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DR-264
November 1967

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METEOROLOGICAL DATA REPORT

NIKE-HYDAC STV SR 061
(11 October 1967)

AND

NIKE-HYDAC STV SR 062
(12 October 1967)

BY

JOHN M. SHARPE

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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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DA Task IV650212A127-02

ATMOSPHERIC SCIENCES LABORATORY
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ABSTRACT

Meteorological data gathered for the launching of two Nike-Hydac STV's (SR 061 and 062) are presented for the Space and Missile Systems Organization, the AVCO Corporation, and for ballistic studies. The data appear, along with calculated ballistic data, in tabular form.

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INTRODUCTION

Two Nike-Hydac STV Missiles were launched from Launch Complex 33, L-361, White Sands Missile Range, New Mexico.

Nike-Hydac STV, SR-061, was launched at 2249 hours MDT, 11 October 1967.

Nike-Hydac STV, SR-062, was launched at 0014 hours MDT, 12 October 1967.

Meteorological data used in conjunction with theoretical calculations to predict rocket impact were collected by the Meteorological Support Division, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The Ballistic Meteorologist for these firings was John M. Sharpe.

DISCUSSION

Wind data for the first 216 feet above the surface were obtained from a system composed of five 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 73,331 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 wind-weighting values as a function of altitude were provided by ASL and are the basis for the data appearing in Tables XV and XVI.

PAYLOAD		210	Pounds
CORIOUS DISPLACEMENT	WEST	4.9	Miles
SECOND-STAGE IGNITION	TIME	20.0	Seconds
	ALTITUDE	35,767	Feet MSL
PEAK	TIME	236	Seconds
	ALTITUDE	715,900	Feet MSL
UNIT WIND EFFECT	HEAD	2.1575	Miles/MPH
	CROSS	2.2444	Miles/MPH
	TAIL	2.1672	Miles/MPH
TOWER TILT EFFECT		14.53	Miles/Degree

TABLE I. THEORETICAL ROCKET PERFORMANCE VALUES
NIKE-HYDAC STV, SR 061 and 062

LAYERS IN FEET ABOVE GROUND	BALLISTIC FACTORS
4011-4060	.1256
4060-4108	.0842
4108-4148	.0533
4148-4184	.0408
4184-4216	.0262
4216-4300	.0620
4300-4400	.0580
4400-4600	.0720
4600-4800	.0580
4800-5000	.0390

LAYERS IN FEET ABOVE GROUND	BALLISTIC FACTORS
5000-- 5400	.0630
5400-- 6000	.0662
6000-- 6500	.0350
6500-- 7000	.0277
7000-- 7500	.0142
7500-- 8000	.0052
8000-- 8160	-.0026
8160-13000	-.0141
13000-19000	-.0168
19000-25000	-.0156

LAYERS IN FEET ABOVE GROUND	BALLISTIC FACTORS
25000-30000	-.0132
30000-35767	-.0162
35767-40000	.1310
40000-45000	.0566
45000-50000	.0260
50000-55000	.0154
55000-60000	.0101
60000-65000	.0063
65000-70000	.0040
70000-7 331	.0009

TABLE II. BALLISTIC FACTORS
NIKE-HYDAC STV (SR 061 and 062)

AERO- VANE NO. *	MEAN WIND COMPONENTS IN MILES PER HOUR											
	1		2		3		4		5		6	
	2015 MDT		2030 MDT		2045 MDT		2100 MDT		2115 MDT		2125 MDT	
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
1	3.5S	3.5W	2.0S	4.0W	0.5N	0.0	0.0	2.0W	0.0	0.0	0.0	0.0
2	1.0	6.5	0.0	7.0	1.0S	4.5W	2.0N	5.0	0.0	0.0	0.0	1.5N
3	0.5	8.0	0.0	6.5	0.5	10.0	2.0	9.0	1.0N	3.5W	1.0N	4.0W
4	1.5	6.5	1.5N	5.5	6.0	8.0	1.0	8.0	1.0	5.0	1.5	5.0
5	2.0	4.5	2.0	4.0	1.0S	5.5	0.0	5.0	0.0	5.0	0.0	3.5

AERO- VANE NO. *	MEAN WIND COMPONENTS IN MILES PER HOUR											
	8		9		10		11		12		13	
	2150 MDT		2200 MDT		2210 MDT		2220 MDT		2230 MDT		2237 MDT	
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
1	1.0S	0.0	0.0	0.5W	0.0	0.0	2.0S	0.5W	2.0S	2.0W	1.0S	6.0W
2	0.5N	0.5W	0.0	1.0	0.0	0.0	0.0	0.5	0.5	1.5	0.0	3.0
3	1.0	2.0	0.0	3.0	0.0	1.5W	0.0	1.0	0.0	2.0	0.0	2.5
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	1.5	0.0	2.0
5	0.0	1.0W	0.0	1.0E	0.0	1.0E	0.0	0.0	0.0	0.0	0.0	0.0

TABLE III. ANEMOMETER WIND SPEED AND DIRECTION
NIKE-HYDAC STV (SR 061 and 062)

* Heights corresponding to Aerovane Numbers:

1 = 35 Feet 3 = 128 Feet 5 = 200 Feet
2 = 88 Feet 4 = 168 Feet

AERO- VANE NO. *	MEAN WIND COMPONENTS IN MILES PER HOUR									
	15 2305 MDT		16 2320 MDT		17 2330 MDT		18 2340 MDT		19 2350 MDT	
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
1	0.5S	3.5W	3.5S	1.0W	4.0S	0.5W	5.5S	0.0	5.5W	2.0E
2	1.0N	6.5	2.0	1.0	2.0	2.0	1.5	2.0W	4.5	0.5W
3	0.0	10.5	4.0	6.0	1.0	5.5	2.5	4.0	4.0	1.0
4	1.0S	8.5	0.5	8.5	1.5	7.0	3.0	5.5	4.0	1.0
5	1.5	5.0	1.0	5.0	1.5	4.0	1.5	2.0	2.5	1.5

AERO- VANE NO. *	MEAN WIND COMPONENTS IN MILES PER HOUR							
	20 0000 MDT		21 0014 MDT					
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
1	5.0S	1.0E	4.0S	0.0				
2	4.0	1.0W	5.0	1.0W				
3	4.0	1.0	5.0	3.0				
4	4.0	1.0	5.0	4.0				
5	2.0	1.5	3.0	4.0				

TABLE III. ANEMOMETER WIND SPEED AND DIRECTION (CONT)
NIKE-HYDAC STV (SR 061 and 062)

* Heights corresponding to Aerovane Numbers: 1 = 35 Feet 3 = 128 Feet 5 = 200 Feet
2 = 88 Feet 4 = 168 Feet

LAYERS IN FEET ABOVE GROUND	HUMAN WIND COMPONENTS IN MILES PER HOUR													
	1		2		3		4		5		6		7	
	2015 MDT		2030 MDT		2045 MDT		2100 MDT		2115 MDT		2125 MDT		2135 MDT	
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
216-300	1.0E	3.5W	1.5E	3.0W	1.0E	3.0W	0.5N	5.5W	1.0N	5.5W	2.0N	3.5W	0.0	1.0W
300-400	2.5	3.5	2.0E	3.0E	1.5E	3.0	1.0	5.5	3.5	7.0	4.0	5.0	0.5N	1.5
400-600	4.5	4.5	3.5E	3.5E	1.0N	2.0	1.5E	4.0	2.5	5.5	3.0	4.5	2.0	3.0
600-800	4.0	3.5	5.5	3.5E	6.0E	2.0	3.0	2.5	0.5E	4.0	0.5E	4.0	1.0	3.5
800-1000	3.0	3.5	4.0	1.5E	5.5	2.0E	5.0	2.0	4.0	3.5	2.0	2.5	1.5E	2.5
1000-1400	1.5	3.5	1.5	4.0E	3.0	2.5	3.0	1.5	2.0	2.5	1.5	2.0	1.5	2.0
1400-2000	0.0	2.0	0.5	1.5	1.0	2.5	2.5	2.5	3.0	1.5	1.0	2.0	2.0	2.0
2000-2500	1.0N	0.5E	1.0N	0.5	1.0	0.0	1.5	0.0	2.0	0.5	1.0	0.0	1.5	1.5
2500-3000	1.0	0.5	1.0	0.0	1.0	0.5E	1.0	1.0E	3.0	2.0	4.5	0.5E	3.0	0.5
3000-3500	0.5E	1.0	1.0E	1.5E	2.5	0.5	3.0	1.5	4.5	1.0E	6.5	1.0W	5.0	0.0
3500-4000	0.5	1.5	1.5	1.0	4.0	1.5	5.5	0.5W	7.0	1.0W	9.0	0.5E	9.5	1.5E

TABLE IV. PILOT-BALLOON-MEASURED WIND DATA
NIKE-UDAG STV (SR 061 and 062)

LAYERS IN FEET ABOVE GROUND	MEAN WIND COMPONENTS IN MILES PER HOUR											
	8		9		10		11		12		13	
	2150 MDT		2200 MDT		2210 MDT		2220 MDT		2230 MDT		2237 MDT	
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
2250-3000	0.5N	1.0W	0.0	0.5W	0.5N	0.5E	0.5N	0.5W	1.0N	1.0W	0.5S	1.0W
3000-4000	1.0	2.0	0.5N	2.5	2.5	4.0W	1.0	4.0	2.0	3.5	1.5	2.0
4000-5000	1.5	3.5	2.0	5.0	2.0	3.5	1.5	3.5	1.5	5.0	1.5	5.5
5000-6000	2.5	4.5	2.0	2.5	0.5S	3.5	0.5	5.5	0.5	4.0	0.5N	4.5
6000-7000	2.5S	4.0	0.5S	3.5	1.0N	2.5	2.5	6.0	0.5S	3.0	1.5	2.5
7000-8000	3.0	3.5	4.5	2.0	1.0S	1.5	1.0S	4.0	2.0	0.5	0.0	2.5
8000-9000	2.5	2.0	6.0	4.0	4.0	1.0	2.5	1.5	1.5	3.0	2.5S	2.0
9000-10000	3.0	2.0	5.5	3.0	3.5	0.5E	5.5	3.5	4.0	2.0	6.0	2.0
10000-15000	5.5	1.0	3.5	2.5	5.0	3.0W	6.5	0.5E	7.5	1.5	7.0	0.5E
15000-20000	8.0	0.5	7.0	1.0	8.0	1.0E	10.0	0.5	7.5	2.0E	6.0	2.0
20000-35000	10.0	1.0E	12.5	2.5	11.0	0.5W	9.0	2.0	9.5	0.5	7.5	2.5
35000-40000												

TABLE IV. PILOT-BALLOON-MEASURED WIND DATA (CONT.)
NINE-HYDAC STV (SR 061 and 062)

LAYERS IN FEET ABOVE GROUND	MEAN WIND COMPONENTS IN MILES PER HOUR													
	15 2305 MDT		16 2320 MDT		17 2330 MDT		18 2340 MDT		19 2354 MDT		20 0000 MDT		21 0016 MDT	
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
210-300	0.5S	5.5W	1.0S	5.5W	1.5S	3.5W	3.0S	2.0W	2.5S	1.5W	1.5S	1.5W	4.5S	3.0W
300-500	0.5W	5.5	1.5	6.5	1.5	3.0	3.0	1.0	5.5	2.0	1.0	1.0	4.5	2.5
500-600	1.0S	4.5	1.5	5.5	1.0	3.0	1.5	2.0	4.5	0.5S	3.5	0.0	4.0	0.5
600-800	1.0	4.5	0.5	5.0	2.0	2.0	3.0	4.0	3.5	1.5	5.0	0.5E	4.0	0.5E
800-1000	0.5N	3.5	1.0	4.0	1.0	2.0	4.0	5.0	3.0	2.0W	1.5	2.0W	3.0	1.0W
1000-1100	2.5S	4.0	1.5	3.0	3.0	2.0	4.0	2.5	3.0	1.5	2.0	1.5	3.0	3.0
1100-2000	4.0	3.0	4.0	1.5	4.5	2.5	6.5	1.0	3.5	1.5	3.5	2.5	4.5	2.5
2000-2500	5.0	1.5	3.5	2.0	4.5	1.0	6.0	1.0	4.0	0.0	3.5	0.5E	5.5	1.5
2500-3000	6.0	1.0	5.0	1.5E	5.5	2.0	6.0	2.0E	5.0	3.5E	4.0	3.5	5.0	3.0
3000-3500	7.5	2.0	7.5	2.0	7.0	2.5	7.0	1.0	6.0	2.5	6.0	2.0	6.0	1.5
3500-4000	9.5	0.5	8.0	1.0W	8.5	1.5	9.0	2.0	7.5	0.5	6.5	0.5	7.0	0.0

TABLE IV. PILOT-BALLOON-MEASURED WIND DATA (CONT.)
NINE-HYDAC STV (SR 061 and 052)

