

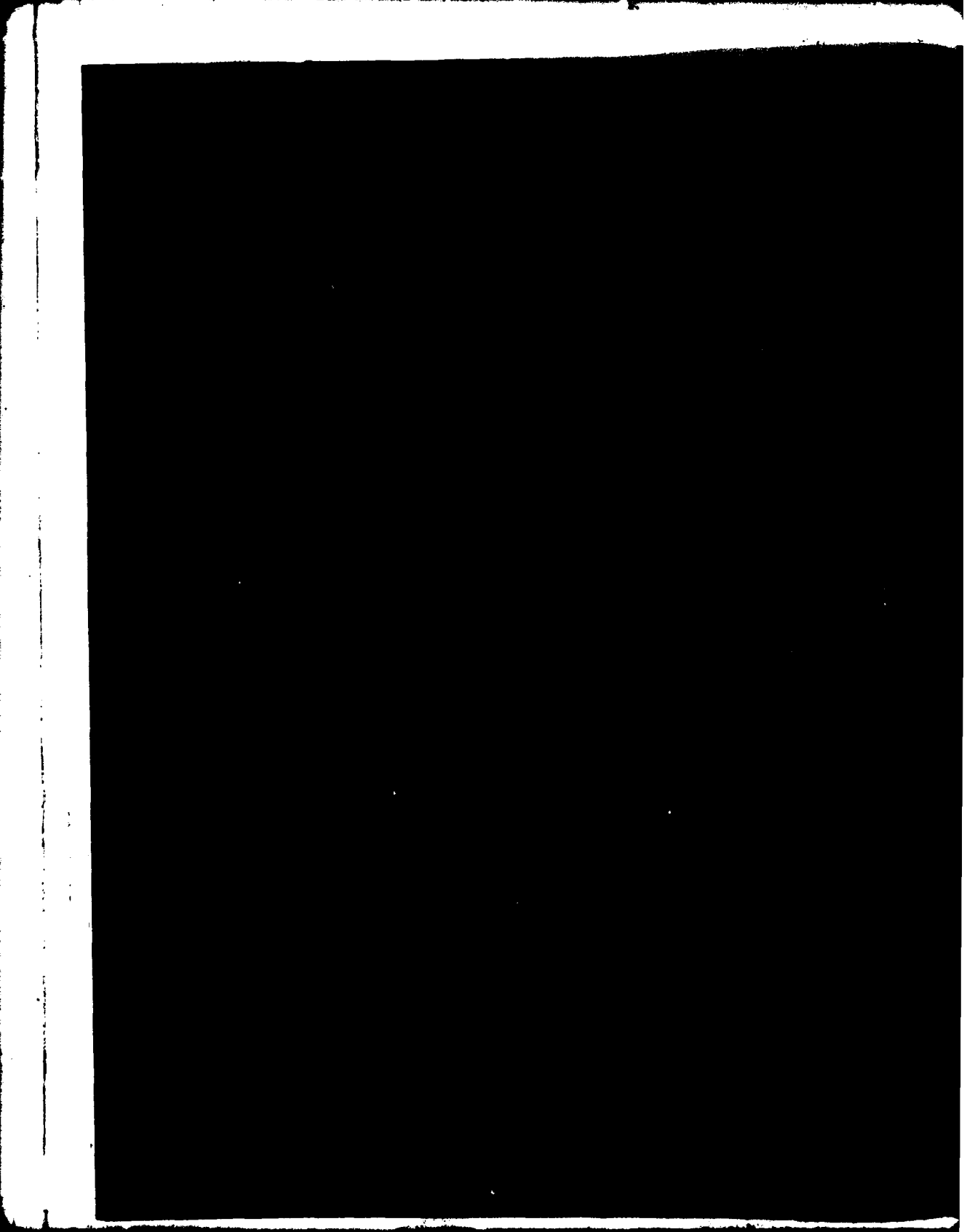




MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 12824C LANCE, Missile Number 5194, Round Number 353 NPL, presented in tabular form.		

410 353

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## INTRODUCTION

12824C LANCE, Missile Number 5194, Round Number 353 ECL, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1500 MDT on 4 July 1980. The scheduled launch time was 1500 MDT.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), Wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

#### b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

## SITE AND ALTITUDE

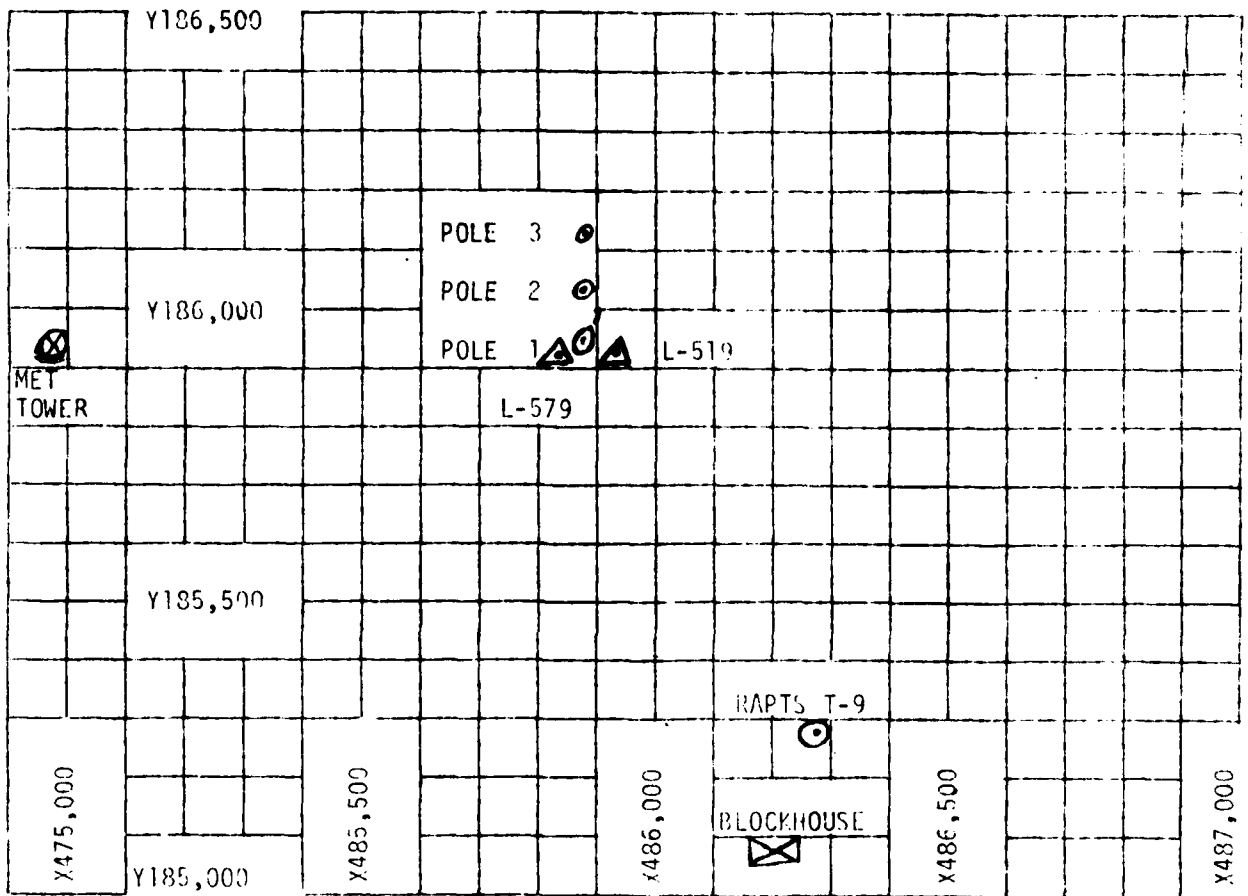
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(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to as high as possible in 500-foot increments.

## SITE AND TIME

WSD	1500 MDT
SMR	1400 MDT
HMN	1500 MDT

NORTH



1. MET TOWER - 4 Bendix Model T-20 Anemometers at 12 ft, 62 ft, 102 ft, and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.
  - (a) Pole #1 - 38.7 ft.
  - (b) Pole #2 - 53.0 ft.
  - (c) Pole #3 - 83.6 ft.
3. RAPTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

TABLE 1. Surface Observations Taken at 1500 MDT,  
 4 July 1980, at LC-33, 12824C LANCE,  
 Missile Number 5194, Round Number 353 NPL.

