

AD-A131 978

12830D LANCE MISSILE NUMBER 5355 ROUND NUMBER 388 MSC

1/1

(U) ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND
WSMR NM ATMOSPHERIC SCIENCES LAB D C KELLER 15 JUN 83

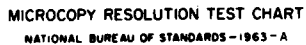
UNCLASSIFIED

ERADCOM/ASL-DR-1302

F/G 4/2

NL

END
DATE
FILMED
DTIC



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

AD A 131978

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1302	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 12830D Lance Missile Number 5355 Round Number 388 MSC		5. TYPE OF REPORT & PERIOD COVERED
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) White Sands Meteorological Team		8. CONTRACT OR GRANT NUMBER(s) DA Task 1F665702D127-02
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Research & Development Cmd Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico 88002		12. REPORT DATE June 83
		13. NUMBER OF PAGES
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) US Army Electronics Research and Development Cmd Adelphi, MD 20783		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Approved for public release; distribution unlimited.		
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 12830D Lance, Missile Number 5355, Round Number 388 MSC 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EDITION OF 1 NOV 65 IS OBSOLETE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)

CONTENTS	PAGE
INTRODUCTION-----	1
DISCUSSION-----	1
GENERAL AREA MAP-----	2
LAUNCH AREA DIAGRAM-----	3
TABLES	
1. Surface Observation Taken at 1730 MDT at LC-33-----	4
2. Anemometer-Measured Wind Speed and Direction, LC-33 Fixed Pole, Taken at 1730 MDT-----	5
3. Anemometer-Measured Wind Speed and Direction, Tower Levels 1, 2, 3, and 4, taken at 1730 MDT-----	5
4. Launch area pilot-balloon measured wind data at 1715 MDT-----	6
5. Launch area pilot-balloon measured wind data at 1730 MDT-----	7
6. Launch and Impact Area Computer Met Message Data-----	8
7. WSD Significant Level Data at 1745 MDT-----	9
8. WSD Upper Air Data at 1745 MDT-----	10
9. WSD Mandatory Levels at 1745 MDT-----	13
10. Stallion Significant Level Data at 1730 MDT-----	14
11. Stallion Upper Air Data at 1730 MDT-----	15
12. Stallion Mandatory Levels at 1730 MDT-----	19

INTRODUCTION

12830D Lance, Missile Number 5355, Round Number 388-MSL, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1730:04 MDT 15 June 1983. The scheduled launch time was 1730 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-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from single-theodolite pilot-balloon observations at:

SITE AND ALTITUDE

WSD 3000 Meters

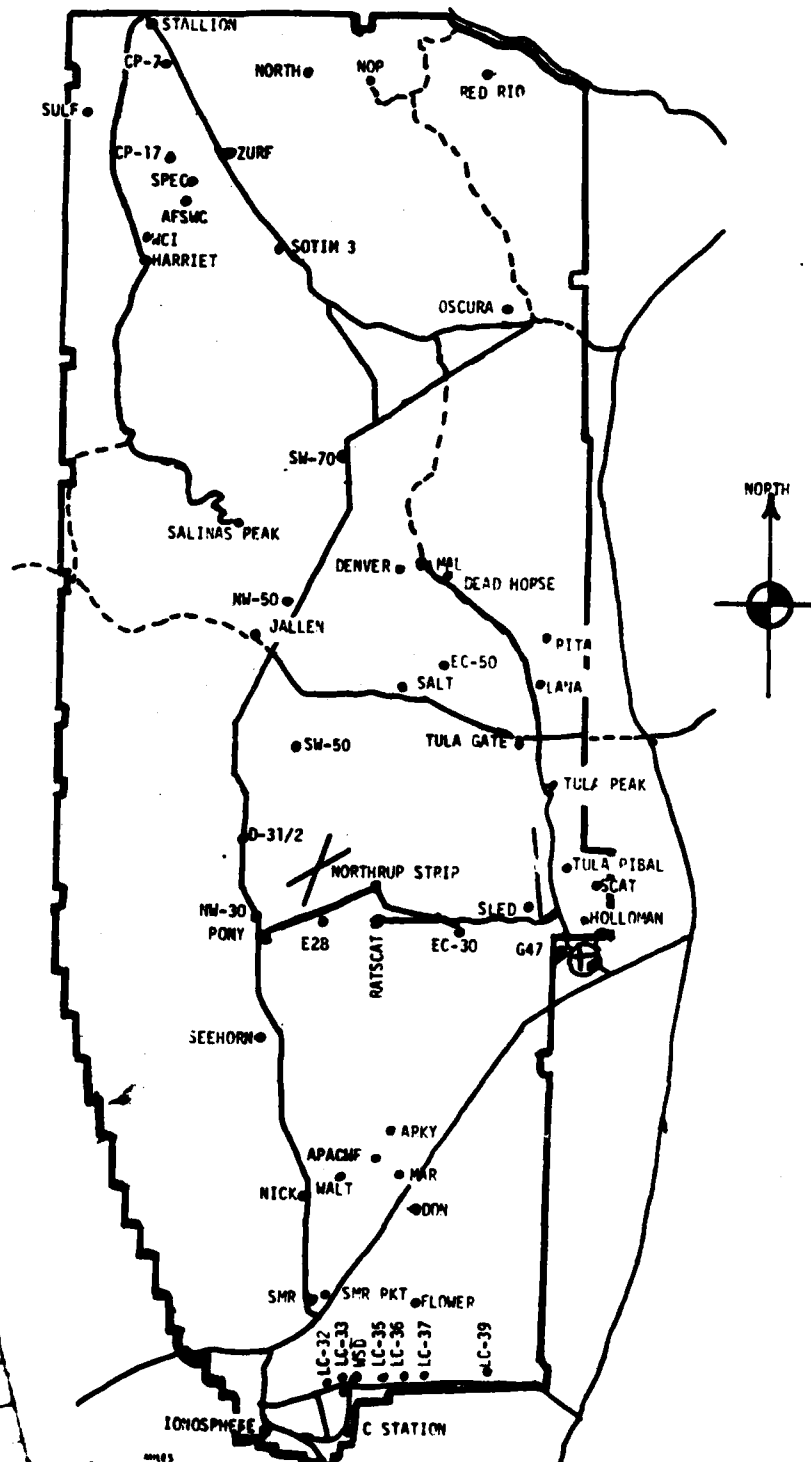
(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to high as possible feet in 500-foot increment.

