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June 1967

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METEOROLOGICAL DATA REPORT

NIKE-HYDAC STV
SR-056 SRE-19
(24 May 1967)

BY

HAROLD M. RICHART

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DA Task IV650212A127-02

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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ABSTRACT

Meteorological data gathered for the launching of Nike-Hydac STV, SR-056 SRE-19, are presented for the Ballistic Systems Division, U. S. Air Force, and for ballistic studies. The data appear, along with calculated ballistic data, in tabular form.

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INTRODUCTION

Nike-Hydac STV, SR-056 SRE-19, was launched from Launch Complex 33, L-361L, White Sands Missile Range (WSMR), New Mexico, at 0721 hours MDT, 24 May 1967.

Meteorological data used in conjunction with theoretical calculations to predict rocket impact were collected by the Meteorological Support Division, Atmospheric Sciences Laboratory (ASL), WSMR, New Mexico. The Ballistics Meteorologists for this firing were Harold M. Richart and SFC Glenn E. Hudson.

DISCUSSION

Wind data for the first 216 feet above the surface were obtained from a system composed of 5 Aerovanes mounted on a 200 foot tower and cabled to component wind indicators.

From 216 to 4,000 feet above the surface, wind data were obtained from double-theodolite-observed balloon ascents.

Temperature, pressure, and humidity data, along with upper wind data from 4,000 to 100,000 feet above the surface, were obtained from standard rawinsonde observations.

Mean wind component values in each ballistic zone were determined from vertical cross sections by the equal-area method.

Theoretical rocket performance values and ballistic factors as a function of altitude were provided by ASL and are the basis for data appearing in Table XII.

PAYLOAD			233.0	Pounds
CORIOLIS DISPLACEMENT		WEST	4.7	Miles
SECOND-STAGE IGNITION		TIME	20.0	Seconds
		ALTITUDE	36,691	Feet MSL
PEAK		TIME	232.0	Seconds
		ALTITUDE	693,948	Feet MSL
UNIT WIND EFFECT		HEAD	2.3815	Miles/MPH
		CROSS	2.4678	Miles/MPH
		TAIL	2.3815	Miles/MPH
TOWER TILT EFFECT			13.83	Miles/Degree

TABLE I. THEORETICAL ROCKET PERFORMANCE VALUES
NIKE-HYDAC STV SR-056

LAYERS IN FEET ABOVE GROUND	BALLISTIC FACTORS
11- 60	.1440
60- 108	.0966
108- 148	.0629
148- 184	.0502
184- 216	.0286
216- 300	.0724
300- 400	.0533
400- 600	.0752
600- 800	.0557
800-1000	.0400

LAYERS IN FEET ABOVE GROUND	BALLISTIC FACTORS
1000- 1400	.0555
1400- 2000	.0575
2000- 2500	.0288
2500- 3000	.0195
3000- 3500	.0112
3500- 4000	.0073
4000- 4253	.0012
4253- 9000	-.0135
9000-15000	-.0147
15000-21000	-.0166

LAYERS IN FEET ABOVE GROUND	BALLISTIC FACTORS
21000- 26000	-.0102
26000- 32691	-.0110
32691- 34000	.0430
34000- 36000	.0411
36000- 41000	.0545
41000- 46000	.0259
46000- 51000	.0154
51000- 56000	.0092
56000- 61000	.0060
61000- 66000	.0040
66000- 74168	.0020

TABLE II. BALLISTIC FACTORS
NIKE-HYDAC STV SR-056

AERO-VANE NO. *	MEAN WIND COMPONENTS IN MILES PER HOUR									
	1 0510 MDT		2 0530 MDT		3 0600 MDT		4 0615 MDT		5 0630 MDT	
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
	1	8.0S	2.0E	8.0S	4.0E	8.0S	2.0E	5.0E	0.0	1.0E
2	12.0	2.0	10.0	4.0	10.0	4.0	8.0	2.0	4.0S	2.0
3	15.0	2.0	12.0	4.0	10.0	4.0	9.0	4.5	6.0	3.0
4	15.0	2.0	13.0	4.0	12.0	8.0	10.0	4.5	6.0	3.0
5	15.0	7.0	13.0	7.0	12.0	8.0	9.0	7.0	6.0	6.0

AERO-VANE NO. *	MEAN WIND COMPONENTS IN MILES PER HOUR									
	6 0640 MDT		7 0650 MDT		8 0700 MDT		9 0721 MDT			
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
	1	0.0	2.0E	0.0	0.0	0.0	4.0S	2.0E		
2	4.0S	2.0	2.0S	0.0	2.0S	0.0	6.5	2.5		
3	6.0	4.0	4.0	2.0E	2.0	2.0E	9.0	2.0		
4	6.0	4.0	4.0	2.0	5.0	2.0	9.0	1.0		
5	6.0	6.0	5.0	6.0	6.0	5.0	9.5	0.0		

TABLE III. ANEMOMETER WIND SPEED AND DIRECTION
NIKE-HYDAC STV SR-056

* Heights corresponding to Aerovane Numbers: 1 = 35 Feet 2 = 128 Feet 3 = 200 Feet
2 = 88 Feet 4 = 168 Feet

LAYERS IN FEET ABOVE GROUND	MEAN WIND COMPONENTS IN MILES PER HOUR									
	1		2		3		4		5	
	0510 MDT		0530 MDT		0600 MDT		0615 MDT		0630 MDT	
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
216- 300	14.58	6.5E	13.08	6.5E	12.58	7.5E	9.58	6.0E	8.08'	4.0E
300- 400	14.0	2.5	14.0	4.0	14.5	5.5	12.0	4.0	13.0	1.0
400- 600	14.0	2.0W	15.0	1.0	18.0	2.0	14.5	2.0	19.0	3.0W
600- 800	17.0	3.0	17.5	0.5	20.0	0.0	17.0	0.0	17.5	4.0
800-1000	18.5	3.5	18.0	0.0	21.0	1.0W	18.0	1.5W	15.0	5.0
1000-1400	18.5	3.0	17.0	1.0W	18.5	2.0	16.0	3.0	9.5	5.0
1400-2000	12.5	4.0	8.0	2.5	9.5	3.0	8.0	4.5	2.5	5.5
2000-2500	1.0	7.0	2.5	5.0	3.5	4.5	1.5	5.0	0.5N	7.0
2500-3000	1.0	9.0	2.0	8.0	2.0	6.0	0.5N	7.5	2.08	9.5
3000-3500	3.0	10.5	3.0	12.5	0.5	8.0	2.08	9.5	4.0	10.5
3500-4000	1.5	10.0	2.5	15.0	2.5N	9.5	3.0	10.0	4.5	11.0

TABLE IV. PILOT-BALLOON-MEASURED WIND DATA
NIKE-HYDAG RTV 8R-056

LAYERS IN FEET ABOVE GROUND	MEAN WIND COMPONENTS IN MILES PER HOUR									
	6 0640 MDT		7 0650 MDT		8 0700 MDT		9 0722 MDT			
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
216- 300	7.08	4.5E	6.08	5.0E	7.58	4.0E	9.58	0.0		
300- 400	9.5	3.0	7.5	2.5	10.0	2.0	9.5	0.5W		
400- 600	12.0	0.5	10.0	2.0W	13.5	0.5W	10.0	1.0		
600- 800	13.0	2.5W	12.0	4.0	16.0	2.0	9.5	3.0		
800-1000	13.5	4.5	13.5	4.5	17.5	3.0	9.0	5.0		
1000-1400	11.5	4.0	12.0	2.5	15.5	3.0	7.0	5.5		
1400-2000	8.0	3.0	7.0	3.0	7.5	3.0	5.5	5.0		
2000-2500	2.0	7.0	2.0	8.0	1.5	6.0	3.5	7.0		
2500-3000	0.0	10.5	2.0N	12.5	0.5	9.5	1.5	10.0		
3000-3500	1.08	12.5	0.5	14.0	1.5N	11.5	1.5N	11.5		
3500-4000	2.5	13.0	2.08	11.5	0.0	11.5	1.0	11.5		

TABLE IV. PILOT-BALLOON-MEASURED WIND DATA (Cont)
NIKE-HYDAG STV 8R-056

LAYERS IN FEET ABOVE GROUND	MEAN WIND COMPONENTS IN KNOTS					
	1		2			
	0400 MDT		0720 MDT			
	N-S	E-W	N-S	E-W	N-S	E-W
4000-4253	15.58	9.0W	0.0	8.0W		
4253-9000	13.0	5.0	2.08	6.0		
9000-15000	0.5	7.0	14.0	0.0		
15000-21000	18.0	0.0	22.0	0.0		
21000-26000	16.5	3.0W	22.0	0.0		
26000-32691	16.5	9.5	22.5	4.0W		
32691-34000	16.0	19.0	16.5	9.5		
34000-36000	16.5	20.0	18.0	10.5		
36000-41000	14.0	17.0	15.5	13.0		
41000-46000	10.0	17.5	14.5	17.5		
46000-51000	0.0	17.0	0.0	15.0		
51000-56000	4.0N	11.5	3.5N	9.5		
56000-61000	4.5	5.5	4.5	2.5		
61000-66000	2.58	4.5E	1.08	5.0E		
66000-74168	4.5	4.0	4.0N	1.5		