ELEVATION	3987	FT/MSL
PRESSURE	877.5	MBS
TEMPERATURE	34.7	°C
RELATIVE HUMIDITY	26	%
DEW POINT	12.2	°C
DENSITY	984	GM/M <sup>3</sup>
WIND SPEED	04	KTS
WIND DIRECTION	090	DEGREES
CLOUD COVER	4	CB
	4	CI

STATION ALTITUDE 5989.00 FEET MSL  
 9 JULY 80  
 ASCENSION NO. 579

STATION ALTITUDE 5989.00 FEET MSL  
 186020359  
 WHITE SANDS

STATION ALTITUDE 5989.00 FEET MSL  
 9 JULY 80  
 ASCENSION NO. 579

TABLE 2.

GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
877.5	37.5	18.0
850.0	33.7	16.0
781.6	26.0	19.0
700.0	17.4	28.0
631.6	0.6	41.0
558.0	-5.9	58.0
500.0	-12.0	72.0
471.1	-15.7	84.0
458.4	-18.0	94.0
434.6	-24.0	16.0
426.6	-34.9	15.0
400.0	-38.0	16.0
374.6	-40.3	16.0
307.0	-49.5	17.0
300.0	-53.0	
250.0	-42.3	
224.8	-47.9	
200.0	-50.5	
150.0	-63.7	
100.0	-60.3	
75.8	-67.2	
70.0	-63.1	
56.0	-57.0	
50.0	-57.9	
38.6	-54.1	

STATION ALTITUDE 3989.00 FEET MSL  
 4 JULY 80  
 ASCENSION NO. 359

UNIPER AIR DATA  
 1060020359  
 WHITE SANDS

1500 HRS MDT

TABLE 3.

GEOMETRIC ALTITUDE MSL FEET	PRESSURE HILLIBAMS	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUMID. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES(TN)	SPEED KNOTS	
3989.0	877.5	37.5	18.0	979.1	688.4	.0	.0	1.000264
4000.0	877.2	37.5	17.0	978.9	688.3	182.0	.0	1.000264
4500.0	862.6	35.5	16.0	969.6	685.8	182.0	1.0	1.000255
5000.0	848.2	33.5	16.1	960.0	683.5	182.0	2.0	1.000247
5500.0	833.4	31.9	16.7	948.7	681.7	182.0	3.0	1.000244
6000.0	819.7	30.4	17.3	937.6	679.9	182.0	4.0	1.000240
6500.0	805.8	28.8	17.9	926.6	678.1	181.1	4.6	1.000236
7000.0	792.2	27.2	18.5	915.8	676.3	178.4	4.4	1.000232
7500.0	778.7	25.7	19.3	904.8	674.5	175.0	4.3	1.000229
8000.0	765.1	24.3	20.7	893.2	673.0	166.1	5.4	1.000226
8500.0	751.4	23.0	22.2	881.7	671.4	160.3	6.5	1.000223
9000.0	738.7	21.6	23.6	870.3	669.9	147.1	6.9	1.000221
9500.0	725.8	20.2	25.0	859.2	668.3	132.4	7.4	1.000218
10000.0	713.2	18.9	26.5	848.2	666.7	115.2	7.2	1.000215
10500.0	700.8	17.5	27.9	837.4	665.2	95.1	7.4	1.000212
11000.0	688.2	16.1	30.1	826.3	663.6	87.9	6.9	1.000209
11500.0	675.4	14.7	32.4	815.4	662.0	84.6	5.9	1.000207
12000.0	663.8	13.4	34.7	804.6	660.4	81.2	5.4	1.000204
12500.0	651.9	12.0	37.0	794.0	658.9	77.2	4.9	1.000201
13000.0	640.2	10.6	39.3	783.6	657.3	86.6	5.1	1.000198
13500.0	628.7	9.3	41.6	773.3	655.6	95.3	5.4	1.000195
14000.0	617.1	7.9	44.2	762.8	654.0	107.8	5.2	1.000193
14500.0	605.7	6.5	46.8	752.4	652.4	121.0	5.2	1.000190
15000.0	594.5	5.1	49.4	742.3	650.8	127.5	5.2	1.000187
15500.0	583.6	3.7	52.0	732.3	649.1	131.2	5.1	1.000184
16000.0	572.8	2.3	54.6	722.5	647.5	131.3	5.1	1.000181
16500.0	562.3	1.0	57.1	712.8	645.8	128.4	5.2	1.000178
17000.0	551.7	-.2	59.5	702.5	644.4	128.1	5.2	1.000174
17500.0	541.2	-1.3	59.2	692.1	643.0	130.3	5.3	1.000171
18000.0	531.0	-2.4	59.8	681.8	641.7	129.5	5.6	1.000168
18500.0	520.9	-3.5	61.2	671.7	640.3	127.4	6.1	1.000164
19000.0	511.0	-4.6	61.2	661.7	639.0	123.0	6.0	1.000161

STATION ALTITUDE 3980.00 FEET MSL  
 4 JULY 69  
 ASCENSION NO. 039

UPPER AIR DATA  
 1860020359  
 WHITE SANDS

1400 HRS MDT

TABLE 3 (continued)

GEOD. TIME ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUMID. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIR. TA DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
19500.0	501.5	-5.8	61.9	651.9	637.6	118.0	5.0	1.000158
20000.0	491.6	-6.9	64.8	642.2	636.2	115.9	4.9	1.000156
20500.0	482.1	-8.2	68.1	632.7	634.7	113.0	4.0	1.000153
21000.0	472.6	-9.4	71.4	623.4	633.3	125.2	3.4	1.000151
21500.0	463.6	-10.1	61.4	613.2	632.3	142.1	3.1	1.000146
22000.0	454.5	-11.0	48.0	603.4	631.1	149.5	3.7	1.000141
22500.0	445.6	-12.2	33.8	594.5	629.5	145.7	4.1	1.000137
23000.0	436.8	-13.4	19.6	585.6	628.0	112.3	4.6	1.000133
23500.0	428.2	-13.9	15.2	575.3	627.3	94.6	5.4	1.000130
24000.0	419.7	-14.9	15.0	566.0	626.1	85.5	5.8	1.000128
24500.0	411.5	-16.1	15.0	557.3	624.7	82.1	5.6	1.000126
25000.0	403.1	-17.3	15.0	548.6	623.3	80.9	4.9	1.000124
25500.0	395.0	-18.4	15.2	540.0	621.9	73.0	4.9	1.000122
26000.0	387.0	-19.5	15.5	531.4	620.5	63.9	5.3	1.000120
26500.0	379.1	-20.6	15.8	523.0	619.1	56.1	5.5	1.000118
27000.0	371.4	-21.8	16.0	514.6	617.7	49.2	5.8	1.000116
27500.0	363.6	-23.0	16.1	506.4	616.2	43.5	6.2	1.000114
28000.0	355.0	-24.3	16.3	498.3	614.7	38.6	6.7	1.000112
28500.0	346.6	-25.5	16.4	490.3	613.1	37.5	7.1	1.000110
29000.0	341.5	-26.7	16.5	482.5	611.6	37.0	7.6	1.000108
29500.0	334.2	-27.9	16.6	474.8	610.1	35.7	8.2	1.000106
30000.0	327.5	-29.2	16.7	467.2	608.5	34.4	8.9	1.000105
30500.0	320.4	-30.4	16.8	459.8	607.0	31.2	9.0	1.000103
31000.0	315.7	-31.6	16.9	452.5	605.5	27.0	8.8	1.000101
31500.0	307.2	-32.9	17.0	445.3	603.9	26.4	8.5	1.000100
32000.0	300.6	-33.5	1.000097	437.1	603.0	27.7	8.0	1.000097
32500.0	294.1	-34.5		429.4	601.8	31.0	8.0	1.000096
33000.0	287.7	-35.6		421.9	600.4	34.7	8.3	1.000094
33500.0	281.4	-36.7		414.5	599.1	40.5	9.0	1.000092
34000.0	275.5	-37.7		407.3	597.8	45.9	9.7	1.000091
34500.0	269.5	-38.8		400.2	596.4	50.6	12.2	1.000089
35000.0	263.4	-39.8		393.3	595.1	53.6	14.7	1.000088