SITE AND TIME

WSD 1745 MDT

Stallion 1730 MDT

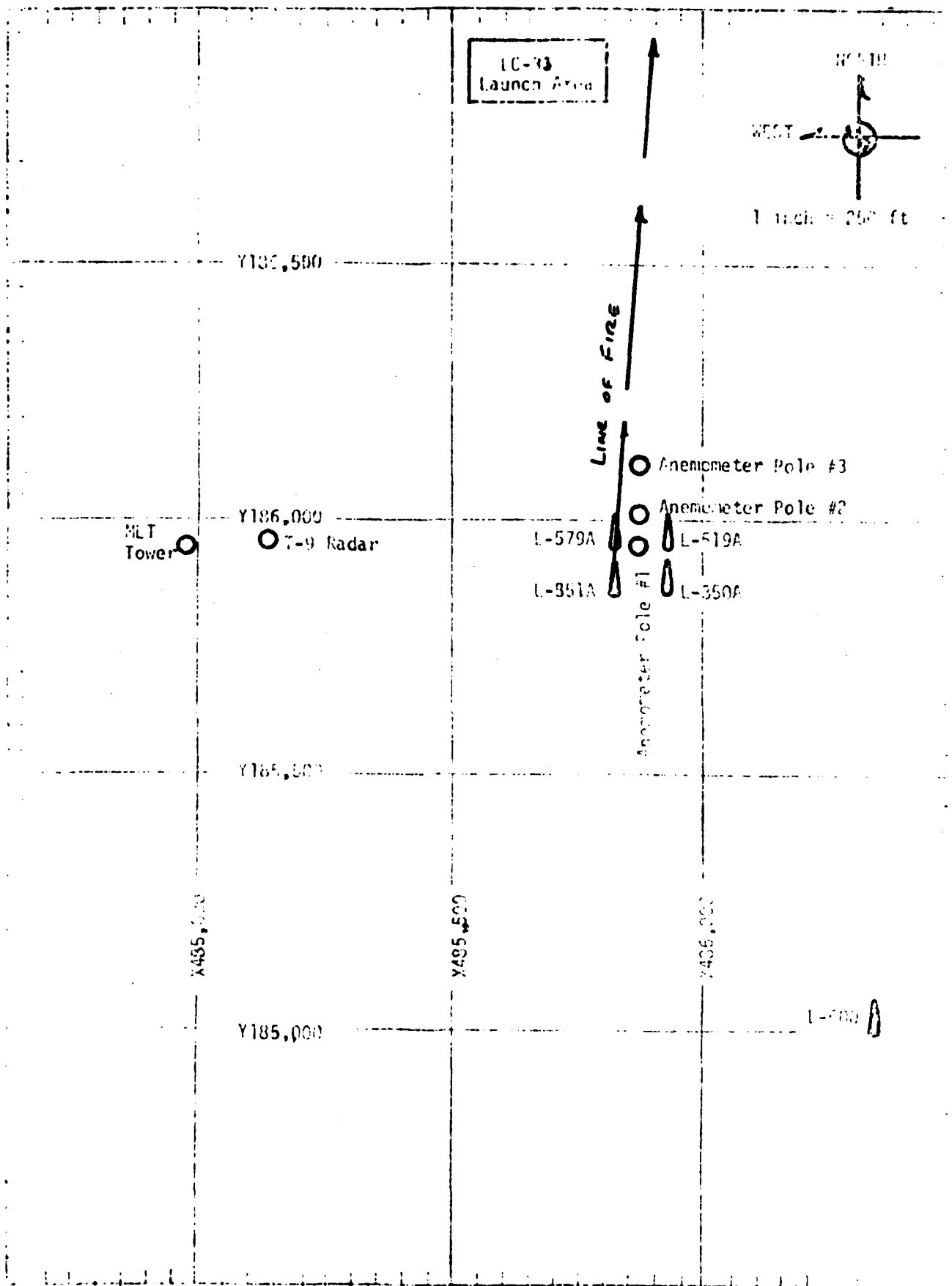
WSMR METEOROLOGICAL SITES



Accession For
 NTIS GRA&I
 DTIC TAB
 Unannounced
 Justification
 Distribution/
 Availability Codes
 4001 100 100
 100 100 100
 A

0 10
 MILES





PROJECT SURFACE OBSERVATION

TABLE 1											
STATION/ LC-33											
DATE 15		Jun		83		X= 484,982.64		Y=185,957.73		H= 3995.00	
TIME M D I		PRESSURE mbs		TEMPERATURE OF °C		DEW POINT OF °C		RELATIVE HUMIDITY %		WIND	
										SPEED kts	
										DIRECTION degs In	
										CHARACTER kts	
										VISIBILITY	
1730		876.1		25.3		7.5		32		354	
										15	

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	HGT	AMT	TYPE	HGT	
	9	CB	3500	1	CI	20,000	H ALDOS BDE

PSYCHROMETRIC COMPUTATION

TIME:	1730	
DRY BULB TEMP.	25.3	
WET BULB TEMP.	14.5	
WET BULB DEPR.	10.8	
DEW POINT	7.5	
RELATIVE HUMID.	32	

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,374.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.29 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30		MISS	T-30		MISS	T-30		MISS
T-20		MISS	T-20		MISS	T-20		MISS
T-10		MISS	T-10		MISS	T-10		MISS
T0.0		MISS	T0.0		MISS	T0.0		MISS
T+10		MISS	T+10		MISS	T+10		MISS