TABLE V. RAWINSONDE-MEASURED WIND DATA
NIRK-HYDAG 8TV 8R-056

STATION ALTITUDE 1909.0 FEET MSL
24 MAY 67 0400 HRS NDT
ASCENSION NO. 417

SIGNIFICANT LEVEL DATA

0243003910
WHITE SANDS SIYR
TABLE VI

WESTH SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
076.5	3989.0	17.3	-8.0	17.0
068.0	4320.0	21.7	-4.4	17.0
062.0	4525.4	22.7	-2.8	18.0
050.0	4926.0	24.0	-1.8	18.0
742.0	8761.9	15.4	-5.1	24.0
602.0	14422.0	0.1	-12.6	36.0
576.0	15052.2	-3.5	-12.7	49.0
549.0	16023.5	-5.9	-22.4	26.0
522.0	10117.0	-7.6	-26.2	21.0
519.0	10265.2	-0.0	-16.0	53.0
513.0	10562.2	-0.6	-13.1	70.0
501.0	19164.1	-10.4	-15.1	69.0
482.0	20139.0	-13.0	-14.2	91.0
464.0	21090.3	-15.1	-15.2	100.0
442.0	22295.0	-17.0	-17.1	100.0
414.0	23090.0	-21.1	-21.7	96.0
400.0	24734.2	-21.6	-25.6	71.0
390.0	25345.4	-23.9	-27.8	71.0
374.0	26346.3	-26.0	-29.5	79.0
354.0	27301.6	-20.3	-32.8	66.0
354.0	27646.6	-20.0	-34.8	57.0
304.0	31163.2	-30.4	-43.6	59.0
299.0	31530.4	-30.6	-44.8	53.0
290.0	32227.0	-40.4	-47.4	48.0
280.0	33011.0	-42.6	-49.2	49.0
214.0	30700.0	-50.0	0.0	-0.0
203.0	39001.7	-50.7	0.0	-0.0
167.0	43062.0	-65.0	0.0	-0.0
155.0	45356.4	-66.1	0.0	-0.0
133.0	40420.2	-64.5	0.0	-0.0

** RELATIVE HUMIDITY NOT SUPPLIED. ZERO VALUE ASSUMED FOR COMPUTATIONS.

STATION ALTITUDE 3989.0 FEET MSL
24 MAY 67 0400 HRS MDT
ASCENSION NO. 417

SIGNIFICANT LEVEL DATA
0243003910
WHITE SANDS SITE
TABLE VI (CONT)

WSTH SITE COORDINATES
E 408.580 FEET
N 105.045 FEET

PRESSURE GEOMETRIC ALTITUDE		TEMPERATURE AIR DEWPOINT		REL. HUM. PERCENT
MILLIBARS	MSL FEET	DEGREES	CENTIGRADE	
126.0	49199.3	-65.6	0.	**
112.0	51882.1	-64.5	0.	**
85.0	57307.7	-60.6	0.	**
02.0	58101.8	-66.5	0.	**
68.0	61860.5	-64.4	0.	**
66.0	62467.4	-61.4	0.	**
56.0	65112.7	-61.5	0.	**
32.0	67367.3	-57.9	0.	**
32.0	77620.5	-51.5	0.	**
18.0	90020.7	-50.0	0.	**
13.0	97167.4	-43.3	0.	**
7.0	111026.7	-41.5	0.	**
6.0	114552.8	-33.9	0.	**
5.0	110706.8	-34.5	0.	**

** RELATIVE HUMIDITY NOT SUPPLIED. ZERO VALUE ASSUMED FOR COMPUTATIONS.

STATION ALTITUDE 3989.0 FEET MSL

24 MAY 67

ASCENSION NO. 417

UPPER AIR DATA

0243003910

WHITE SANDS SITE

TABLE VII

WSTH SITE COORDINATES

E 408.580 FEET

N 205.045 FEET

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	
3489.0	870.5	17.3	-0.0	17.0	1052.3	664.1	140.0	4.1	1.000249
4000.0	870.2	17.4	-7.9	17.0	1051.4	664.2	140.3	4.1	1.000249
4500.0	862.0	22.6	-3.0	17.9	1014.3	670.3	154.0	7.3	1.000247
5000.0	847.8	23.8	-1.0	18.1	992.2	671.0	169.3	10.5	1.000244
5500.0	832.9	22.7	-2.2	18.9	970.5	670.5	183.0	13.7	1.000241
6000.0	818.3	21.6	-2.5	19.7	965.0	669.3	190.3	16.0	1.000237
6500.0	803.8	20.5	-2.9	20.5	951.7	660.0	207.1	18.5	1.000234
7000.0	789.0	19.4	-3.4	21.2	930.6	666.7	209.7	18.6	1.000230
7500.0	773.9	18.2	-3.8	22.0	925.7	665.4	211.7	18.0	1.000227
8000.0	762.5	17.1	-4.3	22.8	913.0	664.1	213.2	17.1	1.000223
8500.0	746.9	16.0	-4.8	23.6	900.5	662.8	213.8	16.7	1.000220
9000.0	735.5	14.8	-5.3	24.6	888.2	661.4	214.0	16.4	1.000217
9500.0	722.0	13.4	-5.8	25.8	876.1	659.0	214.3	16.0	1.000214
10000.0	708.8	12.1	-6.4	27.1	864.2	656.2	213.9	15.5	1.000210
10500.0	695.9	10.7	-6.9	28.3	852.5	656.7	210.8	14.9	1.000207
11000.0	683.1	9.4	-7.6	29.5	840.9	653.1	206.7	14.3	1.000204
11500.0	670.6	8.0	-8.2	30.8	829.5	653.5	201.1	13.5	1.000201
12000.0	658.4	6.6	-8.9	32.0	818.3	651.9	195.0	12.2	1.000197
12500.0	646.3	5.3	-9.6	33.2	807.3	650.3	188.5	10.3	1.000194
13000.0	634.5	3.9	-10.3	34.5	796.5	648.7	179.4	8.5	1.000191
13500.0	622.9	2.6	-11.1	35.7	785.8	647.1	168.0	6.9	1.000188
14000.0	611.5	1.2	-11.9	37.0	775.3	645.5	149.4	5.7	1.000185
14500.0	600.2	-0.1	-12.6	38.6	764.8	643.9	126.6	4.7	1.000182
15000.0	588.9	-1.4	-12.5	42.4	753.7	642.4	121.7	5.5	1.000180
15500.0	577.7	-2.6	-12.6	46.3	742.9	640.9	122.6	6.7	1.000178
16000.0	566.8	-3.9	-14.0	49.5	732.3	639.4	136.3	9.0	1.000174
16500.0	555.9	-5.1	-18.7	53.7	721.9	637.8	149.2	11.3	1.000168
17000.0	545.2	-6.1	-22.9	58.3	711.0	636.5	155.9	14.1	1.000164
17500.0	534.7	-6.8	-24.4	63.4	699.0	635.7	161.8	16.4	1.000160
18000.0	524.4	-7.4	-25.9	68.7	687.3	634.9	163.4	18.0	1.000157

UPPER AIR DATA
0243003910
WHITE SANDS SITE
TABLE VII (Cont)

STATION ALTITUDE 3989.0 FEET MSL
24 MAY 67 0600 HRS MDT
ASCENSION NO. 417

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
18500.0	514.3	-8.5	-13.7	66.4	675.9	634.0	634.0	168.8	19.2	1.000162
19000.0	504.2	-9.9	-14.9	69.3	666.4	632.2	632.2	170.8	19.3	1.000159
19500.0	494.4	-11.3	-14.7	76.6	656.0	630.6	630.6	173.2	19.4	1.000157
20000.0	484.7	-12.6	-14.3	87.9	647.2	629.0	629.0	177.6	18.8	1.000155
20500.0	475.1	-13.8	-14.0	94.4	637.2	627.6	627.6	181.7	18.2	1.000153
21000.0	465.7	-14.9	-15.1	99.1	627.3	626.2	626.2	184.6	18.0	1.000151
21500.0	456.4	-15.7	-15.8	100.0	616.9	625.2	625.2	187.3	17.8	1.000148
22000.0	447.3	-16.5	-16.6	100.0	606.4	624.2	624.2	189.5	17.6	1.000145
22500.0	438.3	-17.5	-17.7	99.5	596.6	623.0	623.0	191.0	17.4	1.000142
23000.0	429.5	-18.8	-19.1	98.2	587.6	621.4	621.4	191.4	17.3	1.000139
23500.0	420.8	-20.1	-20.6	97.0	578.7	619.0	619.0	191.3	17.2	1.000136
24000.0	412.3	-21.2	-22.1	93.0	569.5	618.4	618.4	190.5	17.1	1.000133
24500.0	403.5	-21.5	-24.4	78.0	558.6	618.0	618.0	189.8	16.7	1.000130
25000.0	395.6	-22.6	-26.5	71.0	549.8	616.5	616.5	189.5	15.8	1.000127
25500.0	387.5	-24.3	-28.1	72.2	542.3	614.4	614.4	189.1	15.2	1.000125
26000.0	379.5	-25.8	-28.9	76.2	534.2	612.6	612.6	188.2	15.3	1.000122
26500.0	371.6	-27.0	-30.0	77.1	525.7	611.0	611.0	187.6	15.5	1.000120
27000.0	363.8	-27.7	-31.6	70.8	516.3	610.1	610.1	187.9	15.9	1.000118
27500.0	356.2	-28.5	-33.7	62.0	507.1	609.1	609.1	187.9	16.6	1.000115
28000.0	348.6	-29.8	-35.7	57.2	498.9	607.6	607.6	187.4	17.6	1.000113
28500.0	341.2	-31.1	-36.9	57.5	491.0	605.9	605.9	186.8	18.1	1.000111
29000.0	333.9	-32.5	-38.2	57.8	483.2	604.1	604.1	186.1	18.1	1.000109
29500.0	326.7	-33.9	-39.4	58.1	475.6	602.4	602.4	188.6	17.8	1.000107
30000.0	319.7	-35.2	-40.7	58.3	468.1	600.7	600.7	192.4	17.5	1.000105
30500.0	312.9	-36.6	-41.9	58.6	460.7	598.9	598.9	196.7	17.3	1.000104
31000.0	306.2	-38.0	-43.2	58.9	453.5	597.2	597.2	201.0	17.2	1.000102
31500.0	299.5	-38.6	-44.7	53.6	444.8	596.4	596.4	205.2	17.5	1.000100
32000.0	292.9	-39.8	-46.5	49.6	437.3	594.8	594.8	209.1	17.8	1.000098
32500.0	286.5	-41.2	-48.0	48.3	430.2	593.1	593.1	211.5	18.0	1.000096
33000.0	280.1	-42.6	-49.2	49.0	423.3	591.3	591.3	213.9	18.2	1.000095