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

STATION ALTITUDE 3989.00 FEET MSL  
 4 JULY 69  
 ASCENSION IS. 359 1400 HRS MDT

UPPER AIR DATA  
 1660020359  
 WHITE SANDS

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LONG DEG

TABLE 3 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUMID. PERCENT	DENSITY GM/CUBIC METER	SPEED SOUND KNOTS	DIRECTION DEGREES (TH)	WIND DATA		INDEX OF REFRACTION
							SPEED KNOTS	SPEED KILOMETERS	
35500.0	257.7	-40.9	386.4	593.8	55.0	55.0	15.4	1.000086	
36000.0	252.1	-41.9	379.7	592.4	56.3	56.3	16.2	1.000085	
36500.0	246.5	-43.1	373.1	591.0	61.2	61.2	15.8	1.000083	
37000.0	240.9	-44.2	366.7	589.4	66.3	66.3	15.6	1.000082	
37500.0	235.5	-45.4	360.3	587.9	68.9	68.9	16.4	1.000080	
38000.0	230.2	-46.6	354.1	586.5	71.0	71.0	17.3	1.000079	
38500.0	225.0	-47.8	348.0	584.8	68.3	68.3	18.9	1.000078	
39000.0	219.9	-48.4	340.8	584.1	64.9	64.9	20.7	1.000076	
39500.0	214.9	-48.8	333.7	583.5	60.3	60.3	22.7	1.000074	
40000.0	210.0	-49.3	326.8	582.9	55.7	55.7	25.0	1.000073	
40500.0	205.2	-49.8	320.0	582.3	53.6	53.6	26.7	1.000071	
41000.0	200.5	-50.3	313.3	581.6	52.8	52.8	28.0	1.000070	
41500.0	195.7	-51.3	307.4	580.3	54.1	54.1	29.5	1.000068	
42000.0	191.1	-52.4	301.6	578.8	56.2	56.2	31.3	1.000067	
42500.0	186.6	-53.5	296.0	577.3	55.4	55.4	32.7	1.000066	
43000.0	182.2	-54.6	290.4	575.9	53.9	53.9	34.1	1.000065	
43500.0	177.9	-55.8	285.0	574.4	53.8	53.8	34.4	1.000063	
44000.0	173.7	-56.9	279.7	572.9	53.8	53.8	34.6	1.000062	
44500.0	169.5	-58.0	274.5	571.4	57.5	57.5	34.7	1.000061	
45000.0	165.5	-59.1	269.4	570.0	61.4	61.4	35.0	1.000060	
45500.0	161.6	-60.2	264.4	568.5	65.4	65.4	35.1	1.000059	
46000.0	157.8	-61.5	259.5	567.0	69.4	69.4	35.4	1.000058	
46500.0	154.0	-62.5	254.7	565.5	71.8	71.8	35.4	1.000057	
47000.0	150.4	-63.6	250.0	564.0	74.1	74.1	34.8	1.000056	
47500.0	146.7	-64.0	244.4	563.4	76.8	76.8	33.8	1.000054	
48000.0	143.1	-64.4	238.7	562.9	79.8	79.8	32.4	1.000053	
48500.0	139.5	-64.7	233.2	562.5	83.6	83.6	30.9	1.000052	
49000.0	136.1	-65.0	227.8	562.0	89.2	89.2	29.0	1.000051	
49500.0	132.7	-65.4	222.5	561.5	95.2	95.2	27.2	1.000050	
50000.0	129.4	-65.7	217.4	561.1	100.2	100.2	23.9	1.000048	
50500.0	126.2	-66.1	212.4	560.6	105.2	105.2	20.9	1.000047	
51000.0	123.1	-66.4	207.5	560.1	100.8	100.8	18.5	1.000046	

STATION ALTITUDE 3980.00 FEET MSL  
 4 JULY 69  
 ASCENSION NO. 359

UPPER AIR DATA  
 1860020359  
 WHITE SANDS

1400 HRS MDT

TABLE 3 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METEM	SPEED SOUND KIOTS	WIND DATA		INDEX OF REFRACTION
							DIRECTION (DEGREES TRUE)	SPEED KIOTS	
51500.0	120.1	-66.8			202.7	559.7	112.0	16.2	1.000045
52000.0	117.1	-67.1			198.0	559.2	110.4	17.1	1.000044
52500.0	114.2	-67.5			193.4	558.7	108.9	18.0	1.000043
53000.0	111.4	-67.8			189.0	558.3	109.9	17.9	1.000042
53500.0	108.6	-68.2			184.6	557.8	111.6	17.4	1.000041
54000.0	105.9	-68.5			180.3	557.3	113.8	17.1	1.000040
54500.0	103.3	-68.8			176.2	556.8	116.5	17.0	1.000039
55000.0	100.8	-69.2			172.1	556.4	120.3	17.2	1.000038
55500.0	98.3	-69.2			167.8	556.4	126.7	18.1	1.000037
56000.0	95.8	-69.0			163.5	556.7	132.3	19.3	1.000036
56500.0	93.4	-68.8			159.2	556.9	137.2	17.4	1.000035
57000.0	91.1	-68.6			155.1	557.2	143.2	15.7	1.000035
57500.0	88.8	-68.4			151.1	557.5	141.3	14.0	1.000034
58000.0	86.6	-68.2			147.2	557.7	135.4	12.4	1.000033
58500.0	84.4	-68.0			143.4	558.0	129.5	12.0	1.000032
59000.0	82.3	-67.8			139.7	558.2	125.4	12.9	1.000031
59500.0	80.3	-67.6			136.1	558.5	122.1	13.8	1.000030
60000.0	78.3	-67.4			132.6	558.8	120.5	14.2	1.000030
60500.0	76.3	-67.3			129.2	559.0	119.1	14.5	1.000029
61000.0	74.3	-66.3			125.4	560.3	116.5	14.8	1.000028
61500.0	72.3	-65.0			121.6	562.1	113.7	15.0	1.000027
62000.0	70.3	-63.7			117.8	563.8	111.1	15.3	1.000026
62500.0	67.5	-62.2			114.5	565.8	109.0	15.9	1.000025
63000.0	65.8	-61.6			108.4	566.6	107.1	16.4	1.000025
63500.0	64.3	-61.0			105.5	567.4	104.2	16.9	1.000024
64000.0	62.7	-60.4			102.7	568.2	101.4	17.4	1.000023
64500.0	61.2	-59.8			100.0	569.0	98.8	18.6	1.000023
65000.0	59.8	-59.2			97.3	569.8	95.2	21.2	1.000022
65500.0	58.4	-58.6			94.7	570.6	77.7	24.3	1.000022
66000.0	56.9	-58.0			92.2	571.4	77.0	26.4	1.000021
66500.0	55.6	-57.6			89.8	571.9	77.9	28.4	1.000021
67000.0								29.7	1.000020

STATION ALTITUDE 3900.00 FEET MSL  
 4 JULY 80  
 ASCENSION NO. 337

UPPER AIR DATA  
 1860020359  
 WHITE SANDS

1400 HRS MDT

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 Lon DEG

TABLE 3 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KINOTS	DIRECTION OF WIND (TH) DEGREES	WIND DATA SPEED KINOTS	INDEX OF REFRACTION
67500.0	54.2	-57.7		87.7	571.9	83.2	28.4	1.000020
68000.0	53.0	-57.7		85.6	571.8	89.0	27.4	1.000019
68500.0	51.7	-57.8		83.6	571.7	93.2	26.6	1.000019
69000.0	50.5	-57.9		81.7	571.6	94.8	25.8	1.000018
69500.0	49.3	-57.7		79.7	571.8	96.6	25.0	1.000018
70000.0	48.1	-57.5		77.7	572.3	97.3	25.7	1.000017
70500.0	47.0	-57.0		75.7	572.8	97.4	27.2	1.000017
71000.0	45.9	-56.6		73.8	573.2	97.5	28.0	1.000016
71500.0	44.8	-56.3		72.0	573.7	99.0	29.1	1.000016
72000.0	43.8	-55.9		70.2	574.2	100.8	29.2	1.000016
72500.0	42.7	-55.6		68.4	574.6	102.7	29.3	1.000015
73000.0	41.7	-55.2		66.7	575.1			1.000015
73500.0	40.7	-54.9		65.0	575.5			1.000014
74000.0	39.8	-54.5		63.4	576.0			1.000014
74500.0	38.9	-54.2		61.8	576.5			1.000014

STATION ALTITUDE: 3980.00 FEET MSL  
 4 JULY 60  
 ASCENSION ISL. 334 1400 HRS MDT

MANDATORY LEVELS  
 106020.359  
 WHITE SANDS  
 TABLE 4.

GEODETTIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LONG DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMID.		WIND DATA	
MILLIBARS	FEET	AIR DEGREE'S	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	4935.	33.7	4.4	16.	182.0	1.9	
800.0	6713.	28.1	1.7	18.	180.0	4.5	
750.0	8570.	22.0	.2	22.	159.0	6.7	
700.0	10520.	17.0	-1.3	20.	94.1	7.4	
650.0	12575.	11.0	-2.3	37.	78.8	5.0	
600.0	14750.	5.0	-4.3	48.	125.8	5.3	
550.0	17062.	-1.0	-7.5	59.	120.4	5.2	
500.0	19500.	-5.0	-12.0	62.	117.7	5.8	
450.0	22219.	-11.6	-22.2	41.	152.1	4.0	
400.0	25147.	-17.7	-38.0	15.	79.5	4.7	
350.0	28378.	-25.3	-43.4	16.	37.5	7.0	
300.0	31904.	-33.6			27.8	7.9	
250.0	36105.	-42.3			57.9	16.1	
200.0	40951.	-50.3			52.8	28.0	
175.0	43770.	-56.5			53.8	34.6	
150.0	46926.	-63.7			74.3	34.8	
125.0	50574.	-66.2			107.2	20.0	
100.0	54978.	-64.3			121.9	17.4	
80.0	59368.	-67.6			122.0	13.8	
70.0	62025.	-63.1			110.2	15.5	
60.0	65165.	-54.3			79.5	23.4	
50.0	68935.	-57.0			95.4	25.5	
40.0	73505.	-54.6					

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

STATION ALTITUDE 5997.30 FEET MSL  
 4 JULY 80  
 ASCENSION NO. 83  
 1400 HRS MDT

SIGNIFICANT LEVEL DATA  
 1850060005  
 S M R

GEODETTIC COORDINATES  
 32.48034 LAT DEG  
 106.42507 LON DEG

TABLE 5.

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	HUMIDITY PERCENT
877.7	5997.3	30.0	7.0	16.0
850.0	4055.0	30.0	5.5	17.0
814.6	6210.0	30.7	5.7	18.0
750.4	8590.8	23.9	-1.1	19.0
700.0	10565.7	18.3	.4	30.0
663.6	12058.4	14.4	-2.5	31.0
573.4	16036.1	3.4	-7.1	46.0
549.6	17160.3	-2.2	-8.0	53.0
519.4	18637.1	-4.0	-7.6	75.0
504.4	19388.4	-5.6	-9.1	76.0
500.0	19624.6	-5.8	-10.4	70.0
497.0	19773.9	-5.8	-11.9	52.0
468.0	21321.7	-6.0	-10.7	63.0
446.6	22507.5	-12.0	-24.0	36.0
444.5	22626.2	-11.9	-31.9	17.0
439.6	22905.3	-12.0	-32.6	16.0
432.4	23320.9	-12.1	-32.7	16.0
400.0	25261.4	-17.3	-37.0	16.0
352.6	28325.8	-25.0	-42.9	17.0
330.6	29854.0	-29.3	-48.0	18.0
300.0	32116.1	-34.0	-49.9	18.0
270.4	34406.9	-39.1		
250.0	36248.2	-41.7		
238.4	37301.6	-45.0		
228.2	38262.0	-46.1		
208.0	40220.7	-48.2		
200.0	41131.8	-49.7		
180.8	43242.0	-55.2		
150.0	47141.3	-65.1		
143.4	48048.5	-65.7		
135.8	49140.8	-65.3		
128.4	50263.2	-66.3		

STATION ALTITUDE 3997.30 FEET MSL  
 4 JULY 69  
 ASCENSION ISL. 03  
 1400 HRS MDT

SIGNIFICANT LEVEL DATA  
 18600,0005  
 S M R

GEODETTIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

TABLE 5 (continued)

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MCL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEWPOINT	
117.6	52021.7	-65.7		
100.0	55252.5	-68.2		
89.1	58705.0	-65.6		
76.6	60569.8	-67.8		
72.8	61589.8	-63.9		
66.6	63399.6	-62.0		

STATION ALTITUDE 3997.30 FEET MSL  
 4 JULY 89 1400 HRS MDT  
 ASCENSION, MO. 03

UPPER AIR DATA  
 166060065  
 S M R

TABLE 6.

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

GEOPHYSIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3997.3	877.7	38.0	7.8	978.2	688.8	90.0	9.9	1.000260
4000.0	877.6	38.0	7.0	978.1	688.8	90.0	9.9	1.000260
4500.0	863.0	35.9	6.6	968.7	686.3	97.4	8.4	1.000255
5000.0	848.7	33.9	5.5	959.1	684.0	107.8	7.1	1.000250
5500.0	834.4	32.6	4.7	947.2	682.5	122.3	6.1	1.000246
6000.0	820.4	31.3	4.0	935.4	681.0	129.5	5.5	1.000242
6500.0	806.5	29.9	3.1	923.9	679.4	120.8	5.1	1.000237
7000.0	792.7	28.4	2.1	912.5	677.7	110.7	4.8	1.000233
7500.0	779.2	27.0	1.1	901.4	676.0	106.9	4.6	1.000229
8000.0	765.8	25.6	.1	890.4	674.4	111.4	4.4	1.000225
8500.0	752.8	24.2	.9	879.5	672.7	116.9	4.2	1.000220
9000.0	739.7	22.7	-5	868.2	671.1	126.4	3.8	1.000219
9500.0	726.8	21.3	-0	857.0	669.6	137.8	3.6	1.000218
10000.0	714.1	19.9	.3	846.1	668.0	152.4	3.5	1.000216
10500.0	701.6	18.5	.4	835.3	666.4	161.1	3.6	1.000214
11000.0	689.2	17.2	-4	824.3	664.9	163.2	3.9	1.000210
11500.0	677.0	15.9	-1.4	813.5	663.3	147.9	3.4	1.000206
12000.0	665.0	14.6	-2.4	802.9	661.8	124.1	3.2	1.000202
12500.0	652.9	13.2	-2.9	792.1	660.2	106.3	3.3	1.000199
13000.0	641.0	11.8	-3.3	781.5	658.6	92.7	3.6	1.000196
13500.0	629.4	10.4	-3.8	771.1	656.9	98.3	4.3	1.000193
14000.0	617.9	9.0	-4.4	760.8	655.3	103.5	5.1	1.000190
14500.0	606.7	7.6	-5.0	750.7	653.7	110.4	6.5	1.000188
15000.0	595.6	6.3	-5.6	740.7	652.0	114.4	7.5	1.000185
15500.0	584.8	4.4	-6.3	730.9	650.4	116.0	7.5	1.000182
16000.0	574.2	3.5	-7.0	721.3	648.7	117.6	7.4	1.000179
16500.0	563.5	1.9	-7.7	712.0	646.9	119.4	6.5	1.000176
17000.0	552.9	.3	-9.4	702.8	645.0	121.5	5.4	1.000173
17500.0	542.5	-1.1	-10.3	693.0	643.3	124.3	3.5	1.000171
18000.0	532.2	-2.4	-7.9	683.1	641.8	126.3	1.7	1.000170
18500.0	522.2	-3.6	-7.8	673.3	640.3	233.4	.9	1.000168
19000.0	512.2	-4.8	-8.4	663.3	639.0	255.8	2.0	1.000165