LAYERS IN FEET ABOVE GROUND	MEAN WIND COMPONENTS IN KNOTS					
	1 1830 MDT		2 2100 MDT		3 0012 MDT	
	N-S	E-W	N-S	E-W	N-S	E-W
4000-4160	0.0	1.0W	6.0E	1.0E	7.0E	0.0
4160-9000	5.5E	4.5	11.0	2.0W	10.5	6.0W
9000-15000	8.5	7.0	10.5	4.0	10.0	3.5
15000-21000	3.5	19.5E	5.0	27.5E	13.0	11.0E
21000-26000	7.0N	39.5	7.0N	40.5	6.5N	37.5
26000-31767	6.0	35.5	0.0	34.0	7.5E	13.0
31767-36000	9.5E	7.0	3.5N	6.0	6.0	0.0
36000-41000	0.0	6.0W	4.5	8.0W	5.5	9.5W
41000-46000	4.5N	12.0	9.0	7.5	9.0N	10.5
46000-51000	11.0	13.0	8.0	4.5	6.5	7.5
51000-56000	11.5	4.0	4.5	5.5	8.0	2.5
56000-61000	8.5	5.0E	1.5E	9.0E	9.5E	3.5E
61000-66000	13.0E	2.5W	5.0	8.5W	1.5	8.0W
66000-73331	3.0	4.0	6.0N	1.0E	10.5	4.0

TABLE V. RAWINSONDE-MEASURED WIND DATA
NIKE-HYDAC STV (SR 061 and 062)

STATION ALTITUDE 3989.0 FEET MSL
11 OCT. '67
ASCENSION NO. 825

SIGNIFICANT LEVEL DATA
0493003903
WHITE SANDS SITE
TABLE VI

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

PRESSURE GEOMETRIC		TEMPERATURE		REL. HUM. PERCENT
MILLIBARS	ALTITUDE MSL FEET	AFR DEGREES	DEWPOINT CENTIGRADE	
881.0	3989.0	23.2	8.2	38.0
790.0	7058.6	15.4	4.8	49.0
714.0	9848.6	7.0	0.2	62.0
683.0	11041.4	5.1	-5.0	48.0
671.0	11517.2	5.5	-15.3	21.0
520.0	18156.0	-11.0	-30.2	19.0
437.0	19807.5	-13.3	-31.8	16.0
407.0	24222.7	-23.2	-40.3	19.0
369.0	26558.5	-28.5	-45.0	19.0
328.0	29299.5	-36.9	-50.0	20.0
260.0	34506.9	-46.4	0.	-0.1**
248.0	35540.2	-46.4	0.	-0.1**
196.0	40599.5	-54.1	0.	-0.1**
189.0	41366.4	-56.3	0.	-0.1**
139.0	47691.3	-63.3	0.	-0.1**
119.0	50786.9	-70.3	0.	-0.1**
98.0	54873.5	-72.2	0.	-0.1**
66.0	62394.9	-84.6	0.	-0.1**
60.0	64333.7	-81.0	0.	-0.1**
44.0	70703.9	-60.6	0.	-0.1**
31.0	78036.6	-53.0	0.	-0.1**
23.0	84412.3	-52.2	0.	-0.1**
19.5	87990.2	-46.8	0.	-0.1**
15.5	92981.9	-50.9	0.	-0.1**
13.3	95985.2	-47.0	0.	-0.1**

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

STATION ALTITUDE 3989.0 FEET MSL
 AT OCT 1957
 ASCENSION NO. 025
 1830 HRS MDT

UPPER AIR DATA
 0493003903
 WHITE SANDS SITE
 TABLE VII

WSM 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 DIRECTION DEGREES (TM)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	881.0	23.2	8.2	38.0	1031.0	671.9	0.	0.	1.000276
4000.0	880.7	23.2	8.2	38.0	1030.7	671.8	359.5	0.0	1.000276
4500.0	865.2	21.9	7.7	39.8	1017.0	670.4	336.2	0.2	1.000272
5000.0	850.0	20.6	7.3	41.6	1003.5	668.8	313.0	0.4	1.000268
5500.0	835.0	19.4	6.7	43.4	990.3	667.6	289.7	0.5	1.000264
6000.0	820.5	18.1	6.1	45.2	977.2	666.0	266.4	0.7	1.000260
6500.0	806.0	16.8	5.5	47.0	964.4	664.5	252.4	1.0	1.000256
7000.0	791.9	15.6	4.9	48.8	951.7	663.0	252.0	1.6	1.000251
7500.0	777.7	14.1	4.2	51.0	939.5	661.2	252.0	2.0	1.000247
8000.0	763.6	12.6	3.6	53.4	927.6	659.5	252.4	2.4	1.000243
8500.0	749.9	11.1	2.8	55.7	915.8	657.8	242.2	2.7	1.000239
9000.0	736.3	9.6	1.7	58.0	904.3	655.9	228.2	2.9	1.000234
9500.0	723.0	8.0	0.9	60.6	892.9	654.0	212.5	3.9	1.000230
10000.0	709.9	6.8	-0.4	60.2	880.9	652.5	199.5	5.3	1.000225
10500.0	696.9	6.0	-2.6	54.3	867.5	651.4	200.6	6.3	1.000218
11000.0	684.1	5.2	-4.8	48.5	854.3	650.4	202.9	7.5	1.000211
11500.0	671.4	5.5	-14.8	22.0	838.6	650.3	208.5	9.0	1.000196
12000.0	658.7	4.3	-18.2	20.9	826.3	648.9	211.3	10.5	1.000193
12500.0	646.1	3.0	-17.4	20.7	814.5	647.4	218.0	11.7	1.000189
13000.0	633.9	1.8	-18.5	20.6	802.5	645.9	221.6	12.8	1.000186
13500.0	621.8	0.4	-19.6	20.4	790.9	644.5	223.7	13.8	1.000183
14000.0	610.0	-0.7	-20.8	20.3	779.4	643.0	226.4	13.5	1.000180
14500.0	598.4	-1.9	-21.9	20.0	768.1	641.5	229.2	13.1	1.000177
15000.0	587.0	-3.2	-23.0	20.0	757.0	640.0	229.5	12.5	1.000174
15500.0	575.8	-4.4	-24.2	19.8	746.1	638.5	229.6	11.9	1.000171
16000.0	564.9	-5.6	-25.3	19.6	735.3	637.0	228.9	10.6	1.000168
16500.0	554.1	-6.9	-26.4	19.5	724.8	635.5	227.2	9.5	1.000165
17000.0	543.6	-8.1	-27.6	19.3	714.3	634.0	220.5	9.0	1.000163
17500.0	533.3	-9.4	-28.7	19.2	704.1	632.5	208.0	8.1	1.000160
18000.0	523.1	-10.6	-29.8	19.0	694.0	631.0	182.5	6.3	1.000157

UPPER AIR DATA
 0493003903
 WHITE SANDS SITE
 TABLE VII (Cont)

STATION ALTITUDE 3089.0 FEET MSL
 11 OCT. 67
 ASCENSION NO. 825

WSTN SITE COORDINATES
 E 488.580 FEET
 N 1854.045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNUTS	WIND DATA DIRECTION (TN) DEGREES	SPEED KNUTS	INDEX OF REFRACTION
18500.0	512.9	-11.3	18.8	682.2	630.2	155.2	6.6	1.000155
19000.0	502.9	-11.7	18.5	669.8	629.8	126.5	8.7	1.000152
19500.0	493.0	-12.1	18.2	657.6	629.3	113.8	11.9	1.000149
20000.0	483.2	-12.5	18.0	646.4	628.4	104.8	15.0	1.000146
20500.0	473.5	-13.0	18.2	636.4	626.9	101.3	17.3	1.000144
21000.0	464.0	-13.5	18.3	626.6	625.4	97.9	19.0	1.000142
21500.0	454.8	-14.0	18.4	617.0	623.9	94.5	20.8	1.000139
22000.0	445.5	-14.5	18.5	607.5	622.4	91.8	21.6	1.000137
22500.0	436.5	-15.0	18.6	598.2	620.9	89.4	23.2	1.000135
23000.0	427.7	-15.5	18.7	589.0	619.4	87.4	25.2	1.000133
23500.0	419.1	-16.0	18.8	580.0	617.8	85.5	27.5	1.000130
24000.0	410.7	-16.5	18.9	571.2	616.3	84.1	31.2	1.000128
24500.0	402.3	-17.0	19.0	562.0	614.9	82.9	34.9	1.000126
25000.0	393.9	-17.5	19.0	552.9	613.5	82.6	38.1	1.000124
25500.0	385.8	-18.0	19.0	544.0	612.1	82.9	40.7	1.000122
26000.0	377.8	-18.5	19.0	535.1	610.7	84.0	42.4	1.000120
26500.0	369.9	-19.0	19.0	526.5	609.3	85.1	42.2	1.000118
27000.0	362.1	-19.5	19.0	517.8	607.8	86.0	41.3	1.000119
27500.0	354.4	-20.0	19.0	509.2	606.3	84.8	39.9	1.000114
28000.0	346.8	-20.5	19.0	500.8	604.9	83.1	38.9	1.000112
28500.0	339.2	-21.0	19.0	492.2	603.4	80.6	38.2	1.000110
29000.0	332.2	-21.5	19.0	484.4	601.9	77.8	38.0	1.000108
29500.0	325.0	-22.0	19.0	476.2	600.5	74.8	38.0	1.000106
30000.0	317.9	-22.5	19.0	467.9	599.1	72.6	38.5	1.000105
30500.0	310.9	-23.0	19.0	459.7	597.7	70.6	38.9	1.000103
31000.0	304.0	-23.5	19.0	451.7	596.3	69.4	38.7	1.000101
31500.0	297.3	-24.0	19.0	443.9	594.9	68.3	38.5	1.000099
32000.0	290.8	-24.5	19.0	436.0	593.5	67.8	38.5	1.000097
32500.0	284.4	-25.0	19.0	428.5	592.0	67.6	38.4	1.000096
33000.0	278.1	-25.5	19.0	421.1	590.6	68.1	38.4	1.000094

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

UPPER AIR DATA
0493003903
WHITE SANDS SITE
TABLE VII (Cont)

STATION ALTITUDE 3989.0 FEET MSL
11 OCT. 1967
ASCENSION NO. 825
1830 HRS MDT

MSM 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
33500.0	271.9	-44.2	3.9**	413.8	589.2	68.6	36.9	1.000092
34000.0	265.9	-45.3	1.9**	406.6	587.8	69.1	34.5	1.000091
34500.0	260.1	-46.4	0.0**	399.6	586.4	71.6	31.2	1.000089
35000.0	254.2	-46.4	-0.1**	390.8	586.3	74.6	27.8	1.000087
35500.0	248.5	-46.4	-0.1**	381.8	586.3	78.9	23.1	1.000085
36000.0	242.8	-47.1	-0.1**	374.2	585.4	82.5	18.4	1.000083
36500.0	237.2	-47.9	-0.1**	366.8	584.4	87.1	14.3	1.000082
37000.0	231.7	-48.5	-0.1**	359.6	583.5	91.7	10.3	1.000080
37500.0	226.4	-49.4	-0.1**	352.5	582.5	96.1	6.9	1.000078
38000.0	221.2	-50.1	-0.1**	345.6	581.5	107.2	3.1	1.000077
38500.0	216.1	-50.9	-0.1**	338.8	530.5	189.0	3.3	1.000075
39000.0	211.1	-51.7	-0.1**	332.1	579.5	256.8	3.7	1.000074
39500.0	206.3	-52.4	-0.1**	325.6	578.5	251.3	5.0	1.000073
40000.0	201.5	-53.2	-0.1**	319.2	577.3	247.1	6.0	1.000071
40500.0	196.9	-53.9	-0.1**	313.0	576.5	247.4	5.5	1.000070
41000.0	192.3	-55.3	-0.1**	307.9	574.8	248.4	5.1	1.000068
41500.0	187.8	-56.5	-0.1**	301.9	573.2	251.1	4.7	1.000067
42000.0	183.3	-57.0	-0.1**	295.6	572.5	254.0	4.6	1.000066
42500.0	178.9	-57.6	-0.1**	289.0	571.7	257.3	5.0	1.000064
43000.0	174.6	-58.1	-0.1**	282.8	571.0	261.3	6.3	1.000063
43500.0	170.4	-58.7	-0.1**	276.8	570.3	265.8	8.4	1.000062
44000.0	166.3	-59.2	-0.1**	270.8	569.5	268.9	9.9	1.000060
44500.0	162.3	-59.8	-0.1**	255.0	568.8	271.5	11.3	1.000059
45000.0	158.4	-60.3	-0.1**	259.3	568.1	279.4	12.1	1.000058
45500.0	154.6	-60.9	-0.1**	253.8	567.3	287.6	12.9	1.000057
46000.0	150.9	-61.4	-0.1**	248.3	566.6	290.2	14.6	1.000055
46500.0	147.3	-62.0	-0.1**	243.0	565.8	293.1	16.4	1.000054
47000.0	143.7	-62.5	-0.1**	237.8	565.1	297.3	18.3	1.000053
47500.0	140.3	-63.1	-0.1**	232.7	564.3	301.2	19.9	1.000052
48000.0	136.9	-64.0	-0.1**	228.0	563.1	304.5	20.9	1.000051

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

STATION ALTITUDE 3989.0 FEET MSL
 1830 HRS NOT
 ASCENSION NO. 825

UPPER AIR DATA
 0493003903
 WHITE SANDS SITE
 TABLE VII (Cont.)

