

AD-A086 037

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/8 4/2
14820A LANCE, MISSILE NUMBER 4556, ROUND NUMBER 348 APT, 12 MAY--ETC(U)
MAY 80

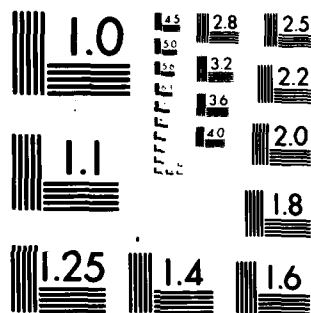
UNCLASSIFIED

ERADCOM/ASL-DR-1147

NL

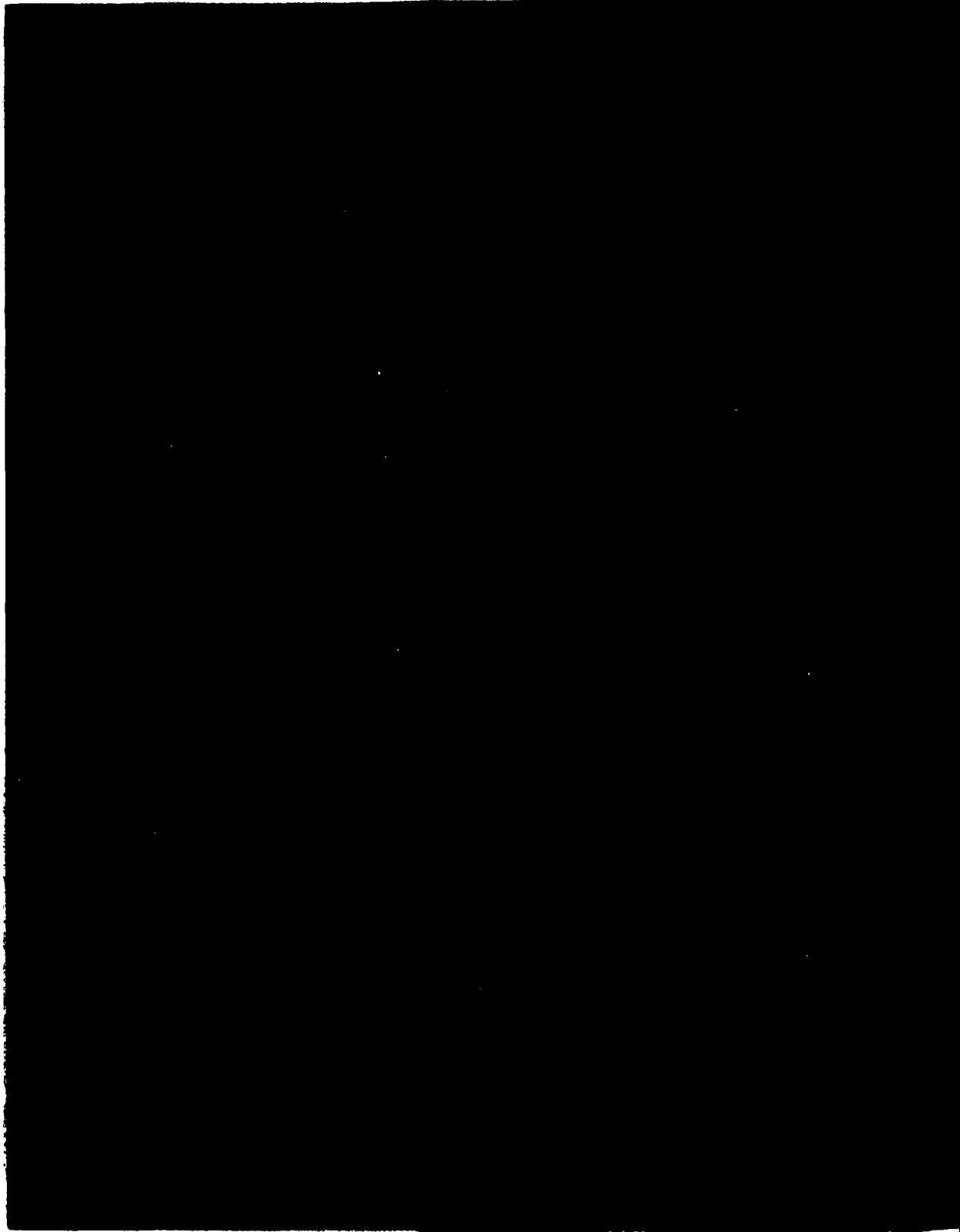
1 1 1
A
2086 37

END
DATE
FILMED
8 80
DTIC



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

ADA 086037



DISCLAIMER NOTICE

**THIS DOCUMENT IS BEST QUALITY
PRACTICABLE. THE COPY FURNISHED
TO DTIC CONTAINED A SIGNIFICANT
NUMBER OF PAGES WHICH DO NOT
REPRODUCE LEGIBLY.**

(14) ERADCOM/ASL-DR-1147

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1147	2. GOVT ACCESSION NO. A086 037	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 14820A LANCE, Missile Number 4556, Round Number 348 APT, 12 May 1980.		5. TYPE OF REPORT & PERIOD COVERED
7. AUTHOR(s) White Sands Meteorological Team		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS ? Meteorological data rept.		8. CONTRACT OR GRANT NUMBER(s) DA Task 1F665702D12702
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Research & Dev Command Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico 88002		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) US Army Electronics Research & Development Command Adelphi, MD 20783		12. REPORT DATE May 80
		13. NUMBER OF PAGES 23
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited		18a. DECLASSIFICATION/DOWNGRADING SCHEDULE
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 14820A LANCE, Missile Number 4556, Round Number 348 APT, are presented in tabular form.		