STATION ALTITUDE 3989.0 FEET MSL

24 MAY 67

ASCENSION NO. 417

UPPER AIR DATA

0243003910

WHITE SANDS SITE

TABLE VII (Cont)

WSTM SITE COORDINATES

E 488,580 FEET

N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTYGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
33500.0	273.7	-43.9	-51.2	44.9**	415.9	589.6	216.2	19.2	1.000093
34000.0	267.4	-45.2	-53.3	40.6**	408.8	587.9	218.4	20.1	1.000091
34500.0	261.3	-46.6	-55.4	36.4**	401.7	586.1	219.8	20.9	1.000090
35000.0	255.2	-47.9	-57.6	32.1**	394.8	584.4	221.1	21.6	1.000088
35500.0	249.4	-49.2	-59.9	27.9**	388.0	582.7	222.4	22.2	1.000087
36000.0	243.6	-50.6	-62.4	23.6**	381.4	580.9	223.8	22.7	1.000085
36500.0	238.0	-51.9	-65.0	19.4**	374.9	579.2	225.3	23.3	1.000084
37000.0	232.6	-53.2	-67.9	15.2**	368.5	577.4	227.0	23.9	1.000082
37500.0	227.2	-54.6	-71.3	10.9**	362.2	575.7	229.4	25.1	1.000081
38000.0	222.0	-55.9	-75.6	6.7**	356.0	573.9	231.3	26.0	1.000079
38500.0	216.9	-57.2	-82.8	2.4**	350.0	572.2	231.6	26.0	1.000078
39000.0	211.8	-58.1	0.	-0.0**	343.2	571.0	231.6	25.7	1.000076
39500.0	206.8	-58.5	0.	-0.0**	335.6	570.5	230.5	24.2	1.000075
40000.0	201.8	-58.9	0.	-0.0**	328.2	570.0	229.4	22.8	1.000073
40500.0	196.9	-59.7	0.	-0.0**	321.4	568.9	228.4	22.1	1.000072
41000.0	192.2	-60.5	0.	-0.0**	314.8	567.9	227.5	21.4	1.000070
41500.0	187.5	-61.3	0.	-0.0**	308.3	566.8	229.7	21.7	1.000069
42000.0	183.0	-62.1	0.	-0.0**	302.0	565.7	233.0	22.3	1.000067
42500.0	178.5	-62.8	0.	-0.0**	295.8	564.7	237.2	22.2	1.000066
43000.0	174.2	-63.6	0.	-0.0**	289.7	563.6	242.8	21.0	1.000065
43500.0	170.0	-64.4	0.	-0.0**	283.8	562.5	247.6	19.7	1.000063
44000.0	165.9	-65.1	0.	-0.0**	277.8	561.6	248.1	18.2	1.000062
44500.0	161.8	-65.5	0.	-0.0**	271.4	561.1	248.7	16.6	1.000060
45000.0	157.8	-65.8	0.	-0.0**	265.2	560.6	242.4	16.0	1.000059
45500.0	153.9	-66.0	0.	-0.0**	258.9	560.4	236.1	15.5	1.000058
46000.0	150.1	-66.8	0.	-0.0**	252.2	560.7	233.4	17.0	1.000056
46500.0	146.4	-65.5	0.	-0.0**	245.7	561.1	232.8	19.7	1.000055
47000.0	142.8	-65.2	0.	-0.0**	239.3	561.4	232.2	22.4	1.000053
47500.0	139.3	-65.0	0.	-0.0**	233.1	561.8	234.8	23.5	1.000052
48000.0	135.9	-64.7	0.	-0.0**	227.1	562.1	237.7	24.5	1.000051

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

STATION ALTITUDE 3989.0 FEET MSL

24 MAY 67

ASCENSION NO. 417

UPPER AIR DATA

0243003910

WHITE SANDS SITE

TABLE VII (Cont)

WSTM SITE COORDINATES

E 488,580 FEET

N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
48500.0	132.5	-64.6	0.	-0.	221.4	562.3		240.9	25.1	1.000049
49000.0	129.3	-65.3	0.	-0.	216.7	561.3		244.9	24.4	1.000048
49500.0	126.1	-65.5	0.	-0.	211.5	561.1		249.0	23.7	1.000047
50000.0	123.0	-65.3	0.	-0.	206.1	561.4		252.9	22.0	1.000046
50500.0	120.0	-65.1	0.	-0.	200.9	561.7		256.9	19.8	1.000045
51000.0	117.0	-64.9	0.	-0.	195.8	562.0		261.0	17.8	1.000044
51500.0	114.1	-64.7	0.	-0.	190.8	562.2		265.5	16.5	1.000042
52000.0	111.3	-64.6	0.	-0.	186.0	562.3		270.1	15.2	1.000041
52500.0	108.6	-65.0	0.	-0.	181.7	561.8		274.8	14.8	1.000040
53000.0	105.9	-65.3	0.	-0.	177.5	561.3		279.6	14.8	1.000040
53500.0	103.3	-65.7	0.	-0.	173.5	560.8		283.4	14.8	1.000039
54000.0	100.7	-66.1	0.	-0.	169.5	560.3		284.1	15.0	1.000038
54500.0	98.2	-66.4	0.	-0.	165.6	559.8		284.9	15.2	1.000037
55000.0	95.8	-66.8	0.	-0.	161.8	559.3		289.0	15.1	1.000036
55500.0	93.4	-67.2	0.	-0.	158.1	558.8		294.2	14.8	1.000035
56000.0	91.1	-67.6	0.	-0.	154.4	558.3		298.9	14.5	1.000034
56500.0	88.9	-67.9	0.	-0.	150.9	557.8		300.6	13.5	1.000034
57000.0	86.7	-68.3	0.	-0.	147.4	557.3		302.3	12.6	1.000033
57500.0	84.5	-68.3	0.	-0.	143.7	557.3		305.0	11.8	1.000032
58000.0	82.4	-66.8	0.	-0.	139.2	559.3		309.2	11.2	1.000031
58500.0	80.4	-66.3	0.	-0.	135.4	560.0		313.5	10.6	1.000030
59000.0	78.4	-66.0	0.	-0.	131.9	560.4		308.7	10.1	1.000029
59500.0	76.5	-65.7	0.	-0.	128.5	560.8		299.1	9.7	1.000029
60000.0	74.6	-65.4	0.	-0.	125.1	561.2		289.9	9.2	1.000028
60500.0	72.8	-65.2	0.	-0.	121.9	561.6		287.4	8.8	1.000027
61000.0	71.0	-64.9	0.	-0.	118.7	561.9		284.9	8.3	1.000026
61500.0	69.2	-64.6	0.	-0.	115.7	562.3		279.0	7.6	1.000026
62000.0	67.5	-63.7	0.	-0.	112.3	563.5		271.2	6.7	1.000025
62500.0	65.9	-61.4	0.	-0.	108.4	566.6		262.1	5.8	1.000024
63000.0	64.3	-61.4	0.	-0.	105.8	566.6		247.7	4.9	1.000024

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

STATION ALTITUDE 3809.0 FEET MSL
24 MAY 67 0400 HRS MDT
ASCENSION NO. 417

UPPER AIR DATA
0243003910
WHITE SANDS SITE
TABLE VII (Cont)

WSM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
63500.0	62.8	-61.4	-0.	103.3	566.6	233.3	4.1	1.000023
64000.0	61.2	-61.5	-0.	100.8	566.5	229.9	3.3	1.000022
64500.0	59.8	-61.5	-0.	98.4	566.5	229.7	2.5	1.000022
65000.0	58.3	-61.5	-0.	96.0	566.5	210.3	2.0	1.000021
65500.0	56.9	-60.9	-0.	93.4	567.3	162.8	1.9	1.000021
66000.0	55.6	-60.1	-0.	90.9	568.4	117.3	1.9	1.000020
66500.0	54.2	-59.3	-0.	88.3	569.4	100.1	3.1	1.000020
67000.0	52.9	-58.5	-0.	85.9	570.5	83.0	4.4	1.000019
67500.0	51.7	-57.8	-0.	83.6	571.4	90.8	5.1	1.000019
68000.0	50.5	-57.5	-0.	81.5	571.8	109.0	5.6	1.000018
68500.0	49.3	-57.2	-0.	79.5	572.2	124.3	5.8	1.000018
69000.0	48.1	-56.9	-0.	77.5	572.6	133.7	5.3	1.000017
69500.0	47.0	-56.6	-0.	75.6	573.0	143.2	4.9	1.000017
70000.0	45.9	-56.3	-0.	73.7	573.4	153.8	5.2	1.000016
70500.0	44.8	-55.9	-0.	71.9	573.9	164.8	5.8	1.000016
71000.0	43.8	-55.6	-0.	70.1	574.3	175.8	6.4	1.000016
71500.0	42.8	-55.3	-0.	68.4	574.7	181.9	6.2	1.000015
72000.0	41.8	-55.0	-0.	66.7	575.1	187.9	6.0	1.000015
72500.0	40.8	-54.7	-0.	65.1	575.5	192.6	5.9	1.000014
73000.0	39.8	-54.4	-0.	63.4	575.9	192.5	5.9	1.000014
73500.0	38.9	-54.1	-0.	61.9	576.3	192.4	5.9	1.000014
74000.0	38.0	-53.8	-0.	60.3	576.7	185.0	5.3	1.000013
74500.0	37.1	-53.5	-0.	58.8	577.1	168.1	3.9	1.000013
75000.0	36.2	-53.1	-0.	57.4	577.6	151.1	2.4	1.000013
75500.0	35.4	-52.8	-0.	56.0	578.0	127.0	2.9	1.000012
76000.0	34.6	-52.5	-0.	54.6	578.4	99.1	4.3	1.000012
76500.0	33.8	-52.2	-0.	53.2	578.8	71.2	5.7	1.000012
77000.0	33.0	-51.9	-0.	51.9	579.2	67.6	5.9	1.000012
77500.0	32.2	-51.6	-0.	50.6	579.6	67.4	5.9	1.000011
78000.0	31.5	-51.5	-0.	49.4	579.8	67.6	5.9	1.000011