WSTN SITE COORDINATES
 E 488.580 FEET
 N 185.045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (IN)	WIND SPEED KNOTS	INDEX OF REFRACTION
48500.0	133.5	-65.1	0.	-0.	223.6	561.6	308.1	21.4	1.000050
49000.0	130.2	-66.3	0.	-0.	219.2	560.1	312.2	21.0	1.000049
49500.0	126.8	-67.4	0.	-0.	214.9	558.5	316.2	20.0	1.000048
50000.0	123.8	-68.5	0.	-0.	210.8	557.0	319.7	18.0	1.000047
50500.0	120.7	-69.7	0.	-0.	206.7	555.5	322.2	15.8	1.000046
51000.0	117.7	-70.4	0.	-0.	202.3	554.4	325.0	13.5	1.000045
51500.0	114.7	-70.7	0.	-0.	197.4	554.1	322.3	11.5	1.000044
52000.0	111.8	-70.9	0.	-0.	192.6	553.7	319.2	10.0	1.000043
52500.0	109.0	-71.2	0.	-0.	188.0	553.4	314.9	9.4	1.000042
53000.0	106.2	-71.4	0.	-0.	183.5	553.1	309.3	9.9	1.000041
53500.0	103.5	-71.7	0.	-0.	179.1	552.7	307.2	11.2	1.000040
54000.0	100.9	-71.9	0.	-0.	174.7	552.4	308.4	13.2	1.000039
54500.0	98.4	-72.2	0.	-0.	170.5	552.0	311.9	14.3	1.000038
55000.0	95.9	-71.8	0.	-0.	165.9	552.5	317.6	14.5	1.000037
55500.0	93.3	-71.3	0.	-0.	161.4	553.2	322.6	13.9	1.000036
56000.0	91.2	-70.8	0.	-0.	157.1	553.9	326.5	12.1	1.000035
56500.0	88.9	-70.3	0.	-0.	152.7	554.5	330.4	10.7	1.000034
57000.0	86.7	-69.8	0.	-0.	148.3	555.2	334.2	10.0	1.000033
57500.0	84.5	-69.4	0.	-0.	144.1	555.9	337.6	9.4	1.000032
58000.0	82.4	-68.9	0.	-0.	140.0	556.9	340.0	9.3	1.000031
58500.0	80.4	-68.4	0.	-0.	136.7	557.2	342.0	9.7	1.000030
59000.0	78.4	-67.9	0.	-0.	133.0	557.8	342.9	11.8	1.000030
59500.0	76.4	-67.4	0.	-0.	129.4	558.5	344.3	13.6	1.000029
60000.0	74.4	-66.8	0.	-0.	125.8	559.2	349.9	13.1	1.000028
60500.0	72.8	-66.4	0.	-0.	122.4	559.8	355.6	12.9	1.000027
61000.0	70.3	-66.0	0.	-0.	119.0	560.5	2.	11.2	1.000027
61500.0	69.1	-65.5	0.	-0.	115.8	561.3	8.6	10.0	1.000026
62000.0	67.3	-65.0	0.	-0.	112.7	561.8	25.0	8.4	1.000025
62500.0	65.7	-64.4	0.	-0.	109.6	562.6	42.4	6.9	1.000024
63000.0	64.1	-63.5	0.	-0.	106.5	563.8	70.7	6.7	1.000024

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

UPPER AIR DATA
0493003903
WHITE SANDS SITE
TABLE VII (Cont)

STATION ALTITUDE 3989.0 FEET MSL
IX OCT. 67
ASCENSION NO. 825

1830 HRS MDT
1830 HRS MDT
1830 HRS MDT

GEOMEYRIC		PRESSURE	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF		WIND DATA		INDEX	
ALTITUDE MSL FEET	ALTITUDE MSL FEET	AIR DEGREES	DEWPOINT CENTIGRADE	SOUND KNOTS			SOUND KNOTS	DIRECTION DEGREES(TW)	SPEED KNOTS	OF REFRACTION	OF REFRACTION	
63500.0	63500.0	62.9	-62.5	0.	-0.	**	103.4	565.0	101.9	6.8	1.000023	1.000023
64000.0	64000.0	61.0	-61.6	0.	-0.	**	100.5	566.3	126.0	7.7	1.000022	1.000022
64500.0	64500.0	59.9	-61.0	0.	-0.	**	97.7	567.2	146.3	9.0	1.000022	1.000022
65000.0	65000.0	58.1	-61.0	0.	-0.	**	95.4	567.2	161.0	10.7	1.000021	1.000021
65500.0	65500.0	56.7	-60.9	0.	-0.	**	93.1	567.2	169.7	12.4	1.000021	1.000021
66000.0	66000.0	55.3	-60.9	0.	-0.	**	90.8	567.3	177.5	13.4	1.000020	1.000020
66500.0	66500.0	54.0	-60.9	0.	-0.	**	88.6	567.3	183.5	12.8	1.000020	1.000020
67000.0	67000.0	52.7	-60.8	0.	-0.	**	86.5	567.4	189.5	12.0	1.000019	1.000019
67500.0	67500.0	51.4	-60.8	0.	-0.	**	84.4	567.4	195.1	11.4	1.000019	1.000019
68000.0	68000.0	50.2	-60.8	0.	-0.	**	82.3	567.5	200.7	10.7	1.000018	1.000018
68500.0	68500.0	49.0	-60.7	0.	-0.	**	80.3	567.5	206.3	9.9	1.000018	1.000018
69000.0	69000.0	47.8	-60.7	0.	-0.	**	78.4	567.5	213.0	8.7	1.000017	1.000017
69500.0	69500.0	46.7	-60.7	0.	-0.	**	76.5	567.6	219.7	7.5	1.000017	1.000017
70000.0	70000.0	45.5	-60.6	0.	-0.	**	74.7	567.6	226.3	6.5	1.000017	1.000017
70500.0	70500.0	44.4	-60.6	0.	-0.	**	72.8	567.7	232.6	5.6	1.000016	1.000016
71000.0	71000.0	43.4	-60.3	0.	-0.	**	71.0	568.1	238.9	4.8	1.000016	1.000016
71500.0	71500.0	42.4	-59.8	0.	-0.	**	69.2	568.8	259.9	3.9	1.000015	1.000015
72000.0	72000.0	41.4	-59.3	0.	-0.	**	67.4	569.5	294.5	2.9	1.000015	1.000015
72500.0	72500.0	40.4	-58.7	0.	-0.	**	65.6	570.2	329.1	1.9	1.000015	1.000015
73000.0	73000.0	39.4	-58.2	0.	-0.	**	63.9	570.8	5.2	1.7	1.000014	1.000014
73500.0	73500.0	38.5	-57.7	0.	-0.	**	62.3	571.5	41.8	1.9	1.000014	1.000014
74000.0	74000.0	37.6	-57.2	0.	-0.	**	60.6	572.2	78.4	2.0	1.000014	1.000014
74500.0	74500.0	36.7	-56.7	0.	-0.	**	59.1	572.9	123.1	2.0	1.000013	1.000013
75000.0	75000.0	35.8	-56.1	0.	-0.	**	57.5	573.6	169.3	1.8	1.000013	1.000013
75500.0	75500.0	35.0	-55.5	0.	-0.	**	56.0	574.3	212.2	1.9	1.000012	1.000012
76000.0	76000.0	34.2	-55.1	0.	-0.	**	54.6	575.0	221.1	3.0	1.000012	1.000012
76500.0	76500.0	33.4	-54.5	0.	-0.	**	53.2	575.6	230.1	4.2	1.000012	1.000012
77000.0	77000.0	32.6	-54.1	0.	-0.	**	51.8	576.3	239.0	5.2	1.000012	1.000012
77500.0	77500.0	31.8	-53.6	0.	-0.	**	50.5	577.0	247.7	6.1	1.000011	1.000011
78000.0	78000.0	31.1	-53.0	0.	-0.	**	49.2	577.7	256.4	6.9	1.000011	1.000011

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

STATION ALTITUDE 3989.0 FEET MSL
 11 OCT. 1967
 ASCENSION NO. 825

UPPER AIR DATA
 0493003903
 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 CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (IN) DEGREES (IN)	SPEED KNOTS	INDEX OF REFRACTION
78500.0	30.3	-52.9	-0.0	48.0	577.8	255.5	6.6	1.000001
79000.0	29.8	-52.9	-0.0	46.9	577.9	254.3	6.3	1.000010
79500.0	28.9	-52.8	-0.0	45.8	578.0	250.7	5.8	1.000010
80000.0	28.3	-52.8	-0.0	44.7	578.1	245.6	4.9	1.000010
80500.0	27.6	-52.7	-0.0	43.7	578.1	236.8	4.0	1.000010
81000.0	27.0	-52.8	-0.0	42.8	578.2	224.7	5.5	1.000009
81500.0	26.4	-52.6	-0.0	41.6	578.3	211.8	7.4	1.000009
82000.0	25.7	-52.5	-0.0	40.7	578.4	202.6	9.1	1.000009
82500.0	25.2	-52.4	-0.0	39.7	578.5	203.8	10.3	1.000009
83000.0	24.6	-52.4	-0.0	38.8	578.6	205.0	11.5	1.000009
83500.0	24.0	-52.3	-0.0	37.9	578.6	206.8	13.3	1.000008
84000.0	23.4	-52.3	-0.0	37.0	578.7	208.9	15.5	1.000008
84500.0	22.9	-52.1	-0.0	36.1	579.0	211.5	17.4	1.000008
85000.0	22.4	-51.3	-0.0	35.2	579.9	218.2	16.5	1.000008
85500.0	21.9	-50.6	-0.0	34.2	580.9	224.8	15.7	1.000008
86000.0	21.4	-49.8	-0.0	33.3	581.9	226.2	15.2	1.000007
86500.0	20.9	-49.0	-0.0	32.5	582.9	228.3	15.1	1.000007
87000.0	20.4	-48.3	-0.0	31.6	583.9	228.4	15.0	1.000007
87500.0	19.9	-47.5	-0.0	30.8	584.9	228.7	16.3	1.000007
88000.0	19.3	-46.8	-0.0	30.0	585.8	228.9	17.9	1.000007
88500.0	19.0	-47.2	-0.0	29.4	585.3	229.1	19.4	1.000007
89000.0	18.6	-47.6	-0.0	28.8	584.7	229.2	20.5	1.000006
89500.0	18.2	-48.0	-0.0	28.2	584.2	229.2	21.6	1.000006
90000.0	17.6	-48.5	-0.0	27.6	583.7	230.2	22.7	1.000006
90500.0	17.4	-48.9	-0.0	27.0	583.3	231.8	23.8	1.000006
91000.0	17.0	-49.3	-0.0	26.4	582.6	237.3	25.0	1.000006
91500.0	16.6	-49.7	-0.0	25.8	582.1	242.3	25.4	1.000006
92000.0	16.2	-50.1	-0.0	25.3	581.5	249.9	25.0	1.000006
92500.0	15.8	-50.5	-0.0	24.8	581.0	257.2	24.5	1.000006
93000.0	15.5	-50.9	-0.0	24.3	580.5			1.000005

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

STATION ALTITUDE 3989.0 FEET MSL
 11 OCT, 1967
 ASCENSION NO. 825
 1830 HRS MDT

UPPER AIR DATA
 0493003903
 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 KNOTS	WIND DATA		REFRACTION OF 1
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE				DIRECTION DEGREES (M)	SPEED KNOTS	
93500.0	15.1	-50.2	0.	-0. **	23.7	581.3			1.000005
94000.0	14.8	-49.6	0.	-0. **	23.1	582.2			1.000005
94500.0	14.5	-49.0	0.	-0. **	22.5	583.0			1.000005
95000.0	14.1	-48.3	0.	-0. **	21.9	583.8			1.000005
95500.0	13.8	-47.7	0.	-0. **	21.3	584.6			1.000005

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

STATION ALTITUDE 3989.0 FEET MSL
 21 OCT. 1967
 ASCENSION NO. 825

1830 HRS MDT

MANDATORY LEVELS
 0493003903
 WHITE SANDS SITE
 TABLE VIII

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

PRESSURE		GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
WILLIBARS	FEET	DEGREES	CENTIGRADE	AIR	DEWPOINT		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5009.	20.6	7.3			42.	312.5	0.4
800.0	6715.	16.3	5.2			48.	252.2	1.3
750.0	8501.	11.0	2.6			56.	242.0	2.7
700.0	10374.	6.2	-2.0			56.	200.1	6.0
650.0	12359.	3.4	-17.0			21.	216.3	11.4
600.0	14468.	-1.7	-21.7			20.	229.3	13.0
550.0	16715.	-7.4	-26.9			19.	224.2	9.2
500.0	19126.	-11.8	-31.2			18.	121.5	9.5
450.0	21750.	-17.0	-35.6			18.	92.9	20.9
400.0	24608.	-24.0	-41.3			19.	82.8	35.8
350.0	27758.	-31.4	-47.3			19.	84.1	39.2
300.0	31280.	-39.3	-57.8			12.4	68.6	38.6
250.0	35301.	-46.6	0.			-0.4	77.6	24.3
200.0	40091.	-53.4	0.			-0.4	247.2	5.8
175.0	42876.	-58.1	0.			-0.4	261.0	6.1
150.0	46036.	-61.6	0.			-0.4	290.9	15.1
125.0	49695.	-68.1	0.			-0.4	316.4	16.2
100.0	54035.	-72.0	0.			-0.4	308.9	14.0
80.0	58383.	-68.3	0.			-0.4	342.0	9.9
70.0	61028.	-65.7	0.			-0.4	4.8	10.7
60.0	64131.	-61.0	0.			-0.4	139.4	8.6
50.0	67880.	-60.8	0.			-0.4	201.4	10.6
40.0	72417.	-58.5	0.			-0.4	340.9	1.6
30.0	78435.	-52.9	0.			-0.4	254.9	6.3
25.0	82298.	-52.4	0.			-0.4	204.0	10.8
20.0	87066.	-47.6	0.			-0.4	228.8	16.1
15.0	93265.	-50.0	0.			-0.4		