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

410663

CONTENTS

	<u>PAGE</u>
INTRODUCTION -----	1
DISCUSSION -----	1
TABLES:	
1. Surface Observation Taken at 0400 MDT at LC-39 -----	2
2. Pilot-Balloon Measured Wind Data at 0345 MDT -----	3
3. Pilot-Balloon Measured Wind Data at 0359 MDT -----	4
4. White Sands Desert Site (WSD) Significant Level Data at 0330 MDT -----	5
5. WSD Upper Air Data at 0330 MDT -----	7
6. WSD Mandatory Levels at 0330 MDT -----	12
7. Jallen Significant Level Data at 0500 MDT -----	13
8. Jallen Upper Air Data at 0500 MDT -----	15
9. Jallen Mandatory Levels at 0500 MDT -----	19

[illegible]

INTRODUCTION

14820A LANCE, Missile Number 4556, Round Number 348 APT,
was launched from LC-39, White Sands Missile Range (WSMR), New Mexico,
at 0359 MDT on 12 May 1980. The scheduled launch time was
0330 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 LC-39 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

LC 39	2160m	0345 MDT
LC 39	2400m	0359 MDT

(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	0330 MDT
Jallen	0500 MDT

TABLE 1. Surface Observations taken at 0400 MDT,
12 May 1980, at LC-39, 14820A LANCE,
Missile Number 4556, Round Number 348 APT.

ELEVATION	4064	FT/MSL
PRESSURE	875.6	MBS
TEMPERATURE	9.8	°C
RELATIVE HUMIDITY	46	%
DEW POINT	- 1.3	°C
DENSITY	1074	GM/M ³
WIND SPEED	CALM	KTS
WIND DIRECTION		DEGREES
CLOUD COVER	2	Ac

PILOT BALLOON MEASURED WIND DATA

TABLE 2

RELEASED FROM LC-39

DATE 12 May 1980

TIME 0345 MDT

COORDINATES (WSTM) X= 530,938.82 Y= 186,564.96 H= 4063.75

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH

HEIGHTS ARE METERS AGL ☒ OR FEET AGL ☐.

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
sfc	180	01
60	260	04
120	268	07
180	271	11
240	272	14
300	273	18
360	273	21
420	273	23
480	273	25
540	273	27
600	272	29
660	272	31
720	272	30
780	271	30
840	270	30
900	269	30
960	268	29
1020	268	29
1080	269	28
1140	269	27
1260	270	25
1320	272	25
1380	275	26
1440	277	26
1500	280	27
1560	282	28
1620	283	28
1680	284	28
1740	284	29
1800	285	29
1860	285	29

[illegible][illegible]

PILOT BALLOON MEASURED WIND DATA

TABLE 3

RELEASED FROM LC-39 DATE 12 May 1980 TIME 0359 MDT

COORDINATES (WSTM) X= 530,938.82 Y= 186,564.96 H= 4063.75

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH

HEIGHTS ARE METERS AGL X OR FEET AGL.

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
sfc	CALM	CALM
60	259	04
120	259	08
180	259	12
240	259	15
300	259	19
360	259	23
420	259	24
480	259	26
540	259	28
600	259	29
660	259	31
720	258	33
780	258	35
840	257	37
900	257	39
960	257	41
1020	257	41
1080	258	41
1140	259	42
1200	260	42
1260	261	42
1320	261	42
1380	260	42
1440	260	41
1500	259	41
1560	259	41
1620	258	39
1680	257	37
1740	255	35
1800	254	33

[illegible][illegible]

GEODETIC COORDINATES
32.40043 LAT DEG
106.57033 LONG DEG

SIGNIFICANT LEVEL DATA

1330020250
WHITE SANDS

TABLE 4.

STATION ALTITUDE 3989.00 FEET MSL
12 MAY 80
ASCLERION NO. 258

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
876.7	3989.0	15.2	.2	36.0
850.0	4847.8	14.3	.2	38.0
720.8	9331.0	3.5	-12.0	31.0
700.0	10110.1	2.6	-18.1	20.0
692.0	10415.1	1.9	-16.0	25.0
683.0	10761.2	.5	-8.4	31.0
673.8	11118.4	-.2	-14.9	32.0
655.4	11845.2	-1.4	-11.2	47.0
643.7	12315.8	-3.0	-8.1	08.0
610.8	13677.5	-4.7	-26.8	16.0
602.4	14035.8	-4.3	-28.5	13.0
510.8	18223.8	-14.8	-36.3	14.0
500.0	18755.3	-15.2	-35.9	15.0
464.2	20589.8	-18.5	-38.8	15.0
441.8	21796.7	-21.3	-40.9	15.0
420.0	23023.1	-22.0	-40.9	16.0
400.0	24198.7	-24.3	-42.8	16.0
338.0	28166.6	-33.2	-49.8	17.0
325.0	29073.0	-33.7		
300.0	30904.1	-38.1		
288.6	31780.2	-39.2		
250.0	34966.8	-46.9		
212.4	38482.4	-52.3		
200.0	39756.7	-55.0		
193.2	40483.0	-56.2		
171.0	43023.4	-58.9		
169.2	43243.1	-57.4		
162.4	44095.9	-58.2		
150.0	45753.0	-56.0		
112.6	51763.2	-56.4		
100.0	54219.7	-61.5		
77.6	59374.2	-64.3		

STATION ALTITUDE 3989.00 FEET MSL
12 MAY 63 0330 HRS MDT
ASCENSION NO. 258

SIGNIFICANT LEVEL DATA
1330020258
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 4 (continued)

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES	DEWPOINT CENTIGRADE	
74.6 60172.0	-63.5		
70.0 61452.6	-66.7		
63.4 63434.9	-65.7		
62.0 63890.2	-59.0		
55.8 66079.2	-57.8		
52.8 67235.1	-56.2		
50.0 68377.0	-57.0		
39.2 73497.0	-54.6		
36.6 74959.0	-51.7		
30.0 79228.1	-51.3		

STATION ALTITUDE 3989.00 FEET MSL
 12 MAY 60 0330 HRS MDT
 ASCENSION NO. 258

UPPER AIR DATA
 1330020258
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 5.

