	273.	29.	-1.	29.	99	-61.0	8.000+1	
1639.	254.	21.	6.	20.	99	-71.1	1.000+2	
1506.	243.	27.	12.	24.	99	-65.8	1.250+2	
1394.	248.	26.	10.	24.	99	-61.0	1.500+2	
1298.	260.	24.	4.	24.	99	-61.1	1.750+2	
1215.	272.	19.	-1.	19.	99	-58.7	2.000+2	
1073.	268.	23.	1.	23.	99	-49.7	2.500+2	
951.	269.	15.	0.	15.	11	-39.8	3.000+2	
844.	261.	19.	3.	16.	12	-30.5	3.500+2	
747.	267.	11.	1.	11.	13	-22.6	4.000+2	
659.	24.	40.	-37.	-10.	16	-14.4	4.500+2	
578.	9999.**	9999.**	-9999.**	-9999.**	20	-6.5	5.000+2	
503.	9999.**	9999.**	-9999.**	-9999.**	21	-0	5.500+2	
432.	9999.**	9999.**	-9999.**	-9999.**	22	4.3	6.000+2	
367.	9999.**	9999.**	-9999.**	-9999.**	21	4.0	6.500+2	
307.	9999.**	9999.**	-9999.**	-9999.**	21	7.1	7.000+2	
250.	9999.**	9999.**	-9999.**	-9999.**	22	12.1	7.500+2	
195.	9999.**	9999.**	-9999.**	-9999.**	23	15.9	8.000+2	
144.	9999.**	9999.**	-9999.**	-9999.**	23	18.6	8.500+2	

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