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

STATION ALTITUDE 3989.0 FEET MSL
 11 OCT 1967
 ASCENSION NO. 826
 2100 HRS MDT

SIGNIFICANT LEVEL DATA
 0493003904
 WHITE SANDS SITE
 TABLE IX

WGM SITE COORDINATES
 E 488.540 FEET
 N 185.045 FEET

PRESSURE	GEOMETRIC	TEMPERATURE	REL HUM.
MILLIBARS	ALTITUDE	AIR DEWPOINT	PERCENT
	MSL FEET	DEGREES CENTIGRADE	
881.8	3989.0	8.8	52.0
871.0	4337.7	8.3	44.0
775.0	7612.0	2.4	47.0
737.0	8992.6	3.0	66.0
675.0	11364.8	-12.6	28.0
437.0	22515.5	-37.3	17.0
339.0	28563.0	-50.0	18.0
228.0	37384.5	0.0	-0.0
178.0	42619.7	0.0	-0.0
163.0	44442.7	0.0	-0.0
105.0	53214.3	0.0	-0.0
73.0	60370.2	0.0	-0.0
65.0	62716.2	0.0	-0.0
59.0	64686.9	0.0	-0.0
37.0	74347.7	0.0	-0.0
16.0	92284.5	0.0	-0.0
10.0	102683.7	0.0	-0.0
6.0	114314.8	0.0	-0.0

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

STATION ALTITUDE 3989.0 FEET MSL
 11 OCT. 67 2100 HRS MDT
 ASCENSION NO. 826

UPPER AIR DATA
 0493003904
 WHITE SANDS SITE
 TABLE X

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	881.8	18.5	8.5	52.0	1048.4	666.6	0.0	0.0	1.000283
4000.0	881.5	18.6	8.5	51.7	1047.8	666.6	1.0	0.0	1.000283
4500.0	866.0	20.5	8.0	44.1	1022.8	668.8	46.3	0.6	1.000275
5000.0	850.7	19.4	7.1	44.6	1008.6	667.5	91.5	1.2	1.000269
5500.0	835.6	18.3	6.2	45.1	994.8	666.1	136.8	1.8	1.000264
6000.0	820.9	17.3	5.3	45.5	981.2	664.8	176.4	2.3	1.000259
6500.0	806.4	16.0	4.4	46.0	967.8	663.4	175.3	3.5	1.000254
7000.0	792.1	14.9	3.5	46.4	954.6	662.7	175.3	4.6	1.000249
7500.0	778.0	13.8	2.6	46.9	941.3	660.7	175.5	5.7	1.000244
8000.0	764.0	12.2	2.8	52.3	929.5	659.0	171.5	7.2	1.000242
8500.0	750.3	10.6	3.0	59.2	917.8	657.2	168.3	8.6	1.000240
9000.0	736.8	9.0	3.0	65.9	906.5	655.3	167.0	9.7	1.000238
9500.0	723.3	8.0	0.2	57.9	893.4	654.0	168.9	10.6	1.000229
10000.0	710.0	7.0	-2.7	49.9	880.4	652.7	172.5	11.2	1.000220
10500.0	697.0	6.0	-5.9	41.9	867.8	651.3	181.4	10.9	1.000212
11000.0	684.2	5.0	-9.6	33.8	855.3	650.1	191.6	10.7	1.000208
11500.0	671.5	4.1	-12.9	27.3	842.0	648.8	204.9	11.0	1.000194
12000.0	658.2	3.0	-14.0	27.4	829.5	647.6	215.4	11.3	1.000194
12500.0	645.8	2.1	-15.1	26.9	816.5	646.4	224.6	11.6	1.000191
13000.0	633.3	1.1	-16.1	26.4	803.7	645.2	229.3	12.0	1.000188
13500.0	621.0	0.0	-17.2	23.9	791.2	644.0	239.3	12.4	1.000184
14000.0	609.0	-0.9	-18.3	25.4	778.8	642.7	237.6	12.0	1.000181
14500.0	597.3	-1.9	-19.4	24.9	766.7	641.5	240.7	11.5	1.000178
15000.0	585.8	-2.9	-20.5	24.4	754.7	640.3	241.7	10.8	1.000174
15500.0	574.5	-3.9	-21.7	23.9	743.0	639.1	240.6	9.8	1.000171
16000.0	563.4	-5.0	-22.8	23.4	731.4	637.9	238.4	8.5	1.000168
16500.0	552.5	-6.0	-23.9	22.9	720.0	636.7	223.5	6.8	1.000165
17000.0	541.8	-7.0	-25.0	22.4	708.9	635.4	203.2	5.0	1.000162
17500.0	531.4	-8.0	-26.1	21.9	697.8	634.2	167.4	6.0	1.000159
18000.0	521.0	-9.0	-27.2	21.5	687.0	633.0	135.6	7.3	1.000157

STATION ALTITUDE 3890.0 FEET MSL
 IN OCT. 67
 ASCENSION NO. 826
 2100 HRS MDT

UPPER AIR DATA
 0493003904
 WHLFE SANDS SITE
 TABLE X (Cont)

WSTM SITE COORDINATES
 E 488,500 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
19500.0	511.1	-10.0	21.0	676.4	631.8	122.5	10.5	1.000134
19000.0	501.2	-11.0	20.5	665.9	630.6	113.1	11.6	1.000131
19500.0	491.5	-12.0	20.0	655.6	629.3	108.3	16.9	1.000149
20000.0	482.0	-13.0	19.5	645.4	628.1	104.7	19.8	1.000146
20500.0	472.1	-14.0	19.0	635.4	626.9	101.7	22.4	1.000144
21000.0	463.6	-15.0	18.5	625.6	625.7	98.7	25.6	1.000141
21500.0	454.7	-16.1	18.0	616.0	624.4	95.7	28.9	1.000139
22000.0	445.9	-17.1	17.5	606.5	623.2	93.8	31.8	1.000137
22500.0	437.3	-18.1	17.0	597.1	622.0	91.9	34.6	1.000134
23000.0	428.2	-19.1	17.1	587.7	620.8	91.6	36.7	1.000132
23500.0	419.3	-20.2	17.2	578.5	619.6	91.3	38.7	1.000130
24000.0	410.6	-21.0	17.2	569.4	617.2	91.3	39.2	1.000128
24500.0	402.1	-22.3	17.3	560.5	615.6	91.3	39.6	1.000126
25000.0	393.7	-24.5	17.4	551.7	614.1	91.4	39.5	1.000124
25500.0	385.5	-25.8	17.5	543.1	612.4	91.1	39.7	1.000122
26000.0	377.5	-27.1	17.6	534.6	610.8	89.1	40.7	1.000120
26500.0	369.7	-28.4	17.7	526.3	609.1	87.2	41.5	1.000118
27000.0	362.0	-29.7	17.7	518.1	607.5	85.4	42.1	1.000116
27500.0	354.5	-31.0	17.8	510.1	605.9	83.4	42.5	1.000114
28000.0	347.1	-32.3	17.9	502.2	604.3	81.1	42.8	1.000112
28500.0	339.9	-33.6	18.0	494.4	602.6	78.4	42.4	1.000111
29000.0	332.4	-34.7	17.1**	485.6	601.3	75.6	41.6	1.000109
29500.0	325.0	-35.8	16.1**	476.8	600.1	73.0	42.0	1.000106
30000.0	317.8	-36.6	15.1**	468.1	598.9	70.6	42.8	1.000103
30500.0	310.7	-37.6	14.0**	459.6	597.6	71.0	43.0	1.000101
31000.0	303.8	-38.6	13.3**	451.3	596.4	72.0	42.9	1.000099
31500.0	297.1	-39.6	12.0**	443.1	595.1	75.5	41.5	1.000097
32000.0	290.5	-40.5	11.0**	435.1	593.9	79.0	39.3	1.000095
32500.0	284.0	-41.5	10.0**	427.2	592.6	82.3	35.4	1.000093
33000.0	277.7	-42.5	8.9**	419.5	591.4	85.7	31.3	1.000094

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

STATION ALTITUDE 3989.0 FEET MSL
 11 OCT. 1967 2100 HRS MDT
 ASCENSION NO. 826

UPPER AIR DATA
 0493003904
 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 KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES (TH)	SPEED KNOTS	
33500.0	271.5	-43.5	-64.5	7.9**	411.9	590.1	89.3	27.0	1.000092
34000.0	265.5	-44.5	-66.3	6.9**	404.9	588.8	99.0	22.3	1.000090
34500.0	259.6	-45.4	-68.2	5.9**	397.2	587.8	96.7	17.2	1.000088
35000.0	253.8	-46.4	-70.3	4.9**	390.0	586.3	104.0	13.6	1.000087
35500.0	248.2	-47.4	-72.7	3.8**	383.0	585.0	114.2	10.7	1.000085
36000.0	242.6	-48.4	-75.4	2.8**	376.1	583.8	123.8	8.3	1.000084
36500.0	237.3	-49.4	-78.9	1.8**	369.4	582.5	132.9	6.2	1.000082
37000.0	232.0	-50.3	-84.6	0.8**	362.8	581.2	130.0	4.7	1.000081
37500.0	226.8	-51.2	0.	-0.1**	356.0	580.1	132.6	4.5	1.000079
38000.0	221.5	-51.8	0.	-0.1**	348.9	579.4	90.1	4.2	1.000078
38500.0	216.3	-52.3	0.	-0.1**	341.2	578.6	99.5	3.8	1.000076
39000.0	211.2	-52.9	0.	-0.1**	334.1	577.9	35.7	3.6	1.000074
39500.0	206.3	-53.4	0.	-0.1**	327.1	577.2	23.3	3.9	1.000073
40000.0	201.5	-53.9	0.	-0.1**	320.2	576.5	2.7	4.2	1.000071
40500.0	196.8	-54.5	0.	-0.1**	313.5	575.8	330.0	4.8	1.000070
41000.0	192.2	-55.0	0.	-0.1**	307.0	575.1	306.3	5.1	1.000068
41500.0	187.7	-55.5	0.	-0.1**	300.5	574.3	293.2	5.0	1.000067
42000.0	183.3	-56.1	0.	-0.1**	294.3	573.6	284.0	5.5	1.000066
42500.0	179.0	-56.7	0.	-0.1**	288.1	572.9	283.4	7.0	1.000064
43000.0	174.8	-57.6	0.	-0.1**	282.4	571.7	282.8	8.6	1.000063
43500.0	170.0	-58.3	0.	-0.1**	276.9	570.4	285.6	9.2	1.000062
44000.0	166.5	-59.3	0.	-0.1**	271.6	569.1	288.4	9.7	1.000060
44500.0	162.5	-60.3	0.	-0.1**	266.3	567.8	293.3	10.2	1.000059
45000.0	158.5	-61.2	0.	-0.1**	260.5	566.9	303.5	10.7	1.000058
45500.0	154.6	-61.9	0.	-0.1**	254.9	566.0	305.8	12.3	1.000057
46000.0	150.8	-62.6	0.	-0.1**	249.3	565.0	306.1	13.9	1.000056
46500.0	147.0	-63.3	0.	-0.1**	244.1	564.1	308.4	15.2	1.000054
47000.0	143.4	-64.0	0.	-0.1**	238.8	563.3	311.0	16.6	1.000053
47500.0	139.8	-64.7	0.	-0.1**	233.7	562.2	313.1	17.2	1.000052
48000.0	136.4	-65.4	0.	-0.1**	228.7	561.2	315.0	17.9	1.000051

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

UPPER AIR DATA
0493033904
WHITE SANDS SITE
TABLE X (Cont)

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

STATION ALTITUDE 3989.0 FEET MSL
11 OCT, '67 2100 HRS EDT
ASCENSION NO. 826

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
48500.0	133.0	-66.1	-0.0	223.8	560.3	318.7	17.3	1.000090
49000.0	129.7	-66.8	-0.0	219.6	559.4	323.6	15.9	1.000049
49500.0	126.5	-67.5	-0.0	214.3	558.4	329.0	14.6	1.000048
50000.0	123.4	-68.2	-0.0	209.7	557.4	335.4	12.5	1.000047
50500.0	120.3	-68.9	-0.0	205.2	556.5	341.4	10.7	1.000046
51000.0	117.3	-69.6	-0.0	200.8	555.5	342.3	9.0	1.000045
51500.0	114.4	-70.3	-0.0	196.5	554.6	343.1	7.4	1.000044
52000.0	111.6	-71.0	-0.0	192.3	553.6	338.8	6.8	1.000043
52500.0	108.8	-71.7	-0.0	188.2	552.7	333.0	6.5	1.000042
53000.0	106.1	-72.4	-0.0	184.2	551.7	329.8	6.6	1.000041
53500.0	103.5	-72.4	-0.0	179.6	551.6	329.2	7.2	1.000040
54000.0	100.9	-72.0	-0.0	174.7	552.3	328.3	7.9	1.000039
54500.0	98.4	-71.5	-0.0	170.0	552.9	326.4	8.9	1.000038
55000.0	95.9	-71.1	-0.0	165.3	553.5	324.3	9.6	1.000037
55500.0	93.5	-70.6	-0.0	160.8	554.2	319.9	8.1	1.000036
56000.0	91.1	-70.1	-0.0	156.4	554.8	315.6	6.6	1.000035
56500.0	88.9	-69.7	-0.0	152.2	555.4	307.2	6.8	1.000034
57000.0	86.6	-69.2	-0.0	148.0	556.1	298.7	7.1	1.000033
57500.0	84.3	-68.7	-0.0	144.0	556.7	300.2	6.3	1.000032
58000.0	82.3	-68.3	-0.0	140.0	557.2	303.8	5.3	1.000031
58500.0	80.3	-67.8	-0.0	136.2	557.9	321.5	5.6	1.000030
59000.0	78.3	-67.4	-0.0	132.5	558.6	345.2	6.5	1.000030
59500.0	76.3	-66.9	-0.0	128.9	559.2	7.1	6.7	1.000029
60000.0	74.4	-66.4	-0.0	125.4	559.8	27.5	6.2	1.000028
60500.0	72.5	-65.9	-0.0	121.9	560.6	49.0	5.9	1.000027
61000.0	70.8	-65.0	-0.0	118.5	561.7	73.2	6.2	1.000026
61500.0	69.0	-64.2	-0.0	115.1	562.9	97.1	6.4	1.000025
62000.0	67.3	-63.3	-0.0	111.8	564.0	112.1	7.5	1.000024
62500.0	65.7	-62.5	-0.0	108.6	565.2	127.2	8.6	1.000024
63000.0	64.1	-62.3	-0.0	105.9	565.6	138.4	9.9	1.000024

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

WSTM SITE COORDINATES
E 488,580 FEET
N 105,045 FEET

UPPER AIR DATA
0493003934
WHITE SANDS SITE
TABLE X (Cont.)