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TD)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	876.7	15.2	.2	36.0	1056.3	662.4	275.0	9.9	1.000264
4000.0	876.4	15.2	.2	36.0	1056.0	662.4	275.0	10.0	1.000264
4500.0	860.7	14.7	.2	37.2	1039.0	661.8	276.0	13.7	1.000260
5000.0	845.3	13.9	-.2	37.8	1022.9	661.0	277.5	17.5	1.000250
5500.0	829.9	12.7	-1.6	37.0	1008.7	659.5	278.1	21.3	1.000250
6000.0	814.7	11.5	-2.9	36.2	994.7	658.1	275.1	23.1	1.000243
6500.0	799.9	10.3	-4.3	35.4	980.9	656.6	269.3	24.5	1.000240
7000.0	785.3	9.1	-5.7	34.6	967.4	655.2	262.5	27.3	1.000235
7500.0	771.0	7.9	-7.0	33.9	953.9	653.7	259.5	25.2	1.000230
8000.0	757.0	6.7	-8.4	33.1	940.7	652.3	257.0	24.6	1.000225
8500.0	743.2	5.5	-9.7	32.3	927.7	650.8	253.0	28.9	1.000221
9000.0	729.6	4.3	-11.1	31.5	914.9	649.4	244.7	30.6	1.000217
9500.0	716.2	3.3	-13.2	28.6	901.5	648.1	237.7	31.8	1.000212
10000.0	702.9	2.7	-17.1	21.6	886.8	647.3	233.0	32.5	1.000206
10500.0	689.8	1.6	-13.6	31.4	873.7	646.1	233.8	32.5	1.000205
11000.0	676.8	.0	-12.5	38.3	862.0	644.3	234.8	34.3	1.000204
11500.0	664.1	-.8	-12.7	39.9	848.4	643.3	236.0	37.0	1.000201
12000.0	651.5	-1.9	-10.0	53.9	835.4	642.1	235.8	38.3	1.000201
12500.0	639.1	-3.2	-9.7	61.0	823.5	640.6	235.8	39.5	1.000199
13000.0	627.0	-3.9	-14.9	41.9	810.1	639.7	236.1	40.3	1.000191
13500.0	615.0	-4.5	-22.5	22.8	796.9	638.8	238.1	39.7	1.000183
14000.0	603.2	-4.3	-20.3	13.3	781.5	638.8	240.2	39.1	1.000177
14500.0	591.5	-5.5	-29.4	13.1	769.5	637.5	242.5	39.6	1.000174
15000.0	580.0	-6.7	-30.3	13.2	758.1	636.0	244.8	41.1	1.000171
15500.0	568.6	-8.0	-31.2	13.3	746.8	634.5	247.0	42.6	1.000169
16000.0	557.6	-9.2	-32.1	13.5	735.7	633.0	249.1	43.3	1.000166
16500.0	546.7	-10.5	-33.0	13.6	724.8	631.5	251.2	44.0	1.000164
17000.0	536.0	-11.7	-34.0	13.7	714.1	630.0	253.4	45.5	1.000161
17500.0	525.6	-13.0	-34.9	13.8	703.6	628.4	255.5	48.1	1.000158
18000.0	515.3	-14.2	-35.8	13.9	693.2	626.9	255.7	51.3	1.000156
18500.0	505.2	-15.0	-36.1	14.5	681.6	626.0	254.6	55.2	1.000153
19000.0	495.1	-15.6	-36.3	15.0	669.6	625.2	252.0	55.3	1.000151

STATION ALTITUDE 3989.00 FEET MSL
12 MAY 60 0330 HRS MDT
ASCENSION NO. 258

UPPER AIR DATA
1330020250
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 5 (continued)

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	485.1	-16.5	15.0	658.5	624.1	251.3	54.0	1.000148
20000.0	475.4	-17.4	15.0	647.6	623.0	250.3	52.8	1.000146
20500.0	465.9	-18.3	15.0	636.8	621.9	248.8	54.9	1.000143
21000.0	456.5	-19.5	15.0	626.7	620.6	247.1	59.3	1.000141
21500.0	447.2	-20.6	15.0	616.8	619.1	245.8	63.2	1.000138
22000.0	438.1	-21.4	15.2	606.2	618.2	245.2	65.2	1.000136
22500.0	429.2	-21.7	15.6	594.5	617.8	244.6	67.1	1.000133
23000.0	420.4	-22.0	16.0	583.0	617.5	244.3	69.9	1.000131
23500.0	411.8	-22.9	16.0	573.2	616.3	244.0	72.5	1.000129
24000.0	403.3	-23.9	16.0	563.6	615.1	244.0	74.8	1.000126
24500.0	394.9	-25.0	16.1	554.3	613.8	243.9	77.0	1.000124
25000.0	386.6	-26.1	16.2	545.1	612.4	244.0	77.5	1.000122
25500.0	378.5	-27.2	16.3	536.1	611.0	244.0	78.2	1.000120
26000.0	370.6	-28.3	16.5	527.3	609.6	244.1	80.6	1.000118
26500.0	362.8	-29.5	16.6	518.6	608.2	244.2	83.3	1.000116
27000.0	355.2	-30.6	16.7	510.0	606.8	244.4	86.5	1.000114
27500.0	347.7	-31.7	16.8	501.6	605.4	244.5	86.3	1.000112
28000.0	340.4	-32.8	17.0	493.4	604.0	244.4	84.4	1.000110
28500.0	333.2	-33.4	10.7**	484.0	603.3	243.7	80.6	1.000108
29000.0	326.0	-33.7	1.4**	474.2	602.9	242.5	79.7	1.000106
29500.0	319.0	-34.7		466.1	601.5	241.2	80.9	1.000104
30000.0	312.1	-35.9		458.3	600.0	240.2	84.1	1.000102
30500.0	305.3	-37.1		450.7	598.5	239.3	85.7	1.000100
31000.0	298.7	-38.2		443.0	597.1	238.5	86.9	1.000099
31500.0	292.2	-38.8		434.4	596.3	238.1	87.7	1.000097
32000.0	285.8	-39.7		426.5	595.2	237.7	88.9	1.000095
32500.0	279.4	-40.9		419.1	593.7	237.4	90.6	1.000093
33000.0	273.2	-42.1		411.9	592.1	235.8	87.3	1.000092
33500.0	267.1	-43.4		404.9	590.6	233.1	82.6	1.000090
34000.0	261.1	-44.6		398.0	589.0	229.0	76.8	1.000089
34500.0	255.3	-45.8		391.2	587.4	219.5	81.6	1.000087
35000.0	249.6	-47.0		384.4	585.9	208.9	98.7	1.000086