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	007	13	T-30	020	16
T-20	001	17	T-20	008	20
T-10	010	18	T-10	055	20
T0.0	354	15	T0.0	018	17
T+10	001	14	T+10	006	18

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	010	17	T-30	018	24
T-20	008	20	T-20	003	26
T-10	008	26	T-10	012	25
T0.0	075	22	T0.0	016	24
T+10	013	26	T+10	013	27

PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM WSD

DATE 15 JUN 83

TIME 1715

COORDINATES (WSTM) X= 488,852.29 Y= 184,982.45 H= 3993.75

NOTE: WIND DIRECTIONS ARE REFERENCED TO _____.

HEIGHTS ARE METERS AGL X OR FEET AGL_____.

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS
SFC	025	18
60	027	22
120	029	28
180	030	34
240	028	31
300	026	27
360	024	24
420	023	22
480	023	21
540	021	21
600	017	21
660	013	22
720	008	22
780	002	23
840	356	23
900	349	22
960	341	22
1020	339	24
1080	339	26
1140	338	27
1200	336	27
1260	334	28
1320	331	27
1380	327	25
1440	322	23
1500	314	21
1560	305	19
1620	303	19

[illegible][illegible]

PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM WSD DATE 15 JUN 83 TIME 1730

COORDINATES (WSTM) X= 488.852.29 Y= 184.982.45 H= 3993.75

NOTE: WIND DIRECTIONS ARE REFERENCED TO

HEIGHTS ARE METERS AGL X OR FEET AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS
SFC	030	20
60	030	27
120	029	36
180	029	45
240	031	40
300	033	36
360	036	31
420	040	28
480	046	25
540	051	24
600	053	25
660	055	26
720	054	27
780	054	29
840	053	29
900	052	29
960	050	29
1020	047	29
1080	043	28
1140	041	28
1200	044	28
1260	046	28
1320	048	29
1380	050	29
1440	049	29
1500	044	28
1560	039	26
1620	034	20

[illegible][illegible]

Launch and Impact Area Computer Met Message Data
15 JUN 83

WSD 1745 MDT	STALLION 1730 MDT
METCM1324064	METCM1338067
152380122873	152350151849
00089028 30530873	00267006 29560349
01117023 29300863	01269013 29550839
02028030 29440839	02276015 29510815
03050019 29320801	03297015 29210778
04057011 29090755	04378012 28830734
05525014 28770712	05488017 28460692
06452021 28360671	06505022 28070651
07455022 27920632	07522021 27660612
08458025 27440594	08552021 27230576
09452030 27010558	09537026 26820540
10444030 26600524	10538024 26360507
11443030 2621-491	11525023 25950475
12435030 25680445	12534019 25370430
13437026 24960389	13483020 24690375
14358014 24270339	14450019 23950326
15249019 23560294	15400024 23160282
16283015 22800254	16327029 22400243
17402031 22510218	17401037 22240209
18412029 22090187	18433041 22150179
19447038 21620160	19432033 21840153
20432038 21250137	20431028 21210131
21459039 20750116	21425027 20600111
22460016 20640099	22444016 20650094
23350012 20690084	23422010 20910080
	24158005 21100068
	25142013 21300058
	26172014 21410050

STATION ALTITUDE 3989.00 FEET MSL
15 JUNE 63
ASCESSION 10. 300

STRATIGRAPHIC LEVEL DATA
160,000-20,000
WHITE SANDS

Table 7

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
875.4	30.0	25.0
865.0	22.6	34.0
855.0	20.8	35.0
839.1	19.3	37.0
836.9	20.3	36.0
739.4	15.6	40.0
700.0	12.5	40.0
633.6	5.5	60.0
582.5	-1.1	78.0
550.5	-3.6	71.0
510.0	-8.4	79.0
500.3	-9.3	60.0
500.0	-10.3	63.0
477.5	-12.9	45.0
461.7	-14.6	30.0
450.1	-15.1	24.0
400.0	-22.4	30.0
390.2	-24.4	37.0
383.6	-23.8	37.0
379.3	-24.4	36.0
351.1	-20.0	71.0
300.0	-36.0	64.0
281.0	-39.1	60.0
262.3	-44.2	
259.0	-45.5	
238.7	-47.8	
222.5	-47.2	
200.0	-49.6	
167.2	-57.0	
150.0	-57.3	
144.8	-58.5	
136.4	-61.0	
116.2	-66.7	
100.8	-65.6	
100.0	-67.3	
74.7	-65.6	

