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WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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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 19316B MLRS, Missile Number V6171, V6172, Round Number V633/AT2-84 and V634/AT2-85 are presented in tabular form.		

CONTENTS

	PAGE
INTRODUCTION -----	1
DISCUSSION -----	1
GENERAL AREA MAP -----	2
LAUNCH AREA DIAGRAM -----	3
TABLES:	
1. Surface Observations Taken at NW-30 at 1415 and 1513 MDT -----	4
2. Anemometer Measured Wind Data at 30 ft. AGL -----	5
3. Anemometer Measured Wind Data at 60 ft. AGL -----	6
4. Anemometer Measured Wind Data at 90 ft. AGL -----	7
5. Launch and Impact Area Pilot-Balloon Measured Wind Data at 1st T-Time	8
6. Launch and Impact Area Pilot-Balloon Measured Wind Data at 2nd T-Time	9
7. Amining and T-Time Computer Met Message Data -----	10
8. WSD Significant Level Data at 0845 MDT -----	11
9. WSD Upper Air Data at 0845 MDT -----	13
10. WSD Mandatory Levels at 0845 MDT -----	19
11. NW-30 Significant Level Data at 1130 MDT -----	20
12. NW-30 Upper Air Data at 1130 MDT -----	21
13. NW-30 Mandatory Levels at 1130 MDT -----	25
14. Jallen Significant Level Data at 1211 MDT -----	26
15. Jallen Upper Air Data at 1211 MDT -----	27
16. Jallen Mandatory Levels at 1211 MDT -----	31
17. Jallen Significant Level Data at 1444 MDT -----	32
18. Jallen Upper Air Data at 1444 MDT -----	33
19. Jallen Mandatory Levels at 1444 MDT -----	37

INTRODUCTION

19316B MLRS, Missile Numbers V6171 and V6172, Round Numbers V633/AT2-84 and V634/AT2-85 were launched from Brillo, White Sands Missile Range (WSMR), New Mexico, at 1443:34 and 1513:08 MDT 30 Jul 80. The scheduled launch times were 1415 and 1445 MDT.

DISCUSSION

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

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 NW-30 Met Site at T-0 Minutes.

(2) Anemometer data were provided from existing tower-mounted anemometers at Brillo. 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 Pilot-balloon observations at:

SITE AND ALTITUDE

D3 $\frac{1}{2}$ 500 meters
Dead Horse 950 meters

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

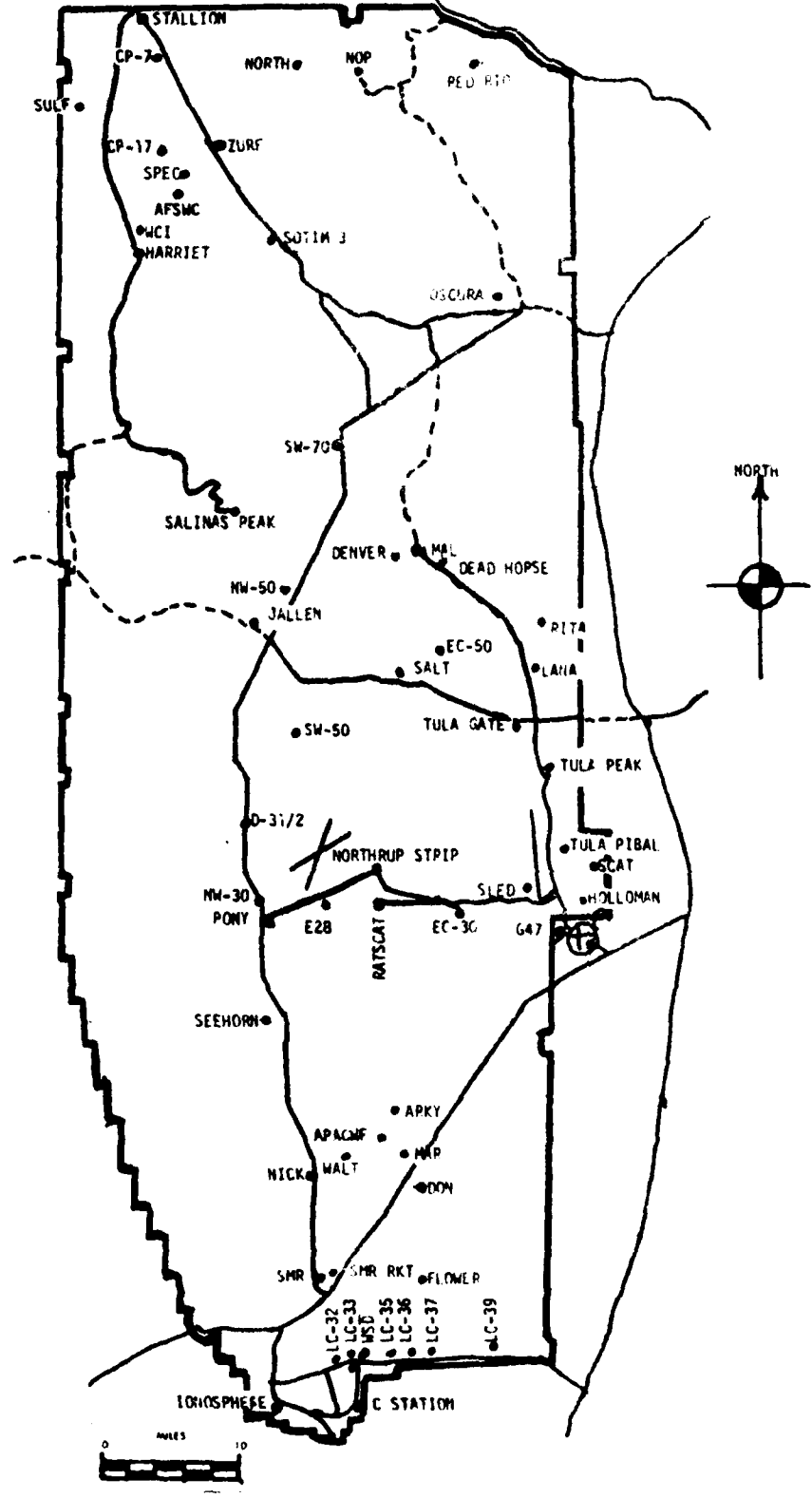
SITE AND TIME

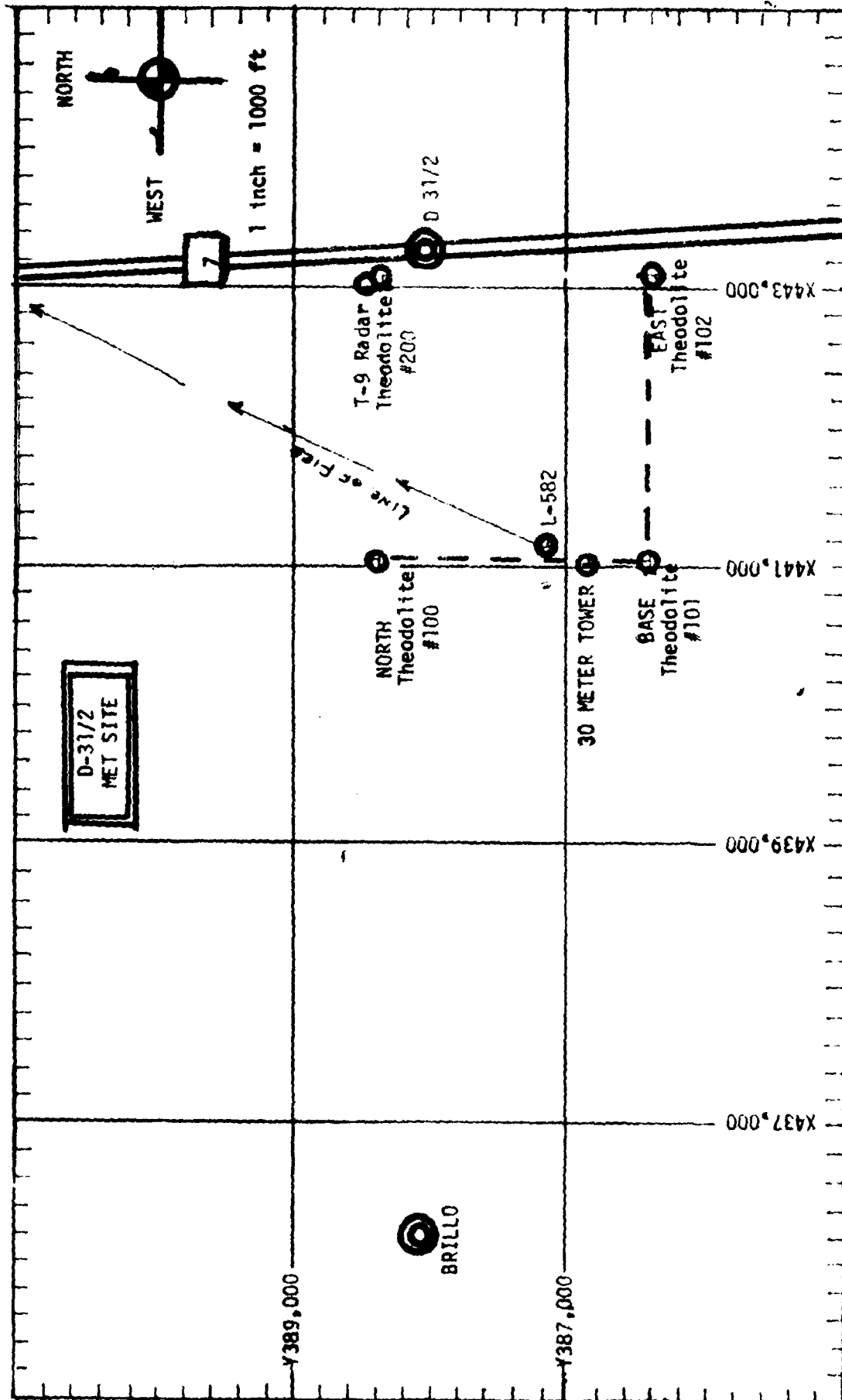
WSD 0845 MDT
NW-30 1130 MDT
JALLEN 1211 MDT
JALLEN 1444 MDT



Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

TABLE 1
 DATE 30 07 84
 STATION NW-30
 X= 449,712.25 Y=361,358.53 H= 4015.85

TIME M D J	PRESSURE mbs	TEMPERATURE OF °C	DEW POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm/m ³	WIND		VISIBIL- ITY
						DIRECTION degs In	SPEED kts	
1415	880.2	32.8	7.2	20		090	10	40
1513	880.0	33.6	9.4	23		080	04	40

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	HGT	AMT	HGT	AMT	HGT	
	3	CU 6000	0	AC 12000	1	CI 24000	T C U E
	3	CU 6000	0	AC 12000	1	CI 24000	

PSYCHROMETRIC COMPUTATION

TIME: MDT	1415	1513
DRY BULB TEMP.	32.8	33.6
WET BULB TEMP.	17.2	18.0
WET BULB DEPR.	15.6	15.6
DEW POINT	7.2	9.4
RELATIVE HUMID.	20	23

TABLE 2

ANEMOMETER DATA - 30 Ft Level of 30 Meter Tower

X= 41,016.71 Y= 386,849.19 H= 4064.80 (BASE)