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

STATION ALTITUDE 3989.0 FEET MSL

24 MAY 67

ASCENSION NO. 417

UPPER AIR DATA

0243003910

WHITE SANDS SITE

TABLE VII (Cont)

WSTM SITE COORDINATES

E 488.580 FEET

N 185.045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
78500.0	30.7	-51.4	0.	-0.	48.3	579.8		71.8	5.1	1.000011
79000.0	30.0	-51.3	0.	-0.	47.2	579.9		76.0	4.4	1.000010
79500.0	29.3	-51.3	0.	-0.	46.1	580.0		83.3	3.8	1.000010
80000.0	28.7	-51.2	0.	-0.	45.0	580.1		100.0	3.4	1.000010
80500.0	28.0	-51.2	0.	-0.	44.0	580.2		116.6	3.0	1.000010
81000.0	27.4	-51.1	0.	-0.	42.9	580.2		127.9	2.7	1.000010
81500.0	26.7	-51.0	0.	-0.	41.9	580.3		132.1	2.5	1.000009
82000.0	26.1	-51.0	0.	-0.	41.0	580.4		136.3	2.4	1.000009
82500.0	25.5	-50.9	0.	-0.	40.0	580.5		139.4	2.6	1.000009
83000.0	24.9	-50.8	0.	-0.	39.1	580.6		141.8	2.9	1.000009
83500.0	24.4	-50.8	0.	-0.	38.2	580.6		144.2	3.3	1.000008
84000.0	23.8	-50.7	0.	-0.	37.3	580.7		151.1	3.3	1.000008
84500.0	23.3	-50.7	0.	-0.	36.4	580.8		159.4	3.3	1.000008
85000.0	22.7	-50.6	0.	-0.	35.6	580.9		167.7	3.2	1.000008
85500.0	22.2	-50.5	0.	-0.	34.8	580.9		149.1	3.8	1.000008
86000.0	21.7	-50.5	0.	-0.	33.9	581.0		128.5	4.5	1.000008
86500.0	21.2	-50.4	0.	-0.	33.2	581.1		109.7	5.2	1.000007
87000.0	20.7	-50.4	0.	-0.	32.4	581.2		106.8	5.8	1.000007
87500.0	20.2	-50.3	0.	-0.	31.6	581.3		103.9	6.4	1.000007
88000.0	19.8	-50.2	0.	-0.	30.9	581.3		102.1	6.9	1.000007
88500.0	19.3	-50.2	0.	-0.	30.2	581.4		103.1	7.5	1.000007
89000.0	18.9	-50.1	0.	-0.	29.5	581.5		104.2	8.1	1.000007
89500.0	18.4	-50.1	0.	-0.	28.8	581.6		106.5	8.5	1.000006
90000.0	18.0	-50.0	0.	-0.	28.1	581.7		113.7	8.3	1.000006
90500.0	17.6	-49.6	0.	-0.	27.4	582.2		120.8	8.0	1.000006
91000.0	17.2	-49.1	0.	-0.	26.8	582.9		128.0	7.8	1.000006
91500.0	16.8	-48.6	0.	-0.	26.1	583.5		134.2	7.5	1.000006
92000.0	16.4	-48.1	0.	-0.	25.5	584.1		140.1	7.2	1.000006
92500.0	16.1	-47.7	0.	-0.	24.8	584.7		146.1	6.9	1.000006
93000.0	15.7	-47.2	0.	-0.	24.2	585.3		147.7	6.5	1.000005

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

STATION ALTITUDE 3989.0 FEET MSL
24 MAY 67 0400 HRS MDT
ASCENSION NO. 417

UPPER AIR DATA
0243003910
WHITE SANDS SITE
TABLE VII (Cont)

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
93500.0	15.4	-46.7	0.	-0.	23.6	585.9		141.0	6.0	1.000005
94000.0	15.0	-46.3	0.	-0.	23.1	586.5		134.4	5.6	1.000005
94500.0	14.7	-45.8	0.	-0.	22.5	587.1		127.8	5.1	1.000005
95000.0	14.3	-45.3	0.	-0.	21.9	587.7		130.0	4.6	1.000005
95500.0	14.0	-44.9	0.	-0.	21.4	588.3		133.4	4.1	1.000005
96000.0	13.7	-44.4	0.	-0.	20.9	588.9		136.8	3.6	1.000005
96500.0	13.4	-43.9	0.	-0.	20.4	589.5		144.2	3.3	1.000005
97000.0	13.1	-43.5	0.	-0.	19.9	590.1		157.4	3.3	1.000004
97500.0	12.8	-43.3	0.	-0.	19.4	590.4		170.6	3.2	1.000004
98000.0	12.5	-43.2	0.	-0.	19.0	590.5		183.9	3.2	1.000004
98500.0	12.2	-43.1	0.	-0.	18.6	590.6		197.7	4.1	1.000004
99000.0	12.0	-43.1	0.	-0.	18.1	590.6		211.7	5.2	1.000004
99500.0	11.7	-43.0	0.	-0.	17.7	590.7		225.6	6.2	1.000004
100000.0	11.5	-42.9	0.	-0.	17.3	590.8		237.2	6.8	1.000004
100500.0	11.2	-42.9	0.	-0.	16.9	590.9		244.8	6.7	1.000004
101000.0	11.0	-42.8	0.	-0.	16.6	591.0		252.5	6.6	1.000004
101500.0	10.7	-42.7	0.	-0.	16.2	591.1		260.1	6.6	1.000004
102000.0	10.5	-42.7	0.	-0.	15.8	591.1		264.8	6.1	1.000004
102500.0	10.2	-42.6	0.	-0.	15.5	591.2		269.0	5.5	1.000003
103000.0	10.0	-42.5	0.	-0.	15.1	591.3		273.2	5.0	1.000003
103500.0	9.8	-42.5	0.	-0.	14.8	591.4		285.3	4.2	1.000003
104000.0	9.6	-42.4	0.	-0.	14.5	591.5		318.3	3.0	1.000003
104500.0	9.4	-42.3	0.	-0.	14.1	591.6		350.8	1.7	1.000003
105000.0	9.2	-42.3	0.	-0.	13.8	591.6		23.3	0.5	1.000003
105500.0	9.0	-42.2	0.	-0.	13.5	591.7		65.8	0.4	1.000003
106000.0	8.8	-42.2	0.	-0.	13.2	591.8		111.4	0.8	1.000003
106500.0	8.6	-42.1	0.	-0.	12.9	591.9		157.1	1.2	1.000003
107000.0	8.4	-42.0	0.	-0.	12.6	592.0		195.8	1.5	1.000003
107500.0	8.2	-42.0	0.	-0.	12.3	592.0		210.8	1.8	1.000003
108000.0	8.0	-41.9	0.	-0.	12.1	592.1		225.8	2.1	1.000003

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

STATION ALTITUDE 3989.0 FEET MSL
24 MAY 67 0400 HRS MDT
ASCENSION NO. 417

UPPER AIR DATA
0243003910
WHITE SANDS SITE
TABLE VII (Cont)

WSTM SITE COORDINATES
E 480,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
108500.0	7.8	-41.8	0.	-0.	11.8	592.2	240.8	2.4	1.000003	
109000.0	7.7	-41.8	0.	-0.	11.5	592.3	250.4	3.6	1.000003	
109500.0	7.5	-41.7	0.	-0.	11.3	592.4	257.5	5.2	1.000003	
110000.0	7.3	-41.6	0.	-0.	11.0	592.5	264.6	6.8	1.000002	
110500.0	7.2	-41.6	0.	-0.	10.8	592.5	270.8	8.3	1.000002	
111000.0	7.0	-41.5	0.	-0.	10.5	592.6	271.3	8.9	1.000002	
111500.0	6.9	-40.5	0.	-0.	10.3	593.9	271.8	9.4	1.000002	
112000.0	6.7	-39.4	0.	-0.	10.0	595.3	272.3	10.0	1.000002	
112500.0	6.6	-38.3	0.	-0.	9.7	596.7	276.6	10.5	1.000002	
113000.0	6.4	-37.2	0.	-0.	9.5	598.1	283.7	10.9	1.000002	
113500.0	6.3	-36.2	0.	-0.	9.2	599.4	290.8	11.3	1.000002	
114000.0	6.1	-35.1	0.	-0.	9.0	600.8	297.9	11.7	1.000002	
114500.0	6.0	-34.0	0.	-0.	8.8	602.1	303.6	10.7	1.000002	
115000.0	5.9	-34.0	0.	-0.	8.6	602.2	309.3	9.6	1.000002	
115500.0	5.8	-34.0	0.	-0.	8.4	602.1	315.0	8.6	1.000002	
116000.0	5.6	-34.1	0.	-0.	8.2	602.0			1.000002	
116500.0	5.5	-34.2	0.	-0.	8.0	601.9			1.000002	
117000.0	5.4	-34.2	0.	-0.	7.9	601.8			1.000002	
117500.0	5.3	-34.3	0.	-0.	7.7	601.8			1.000002	
118000.0	5.2	-34.4	0.	-0.	7.5	601.7			1.000002	
118500.0	5.1	-34.5	0.	-0.	7.4	601.6			1.000002	