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

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

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

UPPER AIR DATA
13300200
WHITE SANDS

TABLE 5 (continued)

STATION ALTITUDE 3989.00 FEET MSL
12 MAY 50 0330 HRS MDT
ASCENSION NO. 258

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 (T, I)	SPEED KNOTS	INDEX OF REFRACTION
35500.0	243.9	-47.7		376.9	564.9			1.000004
36000.0	238.3	-48.5		369.5	583.9			1.000002
36500.0	232.8	-49.3		362.3	562.9			1.000001
37000.0	227.5	-50.0		355.2	561.9			1.000079
37500.0	222.3	-50.8		348.3	580.9			1.000078
38000.0	217.2	-51.6		341.5	579.9			1.000076
38500.0	212.2	-52.3		334.8	578.9			1.000075
39000.0	207.3	-53.4		328.6	577.5			1.000073
39500.0	202.4	-54.5		322.5	576.1			1.000072
40000.0	197.7	-55.4		316.3	574.9			1.000070
40500.0	193.0	-56.2		310.0	573.8			1.000069
41000.0	188.5	-56.7		303.4	573.1			1.000068
41500.0	184.0	-57.3		296.9	572.4			1.000066
42000.0	179.6	-57.8		290.6	571.7			1.000065
42500.0	175.4	-58.3		284.4	571.0			1.000063
43000.0	171.2	-58.9		278.3	570.3			1.000062
43500.0	167.1	-57.6		270.1	571.9			1.000060
44000.0	163.2	-58.1		264.3	571.3			1.000059
44500.0	159.3	-57.7		257.5	571.9			1.000057
45000.0	155.5	-57.0		250.6	572.8			1.000056
45500.0	151.8	-56.3		244.0	573.6			1.000054
46000.0	148.2	-56.0		237.8	574.1			1.000053
46500.0	144.7	-56.0		232.3	574.0			1.000052
47000.0	141.3	-56.1		226.8	574.0			1.000051
47500.0	138.0	-56.1		221.5	573.9			1.000049
48000.0	134.7	-56.1		216.3	573.9			1.000048
48500.0	131.6	-56.2		211.3	573.8			1.000047
49000.0	128.5	-56.2		206.3	573.8			1.000046
49500.0	125.4	-56.2		201.5	573.8			1.000045
50000.0	122.5	-56.3		196.8	573.7			1.000044
50500.0	119.6	-56.3		192.1	573.7			1.000043
51000.0	116.8	-56.3		187.0	573.6			1.000042

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

UPPER AIR DATA
1330020Z
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL
12 MAY 80 0330 HRS MDT
ASCENSION NO. 259

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 5 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) SPEED KNOTS	INDEX OF REFRACTION
51500.0	114.0	-56.4		183.2	573.6		1.000041
52000.0	111.3	-56.9		179.3	572.9		1.000040
52500.0	108.7	-57.9		175.9	571.5		1.000039
53000.0	106.1	-59.0		172.5	570.1		1.000038
53500.0	103.5	-60.0		169.2	568.8		1.000038
54000.0	101.1	-61.0		166.0	567.4		1.000037
54500.0	98.6	-61.7		162.5	566.6		1.000036
55000.0	96.2	-61.9		158.7	566.2		1.000035
55500.0	93.9	-62.2		155.1	565.8		1.000035
56000.0	91.6	-62.5		151.5	565.5		1.000034
56500.0	89.4	-62.7		148.0	565.1		1.000033
57000.0	87.2	-63.0		144.6	564.7		1.000032
57500.0	85.1	-63.3		141.3	564.4		1.000031
58000.0	83.0	-63.6		138.0	564.0		1.000031
58500.0	81.0	-63.8		134.8	563.6		1.000030
59000.0	79.0	-64.1		131.7	563.3		1.000029
59500.0	77.1	-64.2		128.6	563.2		1.000029
60000.0	75.2	-63.7		125.1	563.9		1.000028
60500.0	73.4	-64.3		122.4	563.0		1.000027
61000.0	71.6	-65.6		120.1	561.3		1.000027
61500.0	69.8	-66.7		117.8	559.8		1.000026
62000.0	68.1	-66.4		114.8	560.1		1.000026
62500.0	66.4	-66.2		111.8	560.5		1.000025
63000.0	64.8	-65.9		108.9	560.8		1.000024
63500.0	63.2	-64.7		105.6	562.4		1.000024
64000.0	61.7	-58.9		100.3	570.2		1.000022
64500.0	60.2	-58.7		97.8	570.5		1.000022
65000.0	58.8	-58.4		95.3	570.9	187.1	1.000021
65500.0	57.4	-58.1		93.0	571.3	180.8	1.000021
66000.0	56.0	-57.8		90.6	571.6	160.1	1.000020
66500.0	54.7	-57.2		88.2	572.5	17.2	1.000020
67000.0	53.4	-56.5		85.9	573.4	116.3	1.000019