STATION ALTITUDE 3989.0 FEET MSL
11 OCT. 67
ASCENSION NO. 826
2100 HRS MDT

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	62.5	-62.6	-0.00	103.9	565.0	148.1	11.2	1.000023
64000.0	61.0	-62.9	-0.00	101.2	564.5	159.4	11.6	1.000023
64500.0	59.5	-63.3	-0.00	98.9	564.1	172.5	11.1	1.000022
65000.0	58.0	-63.1	-0.00	96.4	564.3	183.7	10.7	1.000021
65500.0	56.7	-62.7	-0.00	93.9	564.9	199.4	10.4	1.000021
66000.0	55.4	-62.3	-0.00	91.5	565.5	213.9	10.2	1.000020
66500.0	54.1	-61.8	-0.00	89.3	566.1	229.9	9.7	1.000020
67000.0	52.8	-61.3	-0.00	86.8	566.7	253.8	9.3	1.000019
67500.0	51.5	-60.9	-0.00	84.5	567.3	283.9	9.2	1.000019
68000.0	50.3	-60.5	-0.00	82.4	567.9	277.8	9.1	1.000018
68500.0	49.1	-60.0	-0.00	80.2	568.5	289.8	7.9	1.000018
69000.0	47.9	-59.6	-0.00	78.1	569.1	301.8	6.5	1.000017
69500.0	46.8	-59.1	-0.00	76.1	569.7	322.4	5.3	1.000017
70000.0	45.6	-58.7	-0.00	74.1	570.3	349.3	4.3	1.000017
70500.0	44.6	-58.2	-0.00	72.3	570.8	18.0	3.6	1.000016
71000.0	43.5	-57.8	-0.00	70.4	571.4	42.0	4.2	1.000016
71500.0	42.5	-57.3	-0.00	68.5	572.0	68.0	4.6	1.000015
72000.0	41.4	-56.9	-0.00	66.6	572.6	100.3	4.4	1.000015
72500.0	40.5	-56.4	-0.00	65.0	573.2	133.9	3.8	1.000014
73000.0	39.5	-56.0	-0.00	63.4	573.8	160.3	3.5	1.000014
73500.0	38.5	-55.6	-0.00	61.7	574.4	178.7	3.6	1.000014
74000.0	37.6	-55.1	-0.00	60.1	575.0	196.2	3.7	1.000013
74500.0	36.7	-54.8	-0.00	58.6	575.6	204.4	4.5	1.000013
75000.0	35.9	-54.6	-0.00	57.2	575.6	212.6	5.3	1.000013
75500.0	35.1	-54.5	-0.00	55.9	575.8	213.9	6.0	1.000012
76000.0	34.3	-54.3	-0.00	54.5	576.0	216.7	6.7	1.000012
76500.0	33.5	-54.2	-0.00	53.2	576.2	216.7	7.6	1.000012
77000.0	32.7	-54.0	-0.00	52.0	576.4	211.7	10.2	1.000012
77500.0	31.9	-53.9	-0.00	50.7	576.5	206.8	12.8	1.000011
78000.0	31.2	-53.7	-0.00	49.5	576.8	204.6	14.9	1.000011

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

UPPER AIR DATA
0493003904
WHITE SANDS SITE
TABLE X (Cont)

STATION ALTITUDE 3989.0 FEET MSL
11 OCT. 67 2100 HRS MDT
ASCENSION NO. 826

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(TM)	SPEED KNOTS	INDEX OF REFRACTION
76500.0	30.5	-53.6	-0.00	48.4	577.0	204.9	16.6	1.000011
79000.0	29.8	-53.4	-0.00	47.2	577.2	205.3	18.3	1.000011
79500.0	29.1	-53.3	-0.00	46.1	577.4	208.4	19.0	1.000010
80000.0	28.4	-53.1	-0.00	45.0	577.6	211.8	19.7	1.000010
80500.0	27.8	-53.0	-0.00	43.9	577.8	213.1	20.3	1.000010
81000.0	27.1	-52.8	-0.00	42.9	578.0	218.2	20.6	1.000010
81500.0	26.5	-52.7	-0.00	41.9	578.2	221.3	21.0	1.000009
82000.0	25.9	-52.5	-0.00	40.9	578.3	224.3	20.8	1.000009
82500.0	25.3	-52.4	-0.00	39.9	578.5	227.4	20.2	1.000009
83000.0	24.7	-52.2	-0.00	38.9	578.7	230.5	19.7	1.000009
83500.0	24.1	-52.1	-0.00	38.0	578.9	233.7	17.6	1.000008
84000.0	23.6	-51.9	-0.00	37.1	579.1	236.9	15.5	1.000008
84500.0	23.0	-51.8	-0.00	36.2	579.3	241.6	13.6	1.000008
85000.0	22.5	-51.7	-0.00	35.4	579.5	249.6	12.3	1.000008
85500.0	22.0	-51.5	-0.00	34.5	579.7	257.6	11.0	1.000008
86000.0	21.5	-51.4	-0.00	33.7	579.9	263.8	10.7	1.000007
86500.0	21.0	-51.2	-0.00	32.9	580.1	269.2	10.9	1.000007
87000.0	20.5	-51.1	-0.00	32.1	580.3	274.5	11.2	1.000007
87500.0	20.0	-50.9	-0.00	31.4	580.5	276.2	11.9	1.000007
88000.0	19.5	-50.8	-0.00	30.6	580.7	277.8	12.7	1.000007
88500.0	19.1	-50.6	-0.00	29.9	580.9	279.0	13.4	1.000007
89000.0	18.7	-50.5	-0.00	29.2	581.0	278.1	13.4	1.000006
89500.0	18.2	-50.3	-0.00	28.5	581.2	277.2	13.5	1.000006
90000.0	17.8	-50.2	-0.00	27.8	581.4	276.1	13.5	1.000006
90500.0	17.4	-50.0	-0.00	27.2	581.6	273.5	12.3	1.000006
91000.0	17.0	-49.9	-0.00	26.5	581.8	270.8	11.0	1.000006
91500.0	16.6	-49.7	-0.00	25.9	582.0	267.9	9.7	1.000006
92000.0	16.2	-49.6	-0.00	25.3	582.2	259.7	10.1	1.000006
92500.0	15.6	-49.3	-0.00	24.7	582.6	251.5	10.2	1.000005
93000.0	15.5	-48.9	-0.00	24.1	583.1	243.3	10.4	1.000005

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

STATION ALTITUDE 3989.0 FEET MSL
 11 OCT. 67 2100 HRS MDT
 ASCENSION NO. 826

UPPER AIR DATA
 0493003904
 WHITE SANDS SITE
 TABLE X (Cont)

WSTM SITE COORDINATES
 E 488.580 FEET
 N 185.045 FEET

GEOMETRIC ALTITUDE MFC 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
93500.0	15.3	-48.4	-0.00	23.9	583.7	243.4	10.3	1.0900003
94000.0	14.8	-48.0	-0.00	22.9	584.2	244.0	10.1	1.0000005
94500.0	14.5	-47.6	-0.00	22.4	584.8	244.6	10.0	1.0000005
95000.0	14.2	-47.1	-0.00	21.8	585.4	247.9	9.8	1.0000005
95500.0	13.8	-46.7	-0.00	21.3	585.9	252.0	9.4	1.0000005
96000.0	13.5	-46.3	-0.00	20.8	586.5	256.1	9.1	1.0000005
96500.0	13.2	-45.9	-0.00	20.3	587.0	262.3	8.4	1.0000005
97000.0	12.9	-45.4	-0.00	19.8	587.6	269.6	7.4	1.0000004
97500.0	12.6	-45.0	-0.00	19.3	588.2	277.0	6.5	1.0000004
98000.0	12.4	-44.6	-0.00	18.8	588.7	283.9	6.1	1.0000004
98500.0	12.1	-44.1	-0.00	18.4	589.3	290.4	6.2	1.0000004
99000.0	11.8	-43.7	-0.00	17.9	589.8	296.8	6.4	1.0000004
99500.0	11.5	-43.3	-0.00	17.5	590.4	300.1	6.7	1.0000004
100000.0	11.3	-42.8	-0.00	17.1	590.9	297.4	7.4	1.0000004
100500.0	11.0	-42.4	-0.00	16.7	591.5	294.7	8.1	1.0000004
101000.0	10.8	-42.0	-0.00	16.3	592.1	293.1	8.8	1.0000004
101500.0	10.5	-41.5	-0.00	15.9	592.6	295.8	9.4	1.0000004
102000.0	10.3	-41.1	-0.00	15.5	593.2	298.5	10.0	1.0000003
102500.0	10.1	-40.7	-0.00	15.2	593.7	301.0	10.5	1.0000003
103000.0	9.9	-40.4	-0.00	14.8	594.0	297.1	9.7	1.0000003
103500.0	9.6	-40.2	-0.00	14.4	594.3	293.1	9.0	1.0000003
104000.0	9.4	-40.1	-0.00	14.1	594.5	289.2	8.2	1.0000003
104500.0	9.2	-39.9	-0.00	13.8	594.7	279.2	8.0	1.0000003
105000.0	9.0	-39.7	-0.00	13.5	594.9	267.8	7.9	1.0000003
105500.0	8.8	-39.6	-0.00	13.2	595.1	264.4	7.7	1.0000003
106000.0	8.6	-39.4	-0.00	12.9	595.3	259.1	9.0	1.0000003
106500.0	8.5	-39.3	-0.00	12.6	595.5	255.9	11.2	1.0000003
107000.0	8.3	-39.1	-0.00	12.3	595.7	258.8	13.5	1.0000003
107500.0	8.1	-38.9	-0.00	12.0	595.9	262.6	15.6	1.0000003
108000.0	7.9	-38.8	-0.00	11.8	596.1	268.4	17.1	1.0000003

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

STATION ALTITUDE 3989.0 FEET MSL
 11 OCT, 67 2100 HRS MDT
 ASCENSION NO. 826

UPPER AIR DATA
 0493003904
 WHITE SANDS SITE
 TABLE X (Cont)

MSIN 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
108500.0	7.7	-38.5	-0. **	11.5	596.3	274.2	18.7	1.000003
109000.0	7.6	-38.4	-0. **	11.2	596.5	280.0	20.3	1.000003
109500.0	7.4	-38.3	-0. **	11.0	596.7	285.9	22.2	1.000002
110000.0	7.3	-38.1	-0. **	10.7	597.0	291.8	24.2	1.000002
110500.0	7.1	-37.9	-0. **	10.5	597.2	297.7	26.1	1.000002
111000.0	6.9	-37.8	-0. **	10.3	597.4			1.000002
111500.0	6.8	-37.6	-0. **	10.0	597.8			1.000002
112000.0	6.6	-37.5	-0. **	9.8	597.8			1.000002
112500.0	6.5	-37.3	-0. **	9.6	598.0			1.000002
113000.0	6.4	-37.1	-0. **	9.4	598.2			1.000002
113500.0	6.2	-37.0	-0. **	9.2	598.4			1.000002
114000.0	6.1	-36.8	-0. **	9.0	598.6			1.000002