STATION ALTITUDE 3,000.00 FEET MSL
 15 JUNE 63 1745 MDT
 ASCENDING 10. 5 6

UPPER AIR DATA
 160020300
 WHITE SAILS

GEODETIC COORDINATES
 32°40'04.3 LAT NEG
 106°37'03.3 LONG NEG

Table 8

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CELSIUS	TEMPERATURE DEPOSIT CELSIUS	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3000.0	873.4	30.9	0.0	25.0	096.2	680.0	50.0	20.0	1.000268
4000.0	873.1	30.5	0.5	25.3	096.8	680.5	49.0	27.9	1.000268
4500.0	856.0	21.0	5.5	24.4	1009.2	670.4	46.5	25.8	1.000264
5000.0	843.1	19.0	7.5	36.3	098.6	668.1	42.4	23.8	1.000260
5500.0	826.3	20.2	4.7	36.1	079.8	668.5	37.7	21.9	1.000256
6000.0	813.7	19.5	4.3	36.7	064.6	667.7	32.1	20.3	1.000252
6500.0	799.3	18.8	3.9	37.3	050.0	667.0	26.8	18.7	1.000248
7000.0	783.2	18.1	3.0	37.8	035.5	666.2	32.4	16.3	1.000244
7500.0	771.0	17.5	3.2	38.4	021.2	665.4	38.0	14.1	1.000240
8000.0	757.8	16.8	2.6	39.0	007.1	664.6	27.7	10.9	1.000236
8500.0	744.4	16.1	2.4	39.6	093.2	663.8	10.7	8.4	1.000232
9000.0	731.3	15.3	1.8	40.0	079.9	662.9	353.0	6.5	1.000228
9500.0	718.2	14.2	0.0	40.0	067.9	661.5	320.3	5.7	1.000223
10000.0	705.6	13.0	-0.3	40.0	056.0	660.1	284.9	9.4	1.000218
10500.0	692.6	11.8	-0.7	42.1	044.2	658.6	209.9	15.7	1.000215
11000.0	680.6	10.5	-0.7	45.8	032.6	657.1	264.5	20.9	1.000213
11500.0	667.7	9.2	-0.8	49.5	021.2	655.7	261.9	24.8	1.000210
12000.0	655.5	7.9	-1.0	53.2	009.9	654.2	290.0	27.6	1.000208
12500.0	643.6	6.6	-1.3	56.9	798.9	652.7	258.4	24.8	1.000205
13000.0	631.9	5.3	-1.7	60.6	788.0	651.1	256.4	22.0	1.000202
13500.0	620.1	3.8	-2.2	64.6	777.5	649.4	256.3	22.7	1.000199
14000.0	608.5	2.3	-2.8	68.6	767.2	647.6	256.6	23.8	1.000196
14500.0	597.2	0.0	-3.5	72.7	757.0	645.8	256.2	25.1	1.000193
15000.0	586.1	-0.6	-4.2	76.7	747.0	644.1	255.5	26.6	1.000189
15500.0	575.0	-1.9	-5.5	75.0	736.5	642.5	254.9	28.1	1.000185
16000.0	564.2	-3.0	-7.2	72.7	725.8	641.1	254.6	29.2	1.000180
16500.0	553.4	-4.2	-8.5	72.0	715.2	639.6	254.3	30.4	1.000176
17000.0	542.8	-5.4	-9.3	74.0	704.8	638.1	253.3	30.5	1.000173
17500.0	532.3	-6.7	-10.2	76.1	694.5	636.6	252.2	30.5	1.000170
18000.0	522.1	-7.9	-11.0	78.2	684.4	635.1	251.1	30.3	1.000167
18500.0	512.0	-9.0	-13.0	67.3	674.1	633.7	249.7	29.9	1.000162
19000.0	502.0	-10.1	-15.0	62.3	663.9	632.3	248.3	28.6	1.000158
19500.0	492.2	-11.2	-17.0	56.9	653.8	630.9	246.4	29.8	1.000154
20000.0	482.5	-12.3	-20.0	40.1	643.9	629.5	248.5	30.1	1.000150
20500.0	473.0	-13.4	-23.0	40.8	633.9	628.1	248.2	30.2	1.000146
21000.0	463.7	-14.4	-27.0	31.0	623.9	626.8	247.7	30.2	1.000143
21500.0	454.5	-15.1	-31.0	24.3	613.2	626.0	246.7	30.1	1.000139
22000.0	445.3	-16.2	-35.0	25.9	603.0	624.6	245.0	29.9	1.000137
22500.0	436.3	-17.4	-39.0	25.9	594.1	623.1	243.2	29.7	1.000135
23000.0	427.5	-18.6	-43.0	26.0	584.8	621.7	242.4	30.2	1.000132