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

STATION ALTITUDE 3989.00 FEET MSL
12 MAY 60
ASCENSION NO. 258

UPPER AIR DATA
1330020200
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 5 (continued)

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES (TN)	SPEED KNOTS	
67500.0	52.1	-56.4		83.6	573.6	89.6	26.8	1.000019
68000.0	50.9	-56.7		81.9	573.1	97.5	22.9	1.000018
68500.0	49.7	-56.9		80.1	572.8	111.5	18.6	1.000018
69000.0	48.5	-56.7		78.1	573.1	102.0	15.7	1.000017
69500.0	47.4	-56.5		76.2	573.5	205.1	27.8	1.000017
70000.0	46.3	-56.2		74.3	573.8	217.5	40.5	1.000017
70500.0	45.2	-56.0		72.5	574.1	222.6	45.1	1.000016
71000.0	44.1	-55.8		70.7	574.4	226.0	48.5	1.000016
71500.0	43.1	-55.5		69.0	574.7	222.0	27.0	1.000015
72000.0	42.1	-55.3		67.3	575.0	187.3	6.9	1.000015
72500.0	41.1	-55.1		65.7	575.3	70.4	19.1	1.000015
73000.0	40.1	-54.8		64.0	575.6	62.3	42.2	1.000014
73500.0	39.2	-54.6		62.5	575.9	60.0	50.9	1.000014
74000.0	38.3	-53.6		60.7	577.2	60.3	42.2	1.000014
74500.0	37.4	-52.6		59.1	578.5	60.1	31.8	1.000013
75000.0	36.5	-51.7		57.5	579.7	63.6	10.4	1.000013
75500.0	35.7	-51.6		56.1	579.8	233.7	11.2	1.000013
76000.0	34.9	-51.6		54.8	579.9	237.0	22.5	1.000012
76500.0	34.1	-51.6		53.6	579.9	238.3	31.1	1.000012
77000.0	33.3	-51.5		52.3	580.0	239.7	34.0	1.000012
77500.0	32.5	-51.5		51.1	580.1	242.2	30.3	1.000011
78000.0	31.8	-51.4		49.9	580.1			1.000011
78500.0	31.0	-51.4		48.7	580.2			1.000011
79000.0	30.3	-51.3		47.6	580.2			1.000011

STATION ALTITUDE 3989.00 FEET MSL
12 MAY 80 0330 HRS MDT
ASCESSION NO. 258

MANDATORY LEVELS
1330020258
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 6.

PRESSURE GEOPOTENTIAL MILLIBARS	FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUMID. PERCENT	WIND DATA	
				DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4844.	14.3	38.	277.3	16.3
800.0	6511.	10.3	35.	269.1	24.6
750.0	8260.	6.1	33.	255.1	20.9
700.0	10100.	2.6	20.	233.6	32.5
650.0	12049.	-2.1	57.	235.8	30.4
600.0	14123.	-4.6	13.	240.7	38.9
550.0	16346.	-10.1	14.	250.0	43.7
500.0	18729.	-15.2	15.	253.8	55.6
450.0	21317.	-20.3	15.	246.2	61.9
400.0	24159.	-24.3	16.	243.9	75.6
350.0	27307.	-31.4	17.	244.5	80.7
300.0	30843.	-38.1	.	238.7	80.7
250.0	34891.	-46.9	.	209.0	90.9
200.0	39661.	-55.0	.	9999.0	9999.0XX
175.0	42437.	-58.4	.	9999.0	9999.0XX
150.0	45630.	-56.0	.	9999.0	9999.0XX
125.0	49433.	-56.3	.	9999.0	9999.0XX
100.0	54052.	-61.5	.	9999.0	9999.0XX
80.0	58564.	-64.0	.	9999.0	9999.0XX
70.0	61241.	-66.7	.	9999.0	9999.0XX
60.0	64339.	-58.6	.	9999.0	9999.0XX
50.0	68120.	-57.0	.	106.5	20.0
40.0	72778.	-54.8	.	62.0	43.8
30.0	78089.	-51.3	.		

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

STATION ALTITUDE 4051.00 FEET MSL
2 MAY 80
ASCESSION NO. 129 0500 HRS MDT

SIGNIFICANT LEVEL DATA
1230030129
JALLEN

GEODETIC COORDINATES
53.16712 LAT DEG
106.49511 LONG DEG

TABLE 7.

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
878.2	4051.0	6.5	1.0	68.0
864.2	4483.8	11.8	4.5	61.0
857.0	4944.7	12.1	3.0	56.0
839.8	5277.2	12.3	3.3	54.0
770.2	7638.0	6.9	-0.5	60.0
731.8	9014.5	4.7	-2.0	58.0
700.0	10198.2	1.4	-4.2	66.0
674.4	11161.2	-0.7	-4.7	74.0
646.8	12273.7	-3.5	-8.0	71.0
610.8	13754.6	-6.6	-8.5	60.0
567.2	15641.2	-11.4	-13.7	63.0
558.6	16026.5	-11.7	-14.7	78.0
550.4	16399.0	-12.0	-19.0	53.0
525.4	17565.5	-13.5	-26.5	53.0
500.0	18799.4	-15.9	-30.9	20.0
477.2	19952.4	-17.6	-32.0	27.0
453.8	21182.2	-21.0	-36.2	24.0
438.8	21997.8	-21.7	-38.1	21.0
400.0	24214.0	-27.8	-39.9	30.0
353.0	27126.8	-35.0	-44.0	39.0
333.2	28441.6	-38.8	-45.1	63.0
331.3	28570.7	-39.0	-42.0	67.0
326.8	29079.5	-39.0	-45.1	62.0
302.0	30647.0	-42.8	-44.0	62.0
300.0	30794.5	-43.1	-45.1	60.0
287.8	31712.4	-44.7	-49.5	50.0
255.4	34320.3	-48.7		
250.0	34763.8	-48.5		
238.8	35772.9	-50.4		
233.6	36247.4	-49.1		
218.2	37716.7	-50.6		
200.0	39592.5	-49.3		
192.6	40407.2	-49.2		
171.6	42886.7	-52.1		
150.0	45726.7	-56.9		
139.0	47314.3	-57.7		
124.0	49015.5	-61.3		
107.8	52522.5	-62.3		
100.0	54040.6	-64.0		
89.8	56220.4	-64.2		

