

AD-A079 993 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
193068 6SR5, MISSILE NUMBERS 1043, 1045, ROUND NUMBERS V-64, V---ETC(U)
AUG 79

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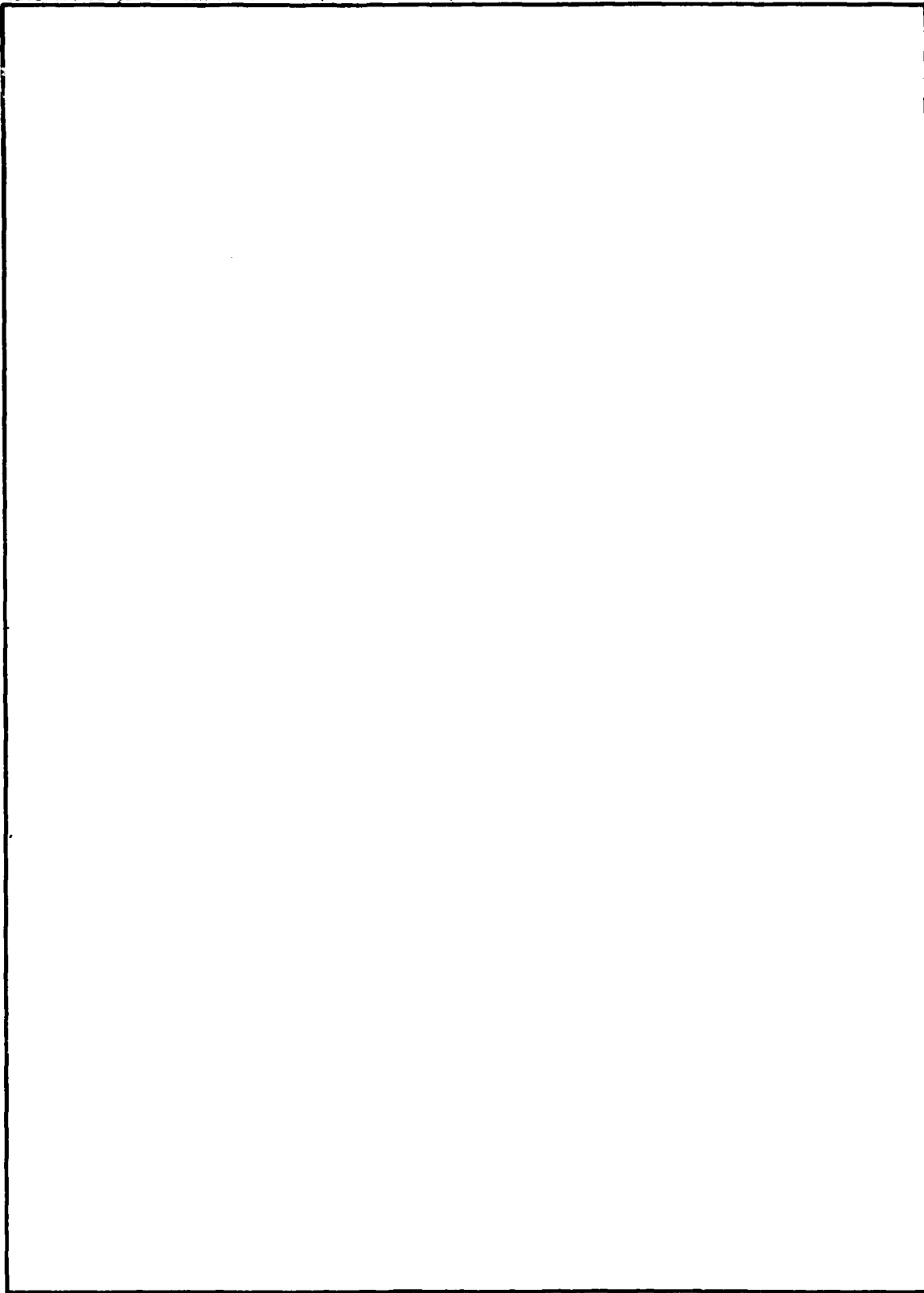
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of 19306B GSRs, Missile Numbers 1043, 1045, Round Numbers V-64, V-65, are presented in tabular form.		

410

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CONTENTS

	PAGE
INTRODUCTION -----	1
DISCUSSION -----	1
MAP -----	2
 TABLES	
1. Surface Observations Taken at 1400 MDT at Snake Site -----	3
2. Snake Pilot Balloon Measured Wind Data at 1350 MDT -----	4
3. Snake Pilot-Balloon Measured Wind Data at 1400 MDT -----	6
4. Snake Pilot-Balloon Measured Wind Data at 1520 MDT -----	8
5. Snake Pilot-Balloon Measured Wind Data at 1531 MDT -----	10
6. Denver Pilot-Balloon Measured Wind Data at 1350 MDT -----	12
7. Denver Pilot-Balloon Measured Wind Data at 1400 MDT -----	14
8. Denver Pilot-Balloon Measured Wind Data at 1520 MDT -----	16
9. Denver Pilot-Balloon Measured Wind Data at 1531 MDT -----	18
10. SW 70 Significant Level Data at 1115 -----	20
11. SW 70 Upper Air Data at 1115 MST -----	21
12. SW 70 Mandatory Levels at 1115 MST -----	23
13. WSD Significant Level Data at 1420 MST -----	24
14. WSD Upper Air Data at 1420 MST -----	25
15. WSD Mandatory Levels at 1420 MST -----	30

ii

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INTRODUCTION

19306B GSRS, Missile Numbers 1043 and 1045, Round Numbers V-64 and V-65, were launched from SNAKE, White Sands Missile Range (WSMR), New Mexico, at 1400 and 1531 MDT, 17 August 1979. The scheduled launch times were 1400 and 1400:02.5 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 (gm/m^3), wind direction and speed, and cloud cover were made at the Snake 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 RPTS T-9 pibal observation at:

SITE AND ALTITUDE

Snake	900 Meters
Denver	900 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites.