STATION ALTITUDE 3997.30 FEET MSL  
 4 JULY 80 1400 HRS MDT  
 ASCENSION NO. 05

UPPER AIR DATA  
 1860060065  
 S N P

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LONG DEG

TABLE 6 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUMID. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KILOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KILOTS	INDEX OF REFRACTION
19500.0	302.9	-5.7	73.3	653.0	637.8	255.5	2.7	1.000161
20000.0	492.8	-6.3	62.1	642.0	637.0	216.1	3.4	1.000156
20500.0	483.2	-7.3	62.5	632.1	635.8	199.6	4.3	1.000153
21000.0	473.9	-8.3	62.8	622.4	634.5	196.3	4.8	1.000150
21500.0	464.7	-9.5	58.9	613.0	633.1	195.3	4.9	1.000146
22000.0	455.6	-10.7	47.6	604.2	631.4	178.4	3.3	1.000142
22500.0	446.7	-12.0	36.2	595.4	629.8	123.9	2.5	1.000138
23000.0	437.9	-12.6	16.0	584.1	629.0	85.5	4.2	1.000132
23500.0	429.3	-12.6	16.0	573.8	629.0	72.8	6.6	1.000130
24000.0	420.8	-13.9	16.0	565.3	627.3	72.5	7.2	1.000120
24500.0	412.4	-15.3	16.0	556.9	625.7	72.5	6.5	1.000126
25000.0	404.2	-16.6	16.0	548.7	624.1	83.2	5.9	1.000124
25500.0	395.1	-17.9	16.1	540.5	622.5	89.9	5.2	1.000122
26000.0	386.0	-19.2	16.2	532.1	620.9	94.3	4.8	1.000120
26500.0	377.1	-20.4	16.4	523.8	619.4	92.9	4.4	1.000118
27000.0	372.4	-21.7	16.6	515.7	617.9	92.4	4.1	1.000116
27500.0	368.8	-22.9	16.7	507.8	616.3	93.6	3.8	1.000114
28000.0	357.4	-24.2	16.9	500.0	614.8	78.0	3.7	1.000112
28500.0	350.0	-25.5	17.1	492.3	613.1	52.0	4.6	1.000110
29000.0	342.7	-26.9	17.4	484.8	611.4	35.0	5.9	1.000109
29500.0	335.6	-28.3	17.8	477.4	609.6	24.7	7.2	1.000107
30000.0	328.5	-29.6	18.0	469.9	608.0	19.9	8.1	1.000105
30500.0	314.7	-30.6	18.0	461.9	606.7	21.2	8.1	1.000103
31000.0	303.0	-31.7	18.0	454.0	605.4	22.3	8.2	1.000102
31500.0	291.5	-32.7	18.0	446.3	604.1	22.8	8.9	1.000100
32000.0	283.8	-33.8	15.1**	438.7	602.6	21.7	9.6	1.000098
32500.0	275.0	-34.8	11.3**	431.2	601.4	16.3	10.3	1.000096
33000.0	264.6	-35.9	7.5**	423.8	600.1	14.6	10.9	1.000095
33500.0	252.3	-37.0	3.7**	416.5	598.7	22.5	11.0	1.000093
34000.0	240.2	-38.1		409.3	597.3	30.3	11.3	1.000091
34500.0	227.2	-39.1		402.3	596.0	38.7	12.0	1.000090
35000.0	214.3	-39.9		394.7	595.0	46.0	12.8	1.000088

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

STATION ALTITUDE 3997.30 FEET MSL  
 4 JULY 69  
 ASCENSION IS. 05  
 1400 HRS MDT

UPPER AIR DATA  
 160000Z  
 S M R

GEOMETRIC COORDINATES  
 32.46034 LAT DEG  
 100.42307 LONG DEG

TABLE 6 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARNS	AIR TEMPERATURE DEGREES CENTIGRADE	RELATIVE HUMIDITY PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KINOTS	DIRECTION DEGREES TRUE	WIND VELOCITY KINOTS	INDEX OF REFRACTION
35500.0	250.5	-40.6		307.2	594.1	52.1	13.4	1.000066
36000.0	252.8	-41.3		379.9	593.2	57.7	14.1	1.000085
36500.0	247.2	-42.5		373.3	591.7	63.5	15.3	1.000083
37000.0	241.7	-44.1		367.5	589.7	68.3	16.5	1.000082
37500.0	236.3	-45.2		361.1	588.2	62.7	17.5	1.000060
38000.0	230.9	-45.8		353.9	587.4	57.6	18.7	1.000079
38500.0	225.7	-46.4		346.7	586.7	52.6	20.7	1.000077
39000.0	220.6	-46.9		339.7	586.0	48.4	22.9	1.000076
39500.0	215.6	-47.4		332.8	585.3	46.9	24.9	1.000074
40000.0	210.7	-48.0		326.0	584.6	47.6	26.3	1.000073
40500.0	205.9	-48.7		319.6	583.7	48.3	27.7	1.000071
41000.0	201.2	-49.5		313.4	582.6	49.0	29.1	1.000070
41500.0	196.6	-50.6		307.8	581.1	49.7	30.5	1.000069
42000.0	192.0	-51.9		302.4	579.5	49.9	31.5	1.000067
42500.0	187.6	-53.2		297.1	577.8	49.9	32.2	1.000066
43000.0	183.2	-54.5		291.9	576.1	49.9	32.8	1.000065
43500.0	178.9	-55.6		286.5	574.6	51.3	32.8	1.000064
44000.0	174.6	-56.7		281.0	573.2	53.0	32.7	1.000063
44500.0	170.3	-57.7		275.6	571.8	55.0	32.7	1.000061
45000.0	166.4	-58.7		270.3	570.5	58.4	33.1	1.000060
45500.0	162.8	-59.7		265.1	569.1	61.7	33.6	1.000059
46000.0	159.5	-60.8		260.0	567.8	65.3	33.8	1.000058
46500.0	156.7	-61.8		255.0	566.4	69.5	33.5	1.000057
47000.0	153.0	-62.8		250.1	565.0	73.7	33.5	1.000056
47500.0	147.4	-64.1		245.6	563.2	78.4	32.4	1.000055
48000.0	143.7	-65.6		241.2	561.3	79.0	31.0	1.000054
48500.0	140.2	-65.5		235.3	561.3	81.7	29.1	1.000052
49000.0	136.8	-65.4		229.3	561.6	84.0	26.1	1.000051
49500.0	133.4	-65.6		223.9	561.2	88.7	23.2	1.000050
50000.0	130.1	-66.1		218.9	560.6	92.3	21.7	1.000049
50500.0	126.9	-66.2		213.6	560.4	97.3	20.4	1.000048
51000.0	123.8	-66.0		208.2	560.6	100.6	19.5	1.000046

UPPER AIR DATA  
 186060085  
 S M R

STATION ALTITUDE 3997.30 FEET MSL  
 4 JULY 80  
 ASCENSION NO. 05 1400 HRS MDT

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

TABLE 6 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED KNOTS	WIND DIRECTION DEGREES (T)	WIND DATA		INDEX OF REFRACTION
							SPEED KNOTS	HEIGHT METERS	
51500.0	120.7	-65.9		212.9	560.9	102.1	19.1	1.000045	
52000.0	117.7	-65.7		197.7	561.1	103.5	18.6	1.000044	
52500.0	114.8	-66.1		193.1	560.0	106.5	18.4	1.000043	
53000.0	112.0	-66.5		188.7	560.1	110.1	18.3	1.000042	
53500.0	109.2	-66.0		184.4	559.6	113.7	18.3	1.000041	
54000.0	106.5	-67.2		180.1	559.0	117.5	18.4	1.000040	
54500.0	103.8	-67.6		176.0	558.5	121.3	18.6	1.000039	
55000.0	101.3	-68.0		172.0	558.0	125.3	18.5	1.000038	
55500.0	98.8	-68.0		167.7	558.0	130.0	17.7	1.000037	
56000.0	96.3	-67.6		163.3	558.5	136.7	17.0	1.000036	
56500.0	93.9	-67.3		158.9	559.0	139.6	16.5	1.000035	
57000.0	91.5	-66.9		154.7	559.5	138.7	15.8	1.000034	
57500.0	89.3	-66.5		150.6	560.0	137.7	15.1	1.000034	
58000.0	87.1	-66.1		146.6	560.5	133.8	14.7	1.000033	
58500.0	85.0	-65.8		142.7	561.0	128.6	14.6	1.000032	
59000.0	82.9	-65.4		139.3	560.8	123.3	14.5	1.000031	
59500.0	80.8	-66.5		136.3	560.0	125.8	15.0	1.000030	
60000.0	78.8	-67.1		133.3	559.2	128.6	15.6	1.000029	
60500.0	76.9	-67.7		130.3	558.4	128.6	15.6	1.000028	
61000.0	75.0	-66.2		126.2	560.5	128.6	15.6	1.000027	
61500.0	73.1	-64.2		121.9	563.1	128.6	15.6	1.000026	
62000.0	71.3	-63.5		118.5	564.1	128.6	15.6	1.000026	
62500.0	69.6	-62.9		115.4	564.8	128.6	15.6	1.000026	
63000.0	67.9	-62.4		112.3	565.5	128.6	15.6	1.000025	

STATION ALTITUDE 3997.30 FEET MSL  
 4 JULY 80  
 ASCENSION NO. 05

MANDATORY LEVELS  
 1660/6600ES  
 5 M R

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LONG DEG

TABLE 7.