STATION ALTITUDE 4051.00 FEET MSL
 2 MAY 80
 ASCENSION NO. 129 0500 HRS MDT

SIGNIFICANT LEVEL DATA
 1230030129
 JALLEN

GEODETIC COORDINATES
 33.16712 LAT DEG
 106.49511 LON DEG

TABLE 7 (continued)

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES	WETBULB CENTIGRADE	
84.0 57575.1	-62.3		
76.0 59605.2	-64.4		
72.4 60590.1	-62.1		
70.0 61277.7	-62.4		
63.4 63287.1	-64.3		
56.2 65734.3	-62.3		
50.0 68110.6	-63.8		
47.2 69279.3	-63.4		

STATION ALTITUDE 4051.00 FEET MSL
2 MAY 60 0500 HRS MDT
ASCENSION, I.O. 129

UPPER AIR DATA
1230030129
JALLEN

GEODETIC COORDINATES
33.10712 LAT DEG
106.49511 LONG DEG

TABLE 8.

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	TEMPERATURE DEWPOINT CELSIUS	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND METERS PER SECOND	WIND DATA DIRECTION DEGREES (TRUE)	SPEED KNOTS	INDEX OF REFRACTION
4051.0	873.2	8.5	1.0	68.0	1090.9	342.4	340.0	1.9	1.000275
4000.0	863.8	11.8	4.5	60.9	1052.2	336.9	290.0	2.6	1.000274
3900.0	848.3	12.1	3.5	55.7	1032.2	339.2	400.7	4.2	1.000267
3800.0	835.0	11.8	2.9	54.6	1014.9	339.7	490.4	5.9	1.000261
3700.0	817.8	10.6	2.2	55.8	1000.6	337.4	540.1	7.6	1.000257
3600.0	803.0	9.5	1.4	57.1	986.5	336.0	640.4	4.4	1.000252
3500.0	788.4	8.4	.7	58.4	972.7	334.7	101.5	2.2	1.000247
3400.0	774.1	7.2	-.1	59.6	959.0	333.3	124.0	2.0	1.000243
3300.0	759.9	6.5	-1.0	59.5	944.0	332.2	150.7	3.2	1.000238
3200.0	745.9	5.5	-1.9	58.7	930.0	331.2	147.5	3.2	1.000233
3100.0	732.2	4.7	-2.8	58.0	915.0	330.2	153.5	3.0	1.000228
3000.0	718.6	3.3	-3.4	61.3	903.1	328.5	183.4	2.2	1.000225
2900.0	705.2	2.0	-4.0	64.7	890.9	327.0	211.1	2.2	1.000221
2800.0	692.0	.8	-4.4	68.5	876.0	325.5	220.0	2.8	1.000218
2700.0	679.0	-.3	-4.6	72.5	864.9	324.3	220.0	4.0	1.000215
2600.0	666.2	-1.5	-5.7	73.1	852.5	323.0	229.5	6.2	1.000210
2500.0	653.0	-2.8	-7.2	71.8	840.5	321.2	230.0	8.6	1.000206
2400.0	641.2	-4.0	-8.0	73.3	828.2	319.8	244.0	11.5	1.000202
2300.0	628.9	-5.0	-8.2	78.4	815.5	318.6	250.5	15.4	1.000199
2200.0	616.0	-6.1	-8.4	83.4	803.0	317.3	255.1	20.0	1.000196
2100.0	604.9	-7.2	-9.2	85.6	791.0	315.9	250.5	23.0	1.000193
2000.0	593.2	-8.5	-10.6	84.6	779.5	314.3	250.4	25.1	1.000188
1900.0	581.7	-9.8	-11.9	84.0	760.1	312.8	249.8	25.8	1.000184
1800.0	570.4	-11.0	-13.3	83.2	750.9	311.2	230.5	21.6	1.000181
1700.0	559.2	-11.7	-14.7	78.3	744.0	310.4	230.8	19.7	1.000177
1600.0	548.2	-12.1	-20.1	51.3	731.0	309.7	244.7	17.8	1.000170
1500.0	537.4	-12.8	-22.8	42.7	716.5	308.0	230.5	17.2	1.000165
1400.0	526.8	-13.4	-25.8	34.1	706.2	306.8	271.5	14.4	1.000161
1300.0	516.3	-14.3	-27.9	30.5	694.7	305.9	277.0	21.5	1.000158
1200.0	506.0	-15.3	-29.8	27.7	683.5	305.7	269.4	20.8	1.000155
1100.0	496.0	-16.2	-31.1	26.2	672.2	304.8	261.4	20.5	1.000152
1000.0	486.0	-16.9	-31.6	26.6	660.0	303.7	260.9	20.2	1.000150
900.0	476.3	-17.7	-32.2	26.9	649.4	302.7	261.5	20.5	1.000147
800.0	466.0	-19.1	-33.8	25.7	639.7	301.0	263.6	22.5	1.000145
700.0	457.2	-20.5	-35.5	24.4	630.2	300.3	263.0	24.7	1.000142
600.0	447.9	-21.3	-36.9	22.8	619.3	299.4	264.6	27.2	1.000139
500.0	438.8	-21.7	-37.1	21.0	607.0	297.8	264.9	29.3	1.000137
400.0	429.7	-23.1	-38.3	23.0	596.5	296.1	260.0	30.4	1.000135
300.0	420.8	-24.5	-39.7	25.1	589.4	294.4	260.0	31.6	1.000133
250.0	412.1	-25.8	-39.2	27.1	580.4	292.7	267.0	32.8	1.000131