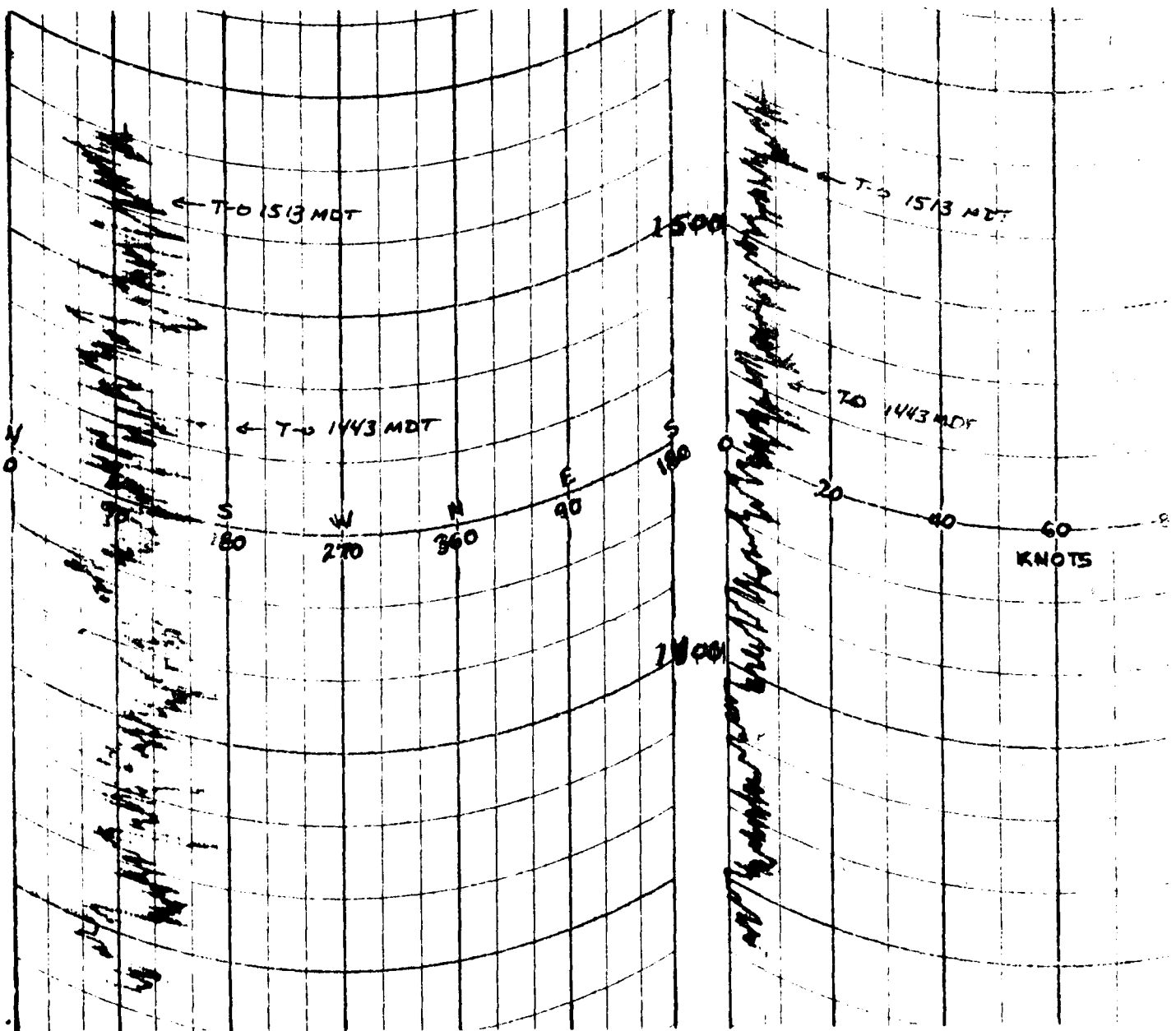


TABLE 3

ANEMOMETER DATA - 60 Ft Level of 30 Meter Tower

X= 441,018.71 Y= 386,649.19 H= 4004.60(BASE)

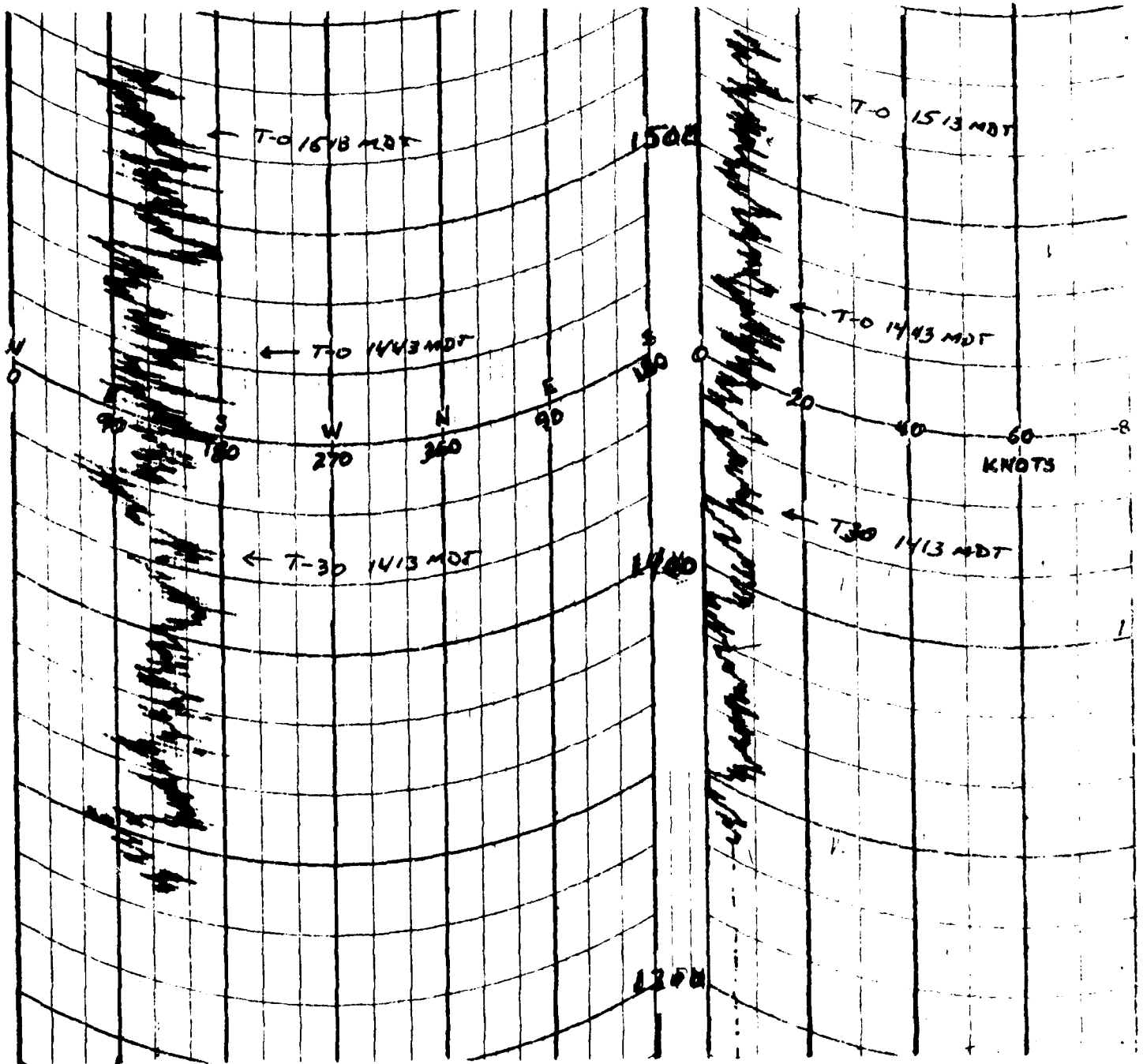


TABLE 4

ANEMOMETER DATA - 90 Ft Level of 30 Meter Tower

X= 441,018.71 Y= 386,849.19 H= 4004.80 (BASE)

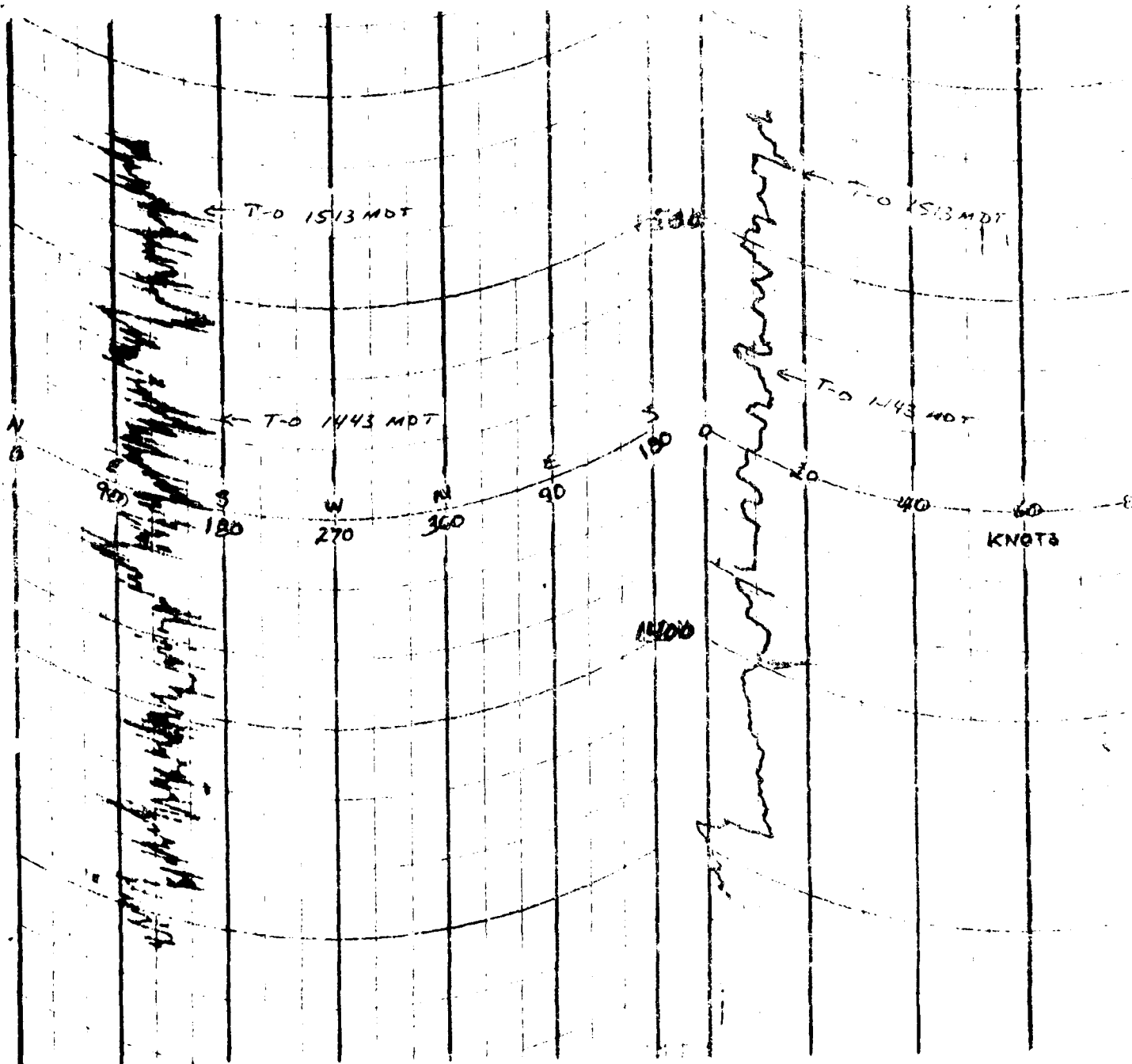


TABLE 5

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 30 July 1984

SITE: D34
 TIME: 1445 MDT
 WSTM COORDINATES:
 X= 441,072.67
 Y= 386,316.94
 H= 4,008.31

SITE: Deadhorse
 TIME: 1444 MDT
 WSTM COORDINATES:
 X= 519,932.11
 Y= 490,249.23
 H= 4,133.12

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	150	04
150	093	11
210	094	10
270	095	08
330	100	07
390	107	07
500	111	06
650		
800		
950		
1150		
1350		
1550		
1750		
2000		

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	160	05
150	200	05
210	220	05
270	220	04
330	220	04
390	330	02
500	180	05
650	170	10
800	170	12
950	170	13
1150	160	08
1350	170	03
1550	ENTERED CLOUDS	
1750		
2000		

Data obtained from Double theodolite tracked Pilot-balloon observations.