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

STATION ALTITUDE 3989.0 FEET MSL
 11 OCT. '67 2100 HRS MDT
 ASCENSION MD. 826

MANDATORY LEVELS
 0493003904
 WHITE SANDS SITE
 TABLE XI

WSTM SITE COORDINATES
 E 488.580 FEET
 N 185.045 FEET

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	5028.	19.4	7.1	45.	94.1	1.3	
800.0	6728.	15.5	4.0	46.	175.1	4.0	
750.0	8511.	10.6	3.0	59.	168.3	8.6	
700.0	10382.	6.3	-5.1	44.	179.3	11.0	
650.0	12361.	2.4	-14.7	27.	222.2	11.5	
600.0	14468.	-1.7	-19.2	25.	240.6	11.5	
550.0	16720.	-6.2	-24.1	23.	215.4	5.9	
500.0	19144.	-11.1	-29.5	20.	111.6	14.7	
450.0	21771.	-16.6	-35.6	18.	94.5	30.6	
400.0	24638.	-23.9	-41.7	17.	91.3	39.6	
350.0	27788.	-31.8	-48.4	18.	81.9	42.7	
300.0	31306.	-39.1	-57.6	12. **	74.5	41.9	
250.0	35336.	-47.1	-71.8	4. **	112.0	11.3	
200.0	40097.	-54.1	0.	-0. **	351.3	4.4	
175.0	42887.	-57.5	0.	-0. **	282.9	8.5	
150.0	46040.	-62.7	0.	-0. **	306.6	14.3	
125.0	49682.	-67.8	0.	-0. **	332.9	13.3	
100.0	54023.	-71.8	0.	-0. **	327.7	8.2	
80.0	58384.	-67.8	0.	-0. **	323.7	5.7	
70.0	61037.	-64.7	0.	-0. **	83.6	6.3	
60.0	64150.	-63.2	0.	-0. **	168.5	11.3	
50.0	67849.	-60.3	0.	-0. **	279.5	9.0	
40.0	72457.	-56.2	0.	-0. **	147.9	3.6	
30.0	78501.	-53.5	0.	-0. **	205.2	17.6	
25.0	82360.	-52.3	0.	-0. **	228.6	20.0	
20.0	87111.	-50.9	0.	-0. **	276.0	11.9	
15.0	93282.	-48.3	0.	-0. **	243.7	10.2	
10.0	102196.	-40.5	0.	-0. **	299.5	10.2	
7.0	110216.	-37.8	0.	-0. **			

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

STATION ALTITUDE 3989.0 FEET MSL
11 OCT. 67 0012 HRS MDT
ASCENSION NO. 827

SIGNIFICANT LEVEL DATA
0499003901
WHITE SANDS SITE
TABLE XII

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

PRESSURE GEOMETRIC ALTITUDE		TEMPERATURE		REL. HUM.
MILLIBARS	MSL FEET	AIR DEGREES	DEWPOINT CENTIGRADE	
882.2	3989.0	14.2	7.5	64.0
872.0	4315.2	19.8	11.4	58.0
868.0	4445.7	21.0	11.7	55.0
799.0	6781.1	16.1	5.1	48.0
707.0	10139.9	6.3	0.8	68.0
684.0	11029.3	4.3	1.0	79.0
663.0	11860.1	1.5	-4.0	67.0
648.0	12466.2	1.5	-11.3	38.0
630.0	13211.8	1.5	-18.0	22.0
562.0	16201.0	-4.4	-22.5	23.0
520.0	18190.6	-10.1	-26.9	24.0
500.0	19183.9	-10.5	-26.4	26.0
307.0	30914.6	-36.5	-49.5	25.0
250.0	35504.9	-46.2	0.	**
204.0	39885.6	-53.4	0.	**
176.0	42971.3	-59.7	0.	**
172.0	43445.5	-59.2	0.	**
160.0	44926.2	-62.9	0.	**
139.0	47763.8	-65.6	0.	**
127.0	49560.3	-68.6	0.	**
122.0	50354.3	-68.4	0.	**
118.0	51010.2	-70.5	0.	**
104.0	53470.3	-72.5	0.	**
96.0	55031.8	-70.0	0.	**
70.0	61266.0	-67.8	0.	**
63.0	63383.0	-62.9	0.	**
43.0	71239.7	-58.0	0.	**
37.0	74365.5	-58.5	0.	**
33.0	76768.0	-54.0	0.	**
26.0	81847.1	-52.3	0.	**

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

STATION IN VVVVDE 3989.0 FEET MSL
 11 OCT. 67 0012 HRS MDT
 ASCENSION ISD. 027

SIGNIFICANT LEVEL DATA
 04/9003901
 WHITE SANDS SITE
 TABLE XII (Cont.)

WSTM SITE COORDINATES
 E 488.500 FEET
 N 1831.045 FEET

PRESSURE GEOMETRIC ALTITUDE	TEMPERATURE AIR DEWPOINT	REL. HUM. PERCENT
MILLIBARS MSL FEET	DEGREES CENTIGRADE	
20.0 87495.1	-49.6	-0. **
14.0 96815.5	-50.3	-0. **
95.0 100479.6	-44.6	-0. **
9.0 109026.4	-46.3	-0. **
6.4 112549.0	-38.6	-0. **
3.0 124558.5	-34.9	-0. **

RELATIVE HUMIDITY NOT SUPPLIED. ZERO VALUE ASSUMED FOR COMPUTATIONS.

UPPER AIR DATA
0490003901
WHITE SANDS SITE
TABLE XIII

STATION ALTITUDE 3900.0 FEET MSL
11 OCT. 67 0012 HRS MDT
ASCENSION NO. 827

WSTM SITE COORDINATES
E 488.580 FEET
N 1854.045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3900.0	882.2	14.2	64.0	1064.9	661.5	0.	0.	1.000285
4000.0	881.9	14.4	63.8	1063.8	661.8	0.8	0.0	1.000289
4500.0	866.3	20.9	54.8	1020.5	669.7	37.7	0.9	1.000287
5000.0	851.2	19.8	53.3	1006.6	668.3	74.7	1.8	1.000279
5500.0	836.1	18.0	51.8	992.8	667.0	111.6	2.6	1.000271
6000.0	821.4	17.7	50.3	979.3	665.7	148.5	3.5	1.000264
6500.0	807.0	16.7	48.8	965.4	664.3	168.7	4.3	1.000257
7000.0	792.7	15.5	49.3	953.0	662.9	165.3	5.0	1.000252
7500.0	778.4	14.0	52.3	940.6	661.2	169.8	5.9	1.000248
8000.0	764.3	12.5	55.3	928.4	659.5	179.5	7.0	1.000244
8500.0	750.5	11.1	58.2	916.4	657.7	188.8	8.8	1.000240
9000.0	737.0	9.6	61.2	904.6	656.0	197.5	10.6	1.000236
9500.0	723.7	8.2	64.2	893.0	654.3	202.2	11.7	1.000232
10000.0	710.8	6.7	67.2	881.6	652.5	207.1	12.3	1.000228
10500.0	697.8	5.5	72.5	869.2	651.1	212.6	12.7	1.000226
11000.0	684.7	4.4	78.6	856.6	649.8	221.6	12.4	1.000223
11500.0	672.0	2.7	72.2	846.2	647.7	230.5	11.9	1.000215
12000.0	659.5	1.5	60.3	834.7	646.1	237.5	11.1	1.000207
12500.0	647.2	1.5	37.3	819.8	645.8	244.2	9.7	1.000195
13000.0	635.7	1.5	26.5	804.8	645.6	250.8	7.9	1.000188
13500.0	623.1	0.9	22.1	791.4	644.9	251.5	5.5	1.000184
14000.0	611.3	-0.1	22.3	779.3	643.7	246.2	3.5	1.000180
14500.0	599.7	-1.0	22.4	767.3	642.6	220.9	2.5	1.000177
15000.0	588.4	-2.0	22.6	755.6	641.4	193.2	3.0	1.000174
15500.0	577.3	-3.0	22.8	744.0	640.2	163.0	4.9	1.000171
16000.0	566.3	-4.0	22.9	732.6	639.0	158.6	8.1	1.000169
16500.0	555.5	-5.3	23.2	722.0	637.5	161.0	11.5	1.000166
17000.0	544.7	-6.7	23.4	711.9	635.8	162.2	13.9	1.000163
17500.0	534.2	-8.1	23.7	701.9	634.1	164.1	15.5	1.000161
18000.0	523.9	-9.6	23.9	692.1	632.3	167.0	15.9	1.000158

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

UPPER AIR DATA
0499003901
WHITE SANDS Site
TABLE XIII (CONT)

STATION ALTITUDE 3900.0 FEET MSL
11 OCT. 67 0012 HRS MDT
ASCENSION NO. 827

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEMPPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
18500.0	513.7	-10.2	24.6	680.4	631.5	169.3	14.8	1.000155
19000.0	503.6	-10.4	25.6	667.6	631.3	171.2	12.9	1.000153
19500.0	493.5	-12.2	26.0	656.0	630.4	172.0	11.3	1.000150
20000.0	483.3	-12.3	25.9	645.3	629.0	170.1	9.7	1.000147
20500.0	473.4	-13.4	25.9	634.7	627.7	159.0	8.7	1.000143
21000.0	463.6	-14.5	25.8	624.3	626.3	144.4	9.2	1.000142
21500.0	454.1	-15.6	24.8	614.1	625.0	126.0	11.7	1.000139
22000.0	444.8	-16.7	25.8	604.1	623.6	115.0	15.1	1.000137
22500.0	435.6	-17.8	25.7	594.3	622.3	107.6	19.0	1.000135
23000.0	426.6	-19.0	25.7	584.6	620.9	103.7	22.3	1.000132
23500.0	417.9	-20.1	25.6	575.1	619.5	100.6	25.5	1.000130
24000.0	409.3	-21.2	25.6	565.8	618.2	97.8	28.8	1.000128
24500.0	400.8	-22.3	25.5	555.6	616.8	95.4	31.9	1.000126
25000.0	392.6	-23.4	25.5	547.5	615.4	93.6	35.0	1.000123
25500.0	384.5	-24.5	25.5	538.7	614.1	91.3	36.8	1.000121
26000.0	376.6	-25.6	25.4	530.0	612.7	88.9	37.9	1.000119
26500.0	368.9	-26.7	25.4	521.4	611.3	87.3	37.7	1.000117
27000.0	361.3	-27.8	25.3	513.0	609.9	85.4	37.6	1.000115
27500.0	353.8	-28.9	25.3	504.7	608.5	83.4	37.6	1.000113
28000.0	346.6	-30.0	25.2	496.6	607.2	82.8	38.3	1.000111
28500.0	339.6	-31.1	25.2	488.6	605.8	82.7	39.2	1.000110
29000.0	332.4	-32.3	25.2	480.8	604.4	84.6	39.2	1.000108
29500.0	325.6	-33.4	25.1	473.1	603.0	86.7	38.7	1.000106
30000.0	318.9	-34.5	25.1	465.5	601.6	89.5	36.4	1.000104
30500.0	312.3	-35.6	25.0	458.0	600.2	93.2	33.4	1.000102
31000.0	305.8	-36.7	24.9**	450.6	598.8	98.7	29.4	1.000101
31500.0	299.1	-37.7	21.8**	442.6	597.4	103.5	25.2	1.000099
32000.0	292.4	-38.8	19.1**	434.8	596.1	107.7	20.9	1.000097
32500.0	286.0	-39.9	16.4**	427.1	594.8	113.7	16.7	1.000095
33000.0	279.7	-40.9	13.6**	419.5	593.4	120.2	12.6	1.000094

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

STATION ALTITUDE 3900.0 FEET MSL
 21 OCT. 1967 0012 HRS. MDT
 ASCENSION NO. 827

UPPER AIR DATA
 0499003901
 WHITE SANDS SITE
 TABLE XIII (Cont)

WSTM SITE COORDINATES
 E 488.580 FEET
 N 185.045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENYIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
33500.0	273.5	-42.0	10.9**	412.1	592.0	130.3	10.3	1.000092
34000.0	267.4	-43.0	8.2**	404.9	590.7	140.6	8.2	1.000090
34500.0	261.5	-44.1	5.5**	397.7	589.3	150.7	6.9	1.000089
35000.0	255.7	-45.1	2.7**	390.7	588.0	157.9	5.8	1.000087
35500.0	250.1	-46.2	0.0**	383.9	586.6	153.2	5.3	1.000085
36000.0	244.3	-47.0	-0.0**	376.4	585.5	150.7	4.8	1.000084
36500.0	238.7	-47.8	-0.0**	369.1	584.5	156.8	3.7	1.000082
37000.0	233.2	-48.7	-0.0**	362.0	583.4	164.9	3.0	1.000081
37500.0	227.9	-49.5	-0.0**	355.0	582.3	180.3	3.8	1.000079
38000.0	222.7	-50.3	-0.0**	348.1	581.3	193.7	4.7	1.000078
38500.0	217.6	-51.1	-0.0**	341.4	580.2	199.9	5.8	1.000076
39000.0	212.6	-51.9	-0.0**	334.8	579.1	203.8	6.8	1.000075
39500.0	207.7	-52.8	-0.0**	328.3	578.0	199.5	7.6	1.000073
40000.0	202.9	-53.6	-0.0**	322.0	576.9	198.2	8.4	1.000072
40500.0	198.1	-54.7	-0.0**	315.9	575.6	205.9	9.6	1.000070
41000.0	193.4	-55.7	-0.0**	309.9	574.2	213.6	10.8	1.000069
41500.0	188.8	-56.7	-0.0**	304.0	572.9	221.5	11.7	1.000068
42000.0	184.4	-57.7	-0.0**	298.2	571.5	230.2	12.4	1.000066
42500.0	180.0	-58.7	-0.0**	292.5	570.2	240.3	12.6	1.000065
43000.0	175.8	-59.7	-0.0**	286.8	568.9	253.1	12.4	1.000064
43500.0	171.5	-59.3	-0.0**	279.5	569.4	269.8	11.4	1.000062
44000.0	167.4	-60.6	-0.0**	274.4	567.7	283.9	11.1	1.000061
44500.0	163.4	-61.8	-0.0**	269.4	566.0	293.8	12.1	1.000060
45000.0	159.4	-63.0	-0.0**	264.3	564.5	300.7	12.8	1.000059
45500.0	155.5	-63.4	-0.0**	258.4	563.9	301.1	12.9	1.000058
46000.0	151.7	-63.9	-0.0**	252.6	563.2	301.2	13.4	1.000056
46500.0	148.0	-64.4	-0.0**	247.0	562.6	300.6	15.4	1.000055
47000.0	144.4	-64.9	-0.0**	241.5	561.9	299.9	17.3	1.000054
47500.0	140.8	-65.3	-0.0**	236.1	561.3	303.3	15.8	1.000053
48000.0	137.4	-66.0	-0.0**	231.0	560.4	306.7	14.2	1.000051

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

UPPER AIR DATA
0490003901
WHITE SANDS SITE
TABLE XIII (Cont.)