STATION ALTITUDE 4051.00 FEET MSL
2 MAY 60 0500 HRS MDT
ASCESSION NO. 129

UPPER AIR DATA
1230030129
JALLEN

GEOCLTIC COORDINATES
33.16712 LAT DEG
106.49511 LONG DEG

TABLE 8 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND M/SEC	WIND DATA DIRECTION DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
2400.0	403.6	-27.2	29.1	571.0	311.0	200.0	34.4	1.000129
2450.0	395.1	-28.5	30.9	562.5	309.4	200.0	36.8	1.000126
2500.0	386.7	-29.7	32.4	553.4	307.9	200.0	39.4	1.000124
2550.0	378.5	-31.0	34.0	544.4	306.3	200.0	42.1	1.000122
2600.0	370.5	-32.2	35.5	535.0	304.8	200.0	43.7	1.000120
2650.0	362.6	-33.5	37.1	526.9	303.2	200.0	44.0	1.000118
2700.0	354.9	-34.7	38.6	518.4	301.6	207.4	44.3	1.000116
2750.0	347.3	-36.1	45.8	510.2	300.9	207.4	44.8	1.000115
2800.0	339.7	-37.5	54.9	502.2	300.1	200.7	46.2	1.000113
2850.0	332.3	-38.9	64.8	494.1	300.3	205.3	48.6	1.000111
2900.0	325.0	-40.3	54.0	484.1	300.5	204.4	50.9	1.000109
2950.0	317.9	-41.4	62.5	475.0	300.5	203.0	53.2	1.000107
3000.0	310.9	-42.5	71.0	467.2	300.1	203.4	54.8	1.000105
3050.0	304.0	-43.5	79.5	459.0	301.7	203.2	56.2	1.000103
3100.0	297.2	-44.5	75.1	450.7	300.5	201.9	57.5	1.000101
3150.0	290.6	-45.3	63.1	442.3	300.3	200.2	58.9	1.000099
3200.0	284.0	-46.1	51.6**	433.9	300.0	200.0	59.9	1.000097
3250.0	277.6	-46.9	40.5**	425.6	300.0	200.0	60.8	1.000095
3300.0	271.3	-47.7	29.4**	417.3	300.0	200.0	62.2	1.000093
3350.0	265.2	-48.4	18.3**	409.3	300.0	200.0	63.0	1.000091
3400.0	259.2	-49.2	7.1**	401.4	300.0	200.0	65.4	1.000089
3450.0	253.3	-49.8		393.0	300.0	202.9	67.3	1.000088
3500.0	247.5	-50.4		384.5	300.0	204.7	67.5	1.000086
3550.0	241.8	-50.9		377.3	300.0	200.0	66.9	1.000084
3600.0	236.3	-51.4		368.5	300.0	200.0	67.0	1.000082
3650.0	230.9	-51.9		359.4	300.0	200.0	67.3	1.000080
3700.0	225.6	-52.4		352.0	300.0	200.0	67.6	1.000078
3750.0	220.4	-52.9		344.7	300.0	204.5	68.0	1.000077
3800.0	215.3	-53.4		336.8	300.0	202.7	67.5	1.000075
3850.0	210.4	-53.9		328.6	300.0	200.5	65.6	1.000073
3900.0	205.6	-54.4		320.5	300.0	200.5	63.7	1.000071
3950.0	200.9	-54.9		312.7	300.0	200.0	61.6	1.000070
4000.0	196.3	-55.4		305.4	300.0	200.0	59.8	1.000068
4050.0	191.8	-55.9		298.5	300.0	200.0	60.0	1.000066
4100.0	187.4	-56.4		292.1	300.0	200.0	60.3	1.000065
4150.0	183.0	-56.9		286.4	300.0	200.0	61.9	1.000064
4200.0	178.8	-57.4		280.5	300.0	200.0	63.5	1.000062
4250.0	174.7	-57.9		274.8	300.0	200.0	63.1	1.000061
4300.0	170.7	-58.4		269.2	300.0	200.0	62.0	1.000060
4350.0	166.7	-58.9		263.9	300.0	200.0	61.8	1.000059

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

STATION ALTITUDE 4051.00 FEET MSL
2 JUL 60 0500 HRS MDT
ASL STATION NO. 129

UPPER AIR DATA
1230030129
JALLEN

GEODETIC COORDINATES
35.16712 LAT DEG
100.49511 LONG DEG

TABLE 8 (continued)