TABLE 6

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 30 July 1984

SITE: D3 $\frac{1}{2}$
TIME: 1514 MDT
WSTM COORDINATES:
X= 441,092.67
Y= 386,316.94
H= 4,008.31

SITE: Deadhorse
TIME 1515 MDT
WSTM COORDINATES:
X= 519,982.11
Y= 490,249.23
H= 4,133.12

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	150	03
150	104	13
210	105	12
270	108	10
330	110	08
390	106	06
500	111	05
650		
800		
950		
1150		
1350		
1550		
1750		
2000		

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	150	05
150	160	05
210	150	06
270	150	06
330	160	06
390	170	05
500	160	07
650	170	04
800	190	03
950	220	02
1150		
1350		
1550		
1750		
2000		

Data obtained from Double Theodolite Tracked Pilot-Balloon Observations

TABLE 7

AIMING AND T-TIME COMPUTER MET MESSAGE DATA

30 July 1984

WSD 0845 MDT METCM1324064 301480122884		NW-30 1130 MDT METCM1329065 301750123883		JALLEN 1211 MDT METCM1332065 301820124880		JALLEN 1444 MDT METCM1332065 302070124878	
00000000	29870884	00107001	30350883	00391005	30710880	00373010	30950878
01300005	29710873	01204001	30110873	01274007	30450870	01296013	30560869
02323011	29520849	02126004	29810849	02313005	30130845	02281005	30320845
03336011	29330810	03367002	29510811	03290006	29710808	03241006	29900807
04270009	28960764	04438004	29120765	04124001	29200763	04225006	29400762
05202006	28670720	05391002	28680721	05627005	28720719	05188004	28920719
06148008	28100678	06167006	28300679	06225004	28320678	06189003	28440677
07214007	27710638	07226008	27890639	07300007	27870638	07300005	27970638
08197012	27440600	08223014	27460601	08255011	27420600	08308005	27540600
09210016	27020563	09237016	27130565	09258012	27100563	09219007	27220563
10235011	26870529	10309008	26980530	10347006	26910529	10190003	26910529
11260003	26790496	11530005	26880498	11004005	26830496	11096008	26720497
12170002	26150451	12079007	26420452	12065010	26300451	12081009	26290451
13132004	25570395	13115006	25650397	13101008	25560395	13079006	25560395
14111008	24630345	14149005	24920347	14123007	24820345	14020003	24790345
15159008	24140300	15086003	24150302	15081003	24040300	15030005	24020300
16181013	22990260	16188011	23320261	16197008	23240260	16146005	23260260
17185011	22300223	17198013	22560225	17199011	22460224	17143014	22480224
18157013	21490191	18180016	21780193	18191019	21670192	18139018	21640192
19161020	20820163	19184021	20950165	19160018	20940164	19134013	20890164
20207007	20280138	20121002	20480140	20082008	20380139	20618009	20500139
21041014	20280117	21068016	20540119	21077018	20410118	21096019	20270118
22144013	20480099	22168010	20610101	22160010	20540100	22138010	20510100
23150016	20690084	23125017	20940085	23114016	20720085	23114017	20730085
24144019	21190071	24180020	21190073	24179023	21040072	24178013	21060072
25134017	21290061	25160018	21370062	25152018	21370061	25164020	21330061
26155030	21350052	26164028	21570053	26157025	21730052	26166026	21540052

STATION ALTITUDE 3989.00 FEET MSL
 10 JULY 64
 ASCENSION NO. 395

0845 MDT

SIGNIFICANT LEVEL DATA
 2120020395
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 8

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL-HUM. PERCENT
823.5	3989.0	23.7	50.0
874.9	4269.7	23.0	50.0
950.0	5094.2	21.0	50.0
795.7	6964.7	18.5	44.0
726.6	9500.1	12.3	63.0
700.0	10525.5	10.4	55.0
688.5	11766.8	7.0	58.0
604.4	14472.7	.1	86.0
584.0	15376.8	-1.0	62.0
577.1	15688.3	-2.2	72.0
569.2	16049.4	-2.7	80.0
564.9	16246.5	-2.3	65.0
558.0	16567.0	-3.6	62.0
543.2	17255.4	-3.9	36.0
531.2	17844.8	-4.4	36.0
518.0	18497.4	-3.9	21.0
500.0	19414.1	-4.5	16.0
497.9	19523.2	-4.2	16.0
476.8	20641.5	-6.2	17.0
460.7	25072.3	-16.7	24.0
277.8	26475.9	-19.7	23.0
300.0	31966.4	-32.5	23.0
274.1	34033.8	-38.6	26.0
250.0	36099.5	-43.5	
220.0	40923.1	-54.8	
126.9	44654.9	-64.2	
100.0	46786.4	-68.6	
74.9	47467.9	-69.7	
51.1	47991.6	-68.6	
104.9	50392.0	-70.2	
118.4	51411.3	-68.4	
107.9	51775.2	-69.9	
100.0	54766.8	-59.9	
76.9	60055.6	-60.0	
70.0	61994.2	-59.9	
67.0	62970.0	-58.6	
65.1	6494.2	-60.4	
50.0	68968.9	-57.1	
43.9	71699.3	-55.6	
33.5	75626.4	-51.3	

STATION ALTITUDE 12129.00 FEET MSL
30 JULY 52
ASCENSION NO. 122

NEUTRANT LEVEL DATA
210023395
WHITE SANDS

GEODETTIC COORDINATES
32.40043 LAT DEG
156.17033 LONG DEG

TABLE 8 Cont'd

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
30.0	79520.9	-55.4	
20.0	58626.0	-44.7	
17.3	57750.1	-39.1	
10.0	104254.0	-38.8	
9.4	105672.0	-36.9	

UPPER AIR DATA
 STATION ALTITUDE 3959.00 FEET MSL
 TO JULY 84
 ASCENSION NO. 392

0100000105
 WHITE SANDS

0845 MDT

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.70333 LON DEG

TABLE 9

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE				DIRECTION DEGR(FEELN)	SPEED KNOTS	
3959.0	653.5	23.7	12.7	50.0	1030.3	673.3	0	0	1.000193
4000.0	693.2	23.7	12.2	50.0	1030.0	673.3	193.6	.1	1.000293
4500.0	657.9	22.4	11.5	50.0	1016.8	671.5	193.5	3.7	1.000186
5000.0	652.8	21.2	10.4	50.0	1007.6	670.3	197.6	7.4	1.000279
5500.0	637.9	20.5	9.4	48.7	988.7	669.4	193.4	11.0	1.000272
6000.0	623.3	19.9	8.3	47.1	973.6	668.5	191.4	11.4	1.000265
6500.0	608.9	19.3	7.3	45.5	958.8	667.9	187.5	11.0	1.000259
7000.0	794.7	18.7	6.3	44.3	944.2	667.1	172.8	10.6	1.000253
7500.0	730.6	17.4	6.3	48.0	931.5	665.6	161.3	10.2	1.000251
8000.0	755.7	16.1	6.2	51.8	918.9	664.2	153.8	9.2	1.000248
8500.0	753.1	14.9	6.0	55.5	906.6	662.7	148.8	8.0	1.000245
9000.0	739.7	13.6	5.8	59.3	894.5	661.2	141.9	6.7	1.000242
9500.0	725.6	12.3	5.5	63.0	882.6	659.8	122.1	5.9	1.000239
10000.0	713.5	11.4	3.7	59.1	869.9	658.5	89.5	6.0	1.000231
10500.0	700.7	10.4	1.9	55.2	857.4	657.3	80.2	7.0	1.000224
11000.0	687.9	9.1	.8	56.1	846.0	655.7	78.9	7.7	1.000219
11500.0	675.4	7.7	-.2	57.4	834.8	654.0	65.8	5.0	1.000215
12000.0	653.0	6.4	-.7	60.4	823.4	652.5	101.1	8.0	1.000212
12500.0	650.7	5.1	-.8	65.6	811.8	651.0	112.7	8.0	1.000209
13000.0	638.0	3.9	-1.0	70.8	800.5	649.5	117.1	7.5	1.000207
13600.0	626.8	2.6	-1.2	75.9	789.3	648.0	115.3	7.8	1.000204
14000.0	615.2	1.3	-1.6	81.1	778.2	646.5	111.1	8.6	1.000201
14500.0	603.5	.1	-2.1	85.3	767.3	645.0	110.8	10.5	1.000196
15000.0	592.4	-.5	-5.0	72.0	755.0	644.1	111.3	12.6	1.000190
15500.0	581.3	-1.5	-7.0	66.0	743.6	642.9	111.5	15.4	1.000184
16000.0	570.3	-2.6	-7.8	67.7	732.7	641.5	116.4	12.9	1.000181
16500.0	559.4	-3.3	-9.4	62.6	720.8	640.5	119.9	17.7	1.000176
17000.0	548.3	-3.8	-13.7	45.9	708.7	639.9	126.6	14.1	1.000169
17500.0	538.1	-4.1	-16.9	36.0	696.2	639.4	134.8	14.4	1.000164
18000.0	528.0	-4.3	-18.3	32.6	683.4	639.1	137.0	11.8	1.000160
18500.0	517.9	-3.9	-23.0	21.0	669.7	639.5	139.5	9.9	1.000157
19000.0	508.1	-4.2	-24.8	18.3	657.7	639.1	141.0	5.5	1.000153
19500.0	498.3	-4.3	-26.3	16.0	645.3	639.0	140.7	2.4	1.000147
20000.0	488.9	-5.1	-26.6	16.4	634.8	638.1	230.2	.4	1.000145
20500.0	479.4	-5.9	-27.1	15.9	624.7	637.0	331.0	.4	1.000143
21000.0	470.1	-7.0	-27.5	17.6	615.1	635.7	39.2	.8	1.000140
21500.0	460.9	-8.2	-28.1	15.4	605.7	634.2	98.1	1.4	1.000136
22000.0	451.4	-9.4	-28.6	19.1	596.5	632.8	109.9	2.5	1.000131
22500.0	442.9	-10.6	-29.3	19.9	587.5	631.4	104.1	3.7	1.000124
23000.0	434.2	-11.8	-29.8	29.7	578.5	630.0	98.1	4.2	1.000122

UPPER AIR DATA
 210000Z096
 WHITE SANDS

STATION ALTITUDE 3999.00 FEET MSL
 30 JULY 54
 ASCENSION NO. 324

GEOMETRIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 9 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY G/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
23500.0	425.7	-13.0	-30.4	21.5	569.8	628.5	88.4	4.1	1.000130
24000.0	417.4	-14.2	-31.0	22.3	561.2	627.1	82.5	3.9	1.000126
24500.0	409.2	-15.3	-31.7	23.1	552.7	625.6	77.6	3.6	1.000120
25000.0	401.1	-16.5	-32.1	23.7	544.4	624.2	72.9	3.8	1.000124
25500.0	393.1	-17.6	-33.4	23.9	535.7	622.9	69.2	4.1	1.000121
26000.0	385.2	-18.7	-34.4	23.3	527.2	621.6	65.1	4.5	1.000119
26500.0	377.4	-19.8	-35.5	23.0	518.7	620.2	61.5	5.1	1.000117
27000.0	369.5	-20.9	-36.5	23.0	510.3	618.9	67.0	6.0	1.000115
27500.0	361.9	-22.1	-37.5	23.0	502.0	617.4	55.1	7.0	1.000113
28000.0	354.5	-23.3	-38.5	23.0	493.9	615.9	62.2	7.9	1.000111
28500.0	347.0	-24.4	-39.5	23.0	485.9	614.5	61.2	8.4	1.000109
29000.0	339.8	-25.6	-40.5	23.0	478.1	613.0	61.7	8.7	1.000108
29500.0	332.8	-26.7	-41.5	23.0	470.4	611.6	63.7	9.2	1.000106
30000.0	325.9	-27.9	-42.5	23.0	462.8	610.1	66.1	7.3	1.000104
30500.0	319.1	-29.1	-43.5	23.0	455.4	608.7	69.7	6.7	1.000102
31000.0	312.5	-30.2	-44.6	23.0	448.0	607.2	72.5	6.1	1.000101
31500.0	306.0	-31.4	-45.6	23.0	440.9	605.8	73.3	6.5	1.000099
32000.0	299.6	-32.6	-46.6	23.0	433.8	604.3	54.1	7.5	1.000097
32500.0	293.1	-34.1	-47.6	23.8	427.1	602.4	97.1	8.6	1.000096
33000.0	286.5	-35.5	-48.6	24.5	420.5	600.6	99.7	10.4	1.000094
33500.0	280.0	-37.0	-49.6	25.2	414.0	598.7	102.6	11.8	1.000093
34000.0	274.5	-38.5	-50.7	25.9	407.6	596.8	104.1	13.2	1.000091
34500.0	268.5	-39.7	-53.9	20.2**	400.7	595.3	107.1	11.4	1.000090
35000.0	262.0	-40.9	-57.9	13.5**	393.8	593.7	101.8	13.1	1.000088
35500.0	256.0	-42.1	-53.5	7.6**	387.1	592.2	99.9	12.5	1.000086
36000.0	251.1	-43.3	-75.6	1.3**	380.5	590.7	97.1	13.3	1.000085
36500.0	245.6	-44.5			373.9	589.2	99.7	12.6	1.000083
37000.0	239.8	-45.7			367.1	587.7	132.9	11.9	1.000082
37500.0	234.3	-46.8			360.6	586.1	137.7	12.7	1.000080
38000.0	229.0	-48.1			354.2	584.6	139.5	9.3	1.000079
38500.0	223.7	-49.1			347.9	583.1	139.5	9.1	1.000077
39000.0	219.0	-50.1			341.7	581.6	136.7	9.1	1.000076
39500.0	213.2	-51.1			335.7	580.0	132.9	9.8	1.000075
40000.0	207.7	-52.1			329.7	578.5	129.4	10.5	1.000073
40500.0	202.3	-53.1			323.9	577.0	96.1	10.8	1.000072
41000.0	197.0	-54.1			318.2	575.4	86.0	11.7	1.000071
41500.0	191.5	-55.0			312.4	573.7	84.1	13.1	1.000070
42000.0	186.0	-57.5			306.7	572.1	84.1	14.4	1.000068
42500.0	180.5	-55.5			301.1	570.4	81.8	15.7	1.000067
43000.0	175.0	-53.2			295.6	568.7	87.5	16.1	1.000066