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

STATION ALTITUDE 3909.0 FEET MSL
24 MAY 67 0400 HRS MDT
ASCENSION NO. 417

MANDATORY LEVELS
0243003910
WHITE SANDS SITE
TABLE VIII

WSTH SITE COORDINATES
E 480,980 FEET
N 109,045 FEET

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
				DIRECTION DEGREES(TN)	SPEED KNOTS
050.0	4925.	24.0	10.	167.2	10.0
000.0	6649.	20.2	21.	207.9	10.6
750.0	0459.	16.1	24.	213.7	16.7
700.0	10365.	11.1	20.	211.6	15.1
650.0	12374.	5.7	33.	190.1	10.7
600.0	14499.	-0.1	39.	126.2	4.7
550.0	16762.	-5.0	27.	152.9	12.8
500.0	19193.	-10.5	70.	171.7	19.4
450.0	21925.	-16.3	100.	180.6	17.7
400.0	24701.	-21.6	71.	169.7	16.3
350.0	27072.	-29.5	57.	107.5	17.4
300.0	31411.	-38.0	54.	204.0	17.5
250.0	35429.	-49.1	20.	222.4	22.2
200.0	40106.	-59.2	-0.	229.0	22.6
175.0	42824.	-63.5	-0.	241.8	21.2
150.0	45904.	-65.0	-0.	233.4	17.0
125.0	49549.	-65.4	-0.	250.3	23.4
100.0	54009.	-66.2	-0.	204.4	15.1
80.0	58423.	-66.2	-0.	314.2	10.5
70.0	61000.	-64.7	-0.	202.6	0.0
60.0	64211.	-61.5	-0.	225.0	2.6
50.0	67953.	-57.4	-0.	115.3	5.7
40.0	72412.	-54.4	-0.	192.6	5.9
30.0	78700.	-51.3	-0.	76.0	4.4
25.0	82599.	-50.9	-0.	141.4	3.9
20.0	87372.	-50.3	-0.	102.5	6.6
15.0	93573.	-46.2	-0.	134.5	5.6
10.0	102510.	-42.5	-0.	273.4	4.9
7.0	110440.	-41.5	-0.	271.3	0.9
5.0	118111.	-34.5	-0.		

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

STATION ALTITUDE 3989.0 FEET MSL
24 MAY 67 0722 HRS MDT
ASCENSION NO. 418

SIGNIFICANT LEVEL DATA
0243003911
WHITE SANDS SITE
TABLE IX

WSTM SITE COORDINATES
E 486,580 FEET
N 185,045 FEET

PRESSURE GEOMETRIC		TEMPERATURE		REL. HUM.
MILLIBARS	ALTITUDE MSL FEET	AIR DEGREES	DWPOINT CENTIGRADE	
875.8	3989.0	19.7	-5.3	10.0
865.0	4339.1	22.3	-2.4	19.0
843.0	5205.4	23.0	1.4	24.0
748.0	8577.1	15.4	-1.2	32.0
590.0	14987.4	-1.2	-10.2	31.0
571.0	15841.1	-3.9	-15.3	41.0
558.0	16437.9	-4.6	-23.2	22.0
520.0	18251.0	-0.0	-27.1	20.0
487.0	19515.5	-11.5	-16.1	69.0
424.0	23355.0	-19.0	-22.3	01.0
388.0	25505.2	-23.0	-29.9	50.0
365.0	26963.0	-27.6	-33.3	59.0
350.0	27953.1	-29.2	-37.3	46.0
301.0	31433.3	-30.4	-47.0	37.0
288.0	32426.5	-41.1	-50.3	37.0
245.0	35573.5	-50.3	0.	**
222.0	38070.3	-55.0	0.	**
175.0	42533.0	-61.6	0.	**
142.0	47224.3	-64.9	0.	**
132.0	48655.8	-62.9	0.	**
112.0	52032.1	-63.4	0.	**
94.0	55550.2	-67.2	0.	**
88.0	56860.1	-68.1	0.	**
68.0	62028.5	-63.4	0.	**
60.0	64604.1	-57.3	0.	**
41.0	72627.5	-53.3	0.	**
36.0	75417.2	-49.0	0.	**
30.0	79331.7	-53.0	0.	**
24.0	84145.1	-47.9	0.	**
16.0	93050.5	-45.1	0.	**

** RELATIVE HUMIDITY NOT SUPPLIED. ZERO VALUE ASSUMED FOR COMPUTATIONS.

STATION ALTITUDE 3989.0 FEET MSL
 24 MAY 67 0722 HRS MDT
 ASCENSION NO. 418

SIGNIFICANT LEVEL DATA
 0243003911
 WHITE SANDS SITE
 TABLE IX (Cont)

WSTM SITE COORDINATES
 E 488,580 FEET
 N 183,045 FEET

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE		REL. HUM. PERCENT
		AIR	DEWPOINT	
11.0	101417.8	-40.7	0.	-0. **
8.0	108697.2	-34.6	0.	-0. **
6.0	115386.7	-32.9	0.	-0. **
4.0	125020.0	-24.5	0.	-0. **

** RELATIVE HUMIDITY NOT SUPPLIED. ZERO VALUE ASSUMED FOR COMPUTATIONS.

STATION ALTITUDE 3989.0 FEET MSL
24 MAY 67 0722 HRS NDT
ASCENSION NO. 418

UPPER AIR DATA
0243003911
WHITE SANDS SITE
TABLE X

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
							DIRECTION DEGREES(TN)	SPEED KNOTS	
3589.0	879.8	19.7	-5.3	18.0	1044.9	666.9	140.0	1.9	1.000251
4000.0	879.5	19.8	-5.2	18.0	1044.2	667.0	140.5	2.0	1.000251
4500.0	864.1	22.4	-1.7	19.9	1016.2	670.2	164.3	2.9	1.000250
5000.0	849.1	22.8	0.5	22.8	996.7	670.8	188.1	3.9	1.000250
5500.0	834.2	22.3	1.2	24.7	980.7	670.3	211.9	4.9	1.000247
6000.0	819.6	21.2	0.9	25.9	967.2	669.1	235.6	5.8	1.000244
6500.0	805.2	20.1	0.6	27.1	953.9	667.8	256.8	6.7	1.000241
7000.0	791.0	19.0	0.2	28.3	940.7	666.5	267.1	7.0	1.000237
7500.0	777.1	17.8	-0.2	29.4	927.8	665.2	274.5	7.0	1.000234
8000.0	763.5	16.7	-0.7	30.6	915.1	663.9	274.6	6.2	1.000230
8500.0	750.0	15.6	-1.1	31.8	902.6	662.6	274.1	5.4	1.000227
9000.0	736.4	14.3	-2.2	31.9	890.2	661.1	272.7	4.6	1.000222
9500.0	722.9	13.0	-3.4	31.9	878.0	659.5	267.1	4.3	1.000218
10000.0	709.6	11.7	-4.5	31.8	865.9	658.0	258.7	4.3	1.000213
10500.0	696.6	10.4	-5.7	31.7	854.1	656.4	249.9	4.8	1.000209
11000.0	683.8	9.1	-6.9	31.6	842.4	654.9	241.2	5.6	1.000205
11500.0	671.3	7.8	-8.0	31.5	830.8	653.3	230.5	6.4	1.000201
12000.0	659.0	6.5	-9.2	31.5	819.5	651.8	220.0	7.2	1.000197
12500.0	646.9	5.2	-10.4	31.4	808.3	650.2	209.7	7.8	1.000194
13000.0	635.0	3.9	-11.6	31.3	797.3	648.7	199.4	8.3	1.000190
13500.0	623.4	2.7	-12.7	31.2	786.4	647.1	188.8	8.8	1.000187
14000.0	612.0	1.4	-13.9	31.2	775.7	645.5	178.3	9.4	1.000183
14500.0	600.7	0.1	-15.1	31.1	765.2	644.0	168.4	10.1	1.000180
15000.0	589.7	-1.2	-16.2	31.1	754.8	642.4	160.5	11.1	1.000177
15500.0	578.5	-2.8	-15.5	37.0	744.7	640.6	156.2	12.4	1.000175
16000.0	567.5	-4.1	-17.0	35.9	734.1	639.0	158.0	13.7	1.000172
16500.0	556.7	-4.7	-23.3	21.9	722.1	638.2	163.7	14.9	1.000166
17000.0	545.9	-5.7	-24.4	21.4	710.7	637.0	168.3	16.2	1.000163
17500.0	535.4	-6.6	-25.5	20.8	699.5	635.9	172.5	17.5	1.000160
18000.0	525.1	-7.5	-26.6	20.3	688.4	634.8	174.4	18.3	1.000157

STATION ALTITUDE 3989.0 FEET MSL
24 MAY 67 0722 HRS MDT
ASCENSION NO. 418

UPPER AIR DATA
0243003911
WHITE SANDS SITE
TABLE X (Cont)