SITE AND TIME

SW-70	1115 MST
WSD	1420 MST

TABLE 1. Surface Observations Taken at 1400 MDT,
 17 August 1979, at Snake Site, 19306B (SPS
 Missile Numbers 1043, 1045, Round Numbers
 V-64 and V-65.

ELEVATION		FT/MSL
PRESSURE	864.8	MBS
TEMPERATURE	26.3	°C
RELATIVE HUMIDITY	62	%
DEW POINT	18.4	°C
DENSITY	998	GM/M ³
WIND SPEED	04	MPH
WIND DIRECTION	190	DEGREES
CLOUD COVER	3	Cu
CLOUD COVER	1	Ac
CLOUD COVER	5	Cs

PILOT BALLOON MEASURED WIND DATA*
(30 meter increments)

TABLE 2

RELEASED FROM Snake Site DATE 17 August 1979 TIME 1350 MDT

MISSILE TYPE 19306B GSPS MISSILE Nos. 1043, 1045 ROUND Nos. V-64, V-65

MISSILE LAUNCHED FROM Snake Site DATE 17 August 1979 TIME 1400, 1531 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHTS - METERS AGL

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
SFC	M	M
30	351	0.6
60	346	1.2
90	168	3.0
120	166	6.3
150	167	8.3
180	168	11.5
210	176	10.8
240	185	10.5
270	179	9.6
300	169	8.1
330	186	8.3
360	202	8.4

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
390	197	7.3
420	189	6.4
450	184	6.5
480	177	6.8
510	191	6.0
540	217	6.3
570	192	5.3
600	180	5.4
630	182	5.7
660	184	6.0
690	166	5.6
720	147	5.7
750	149	6.6

DELAS-MS-MT-WS Form 46A
1 APRIL 79

4

Replaces AMSEL-BL-MT-WS Form 46
which are obsolete.

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
780	149	7.4
810	147	6.6
840	137	5.1
870	141	3.5
900	146	2.7
930		
960		
990		
1020		
1050		
1080		
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

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

PILOT BALLOON MEASURED WIND DATA*
(3.0 meter increments)

TABLE 3

RELEASED FROM Snake Site DATE 17 August 1979 TIME 1400 MDT

MISSILE TYPE 19306 B GPS MISSILE NOS. 1043, 1045 ROUND NOS. V-64, V-65

MISSILE LAUNCHED FROM Snake Site DATE 17 August 1979 TIME 1400, 1531 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHTS - METERS AGL

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
SFC	M	M
30	202	0.5
60	202	0.5
90	201	1.4
120	203	2.3
150	195	3.4
180	193	4.6
210	174	4.4
240	156	4.7
270	168	8.2
300	173	11.8
330	180	12.4
360	188	13.2

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
390	175	10.6
420	154	9.0
450	160	8.0
480	166	7.0
510	192	7.0
540	214	8.1
570	205	8.8
600	196	9.7
630	196	8.2
660	196	6.8
690	181	9.2
720	172	12.0
750	171	10.6

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
780	171	9.1
810	177	9.9
840	189	10.9
870	193	8.2
	212	6.0
930		
960		
990		
1020		
1050		
1080		
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

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

PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM SNAKE SITE DATE 17 August 1979 TIME 1520 MDTMISSILE TYPE 19306 B GSRS MISSILE NOS. 1043, 1045 ROUND NOS. V-64, V-65MISSILE LAUNCHED FROM SNAKE SITE DATE 17 August 1979 TIME 1400, 1531 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHTS - METERS AGL.

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
SFC	M	M
30	090	0.1
60	090	0.1
90	090	0.1
120	090	0.1
150	131	1.8
180	132	3.5
210	156	3.5
240	177	4.0
270	185	8.1
300	187	12.3
330	196	12.9
360	203	13.6

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
390	205	13.5
420	205	13.3
450	195	14.5
480	187	16.1
510	184	14.6
540	179	13.2
570	176	14.4
600	173	15.6
630	169	17.1
660	165	18.7
690	173	17.6
720	182	16.9
750	184	17.2

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
780	186	17.4
810	179	16.5
840	171	15.9
870	178	15.6
900	185	15.5
930		
960		
990		
1020		
1050		
1080		
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

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

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1 APRIL 79

PILOT BALLOON MEASURED WIND DATA*

TABLE 5RELEASED FROM SNAKE SITE DATE 17 August 1979 TIME 1531 MDTMISSILE TYPE 19306 B GSRS MISSILE NOS. 1043, 1045 ROUND NOS. V-64, V-65MISSILE LAUNCHED FROM SNAKE SITE DATE 17 August 1979 TIME 1400, 1531 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHTS - METERS AGL.