GEODETIC COORDINATES
32.44043 LAT DEG
106.37033 LONG DEG

UPPER AIR DATA
1000203000
WIND SPEEDS

Table 8 Cont'd

STATION ALTITUDE 1,892.00 FT. 1.1 MSL
15 APRIL 63 1745 MDT
ASCENDING 10.0 0.0

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUMIDITY PERCENT	DENSITY GM/CM ³ METER	SPEED OF WIND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	410.9	-19.7	27.8	575.7	620.1	241.6	30.7	1.000130
24000.0	410.4	-20.9	28.8	566.7	618.8	242.9	30.2	1.000128
24500.0	402.1	-22.1	29.7	557.8	617.4	245.4	29.4	1.000126
25000.0	393.9	-23.6	30.3	549.8	615.5	247.5	28.3	1.000124
25500.0	385.8	-24.0	37.0	539.3	615.0	247.4	25.7	1.000122
26000.0	377.8	-24.6	37.7	529.5	614.2	247.3	23.1	1.000120
26500.0	370.0	-25.9	47.3	521.1	612.7	243.3	20.6	1.000118
27000.0	362.3	-27.1	56.8	512.8	611.2	236.1	18.3	1.000117
27500.0	354.7	-28.4	66.3	504.7	609.6	227.0	16.4	1.000115
28000.0	347.3	-29.5	70.5	496.3	608.2	215.2	14.9	1.000113
28500.0	339.0	-30.4	69.6	487.6	607.0	201.5	14.1	1.000111
29000.0	332.6	-31.4	68.6	479.1	605.8	188.1	14.0	1.000109
29500.0	325.5	-32.4	67.6	470.8	604.6	177.1	14.3	1.000107
30000.0	318.6	-33.3	66.7	462.6	603.4	166.9	15.1	1.000105
30500.0	311.8	-34.3	65.7	454.6	602.2	158.8	15.7	1.000103
31000.0	305.2	-35.2	64.8	446.7	601.0	151.9	16.4	1.000101
31500.0	298.6	-36.3	63.6	439.1	599.6	145.5	17.3	1.000099
32000.0	292.1	-37.7	61.8	432.2	597.8	139.5	19.0	1.000097
32500.0	285.8	-39.1	59.4**	425.4	596.0	134.5	20.9	1.000096
33000.0	279.4	-40.5	43.9**	418.3	594.3	131.7	21.6	1.000094
33500.0	273.2	-41.8	28.4**	411.4	592.6	130.7	21.1	1.000092
34000.0	267.2	-43.1	12.8**	404.6	590.9	129.7	20.5	1.000090
34500.0	261.3	-44.3		397.7	589.3	138.3	18.0	1.000089
35000.0	255.4	-44.9		389.8	588.5	152.0	15.7	1.000087
35500.0	249.7	-45.6		382.2	587.7	169.3	14.7	1.000085
36000.0	244.0	-46.7		375.4	586.2	192.7	17.1	1.000084
36500.0	238.5	-47.8		368.7	584.6	208.5	21.5	1.000082
37000.0	233.1	-47.6		360.0	585.1	217.2	25.8	1.000080
37500.0	227.9	-47.4		351.5	585.3	221.1	28.1	1.000078
38000.0	222.6	-47.2		343.2	585.6	224.4	30.5	1.000076
38500.0	217.5	-47.7		336.2	584.9	225.8	31.1	1.000075
39000.0	212.6	-48.2		329.3	584.3	225.8	30.1	1.000073
39500.0	207.7	-48.7		322.5	583.6	225.8	29.1	1.000072
40000.0	202.8	-49.3		315.9	582.9	226.4	28.5	1.000070
40500.0	197.3	-49.9		309.6	582.0	227.4	28.5	1.000069
41000.0	192.7	-50.9		303.7	580.8	228.5	28.5	1.000068
41500.0	188.2	-51.9		297.9	579.5	230.4	28.8	1.000066
42000.0	183.8	-52.9		292.3	578.2	234.0	29.9	1.000065
42500.0	180.5	-53.8		286.7	576.9	237.3	31.1	1.000064
43000.0	176.3	-54.8		281.3	575.7	240.4	32.3	1.000063

** AT L, AST ONE. SLOPE TO L, ONE. THE VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL
15 JUL 63
ASLATION NO. JC

UPPER AIR DATA
160020300
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

1745 MDT

Table 8 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND METER	WIND DATA DIRECTION (TH) SPEED KNOTS	INDEX OF REFRACTION
43500.0	172.2	-65.0		270.0	574.0	242.2	1.000041
44000.0	160.2	-66.0		270.8	573.1	243.5	1.000060
44500.0	148.2	-67.0		264.7	572.7	244.0	1.000059
45000.0	136.3	-67.1		258.6	572.6	245.6	1.000054
45500.0	124.5	-67.2		252.5	572.5	245.3	1.000046
46000.0	112.8	-67.2		246.0	572.4	245.0	1.000055
46500.0	101.2	-67.5		241.0	572.1	244.7	1.000054
47000.0	89.7	-68.3		236.2	571.0	243.4	1.000053
47500.0	78.2	-69.3		231.6	569.8	246.5	1.000052
48000.0	66.8	-70.3		227.1	568.4	247.6	1.000051
48500.0	55.4	-71.3		222.6	567.1	248.7	1.000050
49000.0	44.1	-72.1		218.1	565.4	249.8	1.000049
49500.0	32.9	-73.0		213.7	564.7	251.0	1.000048
50000.0	21.7	-73.9		209.3	563.6	252.1	1.000047
50500.0	10.7	-74.8		205.1	562.4	253.4	1.000046
51000.0	0.0	-75.7		200.9	561.2	255.6	1.000045
51500.0	116.8	-66.5		196.8	560.0	250.0	1.000044
52000.0	113.9	-66.4		191.8	560.2	259.8	1.000043
52500.0	111.1	-65.9		186.7	560.4	260.4	1.000042
53000.0	108.3	-65.7		181.9	561.1	261.3	1.000041
53500.0	105.6	-66.2		177.6	560.4	261.2	1.000040
54000.0	103.0	-66.7		173.9	559.4	260.2	1.000039
54500.0	100.5	-67.2		170.0	559.1	258.8	1.000038
55000.0	98.0	-67.2		165.8	559.1	257.2	1.000037
55500.0	95.6	-67.0		161.5	559.3	255.5	1.000036
56000.0	93.2	-66.9		157.4	559.5	253.5	1.000035
56500.0	90.9	-66.7		153.4	559.7	251.1	1.000034
57000.0	88.7	-66.6		149.5	559.9	247.0	1.000033
57500.0	86.5	-66.5		145.8	560.1	243.1	1.000032
58000.0	84.3	-66.3		142.0	560.3	205.9	1.000032
58500.0	82.3	-66.2		138.4	560.5	106.0	1.000031
59000.0	80.3	-66.0		134.9	560.7		1.000030
59500.0	78.2	-65.9		131.5	560.9		1.000029
60000.0	76.3	-65.7		128.2	561.1		1.000029

GEODETIC COORDINATES
12.40043 LAT DEG
106.37033 LON DEG

MANDATORY LEVELS
1600020300
WHITE SOLIDS

STATION ALTITUDE 3989.00 FEET MSL
15 JUNE 83
ASCENSION NO. 30 1745 MDT

Table 9

PRESSURE GEOPOTENTIAL MILLIBARS	FLFT	TEMPERATURE AIR DEGREES CENTIGRADE	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4764.	20.0	44.4	24.7
800.0	6477.	18.0	20.5	10.8
750.0	8207.	16.4	18.7	9.3
700.0	10202.	12.5	276.8	11.9
650.0	12224.	7.3	259.3	20.3
600.0	14365.	1.2	256.4	24.7
550.0	16640.	-4.6	254.1	30.6
500.0	19077.	-8.7	248.4	29.6
450.0	21712.	-16.0	245.9	30.0
400.0	24500.	-22.4	246.0	29.2
350.0	27767.	-29.1	220.1	15.4
300.0	31332.	-36.0	147.0	17.1
250.0	35393.	-45.5	167.1	14.7
200.0	40226.	-49.6	227.0	28.5
175.0	43060.	-55.1	241.2	32.7
150.0	45264.	-57.3	244.8	39.1
125.0	49986.	-64.1	252.3	41.8
100.0	54428.	-67.3	258.6	19.0
80.0	58856.	-66.0		