WSTM SIZE COORDINATES
E 483,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
18500.0	514.9	-8.5	-24.1	27.3	677.5	633.6	174.9	174.9	19.0	1.000156
19000.0	504.9	-9.6	-20.2	42.0	666.8	632.4	172.8	172.8	19.4	1.000155
19500.0	495.0	-10.6	-17.6	56.8	656.2	631.3	171.5	171.5	20.0	1.000155
20000.0	485.3	-11.7	-16.3	69.3	645.9	630.0	170.8	170.8	20.7	1.000153
20500.0	475.7	-12.9	-17.1	71.0	636.0	628.5	172.6	172.6	20.9	1.000151
21000.0	466.2	-14.1	-18.0	72.8	626.3	627.1	174.9	174.9	21.1	1.000148
21500.0	456.5	-15.3	-18.9	74.5	616.7	625.6	176.6	176.6	21.5	1.000145
22000.0	447.8	-16.5	-19.8	76.3	607.3	624.1	178.2	178.2	21.9	1.000143
22500.0	438.5	-17.7	-20.7	78.0	598.0	622.6	179.5	179.5	21.9	1.000140
23000.0	430.1	-18.9	-21.7	79.8	588.9	621.1	179.8	179.8	22.1	1.000138
23500.0	421.5	-20.1	-22.8	79.4	579.7	619.7	178.7	178.7	22.5	1.000135
24000.0	412.9	-21.0	-24.5	74.1	570.0	618.5	177.9	177.9	23.5	1.000132
24500.0	404.4	-21.9	-26.2	68.8	560.5	617.4	177.5	177.5	25.0	1.000129
25000.0	396.2	-22.9	-28.0	63.4	551.2	616.2	177.8	177.8	25.8	1.000126
25500.0	388.1	-23.8	-29.8	58.1	542.0	615.0	178.6	178.6	26.3	1.000124
26000.0	380.0	-25.1	-31.0	58.3	533.5	613.4	179.4	179.4	26.3	1.000122
26500.0	372.2	-26.4	-32.2	58.7	525.3	611.8	180.1	180.1	26.1	1.000120
27000.0	364.4	-27.7	-33.4	58.5	517.0	610.2	180.1	180.1	24.7	1.000117
27500.0	356.8	-28.5	-35.4	51.9	507.9	609.2	180.0	180.0	23.2	1.000115
28000.0	349.3	-29.3	-37.4	45.9	499.0	608.1	179.1	179.1	22.4	1.000113
28500.0	341.8	-30.6	-39.0	44.6	491.0	606.4	178.5	178.5	21.9	1.000111
29000.0	334.5	-32.0	-40.5	43.3	483.1	604.8	179.0	179.0	22.3	1.000109
29500.0	327.3	-33.3	-42.0	42.0	475.4	603.1	179.9	179.9	22.7	1.000107
30000.0	320.3	-34.6	-43.5	40.7	467.8	601.4	181.3	181.3	23.1	1.000105
30500.0	313.4	-35.9	-45.0	39.4	460.3	599.8	182.9	182.9	23.7	1.000103
31000.0	306.7	-37.3	-46.5	38.1	452.9	598.1	184.7	184.7	24.6	1.000102
31500.0	300.1	-38.6	-48.0	37.0	445.7	596.4	185.8	185.8	24.8	1.000100
32000.0	293.5	-39.9	-49.2	37.0	438.5	594.7	186.2	186.2	24.3	1.000098
32500.0	287.0	-41.3	-50.6	36.2**	431.3	592.9	187.9	187.9	24.0	1.000096
33000.0	280.6	-42.6	-53.1	31.0**	424.0	591.3	190.3	190.3	23.6	1.000095

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

STATION ALTITUDE 3989.0 FEET MSL
24 MAY 67 0722 HRS MDT
ASCENSION NO. 418

UPPER AIR DATA
0243003911
WHITE SANDS SITE
TABLE X (Cont)

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNQTS	WIND DATA DIRECTION (TN) DEGREES	SPEED KNOTS	INDEX OF REFRACTION
33500.0	274.2	-43.9	25.8**	416.8	589.6	192.8	22.8	1.000093
34000.0	268.1	-45.2	20.6**	409.7	587.9	195.3	21.7	1.000091
34500.0	262.0	-46.5	15.4**	402.7	586.2	198.3	21.0	1.000090
35000.0	256.1	-47.8	10.2**	395.9	584.6	201.6	20.4	1.000088
35500.0	250.3	-49.1	4.9**	389.3	582.9	204.1	20.4	1.000087
36000.0	244.7	-50.4	-0.0**	382.7	581.2	205.9	20.9	1.000085
36500.0	239.0	-51.5	-0.0**	375.7	579.7	208.0	21.7	1.000084
37000.0	233.5	-52.6	-0.0**	368.8	578.3	210.4	23.0	1.000082
37500.0	228.0	-53.7	-0.0**	362.1	576.8	211.5	23.6	1.000081
38000.0	222.7	-54.8	-0.0**	355.5	575.3	211.6	23.8	1.000079
38500.0	217.4	-55.6	-0.0**	348.3	574.3	212.6	22.5	1.000078
39000.0	212.3	-56.4	-0.0**	341.2	573.3	213.9	20.5	1.000076
39500.0	207.2	-57.1	-0.0**	334.2	572.3	215.7	19.9	1.000074
40000.0	202.3	-57.9	-0.0**	327.3	571.3	217.6	19.8	1.000073
40500.0	197.4	-58.6	-0.0**	320.6	570.4	221.3	20.6	1.000071
41000.0	192.7	-59.3	-0.0**	314.1	569.4	225.8	21.9	1.000070
41500.0	188.1	-60.1	-0.0**	307.6	568.4	230.7	22.0	1.000069
42000.0	183.7	-60.8	-0.0**	301.4	567.4	230.4	21.1	1.000067
42500.0	179.3	-61.6	-0.0**	295.2	566.4	229.5	19.4	1.000066
43000.0	174.9	-61.9	-0.0**	288.5	565.9	226.2	16.9	1.000064
43500.0	170.7	-62.3	-0.0**	282.0	565.4	221.3	15.5	1.000063
44000.0	166.5	-62.6	-0.0**	275.6	565.0	214.7	15.4	1.000061
44500.0	162.4	-63.0	-0.0**	269.3	564.5	210.8	16.5	1.000060
45000.0	158.5	-63.3	-0.0**	263.2	564.0	211.2	19.7	1.000059
45500.0	154.6	-63.7	-0.0**	257.2	563.5	212.4	22.8	1.000057
46000.0	150.8	-64.0	-0.0**	251.3	563.1	216.1	25.6	1.000056
46500.0	147.2	-64.4	-0.0**	245.6	562.6	220.0	28.1	1.000055
47000.0	143.6	-64.7	-0.0**	240.0	562.1	226.1	27.7	1.000053
47500.0	140.1	-64.5	-0.0**	233.9	562.4	232.2	27.2	1.000052
48000.0	136.7	-63.8	-0.0**	227.5	563.3	238.1	25.7	1.000051

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

UPPER AIR DATA
0243003911
WHITE SANDS SITE
TABLE X (Cont)

STATION ALTITUDE 3989.0 FEET MSL
24 MAY 67 0722 HRS NDT
ASCENSION NO. 418

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS			
48500.0	133.3	-63.2	0.	-0.	221.2	564.2	244.0	24.1	1.000049	
49000.0	130.1	-62.9	0.	-0.	215.6	564.5	249.2	22.6	1.000048	
49500.0	126.9	-63.0	0.	-0.	210.4	564.4	253.6	21.3	1.000047	
50000.0	123.8	-63.1	0.	-0.	205.4	564.3	257.7	20.1	1.000046	
50500.0	120.8	-63.2	0.	-0.	200.4	564.2	259.5	18.8	1.000045	
51000.0	117.8	-63.2	0.	-0.	195.6	564.1	261.4	17.5	1.000044	
51500.0	115.0	-63.3	0.	-0.	190.9	564.0	263.7	16.5	1.000043	
52000.0	112.2	-63.4	0.	-0.	186.3	563.9	266.1	15.6	1.000041	
52500.0	109.4	-63.5	0.	-0.	182.2	563.2	271.0	14.8	1.000041	
53000.0	106.7	-64.4	0.	-0.	178.2	562.5	276.6	14.0	1.000040	
53500.0	104.1	-65.0	0.	-0.	174.2	561.8	279.9	13.7	1.000039	
54000.0	101.5	-65.5	0.	-0.	170.4	561.1	281.8	13.6	1.000038	
54500.0	99.0	-66.1	0.	-0.	166.6	560.3	282.2	13.8	1.000037	
55000.0	96.6	-66.6	0.	-0.	163.0	559.6	280.8	14.1	1.000036	
55500.0	94.2	-67.1	0.	-0.	159.4	558.9	279.9	14.2	1.000035	
56000.0	91.9	-67.5	0.	-0.	155.7	558.4	283.4	13.1	1.000035	
56500.0	89.6	-67.9	0.	-0.	152.1	557.9	286.9	11.9	1.000034	
57000.0	87.4	-68.0	0.	-0.	148.4	557.7	287.9	11.2	1.000033	
57500.0	85.2	-67.5	0.	-0.	144.4	558.4	288.1	10.6	1.000032	
58000.0	83.1	-67.1	0.	-0.	140.6	559.0	288.5	9.8	1.000031	
58500.0	81.1	-66.6	0.	-0.	136.8	559.6	289.2	0.5	1.000030	
59000.0	79.1	-66.2	0.	-0.	133.1	560.2	290.3	7.5	1.000030	
59500.0	77.1	-65.7	0.	-0.	129.6	560.8	293.0	7.5	1.000029	
60000.0	75.2	-65.2	0.	-0.	126.1	561.4	295.7	7.5	1.000028	
60500.0	73.4	-64.8	0.	-0.	122.7	562.1	310.4	6.7	1.000027	
61000.0	71.6	-64.3	0.	-0.	119.4	562.7	325.6	5.8	1.000027	
61500.0	69.8	-63.9	0.	-0.	116.2	563.3	334.9	5.6	1.000026	
62000.0	68.1	-63.4	0.	-0.	113.1	563.9	342.1	5.7	1.000025	
62500.0	66.5	-62.3	0.	-0.	109.8	565.4	344.6	5.7	1.000024	
63000.0	64.9	-61.1	0.	-0.	106.6	567.0	342.0	5.7	1.000024	

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

STATION ALTITUDE 3989.0 FEET MSL

24 MAY 67

ASCENSION NO. 418

UPPER AIR DATA

0243003911

WHITE SANDS SITE

TABLE X (Cont)