WEST SITE COORDINATES
E 400,300 FEET
N 108,045 FEET

STATION ALTITUDE 3989.0 FEET MSL
11 OCT. 67 0012 HRS MDT
ASCENSION NO. 827

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	
48500.0	134.0	-66.8	0.	-0. **	226.2	559.3	312.6	14.1	1.000050
49000.0	130.6	-67.7	0.	-0. **	221.5	558.2	319.1	14.4	1.000049
49500.0	127.4	-68.5	0.	-0. **	216.9	557.0	327.0	13.6	1.000048
50000.0	124.2	-68.5	0.	-0. **	211.4	557.0	335.9	11.9	1.000047
50500.0	121.1	-68.9	0.	-0. **	206.5	556.5	341.1	10.7	1.000046
51000.0	118.1	-70.5	0.	-0. **	202.9	554.3	338.2	10.3	1.000045
51500.0	115.1	-70.5	0.	-0. **	198.2	553.8	334.7	10.0	1.000044
52000.0	112.2	-71.3	0.	-0. **	193.6	553.2	327.0	9.5	1.000043
52500.0	109.3	-71.7	0.	-0. **	189.1	552.6	319.3	9.0	1.000042
53000.0	106.3	-72.1	0.	-0. **	184.6	552.1	316.4	7.8	1.000041
53500.0	103.8	-72.5	0.	-0. **	180.3	551.6	317.8	6.7	1.000040
54000.0	101.2	-71.7	0.	-0. **	175.0	552.7	317.6	7.0	1.000039
54500.0	98.7	-70.9	0.	-0. **	169.9	553.8	317.7	7.6	1.000038
55000.0	96.2	-70.1	0.	-0. **	165.0	554.9	318.2	7.7	1.000037
55500.0	93.7	-69.8	0.	-0. **	160.7	555.2	319.1	7.3	1.000036
56000.0	91.4	-69.7	0.	-0. **	156.5	555.5	319.0	7.1	1.000035
56500.0	89.1	-69.5	0.	-0. **	152.5	555.7	315.0	7.7	1.000034
57000.0	86.9	-69.3	0.	-0. **	148.1	555.9	311.1	8.3	1.000033
57500.0	84.7	-69.1	0.	-0. **	144.7	556.2	313.6	7.0	1.000032
58000.0	82.6	-69.0	0.	-0. **	140.9	556.4	317.4	5.4	1.000031
58500.0	80.5	-68.8	0.	-0. **	137.3	556.7	336.3	4.0	1.000031
59000.0	78.5	-68.6	0.	-0. **	133.7	556.9	13.8	2.8	1.000030
59500.0	76.6	-68.4	0.	-0. **	130.3	557.1	51.6	2.0	1.000029
60000.0	74.6	-68.2	0.	-0. **	126.9	557.4	93.4	3.9	1.000028
60500.0	72.8	-68.1	0.	-0. **	123.6	557.6	135.4	5.8	1.000028
61000.0	70.9	-67.9	0.	-0. **	120.4	557.9	152.9	7.0	1.000027
61500.0	69.2	-67.3	0.	-0. **	117.1	558.7	161.9	7.9	1.000026
62000.0	67.5	-66.1	0.	-0. **	113.6	560.3	170.7	9.0	1.000025
62500.0	65.8	-64.9	0.	-0. **	110.2	561.8	179.2	10.2	1.000025
63000.0	64.2	-63.6	0.	-0. **	106.9	563.4	187.6	11.3	1.000024

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

STATION ALTITUDE 39890.0 FEET MSL
 11 OCT. 67 0012 HRS MDT
 ASCENSION NO. 827

UPPER AIR DATA
 0499003901
 WHITE SANDS SITE
 TABEL XIII (Cont)

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

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
63500.0	62.6	-62.8	0.	-0. **	103.8	564.7	197.8	11.7	1.000023
64000.0	61.1	-62.5	0.	-0. **	101.1	565.1	208.1	12.0	1.000023
64500.0	59.7	-62.2	0.	-0. **	98.6	565.3	217.7	12.1	1.000022
65000.0	58.2	-61.9	0.	-0. **	96.0	566.0	226.8	12.2	1.000021
65500.0	56.8	-61.6	0.	-0. **	93.6	566.4	235.8	12.2	1.000021
66000.0	55.5	-61.3	0.	-0. **	91.2	566.8	244.5	11.6	1.000020
66500.0	54.1	-61.0	0.	-0. **	88.9	567.2	253.1	11.0	1.000020
67000.0	52.8	-60.6	0.	-0. **	86.6	567.6	260.9	9.5	1.000019
67500.0	51.6	-60.3	0.	-0. **	84.4	568.0	268.5	7.7	1.000019
68000.0	50.3	-60.0	0.	-0. **	82.3	568.3	272.1	5.9	1.000018
68500.0	49.1	-59.7	0.	-0. **	80.2	568.9	269.1	4.2	1.000018
69000.0	47.9	-59.4	0.	-0. **	78.2	569.3	266.0	2.5	1.000017
69500.0	46.8	-59.1	0.	-0. **	76.2	569.7	226.7	3.0	1.000017
70000.0	45.7	-58.8	0.	-0. **	74.2	570.1	186.3	3.4	1.000017
70500.0	44.6	-58.5	0.	-0. **	72.3	570.3	160.7	4.3	1.000016
71000.0	43.5	-58.1	0.	-0. **	70.5	570.9	161.1	6.0	1.000016
71500.0	42.5	-58.0	0.	-0. **	68.8	571.1	161.5	7.7	1.000015
72000.0	41.5	-58.1	0.	-0. **	67.2	571.0	162.4	9.1	1.000015
72500.0	40.3	-58.2	0.	-0. **	65.6	570.9	164.1	10.2	1.000015
73000.0	39.5	-58.3	0.	-0. **	64.1	570.8	165.8	11.3	1.000014
73500.0	38.6	-58.4	0.	-0. **	62.6	570.7	169.8	11.5	1.000014
74000.0	37.7	-58.4	0.	-0. **	61.1	570.6	176.0	11.0	1.000014
74500.0	36.8	-58.2	0.	-0. **	59.6	570.8	182.2	10.5	1.000013
75000.0	35.9	-57.3	0.	-0. **	57.9	572.1	187.2	9.8	1.000013
75500.0	35.1	-56.4	0.	-0. **	56.3	573.3	191.0	9.0	1.000013
76000.0	34.2	-55.4	0.	-0. **	54.8	574.5	194.9	8.1	1.000012
76500.0	33.4	-54.5	0.	-0. **	53.3	575.8	202.5	7.6	1.000012
77000.0	32.6	-53.9	0.	-0. **	51.9	576.5	213.4	7.5	1.000012
77500.0	31.9	-53.8	0.	-0. **	50.6	576.7	224.3	7.3	1.000011
78000.0	31.1	-53.6	0.	-0. **	49.4	577.0	230.7	7.3	1.000011

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

STATION ALTITUDE 3989.0 FEET MSL
 11 OCT. 67 0012 HRS MDT
 ASCENSION NO. 827

UPPER AIR DATA
 0499003901
 WHITE SANDS SITE
 TABLE XIII (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	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
78900.0	30.4	-53.4	-0.00	48.2	577.2	232.7	7.4	1.0000011
79000.0	29.7	-53.3	-0.00	47.1	577.4	234.8	7.4	1.0000010
79500.0	29.0	-53.1	-0.00	46.0	577.6	237.9	8.0	1.0000010
80000.0	28.4	-52.9	-0.00	44.9	577.8	242.2	9.2	1.0000010
80500.0	27.7	-52.8	-0.00	43.8	578.1	246.5	10.3	1.0000010
81000.0	27.1	-52.6	-0.00	42.7	578.3	249.0	11.1	1.0000010
81500.0	26.4	-52.4	-0.00	41.7	578.5	249.4	11.5	1.0000009
82000.0	25.8	-52.2	-0.00	40.7	578.8	249.8	11.8	1.0000009
82500.0	25.2	-52.0	-0.00	39.7	579.1	249.8	12.3	1.0000009
83000.0	24.6	-51.7	-0.00	38.8	579.4	249.4	13.0	1.0000009
83500.0	24.1	-51.5	-0.00	37.9	579.7	249.0	13.8	1.0000008
84000.0	23.5	-51.3	-0.00	36.9	580.0	247.4	14.0	1.0000008
84500.0	23.0	-51.0	-0.00	36.1	580.3	244.9	14.0	1.0000008
85000.0	22.5	-50.8	-0.00	35.2	580.6	242.4	13.9	1.0000008
85500.0	21.9	-50.6	-0.00	34.3	580.9	239.4	14.2	1.0000008
86000.0	21.4	-50.3	-0.00	33.5	581.3	236.2	14.5	1.0000007
86500.0	20.9	-50.1	-0.00	32.7	581.6	233.0	14.8	1.0000007
87000.0	20.5	-49.8	-0.00	31.9	581.9	229.4	14.2	1.0000007
87500.0	20.0	-49.6	-0.00	31.2	582.2	225.8	13.6	1.0000007
88000.0	19.5	-49.6	-0.00	30.5	582.1	222.6	13.1	1.0000007
88500.0	19.1	-49.7	-0.00	29.8	582.1	222.3	13.1	1.0000007
89000.0	18.7	-49.7	-0.00	29.1	582.0	222.0	13.2	1.0000006
89500.0	18.2	-49.8	-0.00	28.4	582.0	222.4	13.4	1.0000006
90000.0	17.8	-49.8	-0.00	27.8	581.9	225.0	13.8	1.0000006
90500.0	17.4	-49.8	-0.00	27.2	581.9	227.5	14.2	1.0000006
91000.0	17.0	-49.9	-0.00	26.5	581.8	231.8	14.6	1.0000006
91500.0	16.6	-49.9	-0.00	25.9	581.8	238.7	15.2	1.0000006
92000.0	16.2	-49.9	-0.00	25.4	581.7	245.7	15.7	1.0000006
92500.0	15.9	-50.0	-0.00	24.8	581.7	252.7	16.0	1.0000006
93000.0	15.5	-50.0	-0.00	24.2	581.6	260.0	16.0	1.0000005

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

UPPER AIR DATA
0499003901
WHITE SANDS SITE
TABLE XIII (Cont)

STATION ALTITUDE 3989.0 FEET MSL
11 OCT. 1967
ASCENSION NO. 827

WSTM SITE COORDINATES
E 488,580 FEET
N 185,345 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 DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
93500.0	15.2	-50.1	-0.0	23.7	581.6	267.2	16.0	1.000005
94000.0	14.8	-50.1	-0.0	23.1	581.5	269.1	16.0	1.000005
94500.0	14.5	-50.1	-0.0	22.6	581.5	268.6	15.0	1.000005
95000.0	14.1	-50.2	-0.0	22.1	581.4	268.2	16.0	1.000005
95500.0	13.8	-50.2	-0.0	21.6	581.4	268.7	15.8	1.000005
96000.0	13.5	-50.2	-0.0	21.1	581.4	269.5	15.6	1.000005
96500.0	13.2	-50.3	-0.0	20.6	581.3	270.3	15.4	1.000005
97000.0	12.9	-50.0	-0.0	20.1	581.6	264.6	14.5	1.000004
97500.0	12.6	-49.2	-0.0	19.6	582.7	258.7	13.7	1.000004
98000.0	12.3	-48.5	-0.0	19.1	583.7	253.5	12.8	1.000004
98500.0	12.0	-47.7	-0.0	18.6	584.7	254.2	11.5	1.000004
99000.0	11.8	-46.9	-0.0	18.1	585.7	255.0	10.3	1.000004
99500.0	11.5	-46.1	-0.0	17.6	586.7	251.8	9.2	1.000004
100000.0	11.2	-45.3	-0.0	17.2	587.7	234.3	8.0	1.000004
100500.0	11.0	-44.6	-0.0	16.8	588.6	216.9	8.3	1.000004
101000.0	10.7	-45.0	-0.0	16.4	588.2	205.3	8.0	1.000004
101500.0	10.5	-45.3	-0.0	16.1	587.8	206.8	7.9	1.000004
102000.0	10.3	-45.6	-0.0	15.7	587.3	208.2	7.9	1.000003
102500.0	10.0	-45.9	-0.0	15.4	586.9	211.9	7.6	1.000003
103000.0	9.8	-46.3	-0.0	15.1	586.5	219.0	7.1	1.000003
103500.0	9.6	-45.9	-0.0	14.7	587.0	226.1	6.6	1.000003
104000.0	9.4	-45.5	-0.0	14.4	587.5	233.3	6.1	1.000003
104500.0	9.2	-45.1	-0.0	14.0	588.0	244.0	5.5	1.000003
105000.0	9.0	-44.7	-0.0	13.7	588.5	254.7	6.9	1.000003
105500.0	8.8	-44.3	-0.0	13.4	589.0	265.4	7.3	1.000003
106000.0	8.6	-43.9	-0.0	13.0	589.6	274.6	7.7	1.000003
106500.0	8.4	-43.5	-0.0	12.7	590.1	278.8	8.2	1.000003
107000.0	8.2	-43.1	-0.0	12.4	590.6	282.9	8.6	1.000003
107500.0	8.0	-42.7	-0.0	12.1	591.1	287.0	9.1	1.000003
108000.0	7.8	-42.3	-0.0	11.8	591.6	288.8	9.7	1.000003