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUMID. PERCENT	WIND DATA		
		AIR DEGREES CELSIUS	DEWPOINT CELSIUS		DIRECTION DEGREES (TN)	SPEED KNOTS	
850.0	4951.	34.0	5.5	17.	106.7	7.2	
800.0	6736.	29.2	2.6	18.	116.2	4.9	
750.0	8508.	23.0	-1.1	19.	118.0	4.1	
700.0	10555.	18.3	.4	30.	161.4	3.7	
650.0	12618.	12.8	-3.0	33.	102.0	3.3	
600.0	14800.	6.8	-5.4	41.	113.4	7.3	
550.0	17119.	-1.	-8.6	53.	122.0	4.9	
500.0	19507.	-5.8	-10.4	70.	232.3	2.8	
450.0	22282.	-11.5	-22.3	40.	148.7	2.5	
400.0	25218.	-17.3	-37.0	19.	86.4	5.5	
350.0	28450.	-25.5	-43.2	17.	52.5	4.6	
300.0	32051.	-34.0	-49.9	18.	20.5	9.8	
250.0	36166.	-41.7			60.5	14.6	
200.0	41031.	-49.7			49.2	29.4	
175.0	43852.	-56.6			52.8	32.7	
150.0	47012.	-63.1			74.6	33.5	
125.0	50651.	-66.1			100.0	19.8	
100.0	55079.	-68.2			127.7	18.1	
80.0	59505.	-66.8			126.8	15.2	
70.0	62169.	-63.1					

STATION ALTITUDE: 4126.59 FEET MSL  
 4 JULY 89  
 ASCENSION ISD. 2406  
 1500 HRS MDT

SIGNIFICANT LEVELL DATA  
 1860010226  
 HOLLONAI

GEODETTIC COORDINATES  
 32.88865 LAT DEG  
 106.09965 LON DEG

TABLE 8.

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT
874.2	4126.6	36.0	0.0	18.0
863.8	4083.6	36.8	11.2	24.0
850.0	4062.9	30.1	10.7	24.0
763.8	4022.5	24.9	0.1	50.0
700.0	4057.3	17.1	2.7	58.0
634.0	4314.7	9.8	.2	51.0
557.0	46787.3	-1.1	-1.2	99.0
516.6	48750.5	-0.0	-4.1	99.0
500.0	49600.5	-7.3	-7.4	99.0
490.8	20077.6	-7.1	-7.2	99.0
483.1	20081.2	-10.5	-10.6	99.0
478.0	20751.9	-7.5	-7.6	99.0
433.4	23232.1	-10.3	-10.4	99.0
426.2	23672.8	-15.7	-19.7	71.0
419.0	24093.4	-18.6	-26.3	42.0
412.0	24505.8	-20.0	-34.1	27.0
400.0	25225.2	-21.3	-37.7	21.0
358.8	29194.0	-20.2	-43.3	24.0
314.0	30777.3	-30.6	-36.5	56.0
300.0	32030.9	-33.1	-39.9	50.0
260.8	35231.0	-00.0	-40.3	43.0
250.0	36176.0	-42.5		
239.4	37134.9	-45.0		
209.4	40066.5	-07.5		
200.0	41059.3	-50.9		
160.2	45711.1	-61.1		
150.0	47050.1	-63.7		
122.0	51105.4	-68.2		
101.6	54759.6	-69.3		
100.0	55112.5	-69.0		
79.6	59641.9	-66.6		
73.4	61255.3	-68.2		

STATION ALTITUDE 4126.53 FEET MSL  
 4 JULY 40  
 ASCENSION NO. 220 1500 HRS MDT

STATION NAME LEVEL DATA  
 186010226  
 HOLLONAH

GEODETIC COORDINATES  
 32.88865 LAT DEG  
 106.09965 LONG DEG

TABLE 8 (continued)

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEWPOINT DEGREES CENTIGRADE	
70.0	62700.6	-65.9		
61.8	60730.3	-60.6		
50.0	69110.5	-58.4		
44.8	71007.5	-55.7		
36.4	75704.2	-55.2		
30.0	79096.5	-52.0		
21.4	87175.9	-49.0		
20.0	88691.7	-49.0		
19.0	89752.1	-50.0		

STATION ALTITUDE 9426.59 FEET MSL  
 4 JULY 69 1500 HRS MDT  
 ASCENDING 10. 2.5

UPPER AIR DATA  
 1860019226  
 HULLOMAN

GEODETIC COORDINATES  
 32.88865 LAT DEG  
 106.09965 LONG DEG

TABLE 9.

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	TEMPERATURE DEGREE CELSIUS	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
9170.0	874.2	36.0	9.0	18.0	980.5	600.0	0	0	1.000261
9500.0	863.3	34.8	11.2	24.0	971.0	665.0	108.0	0.8	1.000270
9800.0	848.9	34.0	13.0	29.1	957.4	684.7	103.0	1.8	1.000265
9900.0	835.5	32.5	10.0	25.0	945.8	683.0	108.0	2.8	1.000261
10000.0	820.4	31.1	7.3	26.0	934.4	681.3	100.0	3.9	1.000256
10500.0	780.5	29.6	6.6	26.0	923.2	679.6	108.0	4.9	1.000252
11000.0	742.9	28.1	7.8	27.4	912.2	677.9	108.0	5.9	1.000248
11500.0	708.2	26.6	7.1	28.9	901.3	676.2	110.0	6.2	1.000243
12000.0	676.2	25.2	6.3	29.8	890.5	674.5	123.5	6.5	1.000239
12500.0	647.9	23.6	5.7	31.3	879.8	672.7	133.4	6.9	1.000235
13000.0	623.8	22.0	5.0	32.0	869.2	670.8	140.3	7.5	1.000232
13500.0	602.4	20.5	4.3	34.5	858.7	669.0	143.3	7.6	1.000228
14000.0	583.5	18.9	3.7	36.2	848.4	667.2	149.3	7.6	1.000224
14500.0	567.0	17.5	3.0	37.8	838.2	665.3	154.5	7.6	1.000220
15000.0	552.5	16.0	2.4	40.0	827.2	663.7	159.0	7.7	1.000217
15500.0	539.9	14.6	2.0	42.4	816.2	662.2	162.3	7.3	1.000214
16000.0	528.4	13.5	1.6	44.8	805.4	660.6	165.4	6.7	1.000211
16500.0	517.9	12.0	1.1	47.1	794.7	659.1	169.1	6.0	1.000208
17000.0	508.2	10.6	0.5	49.5	784.2	657.5	173.7	5.4	1.000205
17500.0	499.4	9.2	0.3	53.6	773.9	655.9	181.0	4.9	1.000202
18000.0	491.0	7.6	0.5	60.5	763.7	654.1	191.4	4.7	1.000201
18500.0	483.0	6.1	0.5	67.4	753.8	652.3	202.6	4.6	1.000199
19000.0	475.4	4.5	0.5	74.3	744.0	650.5	213.8	4.7	1.000197
19500.0	468.4	2.9	0.0	81.2	734.4	648.8	223.4	4.9	1.000194
20000.0	461.8	1.4	-0.4	88.1	725.0	647.1	229.6	5.1	1.000191
20500.0	455.0	-0.2	-0.9	95.0	715.8	645.9	235.4	5.3	1.000189
21000.0	448.5	-1.4	-1.5	99.0	705.6	643.4	240.6	5.6	1.000185
21500.0	442.0	-2.1	-2.3	99.0	694.2	642.5	242.3	5.0	1.000181
22000.0	435.8	-2.9	-3.0	99.0	683.0	641.0	241.0	3.7	1.000178
22500.0	429.7	-3.6	-3.8	99.0	672.0	640.7	238.4	2.4	1.000174
23000.0	423.8	-5.0	-5.1	99.0	662.7	639.8	235.1	0.9	1.000170
23500.0	418.0	-6.9	-7.0	99.0	655.0	638.5	92.4	1.6	1.000165