GEODETIC COORDINATES
33-81920 LAT UEG
106-66501 LON UEG

UPPER AIR DATA
1600040024
STALLION

Table 11

STATION ALTITUDE 4940.00 FEET MSL
15 JUNE 83
ASCENDANT NO. 24 1700 MDT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE'S CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
4940.0	843.0	21.0	47.0	1000.2	669.4	150.0	6.0	1.000274
5000.0	847.2	20.9	45.9	998.8	669.7	150.7	6.2	1.000272
5500.0	832.4	21.4	39.1	980.2	670.1	155.3	8.1	1.000262
6000.0	817.8	21.0	37.3	964.5	669.5	158.2	10.1	1.000255
6500.0	803.3	19.8	37.7	951.1	668.2	160.1	12.0	1.000251
7000.0	789.1	18.7	38.1	938.0	668.9	164.7	13.2	1.000246
7500.0	775.1	17.6	38.6	925.0	665.6	173.2	13.6	1.000241
8000.0	761.3	16.5	39.0	912.3	664.3	184.0	13.6	1.000236
8500.0	747.8	15.4	39.4	899.7	662.9	195.5	14.1	1.000232
9000.0	734.6	14.3	39.8	887.3	661.6	210.8	12.8	1.000228
9500.0	721.6	13.2	40.3	875.1	660.3	230.8	12.0	1.000223
10000.0	708.8	12.1	40.7	863.1	659.0	253.9	12.9	1.000219
10500.0	696.1	10.9	41.1	851.1	657.6	272.7	15.7	1.000215
11000.0	683.4	9.8	41.3	839.2	656.2	278.7	18.4	1.000211
11500.0	671.0	8.6	41.5	827.4	654.8	282.2	20.4	1.000207
12000.0	658.8	7.5	41.7	815.8	653.4	284.1	21.5	1.000203
12500.0	646.8	6.3	41.9	804.4	652.0	286.0	21.8	1.000199
13000.0	634.8	5.1	43.5	793.0	650.5	288.3	21.4	1.000195
13500.0	622.9	3.8	46.2	781.8	649.0	292.3	20.8	1.000192
14000.0	611.2	2.5	48.8	770.7	647.5	298.0	20.2	1.000189
14500.0	599.7	1.2	51.5	759.6	646.0	302.8	20.1	1.000187
15000.0	588.4	-0.1	54.1	749.1	644.4	306.6	20.4	1.000184
15500.0	577.4	-1.4	56.7	738.6	642.9	307.8	21.3	1.000181
16000.0	566.6	-2.7	59.4	728.2	641.4	305.6	22.8	1.000178
16500.0	555.9	-3.9	62.0	718.0	639.4	303.7	24.4	1.000175
17000.0	545.4	-5.1	62.6	707.7	638.4	302.5	25.1	1.000171
17500.0	535.0	-6.1	57.2	696.7	637.2	301.4	25.8	1.000167
18000.0	524.6	-7.5	60.7	687.0	635.4	301.3	25.5	1.000164
18500.0	514.4	-9.0	64.5	677.5	633.6	301.6	24.9	1.000162
19000.0	504.4	-10.5	68.3	668.2	631.8	300.9	24.3	1.000159
19500.0	494.6	-11.8	72.5	658.2	630.3	299.7	23.7	1.000157
20000.0	484.8	-12.8	77.1	647.8	629.1	298.7	22.9	1.000154
20500.0	475.3	-13.9	73.4	637.8	627.7	297.9	21.9	1.000151
21000.0	465.8	-15.2	64.5	628.4	626.0	297.1	21.0	1.000147
21500.0	456.5	-16.4	76.1	618.8	624.5	297.6	20.9	1.000145
22000.0	447.4	-17.7	87.7	609.4	623.0	296.1	20.8	1.000143
22500.0	438.4	-19.3	96.1	601.0	621.0	299.0	20.6	1.000141
23000.0	429.5	-20.2	87.5	591.0	619.9	300.5	20.3	1.000138
23500.0	420.7	-21.0	76.9	580.9	618.8	300.5	19.9	1.000135
24000.0	412.2	-21.8	66.3	571.0	617.8	299.2	19.2	1.000131