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

UPPER AIR DATA
 212023395
 WHITE SANDS

STATION ALTITUDE 3290.00 FEET MSL
 30 JULY 64
 ASCENSION NO. 395 0845 MDT

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.77033 LON DEG

TABLE 9 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GN/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
43500.0	176.5	-61.3		290.2	567.0	89.3	16.4	1.000065
44000.0	172.3	-62.6		285.0	565.6	89.1	17.2	1.000063
44500.0	168.2	-63.6		279.8	563.7	89.0	18.2	1.000062
45000.0	164.0	-64.9		274.4	562.2	89.7	20.3	1.000061
45500.0	160.0	-65.9		269.0	560.8	90.3	22.4	1.000060
46000.0	155.0	-67.0		263.6	559.4	91.9	23.6	1.000059
46500.0	152.2	-68.0		258.4	558.0	93.9	23.9	1.000058
47000.0	148.4	-68.9		253.1	556.7	98.5	21.1	1.000056
47500.0	144.7	-69.6		247.6	555.8	104.6	18.2	1.000055
48000.0	141.0	-68.6		240.2	557.2	118.4	11.4	1.000053
48500.0	137.5	-68.9		234.6	556.7	154.6	6.4	1.000052
49000.0	134.1	-69.3		229.1	556.3	213.6	5.4	1.000051
49500.0	130.7	-69.5		223.7	555.8	251.0	8.6	1.000050
50000.0	127.4	-69.9		218.4	555.4	281.1	8.6	1.000049
50500.0	124.2	-70.0		213.0	555.3	305.9	10.6	1.000047
51000.0	121.1	-69.1		206.6	556.5	349.7	12.7	1.000046
51500.0	118.1	-68.5		201.0	557.6	12.9	18.2	1.000045
52000.0	115.1	-68.9		196.3	556.8	31.1	20.5	1.000044
52500.0	112.2	-69.3		191.8	556.3	44.3	23.0	1.000043
53000.0	109.4	-69.7		187.3	555.7	55.3	21.5	1.000042
53500.0	106.7	-69.9		182.8	555.6	66.5	20.1	1.000041
54000.0	104.0	-69.9		178.2	555.6	72.6	17.0	1.000040
55000.0	98.9	-69.5		173.8	555.4	80.3	14.5	1.000039
55500.0	95.4	-68.5		169.1	556.0	87.1	12.8	1.000038
56000.0	94.1	-67.6		164.2	557.3	92.6	11.7	1.000037
56500.0	91.8	-66.7		159.4	558.5	89.1	11.3	1.000036
57000.0	89.5	-65.7		154.8	559.8	84.7	11.3	1.000034
57500.0	87.3	-64.8		150.3	561.1	78.2	12.1	1.000033
58000.0	85.2	-63.8		146.0	562.4	74.4	13.3	1.000033
58500.0	83.1	-62.9		141.8	563.6	79.7	15.9	1.000032
59000.0	81.0	-62.0		137.7	564.9	82.1	18.3	1.000031
59500.0	79.1	-61.0		133.7	566.1	86.7	19.7	1.000030
60000.0	77.1	-60.1		129.8	567.4	90.4	21.0	1.000029
60500.0	75.1	-60.0		126.1	568.6	92.1	20.9	1.000028
61000.0	73.5	-60.0		123.0	568.8	94.2	20.9	1.000027
61500.0	71.7	-59.5		120.0	568.8	92.9	19.8	1.000027
62000.0	70.0	-59.5		117.1	568.9	90.3	18.5	1.000026
62500.0	68.3	-59.3		114.3	568.9	87.1	17.3	1.000025
63000.0	66.7	-59.1		111.3	569.7	81.9	16.1	1.000025
63500.0	65.7	-59.1		108.5	570.0	75.8	15.2	1.000024

STATION ALTITUDE 3959.00 FEET MSL
 10 JULY 64
 ASCENSION NO. 396

UPPER AIR DATA
 212020396
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

0845 MDT

TABLE 9 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE						
6350.0	55.1	-50.4			106.6	568.2	74.7	15.1	1.000024
6400.0	53.5	-50.1			107.9	568.5	73.9	15.2	1.000023
6450.0	52.0	-50.5			101.3	569.0	70.7	16.0	1.000023
6500.0	50.5	-50.5			98.7	569.4	58.0	17.4	1.000022
6550.0	49.1	-50.1			96.2	569.9	67.8	19.2	1.000021
6600.0	47.7	-50.9			93.8	570.3	69.6	21.9	1.000021
6650.0	46.3	-50.4			91.4	570.7	71.2	24.4	1.000020
6700.0	45.0	-50.3			89.1	571.1	77.8	26.7	1.000020
6750.0	43.7	-50.0			86.9	571.5	82.6	29.6	1.000019
6800.0	42.4	-50.7			84.7	571.9	85.8	30.9	1.000019
6850.0	41.1	-50.2			82.6	572.3	90.0	31.9	1.000018
6900.0	39.9	-50.3			80.5	572.7	93.7	32.7	1.000018
6950.0	38.6	-50.5			78.5	573.0	94.1	32.8	1.000017
7000.0	37.6	-50.5			76.6	573.4	94.5	32.5	1.000017
7050.0	36.3	-50.0			74.7	573.7	94.8	33.0	1.000017
7100.0	35.1	-50.0			72.8	574.1	94.2	33.1	1.000016
7150.0	34.0	-50.7			71.0	574.5	94.7	34.7	1.000016
7200.0	33.3	-50.3			69.2	574.9	93.2	34.7	1.000015
7250.0	32.3	-50.7			67.4	575.8	93.0	35.4	1.000015
7300.0	31.7	-50.0			65.7	576.5	93.0	35.3	1.000015
7350.0	30.9	-50.0			64.0	577.2	93.1	35.0	1.000015
7400.0	29.9	-50.1			62.4	577.9	93.0	34.7	1.000014
7450.0	29.0	-50.1			60.8	578.6	96.0	34.3	1.000014
7500.0	28.3	-50.0			59.1	579.4	96.0	33.9	1.000014
7550.0	27.7	-50.0			57.1	580.1	96.0	33.9	1.000013
7600.0	27.1	-50.0			56.4	580.8	96.0	33.9	1.000013
7650.0	26.5	-50.0			55.1	579.7	96.0	33.9	1.000013
7700.0	26.0	-50.0			53.9	579.4	96.0	33.9	1.000013
7750.0	25.5	-50.0			52.9	579.0	96.0	33.9	1.000013
7800.0	25.0	-50.0			51.6	578.7	96.0	33.9	1.000013
7850.0	24.5	-50.0			50.4	578.4	96.0	33.9	1.000013
7900.0	24.0	-50.0			49.3	578.1	96.0	33.9	1.000013
7950.0	23.5	-50.0			48.0	577.7	96.0	33.9	1.000013
8000.0	23.0	-50.0			47.1	577.7	96.0	33.9	1.000013
8050.0	22.5	-50.0			46.0	577.4	96.0	33.9	1.000013
8100.0	22.0	-50.0			44.8	577.0	96.0	33.9	1.000013
8150.0	21.5	-50.0			43.7	576.7	96.0	33.9	1.000013
8200.0	21.0	-50.0			42.6	576.3	96.0	33.9	1.000013
8250.0	20.5	-50.0			41.5	576.0	96.0	33.9	1.000013
8300.0	20.0	-50.0			40.5	575.6	96.0	33.9	1.000013

UPPER AIR DATA
 210000395
 WHITE SANDS

STATION ALTITUDE 1989.00 FEET TSL
 30 JULY 64
 ASCENSION NO. 396

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.77033 LON DEG

TABLE 9 Cont'd

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
9300.0	25.3	-49.8		39.5	582.3	86.2	33.7	1.000009
9400.0	24.7	-49.3		38.5	582.9	86.1	34.2	1.000009
9500.0	24.2	-49.8		37.4	583.5	86.7	34.6	1.000008
9600.0	23.5	-48.3		36.6	584.2	85.1	35.6	1.000008
9700.0	23.1	-47.8		35.7	584.8	84.7	36.8	1.000008
9800.0	22.6	-47.3		34.8	585.5	83.1	37.9	1.000006
9900.0	22.1	-46.8		33.9	586.1	84.6	38.9	1.000006
10000.0	21.5	-46.3		33.1	586.8	86.6	39.9	1.000007
10100.0	21.1	-45.8		32.3	587.4	88.5	40.9	1.000007
10200.0	20.6	-45.3		31.5	588.0	91.5	41.1	1.000007
10300.0	20.1	-44.8		30.7	588.7	94.7	41.2	1.000007
10400.0	19.7	-44.3		30.0	589.1	97.9	41.4	1.000007
10500.0	19.2	-44.2		29.3	589.5	96.7	40.6	1.000007
10600.0	18.8	-43.9		28.6	589.9	99.0	39.5	1.000006
10700.0	18.4	-43.6		27.9	590.3	99.3	38.4	1.000006
10800.0	18.0	-43.2		27.3	590.7	98.6	38.2	1.000006
10900.0	17.5	-42.9		26.6	591.1	97.6	38.2	1.000006
11000.0	17.2	-42.6		26.0	591.5	96.6	38.2	1.000006
11100.0	16.8	-42.3		25.4	591.9	95.6	38.7	1.000006
11200.0	16.5	-42.0		24.8	592.3	94.5	39.2	1.000006
11300.0	16.2	-41.7		24.2	592.7	93.5	39.8	1.000005
11400.0	15.7	-41.4		23.7	593.1	92.5	41.6	1.000005
11500.0	15.4	-41.1		23.1	593.4	91.5	44.0	1.000005
11600.0	15.1	-40.8		22.6	593.8	90.6	46.6	1.000005
11700.0	14.7	-40.5		22.0	594.2	90.7	47.2	1.000005
11800.0	14.4	-40.2		21.5	594.5	89.4	47.2	1.000005
11900.0	14.1	-39.9		21.0	595.0	88.9	47.2	1.000005
12000.0	13.8	-39.6		20.5	595.4	88.3	46.8	1.000005
12100.0	13.5	-39.3		20.1	595.8	87.6	46.3	1.000004
12200.0	13.2	-39.1		19.6	596.3	87.0	45.7	1.000004
12300.0	12.9	-39.1		19.2	596.0	86.6	45.4	1.000004
12400.0	12.6	-39.0		18.8	596.1	87.1	45.7	1.000004
12500.0	12.3	-39.0		18.3	596.1	87.5	46.0	1.000004
12600.0	12.1	-39.0		17.9	596.1	87.9	46.3	1.000004
12700.0	11.9	-39.0		17.6	596.2	88.7	45.8	1.000004
12800.0	11.5	-39.0		17.2	596.2	89.9	44.8	1.000004
12900.0	11.3	-38.9		16.8	596.2	91.2	43.7	1.000004
13000.0	11.0	-38.9		16.4	596.3	92.5	42.7	1.000004
13100.0	10.5	-38.9		16.1	596.3			1.000004
13200.0	10.2	-38.9		15.7	596.3			1.000003

UPPER AIR DATA
 2120020394
 WHITE SANDS
 GEOMETRIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

STATION ALTITUDE 5669.00 FEET MSL
 30 JULY 52
 ASCENSION NO. 39, 0945 MDT

TABLE 9 Cont'd

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
103500.0	10.7	-35.5		15.4	596.3			1.000003
104000.0	10.1	-35.5		15.0	596.4			1.000003
104500.0	9.9	-35.5		14.7	596.4			1.000003
105000.0	9.7	-35.5		14.4	596.3			1.000003
105500.0	9.5	-35.5		14.1	596.3			1.000003

STATION ALTITUDE 1909.00 FEET MSL
 20 JULY 64
 ASCENSION NO. 395 0845 MDT

MAJORITY LEVELS
 2100020395
 WHITE SANDS

GEODETTIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 10

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
				DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5090.	21.0	50.	193.6	8.0
800.0	4907.	19.0	44.	175.5	10.6
750.0	4614.	14.6	50.	167.7	7.7
700.0	4315.	10.4	55.	79.0	7.1
650.0	4022.	5.1	60.	113.0	8.0
600.0	3728.	-1.1	81.	110.7	11.1
550.0	3430.	-7.8	48.	125.5	16.4
500.0	3135.	-4.5	16.	145.2	2.9
450.0	2838.	-9.7	19.	138.0	2.7
400.0	2530.	-16.7	24.	72.3	3.0
350.0	2227.	-23.9	23.	51.1	8.1
300.0	1920.	-32.5	23.	83.0	7.0
250.0	1619.	-43.5		97.5	13.7
200.0	1323.	-54.9		91.1	11.5
175.0	1158.	-61.7		99.1	16.7
150.0	1008.	-68.6		96.2	22.4
125.0	823.	-70.2		299.0	9.9
100.0	649.	-69.0		81.3	13.7
50.0	590.7.	-61.5		55.	21.4
70.0	6178.0	-59.0		87.4	17.1
60.0	6424.0	-59.4		57.1	17.9
50.0	6870.0	-57.1		73.0	34.7
40.0	7373.0	-53.4		90.7	18.0
30.0	7947.0	-53.4		89.1	25.1
20.0	8336.0	-48.5		85.0	11.0
15.0	8509.0	-44.7		95.0	11.0
10.0	9457.0	-40.8		90.0	60.0
10.0	10369.0	-38.8		90.0	60.0