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
SFC	M	M
30	090	0.1
60	090	0.1
90	180	3.8
120	180	7.5
150	195	10.8
180	202	14.4
210	202	15.6
240	201	16.7
270	209	9.3
300	196	11.0
330	164	12.6
360	166	15.1

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
390	166	14.1
420	166	13.2
450	163	12.7
480	164	12.2
510	156	12.0
540	151	12.1
570	145	10.7
600	135	9.6
630	139	9.9
660	143	10.2
690	149	9.8
720	156	9.7
750	163	9.8

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
780	171	10.1
810	160	10.0
840	149	10.2
870	153	9.8
900	156	9.5
930		
960		
990		
1020		
1050		
1080		
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

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

PILOT BALLOON MEASURED WIND DATA
(30 meter increments)

TABLE 6

RELEASED FROM DENVER SITE DATE 17 Aug 79 TIME 1350 MST

MISSILE TYPE 19306 B GSPS MISSILE NO. 1043, 1045 ROUND NO. V-64, V-65

MISSILE LAUNCHED FROM SNAKE SITE DATE 17 August 1979 TIME 1400, 1531, MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
SFC	M	M
30	225	1.1
60	225	1.1
90	194	0.4
120	90	0.5
150	188	3.1
180	192	6.7
210	186	4.6
240	170	2.8
270	198	4.3
300	209	6.4
330	211	7.9
360	213	9.5

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
390	205	8.1
420	194	6.8
450	196	9.0
480	198	11.3
510	197	10.3
540	195	9.5
570	195	8.3
600	196	7.1
630	188	7.2
660	181	7.4
690	174	4.8
720	149	2.6
750	184	1.4

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
780	215	3.2
810	204	3.2
840	195	3.4
870	198	2.3
900	207	1.3
930	202	0.5
960		
990		
1020		
1050		
1080		
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

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

PILOT BALLOON MEASURED WIND DATA

TABLE 7

RELEASED FROM DENVER SITE DATE 17 August 1979 TIME 1400 MDTMISSILE TYPE 19306B GSRS MISSILE NOs. 1043, 1045 ROUND NOs. V-64, V-65MISSILE LAUNCHED FROM SNAKE SITE DATE 17 August 1979 TIME 1400, 1531 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHTS - METERS AGL.

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
SFC	M	M
30	M	M
60	M	M
90	M	M
120	M	M
150	M	M
180	M	M
210	M	M
240	M	M
270	M	M
300	M	M
330	M	M
360	M	M

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
390	M	M
420	M	M
450	197	7.3
480	200	7.4
510	204	7.5
540	205	7.5
570	212	7.1
600	218	6.5
630	223	5.9
660	213	6.3
690	225	7.1
720	239	5.8
750	242	5.2

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
780	224	2.9
810	225	2.8
840	180	1.0
870	270	2.1
900	315	4.2
930	315	5.7
960		
990		
1020		
1050		
1080		
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

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

PILOT BALLOON MEASURED WIND DATA

TABLE 8RELEASED FROM DENVER SITE DATE 17 August 1979 TIME 1520 MDTMISSILE TYPE 19306B GSRS MISSILE NOS. 1043, 1045 ROUND NOS. V-64, V-65MISSILE LAUNCHED FROM SNAKE SITE DATE 17 August 1979 TIME 1400, 1531 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHTS - METERS AGL.

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
SFC	187	8.1
30	187	8.3
60	187	8.7
90	187	8.9
120	187	8.9
150	187	8.9
180	187	8.9
210	189	8.6
240	193	8.7
270	206	9.2
300	204	9.9
330	201	11.8
360	201	11.8

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
390	201	11.9
420	201	12.6
450	200	12.1
480	199	12.5
510	198	12.6
540	196	11.6
570	201	8.5
600	196	7.4
630	194	8.3
660	195	9.0
690	196	9.6
720	197	9.7
750	186	9.6

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
780	185	7.1
810	189	6.1
840	195	5.7
870	192	5.6
900	191	5.5
930	187	4.9
960		
990		
1020		
1050		
1080		
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

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

PILOT BALLOON MEASURED WIND DATA

TABLE 9

RELEASED FROM DENVER SITE DATE 17 August 1979 TIME 1531 MDT

MISSILE TYPE 19306 B GSRS MISSILE NOs. 1043, 1045 ROUND NOs. V-64, V-65

MISSILE LAUNCHED FROM SNAKE SITE DATE 17 August 1979 TIME 1400, 1531 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT - METERS AGL.

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
SFC	M	M
30	210	8.1
60	207	8.6
90	205	9.0
120	201	9.3
150	199	9.3
180	195	8.9
210	190	8.3
240	188	8.0
270	188	7.5
300	193	7.2
330	196	7.2
360	196	7.2

HEIGHT AGL	DIRECTION DEGREES	SPEED MPH
390	192	7.5
420	188	8.3
450	188	9.1
480	189	10.1
510	196	11.2
540	197	12.0
570	202	12.3
600	209	12.1
630	209	11.2
660	207	10.6
690	203	10.6
720	201	11.5
750	198	13.5