WSTM SITE COORDINATES

E 488,580 FEET

N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
63500.0	63.3	-59.9	0.	-0. **	103.4	568.6	341.2	5.7	1.000023
64000.0	61.8	-58.7	0.	-0. **	100.4	570.2	347.0	5.3	1.000022
64500.0	60.3	-57.5	0.	-0. **	97.5	571.7	352.8	5.0	1.000022
65000.0	58.9	-57.1	0.	-0. **	95.0	572.3	9.4	4.4	1.000021
65500.0	57.5	-56.9	0.	-0. **	92.6	572.7	27.0	3.8	1.000021
66000.0	56.2	-56.6	0.	-0. **	90.3	573.0	51.3	4.3	1.000020
66500.0	54.8	-56.4	0.	-0. **	88.1	573.3	80.2	5.6	1.000020
67000.0	53.6	-56.1	0.	-0. **	86.0	573.6	105.8	6.7	1.000019
67500.0	52.3	-55.9	0.	-0. **	83.9	574.0	121.9	6.8	1.000019
68000.0	51.1	-55.6	0.	-0. **	81.8	574.3	137.9	7.0	1.000018
68500.0	49.9	-55.4	0.	-0. **	79.8	574.6	139.9	6.0	1.000018
69000.0	48.7	-55.1	0.	-0. **	77.8	575.0	139.3	4.7	1.000017
69500.0	47.6	-54.9	0.	-0. **	75.9	575.3	146.7	3.8	1.000017
70000.0	46.4	-54.6	0.	-0. **	74.0	575.6	167.1	3.5	1.000016
70500.0	45.4	-54.4	0.	-0. **	72.2	576.0	187.4	3.2	1.000016
71000.0	44.3	-54.1	0.	-0. **	70.5	576.3	213.8	2.2	1.000016
71500.0	43.3	-53.9	0.	-0. **	68.7	576.6	240.8	1.2	1.000015
72000.0	42.2	-53.6	0.	-0. **	67.0	576.9	261.6	0.9	1.000015
72500.0	41.2	-53.4	0.	-0. **	65.4	577.3	275.5	1.6	1.000015
73000.0	40.3	-52.8	0.	-0. **	63.7	578.0	289.3	2.3	1.000014
73500.0	39.4	-52.2	0.	-0. **	62.1	578.8	323.2	4.1	1.000014
74000.0	38.5	-51.6	0.	-0. **	60.5	579.6	357.3	5.9	1.000013
74500.0	37.6	-51.0	0.	-0. **	58.9	580.4	26.0	7.1	1.000013
75000.0	36.7	-50.3	0.	-0. **	57.4	581.2	45.9	7.2	1.000013
75500.0	35.9	-49.9	0.	-0. **	56.0	581.8	65.7	7.3	1.000012
76000.0	35.0	-50.3	0.	-0. **	54.8	581.3	83.9	8.0	1.000012
76500.0	34.2	-50.7	0.	-0. **	53.6	580.8	100.9	9.1	1.000012
77000.0	33.4	-51.1	0.	-0. **	52.5	580.2	117.9	10.3	1.000012
77500.0	32.7	-51.5	0.	-0. **	51.4	579.7	131.2	11.1	1.000011
78000.0	31.9	-51.9	0.	-0. **	50.3	579.2	142.8	11.6	1.000011

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

STATION ALTITUDE 3989.0 FEET MSL
24 MAY 67 0722 HRS MDT
ASCENSION NO. 418

UPPER AIR DATA
0243003911
WHITE SANDS SITE
TABLE X (Cont)

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
78500.0	31.2	-52.3	-0.0	49.2	578.6	154.4	12.2	1.000011
79000.0	30.5	-52.7	-0.0	48.2	578.1	162.7	11.3	1.000011
79500.0	29.8	-52.8	-0.0	47.1	578.0	169.9	9.9	1.000010
80000.0	29.1	-52.3	-0.0	45.9	578.7	177.2	8.5	1.000010
80500.0	28.4	-51.8	-0.0	44.7	579.4	177.3	7.0	1.000010
81000.0	27.8	-51.2	-0.0	43.6	580.1	176.4	5.5	1.000010
81500.0	27.1	-50.7	-0.0	42.5	580.7	175.5	4.0	1.000009
82000.0	26.5	-50.2	-0.0	41.4	581.4	155.8	3.8	1.000009
82500.0	25.9	-49.6	-0.0	40.4	582.1	135.2	3.8	1.000009
83000.0	25.3	-49.1	-0.0	39.4	582.8	115.2	3.8	1.000009
83500.0	24.7	-48.6	-0.0	38.4	583.5	106.7	5.4	1.000009
84000.0	24.2	-48.1	-0.0	37.4	584.2	98.2	7.0	1.000008
84500.0	23.6	-47.8	-0.0	36.5	584.5	89.8	8.6	1.000008
85000.0	23.1	-47.6	-0.0	35.7	584.7	96.6	9.7	1.000008
85500.0	22.6	-47.5	-0.0	34.8	584.9	103.4	10.8	1.000008
86000.0	22.1	-47.3	-0.0	34.0	585.1	110.2	11.9	1.000008
86500.0	21.6	-47.2	-0.0	33.2	585.4	113.9	12.4	1.000007
87000.0	21.1	-47.0	-0.0	32.5	585.6	116.7	12.7	1.000007
87500.0	20.6	-46.8	-0.0	31.7	585.8	119.5	13.1	1.000007
88000.0	20.1	-46.7	-0.0	31.0	586.0	122.1	12.7	1.000007
88500.0	19.7	-46.5	-0.0	30.3	586.2	124.3	11.8	1.000007
89000.0	19.2	-46.4	-0.0	29.6	586.4	126.6	10.8	1.000007
89500.0	18.8	-46.2	-0.0	28.9	586.6	128.4	9.8	1.000006
90000.0	18.4	-46.1	-0.0	28.2	586.8	129.3	8.3	1.000006
90500.0	18.0	-45.9	-0.0	27.6	587.0	130.1	6.9	1.000006
91000.0	17.6	-45.7	-0.0	26.9	587.2	130.5	5.5	1.000006
91500.0	17.2	-45.6	-0.0	26.3	587.4	110.7	4.0	1.000006
92000.0	16.8	-45.4	-0.0	25.7	587.6	91.0	2.5	1.000006
92500.0	16.4	-45.3	-0.0	25.1	587.8	71.2	1.0	1.000006
93000.0	16.0	-45.1	-0.0	24.5	588.0	103.9	0.7	1.000005

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

STATION ALTITUDE 3989.0 FEET MSL

24 MAY 67

ASCENSION NO. 418

UPPER AIR DATA

0243003911

WHITE SANDS SITE

TABLE X (Cont)

WSM SITE COORDINATES

E 488,580 FEET

N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA DIRECTION DEGREES(TN)	SPEED		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS		KNOTS	KNOTS	
93500.0	15.7	-44.9	0.	-0. **	23.9	588.3		153.4		0.8	1.000005
94000.0	15.3	-44.6	0.	-0. **	23.4	588.7		202.9		0.9	1.000005
94500.0	15.0	-44.3	0.	-0. **	22.8	589.0		252.8		1.3	1.000005
95000.0	14.7	-44.1	0.	-0. **	22.3	589.3		303.2		2.0	1.000005
95500.0	14.3	-43.8	0.	-0. **	21.8	589.7		353.5		2.7	1.000005
96000.0	14.0	-43.5	0.	-0. **	21.3	590.0		35.3		3.4	1.000005
96500.0	13.7	-43.3	0.	-0. **	20.8	590.3		27.9		4.4	1.000005
97000.0	13.4	-43.0	0.	-0. **	20.3	590.7		20.5		5.3	1.000005
97500.0	13.1	-42.8	0.	-0. **	19.8	591.0		13.1		5.2	1.000004
98000.0	12.8	-42.5	0.	-0. **	19.4	591.4		17.2		6.8	1.000004
98500.0	12.5	-42.2	0.	-0. **	18.9	591.7		23.5		7.4	1.000004
99000.0	12.3	-42.0	0.	-0. **	18.5	592.0		29.9		7.9	1.000004
99500.0	12.0	-41.7	0.	-0. **	18.0	592.4		30.4		8.4	1.000004
100000.0	11.7	-41.4	0.	-0. **	17.6	592.7		25.6		8.7	1.000004
100500.0	11.5	-41.2	0.	-0. **	17.2	593.0		20.8		9.1	1.000004
101000.0	11.2	-40.9	0.	-0. **	16.8	593.4		18.3		9.1	1.000004
101500.0	11.0	-40.6	0.	-0. **	16.4	593.7		25.0		8.0	1.000004
102000.0	10.7	-40.2	0.	-0. **	16.0	594.3		31.6		6.8	1.000004
102500.0	10.5	-39.8	0.	-0. **	15.7	594.8		38.3		5.7	1.000003
103000.0	10.3	-39.4	0.	-0. **	15.3	595.3		31.8		5.0	1.000003
103500.0	10.0	-39.0	0.	-0. **	14.9	595.9		22.8		4.5	1.000003
104000.0	9.8	-38.5	0.	-0. **	14.6	596.4		13.8		4.0	1.000003
104500.0	9.6	-38.1	0.	-0. **	14.2	596.9		5.2		3.5	1.000003
105000.0	9.4	-37.7	0.	-0. **	13.9	597.5		23.6		3.1	1.000003
105500.0	9.2	-37.3	0.	-0. **	13.6	598.0		42.0		2.8	1.000003
106000.0	9.0	-36.9	0.	-0. **	13.3	598.5		60.4		2.4	1.000003
106500.0	8.8	-36.4	0.	-0. **	13.0	599.1		78.9		2.1	1.000003
107000.0	8.6	-36.0	0.	-0. **	12.7	599.6		87.6		2.2	1.000003
107500.0	8.4	-35.6	0.	-0. **	12.4	600.1		92.1		2.6	1.000003
108000.0	8.2	-35.2	0.	-0. **	12.1	600.7		96.6		3.0	1.000003

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

STATION ALTITUDE 3989.0 FEET MSL
24 MAY 67 0722 HRS MDT
ASCENSION NO. 418

UPPER AIR DATA
0243003911
WHITE SANDS SITE
TABLE X (Cont)