STATION ALTITUDE 9126.59 FEET MSL  
 4 JULY 1951  
 ASCENSION NO. 200

WINDY AIR DATA  
 1860010226  
 HOLLORAH

1500 HRS MDT

TABLE 9 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUMIDITY PERCENT	WIND METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TR)	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE					SPEED KNOTS	ANGLE	
20000.0	492.5	-7.1	-7.3	92.0	682.9	630.3	91.4	3.8	1.000102	
20500.0	482.7	-10.5	-10.9	92.0	658.4	632.3	79.5	3.7	1.000157	
21000.0	473.0	-7.8	-7.0	92.0	619.7	635.5	77.4	3.6	1.000156	
21500.0	464.2	-8.5	-8.5	92.0	609.1	634.8	75.6	3.1	1.000153	
22000.0	455.2	-8.9	-9.0	92.0	590.5	634.1	68.5	2.5	1.000150	
22500.0	446.0	-9.5	-9.6	92.0	580.2	633.4	69.6	3.1	1.000147	
23000.0	437.7	-10.0	-10.1	92.0	570.1	632.7	70.4	3.7	1.000144	
23500.0	429.1	-13.5	-13.8	82.5	570.8	628.3	71.2	3.4	1.000138	
24000.0	420.5	-14.0	-14.1	82.5	573.8	622.5	73.7	2.0	1.000132	
24500.0	412.1	-20.0	-20.0	27.2	566.9	620.0	118.6	2.4	1.000128	
25000.0	403.7	-20.9	-20.9	22.9	557.4	618.8	226.8	2.4	1.000126	
25500.0	395.4	-21.8	-21.8	21.2	548.0	617.6	235.2	4.3	1.000123	
26000.0	387.2	-22.8	-22.8	21.6	538.8	616.4	249.4	4.8	1.000121	
26500.0	379.2	-23.8	-23.8	22.0	529.8	615.2	263.0	5.4	1.000119	
27000.0	371.4	-24.8	-24.8	22.3	520.9	614.0	280.6	6.0	1.000117	
27500.0	363.7	-25.8	-25.8	22.7	512.2	612.7	293.7	6.7	1.000115	
28000.0	356.2	-26.8	-26.8	23.1	503.6	611.5	302.9	6.9	1.000113	
28500.0	348.8	-27.8	-27.8	23.5	495.2	610.2	312.7	7.1	1.000111	
29000.0	341.6	-28.8	-28.8	23.0	486.9	609.0	327.9	7.2	1.000109	
29500.0	334.4	-29.4	-29.4	22.5	477.9	608.2	342.1	7.7	1.000107	
30000.0	327.4	-29.8	-29.8	22.5	468.6	607.8	358.0	8.6	1.000106	
30500.0	320.5	-30.2	-30.2	47.4	459.4	607.3	10.3	9.9	1.000104	
31000.0	313.7	-30.7	-30.7	55.0	450.5	606.8	20.6	10.8	1.000102	
31500.0	307.0	-31.8	-31.8	53.0	443.1	605.3	29.6	11.8	1.000100	
32000.0	300.5	-33.0	-33.0	50.2	435.8	603.8	41.1	13.7	1.000098	
32500.0	294.0	-34.2	-34.2	47.0	428.5	602.3	51.2	16.3	1.000097	
33000.0	287.6	-35.4	-35.4	47.0	421.3	600.8	57.2	17.3	1.000095	
33500.0	281.4	-36.5	-36.5	46.8	414.2	599.3	62.0	17.0	1.000093	
34000.0	275.5	-37.7	-37.7	45.7	407.2	597.8	65.4	15.8	1.000091	
34500.0	269.5	-38.9	-38.9	44.6	400.4	596.3	68.7	14.2	1.000090	
35000.0	263.5	-40.1	-40.1	43.5	393.7	594.8	71.0	13.3	1.000088	
35500.0	257.7	-41.1	-41.1	38.8**	386.9	593.4	72.7	16.9	1.000087	

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

STATION ALTITUDE 4126.59 FEET MSL  
 4 JULY 50  
 ASCENSION RC. 240  
 1500 HRS MDT

UPPER AIR DATA  
 180010Z20  
 HOLLOWAY

GEODETIC COORDINATES  
 32.88865 LAT (N)  
 106.09965 LON (W)

TABLE 9 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> MLTER	SPEED OF SOUND KIPTS	DIRECTION DEGREES (TU)	WIND DATA SPEED KIPTS	INDEX OF REFRACTION
36000.0	252.0	-42.1	8.0**	380.0	592.1	71.8	17.9	1.000065
36500.0	246.4	-43.5		373.5	590.0	63.5	18.6	1.000063
37000.0	240.9	-44.6		367.2	586.9	67.0	19.3	1.000062
37500.0	235.4	-45.5		360.0	586.0	63.8	19.9	1.000060
38000.0	230.1	-45.7		352.5	587.5	60.9	20.5	1.000079
38500.0	224.9	-46.2		345.2	586.9	58.2	21.4	1.000077
39000.0	219.9	-46.6		338.1	586.4	55.8	22.3	1.000075
39500.0	214.9	-47.0		331.0	585.8	53.7	23.1	1.000074
40000.0	210.0	-47.4		324.2	585.3	51.7	23.9	1.000072
40500.0	205.2	-49.0		319.0	583.3	50.5	24.5	1.000071
41000.0	200.5	-50.7		314.1	581.1	49.6	25.0	1.000070
41500.0	195.8	-51.9		308.3	579.5	48.5	25.5	1.000069
42000.0	191.2	-53.0		302.5	578.1	47.3	26.0	1.000067
42500.0	186.7	-54.1		296.9	576.6	46.0	26.6	1.000066
43000.0	182.3	-55.2		291.3	575.2	44.4	27.2	1.000065
43500.0	178.0	-56.5		285.9	573.8	50.9	27.9	1.000064
44000.0	173.8	-57.5		280.6	572.3	54.8	28.2	1.000062
44500.0	169.7	-58.4		275.4	570.8	59.6	28.5	1.000061
45000.0	165.7	-59.5		270.3	569.4	64.3	28.6	1.000060
45500.0	161.8	-60.6		265.3	567.9	69.1	28.3	1.000059
46000.0	157.9	-61.7		260.2	566.6	73.3	28.5	1.000058
46500.0	154.1	-62.6		255.0	565.3	75.5	29.4	1.000057
47000.0	150.4	-63.6		250.0	563.9	77.4	29.7	1.000056
47500.0	146.7	-64.2		244.5	563.2	79.0	28.3	1.000054
48000.0	143.0	-64.7		239.1	562.4	80.7	26.8	1.000053
48500.0	139.5	-65.3		233.8	561.7	83.0	24.9	1.000052
49000.0	136.1	-65.8		228.6	561.0	85.7	23.0	1.000051
49500.0	132.7	-66.4		223.6	560.2	88.6	21.5	1.000050
50000.0	129.4	-66.9		218.6	559.5	91.5	20.4	1.000049
50500.0	126.3	-67.5		213.8	558.7	94.7	19.4	1.000048
51000.0	123.1	-68.0		209.1	558.0	98.5	18.6	1.000047
51500.0	119.9	-68.5		204.2	557.0	102.5	18.0	1.000045

\*\* RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 1126.59 FEET MSL  
 4 JULY 80  
 ASCENSION IS. 226  
 1500 HRS MDT