GEODETIC COORDINATES
33.81920 LAT DEG
106.66501 LONG DEG

UPPER AIR DATA
160040024
STALLION
Table 11 Cond't

STATION ALTITUDE 4940.00 FEET MSL
15 JUNE 63 1700 MDT
ASCENSION NO. 24

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³	WIND SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
24500.0	403.8	-22.7	67.2	561.3	616.7	296.8	18.6	1.000129
25000.0	395.4	-23.7	68.5	551.9	615.5	286.5	18.8	1.000127
25500.0	387.1	-24.8	67.7	542.7	614.1	276.6	19.6	1.000124
26000.0	379.0	-25.9	66.9	533.7	612.8	271.4	20.1	1.000122
26500.0	371.1	-27.0	66.1	524.9	611.4	266.4	20.9	1.000120
27000.0	363.4	-28.1	65.2	516.2	610.0	265.0	20.9	1.000117
27500.0	355.8	-29.1	64.4	507.7	608.7	264.4	20.7	1.000115
28000.0	348.3	-30.2	63.6	499.4	607.3	262.2	20.6	1.000113
28500.0	341.0	-31.3	62.7	491.1	605.9	258.8	20.5	1.000111
29000.0	333.9	-32.4	61.9	483.1	604.5	255.6	20.2	1.000109
29500.0	326.7	-33.7	61.1	475.2	602.9	252.4	19.0	1.000107
30000.0	319.6	-35.0	60.3	467.4	601.3	248.8	18.0	1.000105
30500.0	312.7	-36.3	59.5	459.8	599.7	244.0	18.1	1.000104
31000.0	306.0	-37.5	58.7	452.4	598.0	239.4	18.3	1.000102
31500.0	299.4	-38.8	57.8	444.9	596.5	234.9	19.4	1.000100
32000.0	292.8	-39.7	52.9**	436.9	595.2	231.3	21.7	1.000098
32500.0	286.2	-40.9	45.3**	429.3	593.7	228.4	24.0	1.000096
33000.0	279.8	-42.1	37.7**	421.8	592.2	223.9	24.6	1.000094
33500.0	273.6	-43.2	30.2**	414.5	590.7	219.0	24.9	1.000093
34000.0	267.5	-44.4	22.6**	407.3	589.2	213.2	25.1	1.000091
34500.0	261.5	-45.6	15.1**	400.3	587.7	202.5	24.7	1.000089
35000.0	255.7	-46.7	7.5**	393.4	586.2	191.7	25.1	1.000088
35500.0	250.0	-47.9		386.6	584.7	185.2	26.9	1.000086
36000.0	244.2	-49.0		379.6	583.2	181.8	29.2	1.000085
36500.0	238.6	-50.2		372.8	581.7	180.3	31.4	1.000083
37000.0	233.1	-51.3		366.1	580.3	186.0	32.3	1.000082
37500.0	227.8	-52.4		359.5	578.8	191.3	33.5	1.000080
38000.0	222.5	-52.5		351.2	578.4	201.0	33.5	1.000078
38500.0	217.3	-51.7		341.9	579.7	212.4	33.9	1.000076
39000.0	212.3	-50.9		332.9	580.7	222.2	35.7	1.000074
39500.0	207.4	-50.4		324.4	581.4	229.1	38.3	1.000072
40000.0	202.7	-50.0		316.4	581.9	235.0	41.3	1.000070
40500.0	198.0	-49.4		308.3	582.7	236.4	42.7	1.000069
41000.0	193.5	-49.2		301.0	583.0	237.3	43.8	1.000067
41500.0	189.0	-50.1		293.2	581.9	238.5	43.5	1.000066
42000.0	184.7	-50.9		289.4	580.8	240.1	42.0	1.000064
42500.0	180.4	-51.7		283.6	579.7	241.9	40.5	1.000063
43000.0	176.3	-52.6		276.6	578.6	244.0	39.1	1.000062
43500.0	172.2	-52.8		272.2	578.2	246.3	37.9	1.000061
44000.0	168.2	-53.0		266.1	578.0	246.9	36.1	1.000059

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

STATION ALTITUDE 4900.00 FEET MSL
15 JUNE 63 1700 MDT
ASCENSION NO. 24

UPPER AIR DATA
166004024
STATION

GEODETIC COORDINATES
33-81920 LAT DEG
106-00501 LON DEG

Table 11 Cond't

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
44500.0	164.2	-53.2			260.1	577.8	247.5	34.4	1.000058
45000.0	160.4	-53.3			254.2	577.6	246.8	33.8	1.000057
45500.0	156.7	-53.5			248.5	577.4	245.6	33.6	1.000055
46000.0	153.0	-54.5			243.8	576.1	244.6	33.1	1.000054
46500.0	149.4	-55.5			239.1	574.8	243.9	32.0	1.000053
47000.0	145.9	-56.4			234.5	573.5	243.1	30.9	1.000052
47500.0	142.4	-57.4			229.9	572.2	241.9	29.1	1.000051
48000.0	139.0	-58.4			225.4	570.9	240.5	27.1	1.000050
48500.0	135.6	-59.4			221.1	569.6	239.2	25.7	1.000049
49000.0	132.4	-60.4			216.8	568.2	239.3	26.9	1.000048
49500.0	129.2	-61.4			212.6	566.9	239.4	28.0	1.000047
50000.0	126.1	-62.4			208.5	565.6	238.9	28.9	1.000046
50500.0	123.1	-63.4			204.4	564.3	238.0	29.7	1.000045
51000.0	120.1	-64.3			200.3	563.0	237.1	30.5	1.000045
51500.0	117.1	-65.3			196.3	561.7	237.8	29.5	1.000044
52000.0	114.2	-66.2			192.3	560.4	238.5	28.4	1.000043
52500.0	111.4	-67.2			188.4	559.1	239.7	27.8	1.000042
53000.0	108.7	-68.1			184.6	557.8	241.8	26.7	1.000041
53500.0	106.0	-68.6			180.5	557.2	243.8	29.6	1.000040
54000.0	103.3	-68.7			176.1	557.0	244.3	29.2	1.000039
54500.0	100.7	-68.9			171.8	556.8	243.2	27.3	1.000038
55000.0	98.2	-68.3			167.1	557.6	242.1	25.4	1.000037
55500.0	95.8	-67.4			162.2	558.8	244.9	20.3	1.000036
56000.0	93.4	-66.6			157.6	560.0	249.9	15.1	1.000035
56500.0	91.1	-65.7			153.0	561.1	257.3	11.9	1.000034
57000.0	88.9	-64.8			148.6	562.3	267.7	9.7	1.000033
57500.0	86.7	-64.1			144.4	563.3	270.1	9.1	1.000032
58000.0	84.6	-63.8			141.5	562.0	260.0	10.2	1.000032
58500.0	82.5	-66.0			138.7	560.7	251.7	11.2	1.000031
59000.0	80.5	-64.4			134.2	562.9	241.5	10.5	1.000030
59500.0	78.5	-63.3			130.3	564.3	230.4	10.2	1.000029
60000.0	76.6	-63.1			127.0	564.6	222.9	8.7	1.000028
60500.0	74.7	-62.9			123.8	564.9	214.8	6.3	1.000028
61000.0	72.7	-62.7			120.7	565.2	199.0	4.1	1.000027
61500.0	71.1	-62.4			117.6	565.5	186.1	2.5	1.000026
62000.0	69.4	-62.3			114.7	565.6	141.2	1.3	1.000026
62500.0	67.7	-62.5			112.0	565.4	86.6	3.7	1.000025
63000.0	66.1	-62.6			109.4	565.3	81.2	8.4	1.000024
63500.0	64.5	-61.2			106.0	567.1	79.8	12.7	1.000024
64000.0	62.9	-60.5			103.1	568.1	79.9	15.8	1.000023