STATION ALTITUDE 4995.50 FEET MSL
 17 AUG. 79
 ASCENSION NO. 3

SIGNIFICANT LEVEL DATA
 2290230003
 SW 70

TABLE 10

GEODETIC COORDINATES 33.30888 LAT DEG 106.40406 LON DEG	STATION ALTITUDE 4995.50 FEET MSL 17 AUG. 79 ASCENSION NO. 3	SIGNIFICANT LEVEL DATA 2290230003 SW 70	TABLE 10	REL. HUM. PERCENT	
	PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	
	872.0	4395.5	22.8	15.0	64.0
	862.0	4724.7	20.1	13.3	65.0
	850.0	5121.5	18.3	12.1	67.0
	790.5	7147.0	12.0	11.5	97.0
	781.1	7476.7	11.4	6.7	73.0
	774.6	7707.0	12.8	5.7	54.0
	726.4	9397.3	10.1	1.5	55.0
	700.0	10478.7	6.8	.5	63.0
	657.6	12156.8	3.0	.9	56.0
	649.0	12507.9	3.0	-.8	76.0
	623.4	13576.7	.7	-2.7	78.0
	614.8	13944.4	1.4	-5.1	62.0
	593.0	14898.5	.0	-6.8	60.0
	581.4	15417.8	-1.2	-10.1	31.0
	557.0	16536.4	-3.7	-20.0	25.0
	525.2	18054.5	-6.6	-29.5	19.0
	500.0	19310.1	-9.7	-28.4	24.0
	479.2	20383.5	-12.3	-31.7	18.0
	464.4	21172.2	-12.2	-37.5	10.0
	442.6	22378.4	-13.4	-34.4	15.0
	400.0	24801.2	-19.7	-37.9	18.0
	387.4	25659.6	-22.0	-36.8	20.0
	380.8	26075.4	-22.3	-43.8	12.0
	367.6	26925.0	-24.3	-43.4	15.0

UPPER AIR DATA
2290230003
SW 70
TABLE 11

STATION ALTITUDE 4395.50 FEET MSL
17 AUG. 79
ASCENSION NO. 3 1115 HRS MST

GEODETIC COORDINATES
33.36888 LAT DEG
106.40406 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY G/M ³ CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
4395.5	872.0	22.8	64.0	1016.5	672.8	0	0	1.000304
4500.0	866.8	21.9	64.3	1011.1	671.7	119.1	.1	1.000301
5000.0	853.7	18.9	65.4	1011.9	667.9	119.1	.8	1.000290
5500.0	839.6	17.1	72.6	999.9	665.9	119.1	1.5	1.000287
6000.0	823.7	15.6	80.0	987.4	664.1	119.1	2.2	1.000284
6500.0	809.0	14.0	87.4	975.0	662.3	119.1	2.9	1.000282
7000.0	794.7	12.5	94.8	963.0	660.5	113.7	1.5	1.000278
7500.0	780.4	11.5	71.1	950.5	658.9	338.8	.5	1.000257
8000.0	766.4	12.3	54.2	931.8	659.5	319.5	1.9	1.000244
8500.0	752.6	11.5	54.5	917.5	658.5	318.5	3.3	1.000239
9000.0	739.0	10.7	54.8	903.8	657.8	344.9	3.9	1.000235
9500.0	725.7	9.8	55.8	890.3	656.5	1.3	4.7	1.000230
10000.0	712.4	8.3	59.5	878.9	654.7	12.5	4.9	1.000227
10500.0	699.4	6.8	63.3	867.6	652.9	24.2	4.6	1.000223
11000.0	686.9	5.6	70.1	854.9	651.8	40.2	4.1	1.000222
11500.0	673.9	4.5	77.0	842.5	650.3	38.2	3.2	1.000220
12000.0	661.5	3.4	63.9	830.2	649.0	12.9	2.2	1.000217
12500.0	649.2	3.0	75.2	818.2	648.5	282.5	2.7	1.000211
13000.0	637.1	1.9	76.9	804.2	647.2	287.4	5.7	1.000206
13500.0	625.2	1.9	77.9	792.4	645.9	281.5	9.2	1.000202
14000.0	613.5	1.3	61.9	776.7	645.2	260.1	12.1	1.000194
14500.0	602.0	.6	60.8	764.3	645.3	293.0	13.5	1.000190
15000.0	590.7	-2.2	54.3	752.4	644.3	267.2	14.0	1.000184
15500.0	579.6	-1.4	30.6	742.1	642.8	274.0	13.5	1.000174
16000.0	568.6	-2.5	27.9	731.1	641.2	273.0	13.6	1.000170
16500.0	557.8	-3.6	25.2	720.3	639.8	273.0	13.9	1.000167
17000.0	547.1	-4.6	23.2	709.2	639.7	267.0	14.1	1.000163
17500.0	536.6	-5.5	21.2	698.1	637.5	261.4	14.4	1.000160
18000.0	526.3	-6.5	19.2	687.2	636.3	281.9	14.1	1.000157
18500.0	516.1	-7.7	20.8	677.0	634.9	259.7	13.5	1.000155
19000.0	506.1	-8.9	22.8	666.9	633.4	252.3	12.6	1.000152
19500.0	496.3	-10.2	22.9	657.0	631.9	253.3	13.2	1.000150
20000.0	486.5	-11.4	20.1	647.2	630.4	223.8	15.8	1.000147
20500.0	477.0	-12.3	16.8	636.8	629.3	213.8	20.8	1.000144
21000.0	467.6	-12.2	11.7	624.1	629.4	211.8	26.7	1.000141
21500.0	458.4	-12.5	11.4	612.0	629.0	209.8	29.5	1.000138
22000.0	449.3	-13.0	13.4	601.5	628.4	208.3	31.3	1.000136
22500.0	440.4	-13.7	13.1	591.2	627.8	203.2	29.8	1.000133
23000.0	431.6	-15.0	15.7	582.2	626.1	203.7	28.4	1.000131
23500.0	423.0	-16.2	16.3	573.4	624.5	200.8	27.3	1.000129