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

UPPER AIR DATA
 4120220017
 4-73
 TABLE 12

STATION ALTITUDE 6010.0 FEET MSL
 30 JULY 64 1150 MDT
 ASCENSION NO. 17

GEODETIC COORDINATES
 32.86497 LAT DEG
 106.49714 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEW-POINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
6010.4	653.2	28.7	13.5	40.0	1011.5	678.8	60.0	1.0	1.000290
6500.0	658.6	25.6	10.8	39.1	1006.8	675.3			1.000279
5000.0	693.5	24.0	9.7	40.4	993.2	673.4			1.000274
5500.0	688.6	22.2	5.1	41.6	984.1	671.3			1.000266
6000.0	684.0	21.4	5.1	42.4	969.9	670.2			1.000263
6500.0	679.7	20.5	7.6	43.2	955.9	669.2	205.8	1.4	1.000259
7000.0	795.0	19.6	7.0	44.0	942.1	668.2	227.7	2.0	1.000254
7500.0	781.0	18.3	6.8	47.1	929.7	667.7	239.0	2.8	1.000251
8000.0	757.0	16.9	6.3	50.3	917.5	665.1	245.3	3.6	1.000248
8500.0	754.0	15.6	6.3	53.5	905.5	663.5	246.4	3.8	1.000245
9000.0	740.2	14.2	5.7	56.7	893.6	661.9	246.5	3.6	1.000241
9500.0	727.5	12.8	5.2	59.9	882.0	660.3	232.7	2.8	1.000236
10000.0	714.5	11.5	4.7	63.1	870.5	658.8	194.0	1.5	1.000234
10500.0	701.6	10.7	5.9	67.5	857.3	657.9	105.5	3.2	1.000222
11000.0	685.9	9.6	3.7	66.7	845.0	656.6	94.7	4.3	1.000220
11500.0	675.4	8.7	-0.7	51.7	833.3	655.1	95.0	6.3	1.000213
12000.0	654.0	7.5	-1.7	51.7	821.6	653.7	107.7	7.5	1.000209
12500.0	651.0	5.2	-1.7	50.5	810.1	652.2	116.0	7.7	1.000207
13000.0	635.9	5.0	-1.8	61.4	798.8	650.8	126.7	8.1	1.000204
13500.0	626.0	3.7	-2.1	66.0	787.9	649.2	127.9	9.2	1.000202
14000.0	615.4	2.3	-2.5	70.5	777.1	647.5	127.4	11.2	1.000199
14500.0	604.0	1.0	-3.0	75.0	766.6	645.9	125.7	13.5	1.000195
15000.0	593.1	0.0	-4.6	72.0	755.5	644.5	126.3	15.3	1.000192
15500.0	582.0	-1.7	-4.3	60.1	744.0	643.3	123.0	17.0	1.000189
16000.0	571.4	-3.0	-4.7	53.1	732.5	642.2	121.0	18.1	1.000187
16500.0	550.0	-3.0	-5.0	78.2	720.8	641.2	135.5	19.0	1.000184
17000.0	549.4	-3.0	-4.0	56.8	708.2	640.7	144.4	19.7	1.000182
17500.0	539.1	-3.4	-4.1	34.5	695.8	640.3	155.3	20.0	1.000180
18000.0	529.9	-3.7	-2.0	22.4	683.5	639.8	169.2	20.0	1.000178
18500.0	514.1	-5.1	-2.1	20.6	670.9	639.4	182.0	21.8	1.000176
19000.0	504.0	-4.0	-2.3	18.7	658.5	639.4	211.0	21.0	1.000174
19500.0	490.0	-4.4	-2.0	17.4	646.4	639.1	237.0	21.0	1.000172
20000.0	483.0	-3.1	-2.0	23.7	636.1	635.1	260.0	21.0	1.000170
20500.0	465.0	-6.1	-3.8	30.0	626.0	637.0	280.0	21.0	1.000168
21000.0	471.0	-7.0	-3.4	36.3	616.1	635.9	301.0	21.0	1.000166
21500.0	452.0	-7.9	-1.4	42.7	606.2	634.8	320.0	21.0	1.000164
22000.0	453.0	-7.3	-1.6	42.7	597.0	633.5	341.0	21.0	1.000162
22500.0	445.0	-11.0	-1.6	29.1	587.9	632.0	361.0	21.0	1.000160
23000.0	435.4	-11.4	-2.6	35.5	579.0	630.5	381.0	21.0	1.000158
23500.0	426.3	-12.5	-2.5	31.8	570.3	629.1	401.0	21.0	1.000156

WIND DATA IN PARAGRAPHS TO MISSING RAW AZIMUTH AND ELEVATION ANALYSIS

UPPER AIR DATA
 2102220017
 No 30

STATION ALTITUDE 6010.40 FEET MSL
 TO JULY 50 1130 MDT
 ASCENSION NO. 17

GEODETIC COORDINATES
 32.88497 LAT DEG
 106.49714 LON DEG

TABLE 12 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) SPEED KNOTS	INDEX OF REFRACTION
24000.0	419.0	-13.7	28.2	561.5	527.5	58.4	1.000126
24500.0	410.2	-14.9	24.6	553.1	626.2	61.6	1.000126
25000.0	402.1	-16.1	21.0	544.8	624.7	66.3	1.000123
25500.0	394.0	-17.2	20.1	536.1	623.4	71.3	1.000121
26000.0	386.0	-18.2	20.2	527.5	622.0	77.0	1.000119
26500.0	378.2	-19.4	20.4	519.0	620.7	79.4	1.000117
27000.0	370.5	-20.4	20.5	510.5	619.4	81.5	1.000115
27500.0	363.0	-21.5	20.6	502.4	618.1	80.7	1.000113
28000.0	355.0	-22.6	20.7	494.3	616.7	79.2	1.000111
28500.0	346.4	-23.7	20.9	486.4	615.4	80.3	1.000109
29000.0	341.3	-24.8	21.0	478.5	614.0	81.5	1.000108
29500.0	334.1	-26.0	21.2	470.8	612.6	68.3	1.000106
30000.0	327.1	-27.1	21.3	463.2	611.1	37.5	1.000104
30500.0	320.2	-28.3	21.5	455.7	609.5	30.2	1.000102
31000.0	313.3	-29.5	21.7	448.3	608.1	349.3	1.000101
31500.0	307.0	-30.7	21.8	441.1	606.5	22.0	1.000099
32000.0	300.4	-31.9	22.0	433.9	605.1	15.2	1.000097
32500.0	294.1	-33.2	22.7	426.9	603.5	75.0	1.000096
33000.0	287.7	-34.5	23.4	420.0	601.9	58.1	1.000094
33500.0	281.6	-35.8	24.1	413.2	600.2	93.0	1.000092
34000.0	275.4	-37.1	24.8	406.5	598.5	95.8	1.000091
34500.0	269.5	-38.4	25.5	399.9	596.9	102.6	1.000089
35000.0	263.1	-39.7	26.0	393.2	595.3	107.0	1.000088
35500.0	257.1	-40.9	26.5	386.6	593.8	101.1	1.000086
36000.0	251.2	-42.2	27.2	380.2	592.2	108.5	1.000085
36500.0	245.3	-43.5	27.7	373.4	590.8	101.7	1.000083
37000.0	240.0	-44.8	28.2	366.7	589.3	114.3	1.000081
37500.0	235.1	-46.1	28.5	360.1	587.6	117.3	1.000080
38000.0	230.0	-47.4	28.7	353.7	586.4	111.3	1.000078
38500.0	224.7	-48.7	29.0	347.4	584.7	113.7	1.000077
39000.0	219.7	-49.9	29.5	341.1	583.4	114.3	1.000075
39500.0	214.7	-51.2	29.8	335.1	581.9	117.3	1.000073
40000.0	209.7	-52.5	30.3	329.2	580.5	121.3	1.000071
40500.0	205.0	-53.8	30.7	323.4	579.0	130.7	1.000069
41000.0	200.0	-55.1	31.2	317.6	577.5	147.3	1.000067
41500.0	195.0	-56.4	31.7	312.0	575.7	161.7	1.000065
42000.0	191.0	-57.7	32.0	306.5	574.0	131.4	1.000064
42500.0	186.0	-58.9	32.5	301.1	572.2	104.1	1.000062
43000.0	182.0	-60.2	32.8	295.7	570.4	100.1	1.000060
43500.0	177.0	-61.5	33.2	290.5	568.5	114.3	1.000058

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

UPPER AIR DATA
212022Z017
NW 30

STATION ALTITUDE 6010.40 FEET MSL
30 JULY 84 1130 MDT
ASCENSION NO. 17

GEODETTIC COORDINATES
32.88497 LAT DEG
106.49714 LON DEG

TABLE 12 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES(TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
4400.0	173.4	-51.5		285.4	566.8	104.0	20.2	1.000064
4500.0	159.2	-52.7		280.1	565.2	103.5	21.4	1.000062
4600.0	155.1	-53.7		274.6	563.8	103.4	22.6	1.000061
4500.0	151.0	-54.7		269.2	562.6	102.8	21.6	1.000060
4600.0	157.1	-65.8		263.9	561.0	102.1	20.0	1.000059
46500.0	153.2	-65.8		258.7	559.6	101.1	17.1	1.000058
47000.0	149.5	-67.7		253.5	558.4	99.3	13.4	1.000056
47500.0	145.7	-68.0		247.4	558.0	96.8	9.1	1.000055
48000.0	142.1	-68.2		241.5	557.7	90.1	4.0	1.000054
48500.0	138.5	-68.5		235.8	557.3	330.8	1.5	1.000053
49000.0	135.1	-68.7		230.2	557.0	305.5	5.6	1.000051
49500.0	131.7	-69.0		224.7	556.7	303.1	9.8	1.000050
50000.0	128.4	-69.1		219.2	556.5	333.3	10.6	1.000049
50500.0	125.2	-68.7		212.8	557.9	352.5	13.6	1.000047
51000.0	122.1	-67.2		206.6	559.1	16.4	15.6	1.000046
51500.0	119.1	-66.7		200.9	559.8	36.4	18.6	1.000045
52000.0	116.1	-67.4		196.6	558.8	44.0	20.9	1.000044
52500.0	113.2	-68.2		192.4	557.8	94.3	19.1	1.000043
53000.0	110.4	-68.7		188.1	557.0	78.0	18.0	1.000042
53500.0	107.5	-68.2		183.0	557.7	94.0	14.9	1.000041
54000.0	105.0	-67.1		178.0	558.4	92.0	12.1	1.000040
54500.0	102.4	-67.3		173.3	558.9	53.8	10.8	1.000039
55000.0	99.8	-67.3		168.7	559.3	94.4	9.5	1.000038
55500.0	97.3	-66.5		164.2	560.0	91.7	8.7	1.000037
56000.0	94.8	-65.9		159.8	560.7	34.7	8.3	1.000036
56500.0	92.3	-65.3		155.5	561.4	21.0	8.0	1.000035
57000.0	90.0	-64.1		151.2	562.1	66.9	9.0	1.000034
57500.0	87.7	-64.2		147.2	562.9	59.7	10.0	1.000033
58000.0	86.1	-63.4		143.2	563.5	51.0	10.7	1.000032
58500.0	83.9	-61.1		139.4	564.3	33.1	15.2	1.000031
59000.0	81.9	-62.1		135.6	565.0	76.4	20.3	1.000030
59500.0	79.9	-62.1		132.0	565.7	84.5	25.8	1.000029
60000.0	77.9	-62.1		128.4	566.4	90.8	27.7	1.000028
60500.0	76.1	-61.1		125.0	567.1	91.0	28.2	1.000027
61000.0	74.1	-61.2		122.0	567.1	99.6	25.8	1.000027
61500.0	72.4	-61.2		119.0	567.1	102.0	20.7	1.000027
62000.0	70.7	-61.2		116.2	567.1	103.7	17.5	1.000026
62500.0	69.2	-61.1		113.8	567.3	102.1	16.6	1.000025
63000.0	67.3	-60.7		110.4	567.8	100.3	15.8	1.000025
63500.0	65.7	-60.3		107.6	568.3	77.0	16.0	1.000024