STATION ALTITUDE 4,440.00 FEET
15 JUNE 83
ASCENSION NO. 24

UPPER AIR DATA
166040024
STALLION

GEODETIC COORDINATES
33.81920 LAT UEG
106.66501 LONG UEG

Table 11 Cond't

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	REFRACTION	INFLX OF
64500.0	61.4	-60.4	79.9	18.9	1.000022	1.000022
65000.0	60.0	-60.3	78.6	18.6	1.000022	1.000022
65500.0	58.5	-60.2	76.8	17.7	1.000021	1.000021
66000.0	57.1	-60.0	75.9	15.9	1.000021	1.000021
66500.0	55.8	-59.9	75.9	13.2	1.000020	1.000020
67000.0	54.4	-59.8	78.0	10.9	1.000020	1.000020
67500.0	53.1	-59.7	92.0	11.2	1.000019	1.000019
68000.0	51.8	-59.6	104.6	12.1	1.000019	1.000019
68500.0	50.6	-59.5	109.8	12.2	1.000018	1.000018
69000.0	49.4	-59.2	111.8	11.7	1.000018	1.000018
69500.0	48.2	-58.9	113.1	11.0	1.000017	1.000017
70000.0	47.1	-58.5	98.4	8.0	1.000017	1.000017
70500.0	46.0	-58.2	71.2	6.1	1.000017	1.000017
71000.0	44.9	-57.8	54.3	6.1	1.000016	1.000016
71500.0	43.8	-57.5	57.6	6.5	1.000016	1.000016
72000.0	42.8	-57.1	60.5	7.0	1.000015	1.000015
72500.0	41.8	-56.8	65.3	8.3	1.000015	1.000015
73000.0	40.8	-56.4	68.9	9.8	1.000015	1.000015
73500.0	39.0	-56.0	69.5	11.2	1.000014	1.000014
74000.0	38.9	-55.7	65.6	12.6	1.000014	1.000014
74500.0	38.0	-55.3	62.5	14.0	1.000014	1.000014
75000.0	37.1	-55.0	64.6	14.7	1.000013	1.000013
75500.0	36.2	-54.6	70.5	14.9	1.000013	1.000013
76000.0	35.4	-54.3	76.1	15.4	1.000013	1.000013
76500.0	34.5	-53.5	82.3	17.3	1.000012	1.000012
77000.0	33.7	-52.7	87.1	19.9	1.000012	1.000012
77500.0	33.0	-51.9	91.2	22.5	1.000012	1.000012
78000.0	32.2	-51.1	95.0	23.4	1.000011	1.000011
78500.0	31.5	-50.3	98.5	24.3	1.000011	1.000011
79000.0	30.7	-50.7	101.9	24.7	1.000011	1.000011
79500.0	30.0	-51.2	106.0	22.3	1.000010	1.000010
80000.0	29.3	-50.8	111.1	20.0	1.000010	1.000010
80500.0	28.7	-50.4			1.000010	1.000010
81000.0	28.0	-50.0			1.000010	1.000010
81500.0	27.4	-49.6			1.000009	1.000009
82000.0	26.8	-49.3			1.000009	1.000009

STATION ALTITUDE 4940.00 FEET MSL
 15 JUNE 83
 ASCENSION NO. 24 1700 MDT

MANDATORY LEVELS
 160040024
 STALLION
 Table 12

GEOMETRIC COORDINATES
 33.81920 LAT UEG
 106.66501 LON NEG

PRESSURE (GEOPOTENTIAL)		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
800.0	6624.	19.6	4.8	38.	160.5	12.5
750.0	8434.	15.6	1.6	39.	194.1	14.0
700.0	10340.	11.3	-1.5	41.	267.7	14.7
650.0	12355.	6.6	-5.4	42.	285.4	21.9
600.0	14401.	1.2	-7.7	51.	302.8	20.1
550.0	16765.	-4.7	-10.5	64.	303.1	24.8
500.0	19200.	-11.2	-15.0	70.	300.4	24.0
450.0	21826.	-17.3	-19.3	84.	298.0	20.8
400.0	24688.	-23.1	-27.2	69.	292.3	18.6
350.0	27854.	-30.0	-34.6	64.	262.9	20.6
300.0	31304.	-38.7	-43.8	58.	235.4	19.1
250.0	35423.	-47.9			185.4	26.8
200.0	40102.	-49.8			230.0	42.1
175.0	43048.	-52.7			244.6	38.8
150.0	46302.	-55.3			244.0	32.2
125.0	50054.	-62.7			238.6	29.2
100.0	54492.	-68.9			243.0	26.8
80.0	58926.	-64.0			239.5	10.4
70.0	61624.	-62.3			165.8	1.6
60.0	64759.	-60.3			78.7	18.7
50.0	68496.	-59.4			110.7	12.0
40.0	73115.	-56.1			70.7	10.9
30.0	79194.	-51.2			106.0	22.3

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