STATION ALTITUDE 4395.50 FEET MSL
 17 AUG. 79
 ASCENSION NO. 3

UPPER AIR DATA
 2290230005
 SW 70

4395.50 FEET MSL
 1115 HRS MST

GEODETIC COORDINATES
 33.36888 LAT DEG
 106.44406 LON DEG

TABLE 11 (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	# INCL DATA DIRECTIO, DEGREES (H)	SPEED KNOTS	INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE						
4400.0	414.5	-17.5	-36.6	16.9	564.7	623.0	198.7	27.1	1.000127
4500.0	406.2	-18.7	-37.3	17.5	555.1	621.5	197.1	27.3	1.000125
4500.0	398.1	-20.1	-38.0	18.3	547.8	619.8	197.9	29.2	1.000123
4550.0	390.0	-21.5	-38.6	19.6	539.8	618.0			1.000122
4600.0	382.0	-22.2	-42.7	13.5	530.3	617.1			1.000119
4650.0	374.1	-23.3	-43.6	13.5	521.0	615.8			1.000117

STATION ALTITUDE 4395.50 FEET MSL
 17 AUG. 79
 ASCENSION NO. 3

WIND DIRECTION
 240-250-000
 TO
 TABLE 12

GEODETIC COORDINATES
 33.36888 LAT DEG
 106.40406 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUMID. PERCENT	WIND DATA	
		AIR DEGREES CENTIGRADE	TEMP. DEGREES CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
650.0	5118.	18.3	12.1	67.	119.1	1.0
800.0	6012.	13.0	11.0	52.	117.0	2.2
750.0	6589.	11.4	2.0	50.	323.9	3.4
700.0	10469.	9.8	.3	63.	23.5	4.7
650.0	12454.	5.9	-0.0	77.	296.8	4.5
600.0	14573.	.5	-6.2	81.	203.4	13.8
550.0	16244.	-4.3	-21.9	24.	200.8	14.0
500.0	19284.	-9.7	-26.4	24.	245.3	12.5
450.0	21931.	-13.0	-35.3	13.	200.5	31.5
400.0	24641.	-19.7	-37.9	16.	197.7	28.7

GEOMETRIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

UPPER AIR DATA
 2490000000
 WATE 3000

STATION ALTITUDE 38800 FEET MSL
 47 AUG 79 1400 HRS MST
 ASCENSAON NO. 309

TABLE 14

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	TEMPERATURE DEVIATION CENTIGRADE	REL. HUM. PERCENT	DENSITY G/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION SPEED KNOTS	INDEX OF REFRACTION:
38800.0	800.4	24.5	13.4	50.0	1029.4	674.3	150.0	1.000295
4000.0	800.1	24.5	13.4	50.1	1029.4	674.3	150.1	1.000295
4500.0	809.7	22.5	12.7	53.9	1018.1	674.1	150.3	1.000291
5000.0	814.6	20.6	12.0	57.6	1007.2	669.8	161.3	1.000269
5500.0	819.0	19.1	12.0	53.4	994.7	666.1	165.4	1.000264
6000.0	824.8	17.7	12.1	59.6	981.5	660.0	168.2	1.000262
6500.0	810.3	16.3	12.1	76.1	960.6	655.0	163.5	1.000260
7000.0	799.0	15.0	12.0	82.5	950.0	650.0	159.4	1.000277
7500.0	791.9	13.7	11.7	57.7	943.4	644.0	171.0	1.000274
8000.0	787.8	12.7	10.3	55.3	927.9	630.7	172.0	1.000265
8500.0	753.9	11.7	8.9	62.6	915.0	633.4	167.7	1.000258
9000.0	740.3	10.6	7.5	69.4	903.5	630.4	173.0	1.000250
9500.0	727.0	9.8	6.2	75.6	890.0	630.9	172.1	1.000243
10000.0	713.9	8.8	4.3	73.2	877.9	633.7	170.0	1.000237
10500.0	701.0	7.9	3.4	74.2	860.0	634.0	169.3	1.000230
11000.0	689.2	6.0	2.5	74.2	853.1	633.1	169.0	1.000225
11500.0	673.6	5.7	1.2	73.0	840.9	631.0	169.3	1.000220
12000.0	663.1	4.7	-0.6	67.0	823.0	630.0	162.1	1.000213
12500.0	650.8	3.6	-3.0	61.1	810.0	624.0	161.0	1.000206
13000.0	638.8	2.9	-4.8	57.0	804.2	620.1	162.2	1.000200
13500.0	626.9	2.0	-4.2	63.3	791.0	617.1	163.9	1.000199
14000.0	615.2	1.1	-4.3	66.9	773.2	613.1	163.0	1.000190
14500.0	603.0	.3	-10.8	42.8	767.7	614.0	162.2	1.000185
15000.0	592.3	-0.5	-13.4	36.8	755.7	613.7	163.4	1.000179
15500.0	581.1	-1.4	-12.2	43.3	743.7	614.7	162.2	1.000178
16000.0	570.1	-2.3	-14.0	40.0	732.3	614.0	169.2	1.000174
16500.0	559.3	-3.0	-21.1	23.1	720.7	613.0	164.4	1.000166
17000.0	548.0	-3.6	-24.7	17.3	709.3	613.0	163.0	1.000162
17500.0	533.1	-4.7	-26.2	15.6	697.9	613.5	163.0	1.000159
18000.0	527.7	-6.0	-27.5	15.2	687.7	613.0	163.4	1.000157
18500.0	517.5	-7.2	-29.9	15.3	677.8	613.4	164.4	1.000154
19000.0	507.6	-8.6	-30.2	15.3	667.7	613.0	165.0	1.000151
19500.0	497.7	-9.9	-32.3	13.9	658.2	614.0	165.0	1.000149
20000.0	488.0	-10.7	-35.7	10.5	647.0	614.0	167.1	1.000146
20500.0	475.4	-11.0	-36.3	10.1	631.7	613.0	167.0	1.000143
21000.0	466.3	-12.1	-37.1	10.3	620.0	613.0	168.9	1.000141
21500.0	459.5	-13.2	-37.3	10.3	613.7	613.1	168.7	1.000138
22000.0	450.3	-14.0	-38.5	11.0	600.0	613.0	168.0	1.000136
22500.0	441.3	-15.1	-39.2	11.0	585.0	613.0	168.0	1.000134
23000.0	432.5	-16.5	-39.9	11.2	567.1	614.1	168.0	1.000132