UPPER AIR DATA

STATION ALTITUDE 4010.60 FEET MSL
 70 JULY 84
 ASCENSION NO. 17

GEODETIC COORDINATES
 32.88697 LAT DEG
 106.49714 LON DEG

012022017

1130 MDT

TABLE 12 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
6400.0	64.1	-50.0		106.8	568.8	95.7	16.3	1.000023
6450.0	62.6	-50.6		102.1	569.3	93.1	17.4	1.000023
6500.0	61.1	-51.2		98.5	569.8	90.4	19.3	1.000022
6550.0	59.7	-51.8		97.0	570.3	88.5	21.3	1.000022
6600.0	58.2	-52.5		94.5	570.8	87.4	22.7	1.000021
6650.0	56.8	-53.1		92.1	571.3	86.3	24.2	1.000021
6700.0	55.5	-53.7		89.7	571.8	86.7	25.2	1.000020
6750.0	54.2	-54.4		87.5	572.2	89.1	25.6	1.000019
6800.0	52.9	-55.1		85.4	572.2	91.5	26.0	1.000019
6850.0	51.6	-55.8		83.4	572.2	92.9	26.5	1.000018
6900.0	50.4	-56.5		81.4	572.2	94.1	27.0	1.000018
6950.0	49.1	-57.2		79.2	573.1			1.000018
7000.0	48.0	-57.9		77.0	574.4			1.000017
7050.0	46.9	-58.6		74.9	575.7			1.000017

STATION ALTITUDE 4010.40 FEET MSL
 20 JULY 84
 ASCENSION NO. 17 1130 MDT

MANDATORY LEVELS
 2120220017
 N# 30
 TABLE 13

GEODETTIC COORDINATES
 32.88497 LAT DEG
 106.49714 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
				DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5114.	22.9	41.	9999.0	9999.0
800.0	5439.	19.9	44.	222.3	1.5
750.0	5850.	15.2	54.	246.4	3.8
700.0	6254.	10.6	68.	105.0	4.4
650.0	6655.	6.1	57.	119.5	7.7
600.0	7059.	1.4	75.	125.8	14.5
550.0	7474.	-3.2	57.	143.9	12.3
500.0	7894.	-7.1	17.	285.3	3.4
450.0	8315.	-9.4	41.	45.4	7.8
400.0	8732.	-16.4	20.	57.2	6.4
350.0	9143.	-23.4	21.	50.3	5.4
300.0	9580.	-32.0	22.	56.9	3.5
250.0	10011.	-42.5		108.5	11.1
200.0	10439.	-53.5		87.0	14.7
175.0	10710.	-61.0		134.7	19.7
150.0	10901.	-67.7		94.7	14.1
125.0	11087.	-68.1		354.0	13.1
100.0	11293.	-67.1		94.1	8.7
80.0	11523.	-62.3		83.0	8.0
70.0	11820.	-61.3		107.2	17.2
60.0	12136.	-58.9		89.2	20.5
50.0	12490.	-57.4		94.4	27.2

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

STATION ALTITUDE 4051.00 FEET MSL
 10 JULY 84 1211 MDT
 ASCENSION NO. 97

SIGNIFICANT LEVEL DATA
 012000Z097
 JALLEN

GEODETTIC COORDINATES
 13.16712 LAT DEG
 106.49511 LON DEG

TABLE 14

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
950.2	4051.0	32.2	11.9	29.0
972.9	4296.0	29.5	12.0	34.0
950.0	5070.8	26.6	11.5	39.0
762.6	7428.8	19.6	8.6	49.0
725.9	9544.2	13.0	5.9	62.0
700.0	10544.1	11.3	2.1	53.0
681.2	11291.7	9.6	-2.0	44.0
623.2	12692.4	2.9	-1.5	73.0
604.7	14492.5	.7	-4.5	62.0
578.0	15680.9	-1.9	-3.5	89.0
554.3	16774.4	-3.5	-5.3	81.0
543.6	17290.8	-3.9	-11.4	56.0
534.8	17705.0	-4.0	-15.6	40.0
518.0	18531.6	-5.1	-20.7	28.0
500.0	19466.8	-4.3	-21.8	24.0
400.0	25093.6	-17.1	-32.0	26.0
364.2	27384.7	-22.1	-34.9	30.0
300.0	31979.5	-32.8	-45.3	27.0
267.3	34619.0	-39.3	-50.5	29.0
253.0	36116.5	-43.0		
200.0	40949.3	-54.4		
174.7	43750.4	-61.3		
150.0	46835.9	-67.1		
119.6	49264.7	-70.3		
121.0	49503.0	-70.5		
122.2	50075.8	-68.7		
117.6	51633.3	-58.3		
124.8	50950.7	-70.7		
100.0	54625.1	-67.1		
71.0	56596.9	-58.7		
72.3	54716.0	-65.9		
71.0	51933.8	-62.1		
59.0	65131.9	-59.3		
55.1	66557.4	-56.3		
50.0	68977.6	-55.5		
40.0	77637.9	-54.4		

STATION ALTITUDE 4051.00 FEET MSL
 30 JULY 64
 ASCENSION NO. 97 1211 MDT

UPPER AIR DATA
 2120030097
 JALLEN
 TABLE 15

GEODETIC COORDINATES
 33.16712 LAT DLG
 106.49511 LON DLG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES(TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
4051.0	550.2	32.2	29.0	998.2	582.9	220.0	5.1	1.000279
4500.0	566.8	28.7	35.3	994.2	679.0	206.4	5.0	1.000280
5000.0	582.1	26.9	38.5	983.4	676.8	191.6	5.2	1.000277
5500.0	637.4	25.3	43.8	971.5	675.1	178.8	5.7	1.000273
6000.0	682.9	23.9	42.9	959.6	673.4	168.8	6.2	1.000268
6500.0	708.7	22.4	45.0	947.8	671.5	159.9	4.8	1.000264
7000.0	794.7	20.9	47.1	936.2	669.9	149.8	3.4	1.000260
7500.0	780.9	19.4	49.4	924.8	668.2	135.6	1.9	1.000255
8000.0	757.1	17.6	52.5	913.5	666.3	85.9	.9	1.000252
8500.0	753.5	16.3	55.6	902.3	664.5	25.0	1.2	1.000246
9000.0	740.2	14.7	58.5	891.2	662.5	5.0	2.2	1.000244
9500.0	727.0	13.1	61.7	880.4	660.9	1.2	3.0	1.000239
10000.0	714.0	12.2	57.9	867.8	659.5	2.5	3.6	1.000232
10500.0	701.2	11.4	53.4	855.2	658.4	6.9	3.8	1.000224
11000.0	685.5	10.3	47.5	843.5	656.9	72.6	2.0	1.000216
11500.0	676.0	9.0	46.5	832.0	655.6	133.4	3.0	1.000211
12000.0	663.5	7.6	52.5	820.7	653.3	152.1	6.2	1.000209
12500.0	651.4	6.2	58.6	809.5	652.2	164.0	6.2	1.000207
13000.0	639.1	4.8	64.0	798.7	650.5	168.5	6.5	1.000203
13500.0	627.7	3.4	70.7	787.9	649.0	162.2	7.2	1.000203
14000.0	616.0	2.1	71.1	777.4	647.3	152.8	8.9	1.000198
14500.0	604.5	.7	68.1	767.0	645.5	145.9	10.7	1.000193
15000.0	593.2	-.4	77.0	755.4	644.3	140.4	11.6	1.000192
15500.0	582.0	-1.5	85.8	744.1	643.1	138.2	12.2	1.000190
16000.0	571.0	-2.9	89.7	732.4	642.0	139.0	12.5	1.000186
16500.0	560.2	-3.1	83.0	720.6	641.1	149.8	11.9	1.000182
17000.0	549.5	-3.7	70.1	709.8	640.2	151.0	11.0	1.000175
17500.0	539.1	-4.0	47.9	698.5	639.7	174.2	9.6	1.000167
18000.0	528.7	-4.9	35.7	684.6	639.0	197.2	5.1	1.000153
18500.0	518.1	-5.1	28.5	673.3	638.2	231.0	3.8	1.000155
19000.0	508.2	-5.6	25.0	659.6	638.6	304.5	2.5	1.000152
19500.0	495.9	-4.4	24.0	646.3	638.9	356.2	4.7	1.000150
20000.0	485.0	-5.6	24.0	636.4	637.5	15.1	6.9	1.000143
20500.0	479.6	-6.7	24.4	626.6	636.2	22.5	8.0	1.000144
21000.0	470.0	-7.6	24.0	617.0	634.8	27.0	6.1	1.000142
21500.0	461.0	-9.0	24.9	607.5	633.6	31.0	9.7	1.000139
22000.0	452.0	-10.1	24.9	598.2	632.0	35.0	2.5	1.000137
22500.0	443.0	-11.0	25.1	589.1	630.7	39.3	10.3	1.000135
23000.0	434.5	-12.4	25.2	580.1	629.3	41.7	10.9	1.000133
23500.0	426.0	-13.5	25.4	571.2	627.9	43.1	11.4	1.000130

UPPER AIR DATA
2120030097
JALLEN

STATION ALTITUDE 6051.00 FEET MSL
30 JULY 84 1211 MDT
ASCENSION NO. 37

GEODETTIC COORDINATES
33.76712 LAT DEG
106.69511 LON DEG

TABLE 15 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GRAMS PER CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DE-POINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
24000.0	417.7	-14.6	-30.0	25.6	562.5	626.5	46.7	10.4	1.000126
24500.0	409.5	-15.8	-30.9	25.5	554.0	625.2	49.9	9.1	1.000126
25000.0	401.5	-16.9	-31.6	26.0	545.5	623.9	54.0	7.4	1.000124
25500.0	393.4	-18.0	-32.5	26.7	536.9	622.4	60.7	6.4	1.000122
26000.0	385.4	-19.1	-33.1	27.6	528.3	621.1	65.1	6.4	1.000120
26500.0	377.5	-20.2	-33.7	28.5	519.9	619.7	67.4	6.8	1.000118
27000.0	370.0	-21.3	-34.4	29.3	511.5	618.4	68.5	7.2	1.000116
27500.0	362.6	-22.4	-35.2	29.9	503.3	617.0	67.6	7.4	1.000114
28000.0	354.9	-23.5	-36.3	29.6	495.1	615.6	67.3	7.5	1.000112
28500.0	347.5	-24.7	-37.4	29.3	487.1	614.1	67.9	7.6	1.000110
29000.0	340.2	-25.9	-38.6	28.9	479.1	612.7	65.6	7.1	1.000108
29500.0	333.1	-27.0	-39.7	28.6	471.4	611.2	58.7	6.3	1.000106
30000.0	326.1	-28.2	-40.8	28.3	463.7	609.8	64.3	6.7	1.000104
30500.0	319.3	-29.4	-42.0	28.0	456.2	608.3	11.4	3.4	1.000102
31000.0	312.7	-30.5	-43.1	27.6	448.8	606.9	2.0	2.8	1.000101
31500.0	306.1	-31.7	-44.3	27.3	441.6	605.4	8	2.1	1.000099
32000.0	299.7	-32.9	-45.4	27.0	434.5	603.9	57.1	2.5	1.000097
32500.0	293.2	-34.1	-46.3	27.4	427.3	602.4	60.5	6.7	1.000096
33000.0	286.9	-35.3	-47.3	27.9	420.2	600.9	84.4	5.0	1.000094
33500.0	280.7	-36.5	-48.3	28.2	413.3	599.3	73.9	5.8	1.000093
34000.0	274.5	-37.5	-49.3	29.5	406.4	597.7	97.4	5.8	1.000091
34500.0	268.7	-39.0	-50.2	28.9	399.7	596.1	103.2	7.5	1.000089
35000.0	262.3	-40.2	-53.8	21.5**	392.0	594.5	112.3	5.2	1.000088
36000.0	251.5	-42.7	-59.5	11.9**	386.4	593.0	113.7	9.3	1.000086
36500.0	245.6	-43.9	-70.4	2.3**	379.9	591.4	113.7	9.1	1.000085
37000.0	240.0	-45.1			373.2	589.9	116.4	9.1	1.000083
37500.0	234.5	-46.3			366.5	588.3	117.7	10.1	1.000082
38000.0	229.2	-47.4			360.1	586.8	118.5	10.3	1.000080
38500.0	223.9	-48.5			353.7	585.3	111.6	12.2	1.000078
39000.0	219.4	-49.8			347.5	583.8	112.1	12.4	1.000077
39500.0	213.5	-51.0			341.3	582.2	112.1	12.5	1.000076
40000.0	209.0	-52.1			335.3	580.7	110.	12.0	1.000075
40500.0	204.6	-53.2			329.4	579.1	104.5	13.1	1.000073
41000.0	199.5	-54.5			323.6	577.5	107.5	15.4	1.000072
41500.0	194.5	-55.8			317.9	576.0	111.3	12.6	1.000071
42000.0	190.1	-57.0			312.1	574.4	111.2	19.1	1.000070
42500.0	185.5	-58.2			306.4	572.8	109.5	22.4	1.000068
43000.0	181.0	-59.4			300.8	571.2	105.9	21.1	1.000067
43500.0	176.5	-60.7			295.4	569.5	100.6	21.2	1.000066
44000.0	172.0				290.0	567.9	66.9	21.1	1.000065