WSTM SITE COORDINATES
E 489,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	DEWPOINT DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
108500.0	8.1	-34.8	0.	-0.0	11.8	601.2	101.0	3.3	1.000003
109000.0	7.9	-34.5	0.	-0.0	11.5	601.5	102.8	3.9	1.000003
109500.0	7.7	-34.4	0.	-0.0	11.3	601.7	98.5	5.0	1.000003
110000.0	7.6	-34.3	0.	-0.0	11.0	601.8	94.3	6.0	1.000002
110500.0	7.4	-34.1	0.	-0.0	10.8	602.0	90.0	7.1	1.000002
111000.0	7.2	-34.0	0.	-0.0	10.6	602.1	85.8	8.1	1.000002
111500.0	7.1	-33.9	0.	-0.0	10.3	602.3	82.0	8.5	1.000002
112000.0	6.9	-33.8	0.	-0.0	10.1	602.5	78.2	8.9	1.000002
112500.0	6.8	-33.6	0.	-0.0	9.9	602.6	74.4	9.2	1.000002
113000.0	6.6	-33.5	0.	-0.0	9.7	602.8	70.7	9.6	1.000002
113500.0	6.5	-33.4	0.	-0.0	9.5	602.9	70.0	9.7	1.000002
114000.0	6.4	-33.3	0.	-0.0	9.2	603.1	73.0	9.6	1.000002
114500.0	6.2	-33.1	0.	-0.0	9.0	603.3	76.1	9.5	1.000002
115000.0	6.1	-33.0	0.	-0.0	8.9	603.4	79.1	9.5	1.000002
115500.0	6.0	-32.8	0.	-0.0	8.7	603.7	82.2	9.4	1.000002
116000.0	5.8	-32.4	0.	-0.0	8.5	604.2	78.9	9.1	1.000002
116500.0	5.7	-31.9	0.	-0.0	8.3	604.8	75.5	8.8	1.000002
117000.0	5.6	-31.5	0.	-0.0	8.1	605.3	72.1	8.5	1.000002
117500.0	5.5	-31.1	0.	-0.0	7.9	605.8	68.7	8.2	1.000002
118000.0	5.4	-30.6	0.	-0.0	7.7	606.4	69.4	8.3	1.000002
118500.0	5.3	-30.2	0.	-0.0	7.5	606.9	74.4	8.8	1.000002
119000.0	5.2	-29.7	0.	-0.0	7.4	607.5	79.5	9.3	1.000002
119500.0	5.0	-29.3	0.	-0.0	7.2	608.0	84.5	9.8	1.000002
120000.0	4.9	-28.9	0.	-0.0	7.0	608.6	89.6	10.4	1.000002
120500.0	4.8	-28.4	0.	-0.0	6.9	609.1			1.000002
121000.0	4.7	-28.0	0.	-0.0	6.7	609.7			1.000001
121500.0	4.6	-27.6	0.	-0.0	6.6	610.2			1.000001
122000.0	4.5	-27.1	0.	-0.0	6.4	610.7			1.000001
122500.0	4.4	-26.7	0.	-0.0	6.3	611.3			1.000001
123000.0	4.4	-26.3	0.	-0.0	6.1	611.8			1.000001

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

STATION ALTITUDE 3989.0 FEET MSL
 24 MAY 67 0722 HRS MDT
 ASCENSION NO. 418

UPPER AIR DATA
 0243003911
 WHITE SANDS SITE
 TABLE X (Cont)

WSTM SITE COORDINATES
 E 488,580 FEET
 N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
123500.0	4.3	-25.8	0.	-0. **	6.0	612.4				1.000001
124000.0	4.2	-25.4	0.	-0. **	5.9	612.9				1.000001
124500.0	4.1	-25.0	0.	-0. **	5.7	613.4				1.000001
125000.0	4.0	-24.5	0.	-0. **	5.6	614.0				1.000001

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

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STATION ALTITUDE 3909.0 FEET MSL
24 MAY 67 0722 HRS NDT
ASCENSION NO. 410

MANDATORY LEVELS
0243003911
WHLTL SANUS SITE
TABLE XI

WSTM SITE COORDINATES
E 408,800 FEET
N 105,045 FEET

PRESSURE EQUIPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4960.	22.0	0.4	23.	186.6	3.0
800.0	6690.	19.7	0.4	20.	260.7	6.0
750.0	8450.	15.0	-1.1	32.	274.1	5.4
700.0	10402.	10.0	-5.4	32.	281.6	4.7
650.0	12409.	5.6	-10.1	31.	211.6	7.7
600.0	14535.	-2.0	-15.2	31.	167.6	10.2
550.0	16790.	-5.3	-24.0	28.	166.6	14.7
500.0	19230.	-10.1	-10.0	49.	171.0	19.6
450.0	21066.	-16.2	-19.6	76.	177.9	21.0
400.0	24739.	-22.4	-27.2	66.	177.5	25.6
350.0	27912.	-29.2	-37.3	46.	179.2	22.5
300.0	31457.	-30.6	-40.0	37.	109.0	24.0
250.0	35473.	-49.2	-72.0	5.	204.2	20.4
200.0	40160.	-90.2	0.	0.	219.0	20.0
175.0	42900.	-61.9	0.	0.	220.2	17.0
150.0	46013.	-64.1	0.	0.	216.4	26.2
125.0	49601.	-63.1	0.	0.	256.3	20.6
100.0	54167.	-65.9	0.	0.	202.0	13.6
80.0	58584.	-60.4	0.	0.	209.6	7.9
70.0	61253.	-63.9	0.	0.	334.0	5.6
60.0	64396.	-57.3	0.	0.	355.2	4.9
50.0	68195.	-55.4	0.	0.	140.0	6.2
40.0	72890.	-52.6	0.	0.	299.0	2.0
30.0	79023.	-53.0	0.	0.	167.4	10.4
25.0	82917.	-40.0	0.	0.	111.0	4.6
20.0	87756.	-46.6	0.	0.	122.6	12.5
15.0	94046.	-44.3	0.	0.	249.9	1.2
10.0	103058.	-30.9	0.	0.	21.5	4.5
7.0	111194.	-33.0	0.	0.	79.8	8.7
5.0	118908.	-29.1	0.	0.	06.2	10.0

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

RELEASE TIME (MDT)		SECOND-STAGE IMPACT DISPLACEMENT IN MILES DUE TO WIND										AZI- MUTH (DEG- REES)	THEORETICAL IMPACT FROM LAUNCHER (IN MILES)		
		11-216 FT		216-4000 FT		4000-74168 FT		TOTAL							
		RAWIN- SONDE	PIBAL	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W		RANGE	N-S	E-W
0400	0510	10.6S	2.2E	15.2S	2.1W	3.9S	8.9W	29.7S	8.8W	359.3	53.8	53.8N	0.7W		
0400	0530	9.3S	4.0E	14.6S	0.1E	3.9S	8.9W	27.8S	4.8W	003.4	55.8	55.7N	3.3E		
0400	0600	8.8S	3.8E	15.9S	0.6E	3.9S	8.9W	28.6S	4.5W	003.7	55.0	54.9N	3.6E		
0400	0615	6.7S	4.0E	13.2S	0.4W	3.9S	8.9W	23.8S	5.3W	002.7	59.8	59.7N	2.8E		
0400	0630	3.0S	2.1E	12.0S	3.7W	3.9S	8.9W	18.9S	10.5W	357.9	64.6	64.6N	2.4W		
0400	0640	3.0S	2.7E	10.4S	2.0W	3.9S	8.9W	17.3S	8.2W	359.9	66.2	66.2N	0.1W		
0400	0650	1.9S	1.0E	9.2S	2.7W	3.9S	8.9W	15.0S	10.6W	357.9	68.5	68.5N	2.5W		
0400	0700	1.8S	0.9E	11.9S	1.9W	3.9S	8.9W	17.6S	9.9W	358.4	65.9	65.9N	1.8W		
0722	0721	6.0S	1.7E	8.7S	4.1W	4.2S	6.3W	18.9S	8.6W	359.6	64.6	64.6N	0.5W		

AZIMUTH (DEG REES)	MILES FROM LAUNCHER		
	RANGE	N-S	E-W
008.7	84.5	83.5N	12.8E
005.5	83.9	83.5N	8.1E
358.0	68.7	68.7N	2.4W
012.0	49.0	47.9N	10.1E
004.5	2.2	2.2N	0.2E

TABLE XII. IMPACT PREDICTION DATA
NIKE-HYDAC STV SR-056

UNCLASSIFIED

Security Classification

DOCUMENT CONTROL DATA - R&D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author) U. S. Army Electronics Command Fort Monmouth, New Jersey		2a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED	
		2b. GROUP	
3. REPORT TITLE METEOROLOGICAL DATA REPORT NIKE-HYDAC STV, SR-056 SRE-19			
4. DESCRIPTIVE NOTES (Type of report and inclusive dates)			
5. AUTHOR(S) (Last name, first name, initial) Richart, Harold M.			
6. REPORT DATE June 1967		7a. TOTAL NO. OF PAGES 39	7b. NO. OF REFS NONE
8a. CONTRACT OR GRANT NO.		9a. ORIGINATOR'S REPORT NUMBER(S)	
b. PROJECT NO.		DR-202	
c. DA Task IV650212A127-02		9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)	
d.			
10. AVAILABILITY/LIMITATION NOTICES Distribution of this document is <u>unlimited</u> .			
11. SUPPLEMENTARY NOTES		12. SPONSORING MILITARY ACTIVITY U. S. Army Electronics Command Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico	
13. ABSTRACT Meteorological data gathered for the launching of Nike-Hydac STV, SR-056 SRE-19, are presented for the Ballistic Systems Division, U. S. Air Force, and for ballistic studies. The data appear, along with calculated ballistic data, in tabular form.			

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14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
1. Ballistics						
2. Meteorology						
3. Wind						

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