UPPER AIR DATA
 280000000
 WHITE BRASS

STATION ALTITUDE 3989.00 FEET MSL
 17 AUG. 79
 ASCENDING NO. 309

GEOMETRIC COORDINATES
 32.40043 LAT DEG
 105.37033 LON DEG

TABLE 14 (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	RELATIVE HUMIDITY PERCENT	DENSITY G/G CM ³ METERS	SPEED OF SOUND M/SEC	DIRECTION DEGREES (TR)	WIND SPEED (MPH) KNOTS	INDEX OF REFRACTION
4350.00	429.9	-17.9	11.4	577.9	625.0	219.2	27.5	1.000130
4300.00	419.4	-16.7	11.6	580.6	624.4	210.2	29.6	1.000128
4250.00	407.2	-15.9	11.5	587.9	620.1	217.0	31.8	1.000120
4200.00	397.0	-15.9	11.9	587.9	616.0	217.0	34.1	1.000124
4150.00	389.9	-16.3	11.1	590.7	613.2	210.0	36.4	1.000121
4100.00	382.9	-16.8	10.3	593.7	617.7	214.0	35.3	1.000119
4050.00	379.1	-16.7	10.0	592.0	616.9	210.9	40.0	1.000117
4000.00	367.3	-15.9	10.0	593.2	615.2	209.9	41.4	1.000115
3950.00	359.5	-15.9	10.0	593.3	615.6	207.4	42.5	1.000113
3900.00	352.2	-15.1	16.1	493.0	612.5	207.9	44.9	1.000111
3850.00	344.8	-14.2	27.0	469.0	611.1	202.0	48.1	1.000110
3800.00	337.6	-13.5	35.6	435.2	609.7	195.0	50.3	1.000106
3750.00	329.5	-12.4	44.6	409.0	609.0	194.7	52.2	1.000107
3700.00	323.5	-10.5	53.5	454.0	608.9	184.0	52.0	1.000105
3650.00	319.7	-11.7	62.0	450.9	609.0	167.9	52.4	1.000103
3600.00	310.1	-12.0	71.1	449.0	614.1	160.2	52.6	1.000102
3550.00	303.5	-13.1	69.0	442.1	606.5	162.0	53.4	1.000100
3500.00	297.0	-13.0	61.5	434.9	608.9	160.9	54.1	1.000098
3450.00	292.5	-11.2	61.5	427.0	611.0	174.2	54.6	1.000096
3400.00	284.6	-10.7	55.1	420.0	617.0	179.1	58.4	1.000095
3350.00	277.0	-9.0	52.7	410.0	620.2	177.1	58.3	1.000093
3300.00	271.9	-8.5	51.1	400.0	624.4	176.6	60.1	1.000091
3250.00	265.9	-8.0	49.3	391.1	621.7	178.0	61.9	1.000090
3200.00	260.0	-7.0	47.4**	380.0	623.0	170.9	61.7	1.000088
3150.00	254.2	-6.5	20.0**	367.2	623.2	173.2	61.3	1.000086
3100.00	249.5	-6.0		360.0	621.5	174.2	60.3	1.000085
3050.00	244.7	-5.1		351.0	620.7	170.2	59.3	1.000083
3000.00	241.1	-4.0		337.4	621.1	172.7	57.8	1.000082
2950.00	231.0	-3.5		324.0	621.0	174.4	55.4	1.000080
2900.00	220.3	-3.0		310.0	620.0	170.2	55.6	1.000079
2850.00	211.1	-2.1		300.0	620.2	174.1	54.6	1.000078
2800.00	210.9	-1.4		291.0	617.0	170.0	53.0	1.000076
2750.00	200.1	-0.9		280.0	620.0	174.0	51.1	1.000075
2700.00	201.2	-0.1		270.0	620.2	170.9	46.4	1.000074
2650.00	195.6	-0.2		260.0	620.0	181.0	42.3	1.000072
2600.00	190.0	-0.3		247.1	620.0	184.7	39.5	1.000071
2550.00	187.5	-0.3		231.1	620.0	184.7	37.1	1.000069
2500.00	187.5	-0.3		200.0	620.0	184.7	42.0	1.000067
2450.00	180.0	-0.3		200.0	620.0	184.7	45.0	1.000065
2400.00	178.7	-0.0		200.0	617.0	185.9	49.2	1.000064