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

UPPER AIR DATA

STATION ALTITUDE 40500 FEET MSL
 30 JULY 64
 ASCENSION NO. 27 1011 MDT

GEODETTIC COORDINATES
 33.16712 LAT DLG
 106.49511 LON DLG

TABLE 15 Cont'd

GEOMETRIC 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	
44000.0	172.6	-61.5		264.5	566.4	95.4	20.5	1.000063
44500.0	168.4	-62.7		278.8	565.2	93.8	19.8	1.000062
45000.0	164.3	-63.8		273.2	563.9	92.1	19.9	1.000061
45500.0	160.7	-64.6		267.7	562.5	88.7	17.7	1.000060
46000.0	156.3	-65.3		262.3	561.4	63.3	16.4	1.000058
46500.0	152.3	-66.5		257.1	560.1	78.4	15.2	1.000057
47000.0	148.5	-67.5		252.0	558.7	74.1	14.0	1.000056
47500.0	145.0	-68.6		247.0	557.2	69.9	11.9	1.000055
48000.0	141.4	-69.7		242.2	555.6	64.8	9.3	1.000054
48500.0	137.9	-70.3		236.8	554.8	42.4	6.8	1.000053
49000.0	134.4	-70.4		230.8	554.7	3.2	6.7	1.000051
49500.0	131.0	-70.5		225.2	554.5	351.8	9.9	1.000050
50000.0	127.7	-69.9		217.9	556.7	353.0	13.7	1.000049
50500.0	124.5	-69.6		212.1	557.2	3.0	16.2	1.000047
51000.0	121.4	-69.5		206.6	557.6	22.9	18.7	1.000046
51500.0	118.4	-69.1		201.3	557.5	39.5	20.2	1.000045
52000.0	115.4	-69.0		196.9	556.7	56.7	21.7	1.000044
52500.0	112.5	-69.3		192.8	555.5	68.4	21.3	1.000043
53000.0	109.7	-70.2		188.7	554.4	78.7	18.3	1.000042
53500.0	106.9	-69.7		183.1	555.7	88.4	15.2	1.000041
54000.0	104.3	-68.7		177.7	557.0	97.1	11.5	1.000040
54500.0	101.7	-67.7		172.4	558.4	99.9	9.6	1.000038
55000.0	99.1	-67.1		167.6	559.3	92.2	9.4	1.000037
55500.0	96.7	-66.8		163.1	559.4	81.7	9.5	1.000036
56000.0	94.3	-66.3		159.2	559.6	70.0	10.1	1.000035
56500.0	91.9	-66.7		155.2	559.7	62.2	10.6	1.000034
57000.0	89.7	-66.5		151.2	560.0	56.9	11.8	1.000034
57500.0	87.6	-66.4		147.3	560.2	54.5	13.0	1.000033
58000.0	85.7	-66.4		143.6	560.5	54.2	14.5	1.000031
58500.0	83.8	-66.3		139.9	560.7	61.7	17.0	1.000031
59000.0	81.9	-66.3		136.2	561.3	71.4	20.7	1.000030
59500.0	79.9	-66.3		132.5	562.1	51.5	23.9	1.000029
60000.0	77.9	-66.4		128.9	562.9	92.0	27.2	1.000029
60500.0	75.9	-66.4		125.4	563.6	96.4	20.2	1.000028
61000.0	73.9	-66.4		122.0	564.4	103.5	26.5	1.000027
61500.0	71.7	-66.7		119.7	565.2	105.5	23.7	1.000026
62000.0	70.0	-66.3		115.5	566.0	102.5	19.7	1.000026
62500.0	68.3	-66.7		112.5	566.6	93.3	16.6	1.000025
63000.0	66.6	-66.3		109.5	567.1	93.1	14.9	1.000024
63500.0	64.9	-66.4		106.7	567.7	90.7	14.5	1.000024

UPPER AIR DATA
 217000Z097
 JALLEN

STATION ALTITUDE 6051.00 FEET MSL
 TO JULY 8, 1211 MDT
 ASCENSION NO. 97

GEOMETRIC COORDINATES
 33.16712 LAT DEG
 106.49511 LON DEG

TABLE 15 Cont'd

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
6400.0	53.5	-50.3		103.9	568.3	91.9	15.6	1.000023
6450.0	52.0	-50.6		101.2	568.9	91.9	17.1	1.000023
6500.0	50.5	-50.5		98.6	569.5	90.2	19.0	1.000022
6550.0	49.0	-50.6		95.8	570.5	88.6	20.8	1.000021
6600.0	47.6	-50.5		93.1	572.1	87.1	22.5	1.000021
6650.0	46.3	-50.4		90.4	573.5	86.2	23.7	1.000020
6700.0	44.9	-50.2		86.2	573.9	86.4	24.1	1.000020
6750.0	43.6	-50.0		86.0	574.1	86.4	24.5	1.000019
6800.0	42.4	-50.6		84.0	574.3	85.5	25.1	1.000019
6850.0	41.1	-50.7		81.9	574.5	84.7	25.8	1.000018
6900.0	39.9	-50.5		79.9	574.8	85.1	27.1	1.000018
6950.0	38.8	-50.4		78.0	574.9	85.4	28.3	1.000017
7000.0	37.6	-50.3		76.2	575.1	88.4	28.7	1.000017
7050.0	36.5	-50.1		74.3	575.2	91.5	29.2	1.000017
7100.0	35.4	-50.0		72.6	575.4	95.5	28.5	1.000016
7150.0	34.4	-50.9		70.8	575.5	100.1	27.4	1.000016
7200.0	33.3	-50.6		69.1	575.7			1.000015
7250.0	32.3	-50.7		67.5	575.8			1.000015
7300.0	31.3	-50.6		65.9	576.0			1.000015
7350.0	30.4	-50.4		64.3	576.2			1.000014

STATION ALTITUDE 4051.00 FEET MSL
 20 JULY 54
 ASCENSION NO. 97 1211 MDT

MAGNETIC LEVELS
 11000097
 JALLEN
 TABLE 16

GEODETTIC COORDINATES
 33.16712 LAT DEG
 106.49511 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
		AIR DEGREES CENTIGRADE	DEW POINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
810.0	5007.	26.6	11.5	39.	189.7	5.2
800.0	5009.	21.5	9.5	46.	151.3	4.0
780.0	5129.	15.9	7.2	56.	17.2	1.5
760.0	10536.	11.3	2.1	53.	9.0	3.5
690.0	12551.	6.1	-1.7	59.	165.4	6.2
650.0	14682.	7.	-4.3	72.	143.7	11.1
590.0	16958.	-7.7	-9.1	71.	150.4	11.0
550.0	19420.	-4.3	-21.6	24.	352.7	3.5
490.0	22114.	-10.3	-25.6	25.	36.9	9.7
400.0	25052.	-17.1	-32.0	26.	55.6	7.1
360.0	28293.	-24.3	-37.0	29.	67.7	7.5
300.0	31917.	-32.8	-45.3	27.	54.2	2.4
250.0	36039.	-43.0			119.1	9.1
200.0	40852.	-54.4			111.0	17.1
175.0	43615.	-61.2			96.3	23.5
150.0	46711.	-67.1			75.7	14.6
125.0	50250.	-66.6			359.0	16.0
100.0	54659.	-67.1			95.3	9.5
80.0	59091.	-55.2			75.5	22.7
70.0	61779.	-62.1			102.8	20.0
60.0	64926.	-59.3			89.5	19.5
50.0	68720.	-55.5			85.0	26.9

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

STATION ALTITUDE 4351.0J FEET MSL
 20 JULY 94
 ASCENSION NO. 95 1444 MDT

SIGNIFICANT LEVEL DATA
 212003099
 JALLEY

GEODETTIC COORDINATES
 33.16712 LAT DEG
 106.49511 LONG DEG

TABLE 17

PRESSURE GEOMETRIC ALTITUDE		TEMPERATURE		REL. HUM. PERCENT
MILLIBARS	MSL FEET	AIR DEGREES	DEWPOINT CENTIGRADE	
979.6	4051.0	33.2	11.1	26.0
875.7	4155.4	31.1	10.4	26.0
950.0	5015.4	28.9	10.6	32.0
900.0	6770.6	23.5	9.0	37.0
760.0	7494.0	21.3	5.8	39.0
700.0	10528.5	12.6	3.6	54.0
636.1	17138.0	5.4	-1.1	63.0
561.9	19508.0	-7	-2.4	88.0
583.9	14333.8	-1.4	-4.4	80.0
547.3	17115.1	-3.1	-12.3	49.0
513.7	18757.5	-5.5	-21.5	27.0
500.0	19454.7	-5.7	-21.7	27.0
449.7	22196.0	-10.0	-25.9	27.0
433.7	23078.1	-12.0	-27.1	27.0
400.0	25094.3	-17.2	-31.7	27.0
300.0	31975.5	-33.0	-45.2	26.0
268.3	34530.1	-39.0	-49.6	31.0
250.0	36113.0	-42.8		
242.2	36815.7	-43.9		
200.0	40949.4	-54.9		
171.2	44167.4	-62.6		
150.0	46823.2	-67.6		
136.7	48651.5	-68.7		
128.9	49824.3	-67.8		
117.7	51610.9	-71.6		
110.5	52842.4	-70.9		
100.0	54809.8	-67.6		
78.9	59546.3	-65.2		
70.0	61973.4	-61.7		
50.0	68929.8	-57.2		
47.7	72241.7	-55.5		
38.1	74637.0	-56.7		

STATION ALTITUDE 4051.00 FEET MSL
 30 JULY 64 1444 MDT
 ASCENSION NO. 35

UPPER AIR DATA
 2100000000
 JALLEN

GEODETTIC COORDINATES
 33.16712 LAT DEG
 106.49511 LON DEG

TABLE 18

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	TEMP POINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
							DIRECTION DEGREES(TN)	SPEED KNOTS	
4551.0	878.4	15.2	11.1	25.0	997.2	683.5	210.0	9.9	1.000275
4500.0	855.1	13.2	10.5	29.6	987.9	680.4	202.0	8.2	1.000275
5000.0	850.4	26.9	10.5	31.9	975.2	679.0	191.7	6.6	1.000270
5500.0	835.9	27.4	9.9	33.4	963.5	677.2	173.1	5.4	1.000266
6000.0	821.5	25.9	9.2	34.8	952.0	675.5	152.4	5.1	1.000261
6500.0	807.5	24.3	8.4	35.2	940.7	673.7	140.2	5.4	1.000257
7000.0	793.9	22.9	7.6	37.6	929.5	671.9	129.0	7.0	1.000252
7500.0	779.9	21.3	6.8	39.0	918.3	670.1	127.5	7.7	1.000246
8000.0	765.1	19.8	6.4	41.5	906.5	668.4	120.5	5.0	1.000244
8500.0	750.5	18.1	5.9	44.0	894.9	666.8	124.3	4.5	1.000241
9000.0	739.2	17.0	5.4	46.4	883.5	665.1	126.5	5.1	1.000237
9500.0	728.2	15.5	4.9	48.9	872.3	663.4	115.7	4.5	1.000234
10000.0	717.3	14.1	4.2	51.4	861.2	661.7	105.7	4.0	1.000230
10500.0	707.7	12.7	3.6	53.9	850.4	660.1	97.0	3.6	1.000226
11000.0	698.2	11.5	2.8	55.6	839.1	658.4	88.5	3.3	1.000222
11500.0	689.1	9.9	1.9	57.4	828.0	656.7	105.1	3.0	1.000218
12000.0	680.2	8.5	1.0	59.1	817.1	655.1	120.4	3.1	1.000213
12500.0	671.2	7.4	.1	60.9	806.4	653.6	144.3	3.3	1.000209
13000.0	662.7	5.9	-1.6	62.5	795.8	651.8	166.6	4.1	1.000205
13500.0	654.5	4.5	-1.1	65.8	784.7	650.2	179.0	4.5	1.000202
14000.0	645.8	3.2	-1.3	72.1	773.7	648.7	183.6	5.5	1.000200
14500.0	637.4	1.9	-1.6	77.4	762.9	647.2	176.7	5.4	1.000197
15000.0	629.1	.6	-2.0	82.5	752.2	645.7	161.2	5.4	1.000194
15500.0	621.1	-1.7	-2.4	87.9	741.7	644.1	141.0	5.0	1.000191
16000.0	613.1	-1.1	-3.1	93.2	729.1	643.5	130.3	5.4	1.000186
16500.0	605.3	-1.5	-3.9	73.4	717.3	642.8	121.4	6.0	1.000180
17000.0	597.7	-2.8	-10.9	53.9	707.2	641.1	122.3	5.6	1.000171
17500.0	589.9	-3.7	-14.2	43.8	696.1	640.0	124.0	4.2	1.000166
18000.0	582.9	-5.4	-16.9	37.1	684.8	639.0	104.6	3.2	1.000151
18500.0	576.5	-6.1	-19.8	30.4	673.7	638.1	75.4	2.0	1.000157
19000.0	570.9	-7.2	-21.5	27.0	662.0	637.2	56.7	5.2	1.000153
19500.0	565.1	-8.3	-21.7	27.0	649.8	637.3	51.9	7.7	1.000150
20000.0	559.4	-9.2	-22.5	27.0	637.4	636.6	46.8	8.6	1.000146
20500.0	553.9	-7.1	-23.3	27.0	625.1	635.1	47.7	9.6	1.000145
21000.0	548.7	-5.5	-24.1	27.0	613.0	634.0	61.9	9.3	1.000143
21500.0	543.1	-4.4	-24.8	27.0	601.1	632.9	61.3	8.9	1.000140
22000.0	537.7	-10.2	-25.0	27.0	589.4	631.9	45.2	5.8	1.000136
22500.0	532.7	-11.1	-26.3	27.0	589.5	630.8	52.5	9.0	1.000135
23000.0	527.5	-11.9	-27.0	27.0	579.7	629.5	54.9	8.9	1.000133
23500.0	522.4	-11.1	-28.1	27.0	570.9	628.4	51.8	8.6	1.000131