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

STATION ALTITUDE 3909.0 FEET MSL
11 OCT. 67 0012 HRS MDT
ASCENSION NO. 827

UPPER AIR DATA
0499003901
WHITE SANDS SITE
TABLE XIII (Cont)

WSIN SITE COORDINATES
E 088.580 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
100900.0	7.7	-41.9	-0. **	11.6	592.1	287.0	10.7	1.000003
102000.0	7.5	-41.5	-0. **	11.3	592.7	285.1	11.6	1.000003
103500.0	7.3	-41.1	-0. **	11.0	593.2	283.2	12.5	1.000002
105000.0	7.2	-40.7	-0. **	10.8	593.7	282.6	13.6	1.000002
106500.0	7.0	-40.3	-0. **	10.5	594.2	282.7	14.9	1.000002
108000.0	6.9	-39.9	-0. **	10.3	594.7	281.8	16.1	1.000002
109500.0	6.7	-39.5	-0. **	10.0	595.2	280.8	17.3	1.000002
111000.0	6.6	-39.1	-0. **	9.8	595.7	280.9	18.1	1.000002
112500.0	6.4	-38.7	-0. **	9.5	596.3	291.6	18.7	1.000002
114000.0	6.3	-38.3	-0. **	9.3	596.5	292.3	19.3	1.000002
115500.0	6.1	-38.3	-0. **	9.1	596.8	293.0	19.9	1.000002
117000.0	6.0	-38.1	-0. **	8.9	597.0	295.2	21.0	1.000002
118500.0	5.9	-37.9	-0. **	8.7	597.2	297.7	22.2	1.000002
120000.0	5.8	-37.7	-0. **	8.5	597.4	300.1	23.4	1.000002
121500.0	5.6	-37.5	-0. **	8.3	597.7	302.5	24.6	1.000002
123000.0	5.5	-37.4	-0. **	8.1	597.9	301.5	25.0	1.000002
124500.0	5.4	-37.2	-0. **	8.0	598.1	300.2	25.2	1.000002
126000.0	5.3	-37.0	-0. **	7.8	598.4	299.0	19.4	1.000002
127500.0	5.2	-36.8	-0. **	7.6	598.6	297.8	17.6	1.000002
129000.0	5.1	-36.7	-0. **	7.4	598.8	296.3	16.2	1.000002
130500.0	4.9	-36.5	-0. **	7.3	599.0	294.8	14.8	1.000002
132000.0	4.8	-36.3	-0. **	7.1	599.3	293.3	13.4	1.000002
133500.0	4.7	-36.1	-0. **	7.0	599.5	290.2	11.9	1.000002
135000.0	4.6	-35.9	-0. **	6.8	599.7	271.1	9.9	1.000002
136500.0	4.5	-35.8	-0. **	6.7	599.9	252.0	7.9	1.000001
138000.0	4.4	-35.6	-0. **	6.5	600.2	232.9	5.9	1.000001
139500.0	4.3	-35.4	-0. **	6.4	600.4			1.000001
141000.0	4.2	-35.2	-0. **	6.2	600.6			1.000001
142500.0	4.2	-35.0	-0. **	6.1	600.8			1.000001
144000.0	4.1	-34.9	-0. **	5.9	601.1			1.000001

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

STATION ALTITUDE 3989.0 FEET MSL
 11 OCT. 67 0012 HRS NDT
 ASCENSION NO. 827

UPPER AIR DATA
 0499003901
 WHITE SANDS SITE
 TABLE XIII (Cont)

WSTM SITE COORDINATES
 E 408,580 FEET
 N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		DEGREES	CENTIGRADE			KNOTS	FEET	DIRECTION DEGREES(TN)	SPEED KNOTS	
123500.0	4.0	-34.7	0.1	-0.1**	5.8	601.3			1.000001	
124000.0	3.9	-34.9	0.1	-0.1**	5.7	601.5			1.000001	
124500.0	3.8	-34.3	0.1	-0.1**	5.6	601.7			1.000001	

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

STATION ALTITUDE 3989.0 FEET MSL
 21 OCT. '67 0012 HRS MDT
 ASCENSION NO. 827

RANDATORY LEVELS
 0499003901
 WHITE SANDS SITE
 TABLE XIV

WSTM SITE COORDINATES
 E 488.580 FEET
 N 185.045 FEET

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5039.	19.3	10.0	53.	77.6	1.8
800.0	6743.	16.2	5.2	48.	167.0	4.7
750.0	8529.	11.0	3.2	58.	189.4	6.9
700.0	10402.	5.7	0.9	71.	211.2	12.6
650.0	12376.	1.5	-10.1	42.	242.7	10.1
600.0	14484.	-1.0	-19.9	22.	221.2	2.5
550.0	16742.	-6.0	-23.7	23.	161.6	12.7
500.0	19163.	-10.5	-26.4	26.	171.5	12.3
450.0	21795.	-16.1	-31.4	26.	117.7	13.7
400.0	24670.	-22.4	-37.0	26.	94.7	33.1
350.0	27843.	-29.5	-43.3	25.	82.8	38.1
300.0	31392.	-37.6	-51.5	22.**	103.0	25.7
250.0	35444.	-46.2	0.	-0.**	153.1	5.3
200.0	40226.	-54.2	0.	-0.**	202.9	9.2
175.0	42999.	-59.6	0.	-0.**	256.0	12.2
150.0	46128.	-64.1	0.	-0.**	300.9	14.3
125.0	49732.	-68.5	0.	-0.**	333.6	12.4
100.0	54089.	-71.3	0.	-0.**	317.6	7.3
80.0	58434.	-68.7	0.	-0.**	345.5	3.7
70.0	61083.	-67.8	0.	-0.**	157.7	7.5
60.0	64174.	-62.3	0.	-0.**	215.4	12.1
50.0	67889.	-59.9	0.	-0.**	271.4	5.6
40.0	72488.	-58.2	0.	-0.**	164.9	10.7
30.0	78492.	-53.3	0.	-0.**	233.9	7.4
25.0	82356.	-51.9	0.	-0.**	249.7	12.6
20.0	87125.	-49.6	0.	-0.**	225.9	13.6
15.0	93298.	-50.1	0.	-0.**	269.4	16.0
10.0	102075.	-46.0	0.	-0.**	213.0	7.6
7.0	109949.	-40.2	0.	-0.**	285.8	14.9
5.0	117550.	-36.6	0.	-0.**	295.6	15.6

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE HAS BEEN 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		4000-73331 FT		TOTAL					
		N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W				
1830	2015	1.5S	4.2W	2.1S	4.0W	1.7S	3.1W	5.3S	11.3W	356.8	63.4	63.2N	3.5W
1830	2030	0.8S	4.1W	2.3S	3.1W	1.7S	3.1W	4.8S	10.3W	357.8	63.7	63.7N	2.5W
1830	2045	0.2S	3.2W	2.7S	2.5W	1.7S	3.1W	4.6S	8.8W	359.1	63.9	63.9N	1.0W
1830	2100	0.7N	3.7W	1.5S	3.3W	1.7S	3.1W	2.5S	10.1W	358.0	66.0	66.0N	2.3W
1830	2115	0.2N	1.2W	0.8S	4.3W	1.7S	3.1W	2.3S	8.6W	359.3	66.2	66.2N	0.8W
1830	2125	0.3N	1.2W	0.3N	3.3W	1.7S	3.1W	1.1S	7.6W	000.2	67.4	67.4N	0.2E
2100	2135	0.7N	0.8W	0.8S	2.3W	3.8N	3.6W	2.8N	6.7W	000.9	71.3	71.3N	1.1E
2100	2150	0.1S	0.4W	1.4S	3.1W	3.8N	3.6W	2.3N	7.1W	000.6	70.8	70.8N	0.7E
2100	2200	0.0	0.6W	2.2S	3.0W	3.8N	3.6W	1.6N	7.2W	000.5	70.1	70.1N	0.6E
2100	2210	0.0	0.1W	2.1S	2.1W	3.8N	3.6W	1.7N	5.8W	001.6	70.2	70.2N	2.0E
2100	2220	0.6S	0.5W	1.3S	3.6W	3.8N	3.6W	1.9N	7.7W	000.0	70.4	70.4N	0.1E
2100	2230	0.7S	1.3W	1.0S	2.8W	3.8N	3.6W	2.1N	7.7W	000.0	70.6	70.6N	0.1E
2100	2237	0.3S	2.8W	2.1S	3.0W	3.8N	3.6W	1.4N	9.4W	358.7	69.9	69.9N	1.6W
2100	2248	0.3S	3.5W	1.1S	3.1W	3.8N	3.6W	2.4N	10.2W	358.1	71.0	71.0N	2.4W

AZI- MUTH (DEG- REES)	MILES FROM LAUNCHER		
	RANGE	N-S	E-W
LAUNCHER SETTING (ELEVATION 85.2 DEG. REES QE) NO WIND IMPACT PREDICTED SECOND-STAGE IMPACT SECOND-STAGE IMPACT, RADAR TRACK PREDICTED BOOSTER IMPACT ACTUAL BOOSTER IMPACT	69.7	68.5N	12.7E
	69.0	68.5N	7.8E
	70.0	70.0N	0.0
	78.5	76.1N	19.0W
	1.8	1.8N	0.3E
N/A	N/A	N/A	N/A

TABLE XV. IMPACT PREDICTION DATA
NIFZ-HYDAC STV (SR 061)

RELEASE TIME (MDT)		SECOND-STAGE IMPACT DISPLACEMENT IN MILES DUE TO WIND										AZI- MUTH (DEG- DEES)	THEORETICAL IMPACT FROM LAUNCHER (IN MILES)		
		11-216 FT		216-4000 FT		4000-7331 FT		TOTAL							
		N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W						
RAWIN- SONDE	FIBAL	2100	2240	0.3S	3.5W	1.1S	3.1W	3.8N	3.6W	2.4N	10.2W	357.4	75.7	75.6N	3.5W
2100	2305	0.1S	4.7W	1.9S	4.4W	3.8N	3.6W	1.8N	12.7W	355.4	75.2	75.0N	6.0W		
2100	2320	2.0S	2.3W	2.7S	4.4W	3.8N	3.6W	0.9N	10.3W	357.2	74.2	74.1N	3.6W		
2100	2330	1.9S	2.1W	3.2S	2.4W	3.8N	3.6W	1.3S	8.1W	358.9	71.9	71.9N	1.4W		
2100	2340	2.6S	1.5W	4.8S	2.2W	3.8N	3.6W	3.6S	7.3W	359.9	69.6	69.6W	0.6W		
2100	2350	3.4S	0.2W	4.6S	0.6W	3.8N	3.6W	4.2S	4.4W	001.9	69.0	69.0N	2.3E		
2100	0000	3.2S	0.2W	3.4S	0.9W	3.8N	3.6W	2.8S	4.7W	001.6	70.4	70.4N	2.0E		
0016	0014	3.4S	1.2W	4.9S	1.7W	0.5S	4.6W	8.8S	7.5W	359.3	64.4	64.4N	0.8W		

AZI- MUTH (DEG- REES)	MILES FROM LAUNCHER		
	RANGE	N-S	E-W
009.0	74.1	73.2N	11.6E
005.2	73.5	73.2N	6.7E
001.0	70.0	70.0N	1.2E
000.3	79.1	79.1N	0.4E
009.0	2.0	2.0N	0.3E
N/A	N/A	N/A	N/A

TABLE XVI. IMPACT PREDICTION DATA
NIKE-HYDAC STV (SR 062)

LAUNCHER SETTING (ELEVATION 84.9 DEGREES QE)
NO WIND IMPACT
PREDICTED SECOND-STAGE IMPACT
SECOND-STAGE IMPACT, RADAR TRACK
PREDICTED ROOSTER IMPACT
ACTUAL BOOSTER IMPACT

UNCLASSIFIED

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13. ABSTRACT Meteorological data gathered for the launching of two Nike-Hydac STV's (SR 061 and 062) are presented for the Space and Missile Systems Organization, the AVCO Corporation, and for ballistic studies. The data appear, along with calculated ballistic data, in tabular form.		

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	ROLE	WT	ROLE	WT	ROLE	WT
1. Ballistics 2. Meteorology 3. Wind						

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