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

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

UPPER AIR DATA
2420020009
WIDE SWING

STATION ALTITUDE 3489.00 FEET MSL
17 AUG. 79
ASCENSION NO. 359

TABLE 14 (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY WATER G/CM ³	SPEED SOUND KNOTS	WIND DIRECTION DEGREES (T.)	WIND SPEED KNOTS	INJEX OF REFRACTION
4350.0	174.5	-55.1		275.7	575.3	240.5	52.7	1.000062
4400.0	170.4	-54.8		271.6	575.7	245.0	55.3	1.000061
4450.0	166.3	-54.8		265.9	574.4	245.0	58.0	1.000059
4500.0	162.4	-55.7		261.4	573.1	249.1	59.5	1.000058
4550.0	158.5	-57.7		255.8	571.9	245.0	60.7	1.000057
4600.0	154.8	-59.0		251.4	570.8	249.0	56.3	1.000056
4650.0	151.1	-59.0		245.5	569.3	240.2	48.2	1.000055
4700.0	147.5	-60.3		241.5	568.4	250.0	40.3	1.000054
4750.0	143.9	-61.5		237.1	567.7	257.6	32.9	1.000053
4800.0	140.4	-61.4		231.0	567.0	261.1	26.9	1.000052
4850.0	137.0	-61.9		225.9	566.2	267.4	25.6	1.000049
4900.0	133.7	-62.4		221.0	565.5	261.4	21.9	1.000048
4950.0	130.5	-63.0		216.2	564.8	261.4	18.5	1.000047
5000.0	127.3	-63.5		211.5	564.1	255.1	18.4	1.000046
5050.0	124.2	-64.1		207.0	563.5	252.7	18.4	1.000045
5100.0	121.2	-65.0		202.6	562.1	243.7	21.3	1.000045
5150.0	118.2	-66.0		198.0	560.7	209.6	25.1	1.000044
5200.0	115.3	-67.1		194.9	559.2	210.7	28.7	1.000043
5250.0	112.4	-68.2		191.0	557.3	212.0	22.5	1.000043
5300.0	109.5	-69.0		189.5	555.5	210.8	27.4	1.000041
5350.0	106.9	-69.9		186.5	553.9	221.7	24.4	1.000040
5400.0	104.3	-69.3		183.0	552.3	220.1	20.9	1.000039
5450.0	101.7	-69.3		179.4	550.3	217.5	17.4	1.000038
5500.0	99.2	-69.3		167.0	548.4	213.6	16.4	1.000037
5550.0	96.7	-69.2		162.8	546.5	210.2	16.7	1.000036
5600.0	94.3	-69.0		158.7	544.7	209.4	15.2	1.000035
5650.0	92.0	-69.9		154.7	543.0	199.9	10.6	1.000034
5700.0	89.7	-69.5		150.6	541.0	192.0	6.4	1.000034
5750.0	87.5	-69.7		147.0	539.1	182.0	5.6	1.000033
5800.0	85.4	-69.5		143.5	537.1	164.4	10.5	1.000032
5850.0	83.3	-69.5		139.7	535.4	160.2	12.2	1.000031
5900.0	81.2	-69.2		136.1	533.7	141.0	13.1	1.000030
5950.0	79.3	-69.6		132.4	532.0	130.6	13.2	1.000029
6000.0	77.5	-69.1		128.6	530.5	120.6	12.2	1.000029
6050.0	75.4	-69.0		125.3	529.1	111.2	11.2	1.000028
6100.0	73.5	-68.9		121.9	527.9	100.0	10.9	1.000027
6150.0	71.8	-68.7		118.5	526.7	105.4	10.6	1.000026
6200.0	70.1	-68.7		114.5	525.5	105.4	11.5	1.000025
6250.0	68.4	-68.5		110.5	524.0	105.4	10.7	1.000025
6300.0	66.7	-68.2		106.7	522.2	109.2	11.5	1.000024