UPPER AIR DATA  
 186000Z  
 HOLLOWAY

GEODETIC COORDINATES  
 32.88865 LAT UEG  
 106.09965 LON DEG

TABLE 9 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TR)	WIND SPEED KNOTS	INDEX OF REFRACTION	
								INDEX OF REFRACTION	INDEX OF REFRACTION
52000.0	117.1	-68.4	199.2	557.4	105.4	17.7	1.000044		
52500.0	114.1	-68.6	194.4	557.2	106.0	17.9	1.000043		
53000.0	111.5	-68.8	189.7	557.0	106.6	18.1	1.000042		
53500.0	108.9	-68.9	185.1	556.8	107.3	17.9	1.000041		
54000.0	106.4	-69.1	180.6	556.6	108.1	17.7	1.000040		
54500.0	103.8	-69.2	176.2	556.4	109.1	17.3	1.000039		
55000.0	101.3	-69.1	171.7	556.5	113.6	16.1	1.000038		
55500.0	98.8	-68.8	167.2	556.9	118.9	15.0	1.000037		
56000.0	96.3	-68.5	162.8	557.3	125.1	13.9	1.000036		
56500.0	93.8	-68.3	158.6	557.6	132.5	12.8	1.000035		
57000.0	91.3	-68.0	154.4	558.0	141.2	12.0	1.000034		
57500.0	88.8	-67.7	150.4	558.4	147.0	11.6	1.000033		
58000.0	86.3	-67.5	146.4	558.7	151.0	11.5	1.000033		
58500.0	83.8	-67.2	142.6	559.1	154.2	11.6	1.000032		
59000.0	81.3	-66.9	138.9	559.4	146.5	13.9	1.000031		
59500.0	78.8	-66.7	135.3	559.8	140.7	16.5	1.000030		
60000.0	76.3	-67.0	132.1	559.4	137.5	18.5	1.000029		
60500.0	73.8	-67.5	129.1	558.7	135.9	19.7	1.000029		
61000.0	71.3	-67.9	126.2	558.1	134.4	20.9	1.000028		
61500.0	68.8	-67.6	122.9	558.5	132.5	19.2	1.000027		
62000.0	66.3	-66.4	119.1	560.2	129.9	16.4	1.000027		
62500.0	63.8	-65.3	115.6	561.7	126.1	13.7	1.000026		
63000.0	61.3	-64.2	112.2	563.1	117.4	12.9	1.000025		
63500.0	58.8	-63.2	108.9	564.5	107.9	12.6	1.000024		
64000.0	56.3	-62.1	105.8	565.9	97.6	12.9	1.000024		
64500.0	53.8	-61.1	102.7	567.3	65.7	14.6	1.000023		
65000.0	51.3	-60.5	99.9	568.2	76.6	16.8	1.000022		
65500.0	48.8	-60.2	97.4	568.5	70.6	19.3	1.000021		
66000.0	46.3	-60.0	95.0	568.8	70.7	22.0	1.000021		
66500.0	43.8	-59.7	92.6	569.2	70.7	24.7	1.000021		
67000.0	41.3	-59.5	90.3	569.5	71.2	27.2	1.000020		
67500.0	38.8	-59.2	88.0	569.8	77.5	26.9	1.000020		

STATION ALTITUDE 9126.59 FEET MSL  
 4 JULY 80  
 ASCENDING NO. 276

UPPER AIR DATA  
 186000226  
 HOLLONAI

1500 HRS MDT

GEODETIC COORDINATES  
 32.81865 LAT DEG  
 106.09965 LON DEG

TABLE 9 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KIOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KIOTS	INDEX OF REFRACTION
68000.0	52.0	-59.0		85.8	570.2	84.0	26.9	1.000019
68500.0	51.5	-58.7		85.7	570.5	90.2	27.3	1.000019
69000.0	51.0	-58.5		81.6	570.8	91.9	27.1	1.000018
69500.0	49.1	-57.9		79.4	571.5	93.6	26.9	1.000018
70000.0	47.9	-57.4		77.4	572.3	95.3	26.8	1.000017
70500.0	46.8	-56.8		75.3	573.1	97.4	26.2	1.000017
71000.0	45.7	-56.2		73.3	573.8	99.7	25.5	1.000016
71500.0	44.6	-55.7		71.5	574.5	102.2	24.9	1.000016
72000.0	43.6	-55.6		69.8	574.6	104.5	24.2	1.000016
72500.0	42.5	-55.6		68.1	574.6	106.3	23.4	1.000015
73000.0	41.5	-55.5		66.5	574.7	108.2	22.6	1.000015
73500.0	40.6	-55.5		64.9	574.8	110.2	21.8	1.000014
74000.0	39.6	-55.4		63.4	574.9	106.4	21.5	1.000014
74500.0	38.7	-55.3		61.9	574.9	101.8	21.4	1.000014
75000.0	37.8	-55.3		60.4	575.0	97.2	21.5	1.000013
75500.0	36.9	-55.2		59.0	575.1	93.2	22.0	1.000013
76000.0	36.0	-55.0		57.5	575.4	90.1	23.0	1.000013
76500.0	35.2	-54.6		56.1	575.9	87.2	24.1	1.000012
77000.0	34.4	-54.3		54.7	576.4	84.6	25.2	1.000012
77500.0	33.6	-53.9		53.3	576.9	84.5	26.1	1.000012
78000.0	32.8	-53.5		52.0	577.4	84.5	27.1	1.000012
78500.0	32.0	-53.1		50.7	577.9	84.5	28.0	1.000011
79000.0	31.3	-52.7		49.4	578.4	84.5	28.7	1.000011
79500.0	30.6	-52.3		48.2	578.9	84.5	29.2	1.000011
80000.0	29.9	-52.0		47.0	579.4	84.4	29.7	1.000010
80500.0	29.2	-51.8		45.9	579.6	84.4	30.2	1.000010
81000.0	28.5	-51.6		44.8	579.8	83.1	30.2	1.000010
81500.0	27.8	-51.5		43.8	580.0	81.9	30.2	1.000010
82000.0	27.2	-51.3		42.7	580.3	80.0	30.2	1.000010
82500.0	26.6	-51.1		41.7	580.5	81.7	30.4	1.000009
83000.0	26.0	-51.0		40.7	580.7	84.0	30.7	1.000009
83500.0	25.4	-50.8		39.8	580.9	86.2	31.1	1.000009

GEODETIC COORDINATES  
 32.88865 LAT DEG  
 106.09965 LON DEG

UPPER AIR DATA  
 1860010220  
 HOLLOWAY

STATION ALTITUDE 4126.59 FEET MSL  
 4 JULY 80 1500 HRS MDT  
 ASCENSION NO. 226

TABLE 9 (continued)

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KIOTS	WIND DATA DIRECTION (DEGREES TRUE)	SPEED KIOTS	INDEX OF REFRACTION
84900.0	24.8	-50.6	36.8	581.1	98.3	31.5	1.000009	
84500.0	24.2	-50.5	37.9	581.5	98.5	31.1	1.000008	
85000.0	23.7	-50.5	37.0	581.5	97.9	30.5	1.000008	
85500.0	23.1	-50.2	36.1	581.8	97.4	29.9	1.000008	
86000.0	22.6	-50.0	35.3	582.0			1.000008	
86500.0	22.1	-49.8	34.4	582.2			1.000008	
87000.0	21.6	-49.7	33.6	582.4			1.000007	
87500.0	21.1	-49.6	32.9	582.4			1.000007	
88000.0	20.6	-49.7	32.1	582.3			1.000007	
88500.0	20.1	-49.8	31.4	582.2			1.000007	
89000.0	19.7	-49.9	30.7	582.1			1.000007	
89500.0	19.2	-50.0	30.0	582.0			1.000007	

STATION ALTITUDE 9126.59 FEET ASL  
 4 JULY 80 1500 HRS MDT  
 ASCENSION NO. 226

MANDATORY LEVELS  
 1460010226  
 HOLLOWAY

GEODETIC COORDINATES  
 32.88865 LAT DEG  
 106.09965 LON DEG

TABLE 10.

PRESSURE GEOPOTENTIAL		TEMPERATURE		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT PERCENT	DIRECTION DEGREES(TN)	SPEED KINOTS
850.0	4959.	34.1	10.7	108.0	1.7
800.0	6704.	28.9	8.2	108.0	5.4
750.0	8609.	23.3	5.5	135.1	7.1
700.0	10562.	17.1	2.7	155.1	7.6
650.0	12616.	11.6	.9	170.2	5.9
600.0	14702.	5.2	.4	209.5	4.6
550.0	17008.	-1.6	-1.7	241.7	5.7
500.0	19573.	-7.3	-7.4	08.6	2.0
450.0	22262.	-9.2	-9.4	69.2	2.9
400.0	25103.	-21.3	-37.7	229.7	3.5
350.0	28375.	-27.7	-42.1	310.1	7.1
300.0	31975.	-33.1	-39.9	41.0	13.8
250.0	36007.	-42.5		71.0	18.2
200.0	40960.	-50.0		49.5	25.0
175.0	43772.	-57.0		53.5	28.2
150.0	46923.	-63.7		77.5	29.7
125.0	50558.	-67.7		96.0	19.1
100.0	54902.	-69.0		114.5	15.9
80.0	59305.	-66.7		140.6	16.6
70.0	61907.	-65.0		120.0	15.4
60.0	65105.	-60.3		72.2	10.3
50.0	68851.	-58.4		92.1	27.1
40.0	73501.	-55.4		108.5	21.6
30.0	79555.	-52.0		84.4	29.5
25.0	83401.	-50.7		97.4	31.3
20.0	88226.	-49.8			

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