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND M/SEC	WIND DIRECTION DEGREES (T)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
44100.0	162.8	-54.0		250.7	570.7	250.5	61.0	1.000058
44100.0	159.0	-54.8		253.7	575.6	250.4	60.7	1.000056
44100.0	155.5	-55.7		248.7	574.5	250.1	60.7	1.000055
44100.0	151.0	-56.5		243.8	573.4	250.2	60.4	1.000054
44100.0	146.0	-57.0		238.6	572.7	250.7	60.0	1.000053
44100.0	144.5	-57.3		233.3	572.4	250.9	58.3	1.000052
44100.0	141.1	-57.5		228.0	572.0	253.1	54.2	1.000051
44100.0	137.6	-58.1		223.1	571.5	250.2	50.2	1.000050
44100.0	134.5	-58.2		218.9	570.9	250.7	46.0	1.000049
44100.0	131.2	-60.2		214.7	570.2	250.6	42.4	1.000048
44100.0	128.1	-61.3		210.0	570.1	253.7	41.6	1.000047
44100.0	125.0	-61.4		205.7	570.9	251.0	41.4	1.000046
44100.0	122.0	-61.6		200.8	570.7	250.5	41.8	1.000045
44100.0	119.0	-61.7		196.1	570.5	250.1	42.2	1.000044
44100.0	116.1	-61.9		191.5	570.3	250.5	41.5	1.000043
44100.0	113.5	-62.0		187.0	570.1	251.0	40.3	1.000042
44100.0	110.0	-62.2		182.0	570.9	251.6	38.2	1.000041
44100.0	107.9	-62.3		176.5	570.7	252.9	35.7	1.000040
44100.0	105.5	-62.8		174.4	570.5	254.1	33.2	1.000039
44100.0	102.7	-63.4		170.0	574.2	253.4	30.7	1.000038
44100.0	100.2	-63.9		166.9	573.5	257.2	28.3	1.000037
44100.0	97.8	-64.0		162.9	573.4	271.7	25.5	1.000036
44100.0	95.4	-64.1		159.0	573.5	277.2	23.0	1.000035
44100.0	93.1	-64.1		155.1	573.2	280.6	21.6	1.000035
44100.0	90.3	-64.2		151.5	573.2	283.7	20.8	1.000034
44100.0	88.6	-63.8		147.4	573.7	285.5	18.3	1.000033
44100.0	86.4	-63.1		143.3	574.0	288.3	14.6	1.000032
44100.0	84.3	-62.4		139.4	573.0	288.9	10.4	1.000031
44100.0	82.3	-62.7		136.2	573.1	283.0	7.2	1.000030
44100.0	80.3	-63.3		133.2	574.4	271.1	3.6	1.000030
44100.0	78.3	-63.3		130.3	573.7	262.4	3.9	1.000029
44100.0	76.4	-64.3		127.4	573.0	262.4	5.6	1.000028
44100.0	74.5	-63.5		123.8	574.1	260.0	6.8	1.000028
44100.0	72.7	-62.3		120.2	573.7	270.7	7.3	1.000027
44100.0	71.0	-62.3		117.2	573.7	255.7	8.0	1.000026
44100.0	69.2	-62.6		114.0	573.5	263.2	7.4	1.000025
44100.0	67.0	-63.1		112.0	574.0	271.5	6.7	1.000025
44100.0	65.9	-63.0		109.5	574.0	261.0	6.1	1.000024
44100.0	64.3	-64.0		107.1	573.4	250.0	5.6	1.000024
44100.0	62.7	-64.1		104.0	573.2	302.1	5.6	1.000023

STATION ALTITUDE 4051.00 FEET MSL
2 MAY 60 0500 HRS MDT
ASCEN, S101, NO. 129

UPPER AIR DATA
1230030129
JALLEN

GEODETTIC COORDINATES
33.10712 LAT DEG
106.49511 LON DEG

TABLE 8 (continued)

GEODETTIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND M/SEC	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES (TR)	SPEED KNOTS	
04000.0	61.2	-63.7		101.0	513.0	321.7	5.0	1.000023
04500.0	59.7	-63.3		99.1	514.3	330.2	6.0	1.000012
05000.0	58.3	-62.9		96.5	514.9	342.5	6.1	1.000022
05300.0	56.9	-62.5		94.0	515.4	345.0	5.3	1.000021
06000.0	55.5	-62.5		91.7	515.3	357	5.1	1.000020
06300.0	54.1	-62.9		89.0	515.0	37.5	6.9	1.000020
07000.0	52.8	-63.1		87.0	514.0	49.9	8.7	1.000010
07300.0	51.5	-63.4		85.0	514.2	50.9	7.4	1.000019
08000.0	50.3	-63.7		83.0	513.8			1.000019
08300.0	49.0	-63.7		81.0	513.9			1.000018
09000.0	47.9	-63.5		79.5	514.1			1.000018

STATION ALTITUDE 4051.00 FEET MSL
2 MAY 70 0500 HRS MDT
ASCESSION NO. 129

MANDATORY LEVELS
1230030129
JALLEN

MODELLING COORDINATES
33.10712 LAT DEG
100.49511 LONG DEG

TABLE 9.

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMID.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DE-POINT CENTIGRADE	PERCENT		DIRECTION DEGREES (T)	SPEED KNOTS
850.0	4941.	12.1	3.6	50.		39.2	4.0
800.0	6033.	9.3	1.3	57.		60.7	3.8
750.0	6348.	5.8	-1.6	59.		144.9	3.2
700.0	10109.	1.4	-4.2	60.		215.3	2.4
650.0	12133.	-3.2	-7.6	71.		239.1	3.4
600.0	14196.	-7.8	-9.8	85.		250.3	23.8
550.0	16397.	-12.0	-19.7	95.		243.1	10.1
500.0	18774.	-15.9	-30.9	20.		262.8	20.0
450.0	21355.	-21.2	-36.6	73.		204.0	20.6
400.0	24176.	-27.8	-39.9	50.		200.3	33.4
350.0	27275.	-35.6	-43.7	43.		267.3	44.6
300.0	30776.	-43.1	-45.1	30.		202.0	50.9
250.0	34711.	-48.5				203.9	67.7
200.0	39500.	-49.3				250.1	61.3
175.0	42363.	-51.6				257.0	63.1
150.0	45007.	-56.9				250.4	60.2
125.0	49362.	-61.4				261.0	41.4
100.0	53484.	-64.0				267.4	20.1
80.0	58378.	-63.3				209.0	3.3
70.0	61072.	-62.4				284.9	7.8
60.0	64177.	-63.4				334.5	0.4
50.0	67059.	-63.8					

DATE
FILMED
-8