UPPER AIR DATA
 249027359
 WHITE BR 153

GEOMETRIC COORDINATES
 32.40043 LAT DEG
 106.37333 LOG DEG

STATION ALTITUDE 3009.00 FEET MSL
 17 AUG. 79 1:20 PMS MST
 ASCENSION NO. 309

TABLE 14 (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE MIN DEGREE CELSIUS	REL. HUM. PERCENT	DENSITY GR/CM ³	SPEED OF SOUND M/SEC	WIND DIRECTION (DEGREES TRUE)	WIND SPEED (KNOTS)	INDEX OF REFRACTION
0500.0	55.1	-51.0	100.0	567.5	137.7	12.6	1.000024	
0500.0	53.9	-50.7	104.5	567.0	139.7	14.2	1.000023	
0500.0	52.1	-50.4	101.0	555.2	132.0	14.1	1.000023	
0500.0	50.0	-50.2	99.1	545.0	121.9	13.9	1.000022	
0500.0	49.1	-50.2	90.0	535.0	110.0	14.2	1.000022	
0500.0	47.7	-50.7	94.2	533.2	99.7	15.4	1.000021	
0500.0	46.3	-51.4	81.0	531.0	90.0	17.7	1.000020	
0700.0	50.0	-50.2	89.5	530.9	77.7	19.1	1.000020	
0700.0	49.7	-50.9	67.5	531.2	71.9	19.3	1.000019	
0800.0	52.4	-50.7	50.1	530.5	69.5	20.5	1.000019	
0900.0	51.1	-50.4	62.9	529.9	74.4	19.7	1.000018	
0900.0	49.9	-50.2	81.9	521.2	73.5	19.0	1.000018	
0900.0	48.7	-50.4	79.0	519.9	75.0	18.3	1.000018	
0900.0	47.6	-50.3	77.1	521.0	61.7	17.7	1.000017	
0900.0	46.4	-50.6	73.5	522.0	60.0	17.3	1.000017	
0900.0	45.3	-50.3	70.5	523.1	60.0	17.1	1.000016	
0900.0	44.2	-50.0	71.0	524.1	69.4	16.9	1.000016	
0900.0	43.2	-50.2	69.1	525.2	93.1	16.5	1.000015	
0900.0	42.2	-50.4	57.2	525.2	67.5	16.0	1.000015	
0900.0	41.2	-50.6	50.4	527.2	64.5	19.3	1.000015	
0900.0	40.3	-50.0	50.7	525.0	59.2	20.5	1.000014	
0900.0	39.3	-52.0	61.2	525.0	63.4	21.3	1.000014	
0900.0	38.4	-52.6	50.7	525.0	60.0	22.1	1.000014	
0900.0	37.0	-52.1	59.3	525.9	62.9	22.4	1.000013	
0900.0	35.2	-51.9	57.0	529.2	59.9	22.2	1.000013	
0900.0	33.0	-51.5	50.4	529.0	75.9	22.1	1.000013	
0900.0	31.7	-51.5	50.1	529.5	73.0	22.0	1.000012	
0900.0	30.4	-51.2	50.0	531.1	61.0	24.0	1.000012	
0900.0	28.7	-51.0	52.0	531.5	55.5	25.3	1.000012	
0900.0	27.0	-50.8	51.2	530.0	59.7	26.2	1.000011	
0900.0	25.4	-50.6	51.0	530.9	67.0	27.1	1.000011	
0900.0	23.8	-50.3	47.0	531.4	63.0	28.0	1.000011	
0900.0	22.0	-50.1	40.5	531.0	92.4	27.7	1.000010	
0900.0	20.1	-49.9	40.1	531.1	90.5	27.5	1.000010	
0900.0	18.4	-49.7	41.0	531.1	90.4	27.9	1.000010	
0900.0	17.6	-49.4	40.2	531.7	91.2	26.2	1.000009	
0900.0	16.3	-49.2	41.2	530.5	90.5	26.2	1.000009	
0900.0	15.0	-49.0	41.2	530.5	90.2	26.2	1.000009	
0900.0	13.9	-48.3	40.2	530.3	91.2	26.2	1.000009	

STATION ALTITUDE 3489.00 FEET MSL
 17 AUG. 79 1420 HRS MST
 ASCENSION NO. 339

UPPER AIR DATA
 2290020359
 WHITE SANDS

GEODETTIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 14 (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
3550.0	25.3	-48.5		39.3	503.9			1.000009
3400.0	24.7	-46.3		38.3	504.2			1.000009

STATION ALTITUDE 3989.00 FEET MSL
 17 AUG. 79
 ASCENSION NO. 359

MANDATORY LEVELS
 24900.0009
 WHITE CLOUDS

TABLE 15

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMID.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	LEADPOINT CENTIGRADE	PERCENT	WIND DIRECTION DEGREES (TN)	SPEED KNOTS	
650.0	5152.	20.0	11.7	59.	162.0	0.1	
800.0	6057.	15.4	12.1	61.	156.2	3.7	
750.0	6843.	11.5	8.0	64.	204.1	0.3	
700.0	10529.	7.8	3.0	70.	204.9	0.1	
650.0	12932.	3.7	-3.1	84.	200.9	0.3	
600.0	14642.	.1	-13.0	88.	203.0	14.4	
550.0	16914.	-3.4	-24.2	10.	204.0	13.1	
500.0	19558.	-9.5	-31.2	13.	220.4	17.4	
450.0	22003.	-14.4	-38.0	11.	220.0	24.5	
400.0	24698.	-20.8	-42.0	12.	217.1	33.7	
350.0	27107.	-25.4	-42.2	11.	204.0	45.8	
300.0	31700.	-34.8	-53.2	11.	161.7	53.7	
250.0	35788.	-43.5			174.0	60.6	
200.0	40341.	-57.5			194.3	41.5	
175.0	43324.	-55.1			209.9	52.1	
150.0	46327.	-59.9			240.0	40.1	
125.0	50228.	-63.9			239.4	16.0	
100.0	54361.	-68.3			215.0	16.4	
80.0	59130.	-74.9			113.2	13.6	
70.0	61071.	-64.7			116.8	10.5	
60.0	64345.	-50.1			116.7	14.0	
50.0	68090.	-53.2			116.2	15.1	
40.0	73349.	-53.0			83.2	20.6	
30.0	79474.	-50.2			50.0	27.8	
25.0	83335.	-48.4					

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