UPPER AIR DATA
 1000 FT
 JALLEN

STATION ALTITUDE 4051.00 FEET MSL
 70 JULY 52
 ASCENSION NO. 28

GEODETIC COORDINATES
 33.16712 LAT DEG
 106.49511 LON DEG

TABLE 18 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
24500.0	418.0	-14.9	27.0	562.4	620.8	49.1	9.7	1.000126
24500.0	409.1	-15.7	27.0	554.0	625.3	42.4	7.5	1.000126
25000.0	401.5	-17.0	27.1	545.7	623.7	39.1	6.7	1.000124
25500.0	393.3	-18.1	27.1	537.0	622.2	41.5	5.7	1.000122
26000.0	385.1	-19.2	27.1	528.3	620.8	44.4	4.8	1.000120
26500.0	377.2	-20.4	27.0	519.7	619.4	47.0	4.3	1.000118
27000.0	369.4	-21.6	27.3	511.1	618.0	50.0	3.1	1.000116
27500.0	361.7	-22.7	27.4	502.6	616.5	50.3	2.7	1.000114
28000.0	354.2	-23.9	27.5	494.9	615.2	36.4	1.9	1.000112
28500.0	346.9	-25.0	27.5	486.9	613.7	34.9	1.9	1.000110
29000.0	339.7	-26.2	27.6	479.1	612.3	32.5	2.9	1.000108
29500.0	332.7	-27.3	27.6	471.4	610.9	34.3	6.3	1.000106
30000.0	325.4	-28.5	27.7	463.8	609.5	35.7	5.0	1.000104
30500.0	318.7	-29.6	27.8	456.4	608.0	32.4	6.1	1.000103
31000.0	312.1	-30.6	27.9	449.0	606.5	16.7	7.8	1.000101
31500.0	306.0	-31.6	27.9	441.9	605.1	20.3	6.0	1.000099
32000.0	299.7	-32.7	28.0	434.8	603.7	24.0	5.1	1.000098
32500.0	293.7	-33.7	28.0	427.5	602.2	27.9	4.1	1.000096
33000.0	287.4	-34.7	29.2	420.1	600.7	27.7	3.1	1.000094
33500.0	281.7	-35.4	29.2	412.2	599.2	27.7	2.1	1.000093
34000.0	274.7	-37.4	30.0	406.1	597.7	27.4	1.1	1.000091
34500.0	268.7	-38.5	31.0	399.5	596.2	27.4	1.1	1.000089
35000.0	261.7	-40.7	29.6	392.4	594.7	27.4	1.1	1.000087
35500.0	254.9	-41.3	28.0	385.1	593.2	27.4	1.1	1.000085
36000.0	248.7	-42.4	28.0	379.5	591.5	27.4	1.1	1.000083
36500.0	242.7	-43.4	28.0	372.5	590.3	27.4	1.1	1.000081
37000.0	236.7	-44.4	28.0	365.7	589.2	27.4	1.1	1.000079
37500.0	230.7	-45.3	28.0	359.4	587.5	27.4	1.1	1.000077
38000.0	224.7	-46.3	28.0	353.3	585.8	27.4	1.1	1.000075
38500.0	218.7	-47.3	28.0	347.2	584.1	27.4	1.1	1.000073
39000.0	212.7	-48.3	28.0	341.3	582.3	27.4	1.1	1.000071
39500.0	206.7	-49.3	28.0	335.3	580.5	27.4	1.1	1.000069
40000.0	200.7	-50.3	28.0	329.8	578.9	27.4	1.1	1.000067
40500.0	194.7	-51.2	28.0	324.2	577.1	27.4	1.1	1.000065
41000.0	188.7	-52.2	28.0	318.6	575.4	27.4	1.1	1.000063
41500.0	182.7	-53.1	28.0	313.2	573.8	27.4	1.1	1.000061
42000.0	176.7	-54.1	28.0	307.6	572.2	27.4	1.1	1.000059
42500.0	170.7	-55.0	28.0	301.7	570.5	27.4	1.1	1.000057
43000.0	164.7	-55.9	28.0	295.9	569.0	27.4	1.1	1.000055
43500.0	158.7	-56.8	28.0	290.3	567.4	27.4	1.1	1.000053

RELATIVE HUMIDITY VALUE WAS USED IN INTERPOLATIONS.

STATION ALTITUDE 4051.00 FEET MSL
 30 JULY 54
 ASCENSION NO. 98

1444 MDT

UPPER AIR DATA
 2120030098
 JALLEN

GEODETIC COORDINATES
 33.16712 LAT DEG
 106.49511 LON DEG

TABLE 18 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES(TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
4400.0	172.6	-62.2		285.0	565.9	79.3	16.8	1.000063
4450.0	158.4	-63.2		279.4	564.5	77.0	15.8	1.000062
4500.0	154.2	-64.2		273.8	563.2	74.8	15.9	1.000061
4550.0	150.2	-65.1		268.3	561.9	72.7	12.0	1.000060
4600.0	155.3	-66.1		262.9	560.6	69.1	9.5	1.000059
4650.0	152.4	-67.0		257.6	559.4	62.6	6.9	1.000057
4700.0	148.7	-67.7		252.1	558.4	26.6	4.5	1.000056
4750.0	145.0	-68.0		246.2	558.0	336.6	5.3	1.000055
4800.0	141.3	-68.3		240.4	557.5	333.2	8.0	1.000054
4850.0	137.5	-68.6		234.7	557.2	331.9	10.6	1.000052
4900.0	134.4	-68.4		228.7	557.4	348.3	12.3	1.000051
4950.0	131.0	-68.1		222.6	557.9	4.9	14.9	1.000050
5000.0	127.8	-68.2		217.1	557.8	19.0	17.7	1.000048
5050.0	124.5	-69.2		212.8	556.3	31.3	20.9	1.000047
5100.0	121.4	-70.3		208.5	554.9	40.1	22.6	1.000046
5150.0	118.4	-71.4		204.3	553.4	49.5	19.8	1.000046
5200.0	115.4	-71.4		199.2	553.4	61.3	17.6	1.000044
5250.0	112.5	-71.1		193.9	553.8	71.7	14.4	1.000043
5300.0	109.4	-70.6		188.6	554.4	87.3	11.9	1.000042
5350.0	106.9	-69.8		183.1	555.5	88.1	11.6	1.000041
5400.0	104.2	-69.0		177.8	556.7	86.7	11.4	1.000040
5450.0	101.6	-68.1		172.6	557.5	82.4	11.5	1.000038
5500.0	99.1	-67.5		167.8	558.7	78.2	11.8	1.000037
5550.0	96.6	-67.3		163.4	559.0	66.1	12.5	1.000036
5600.0	94.2	-67.0		159.2	559.4	61.7	13.4	1.000035
5650.0	91.9	-66.7		155.1	559.7	57.3	14.1	1.000035
5700.0	89.4	-66.5		151.1	560.0	56.1	14.8	1.000034
5750.0	87.4	-66.6		147.2	560.6	56.1	16.1	1.000033
5800.0	85.2	-66.0		143.3	560.7	54.7	17.4	1.000032
5850.0	83.1	-65.7		139.6	561.1	52.5	18.2	1.000031
5900.0	81.1	-65.5		136.0	561.4	71.5	19.3	1.000030
5950.0	79.1	-65.2		132.5	561.8	52.1	18.8	1.000030
6000.0	77.2	-64.5		128.9	562.7	94.5	19.2	1.000029
6050.0	75.3	-63.8		125.3	563.5	102.0	17.0	1.000028
6100.0	73.4	-63.1		121.8	564.5	104.9	14.3	1.000027
6150.0	71.7	-62.6		118.4	565.6	106.2	12.0	1.000026
6200.0	69.9	-61.7		115.2	566.5	97.7	11.3	1.000026
6250.0	68.2	-61.4		112.2	567.0	88.4	10.9	1.000025
6300.0	66.6	-61.0		109.4	567.4	91.6	12.1	1.000024
6350.0	65.0	-60.7		106.6	567.8	94.8	11.5	1.000024

STATION ALTITUDE 4051.00 FEET MSL
 TO JULY 24
 ASCENSION NO. 95

UPPER AIR DATA
 110000Z
 JALAN

GEODETTIC COORDINATES
 N 12712 LAT DEG
 106.45511 LON DEG

TABLE 18 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TA)	SPEED KNOTS	INDEX OF REFRACTION
6400.0	57.2	-56.4		103.5	568.3	94.4	15.9	1.000023
6500.0	57.7	-56.1		101.3	568.7	93.1	19.0	1.000023
6600.0	58.6	-55.7		94.7	569.1	92.7	21.9	1.000022
6800.0	59.0	-55.4		92.2	569.5	92.8	24.3	1.000021
7000.0	57.3	-55.1		93.9	570.0	93.3	26.8	1.000021
7200.0	56.0	-55.8		91.4	570.6	94.8	27.2	1.000020
7300.0	54.7	-56.4		89.1	570.8	96.6	27.2	1.000020
7400.0	53.7	-55.1		86.9	571.3	96.2	27.0	1.000019
7500.0	52.3	-57.5		84.5	571.7	93.0	26.4	1.000019
7600.0	51.1	-57.0		82.5	572.1	89.0	25.9	1.000018
7700.0	49.4	-57.2		80.4	572.5	87.0	25.9	1.000018
7800.0	48.2	-56.9		78.4	572.9	84.3	25.9	1.000017
7900.0	47.3	-56.7		76.5	573.2	81.0	25.7	1.000017
8000.0	46.4	-56.4		74.5	573.5	80.5	25.5	1.000017
8100.0	45.3	-55.1		72.7	573.9	89.0	25.3	1.000016
8200.0	44.0	-55.9		70.9	574.2	90.1	25.7	1.000016
8300.0	43.0	-55.6		69.2	574.6	91.0	26.4	1.000015
8400.0	42.0	-55.3		67.5	574.5			1.000015
8500.0	41.3	-55.5		66.0	574.2			1.000015
8600.0	40.3	-56.1		64.4	573.9			1.000014
8700.0	39.3	-56.4		63.1	573.5			1.000014
8800.0	38.3	-56.3		61.7	573.2			1.000014

STATION ALTITUDE 4000 FT
 10 JULY 54
 ASCENSION 40. 54

MANOIRY LEVELS
 COLLECTOR
 JAELEN

STATION ALTITUDE 4000 FT
 10 JULY 54
 ASCENSION 40. 54

MANOIRY LEVELS
 COLLECTOR
 JAELEN

TABLE 19

PRESSURE (GEOMETRICAL)	AIR TEMPERATURE	REL. HUM.	WIND DATA	
			DIRECTION	SPEED
FEET	DEGREES CENTIGRADE	PERCENT	DEGREES (CN)	KNOTS
4000	28.9	32.	190.4	6.6
3900	28.5	37.	133.7	6.1
3800	28.2	44.	126.0	5.5
3700	27.9	54.	97.0	3.3
3600	27.6	61.	146.0	3.3
3500	27.3	79.	176.0	5.4
3400	27.0	54.	122.8	5.6
3300	26.7	27.	52.4	7.4
3200	26.4	27.	47.7	8.8
3100	26.1	27.	39.5	6.6
3000	25.8	27.	2.1	1.7
2900	25.5	27.	24.5	5.9
2800	25.2	28.	77.1	6.7
2700	24.9		80.1	15.5
2600	24.6		28.9	17.2
2500	24.3		6.7	5.1
2400	24.0		29.6	25.0
2300	23.7		50.1	11.2
2200	23.4		75.0	13.9
2100	23.1		98.7	11.4
2000	22.8		92.6	23.6
1900	22.5		97.6	23.9

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

END

FILMED

DTIC