

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

ADA 122610

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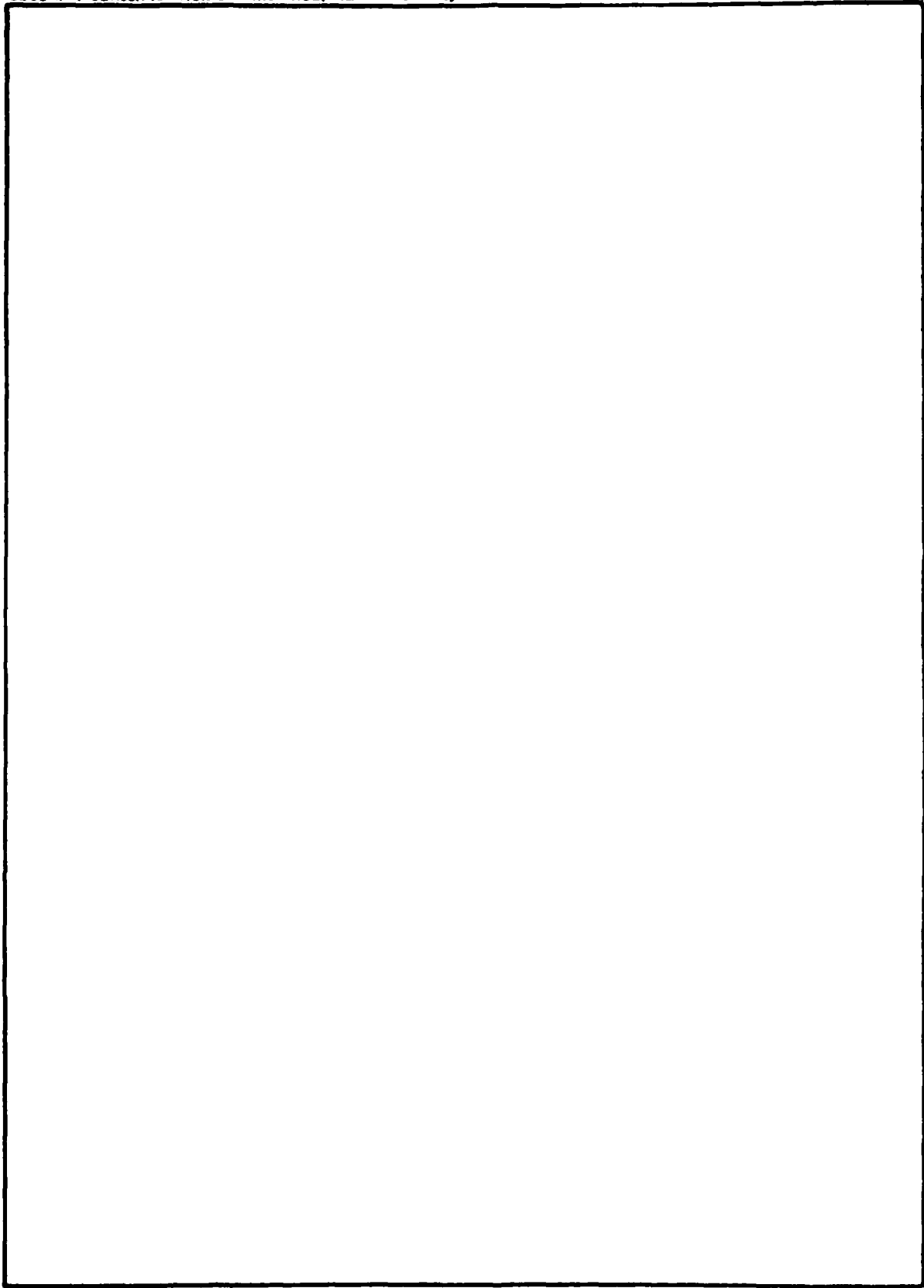
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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
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17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Approved for public release; distribution 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 19314 MLRS, Missile Numbers BC-114, BC-127, BC-118, Round Numbers V-333/PQ-73, V-334/PQ-74, V-335/PQ-75 are presented in tabular form.		

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INTRODUCTION

19314A MLRS, Missile Numbers BC-114, BC-127 and BC-118, Round Numbers V-333/PQ-73, V-334/PQ-74 and V-335/PQ-75, were launched from DEADHORSE, White Sands Missile Range (WSMR), New Mexico, at 0941:16, 0941:21 and 0941:25 MDT, 13 Oct 82. The scheduled launch times were 0930, 0930:04.5 and 0930:09 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 DEADHORSE Met Site at T-0 minutes.

(2) Anemometer data were provided from existing tower-mounted anemometers at DEADHORSE. 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 a Double Theodolite Pilot Balloon observatinn at:

SITE AND ALTITUDE

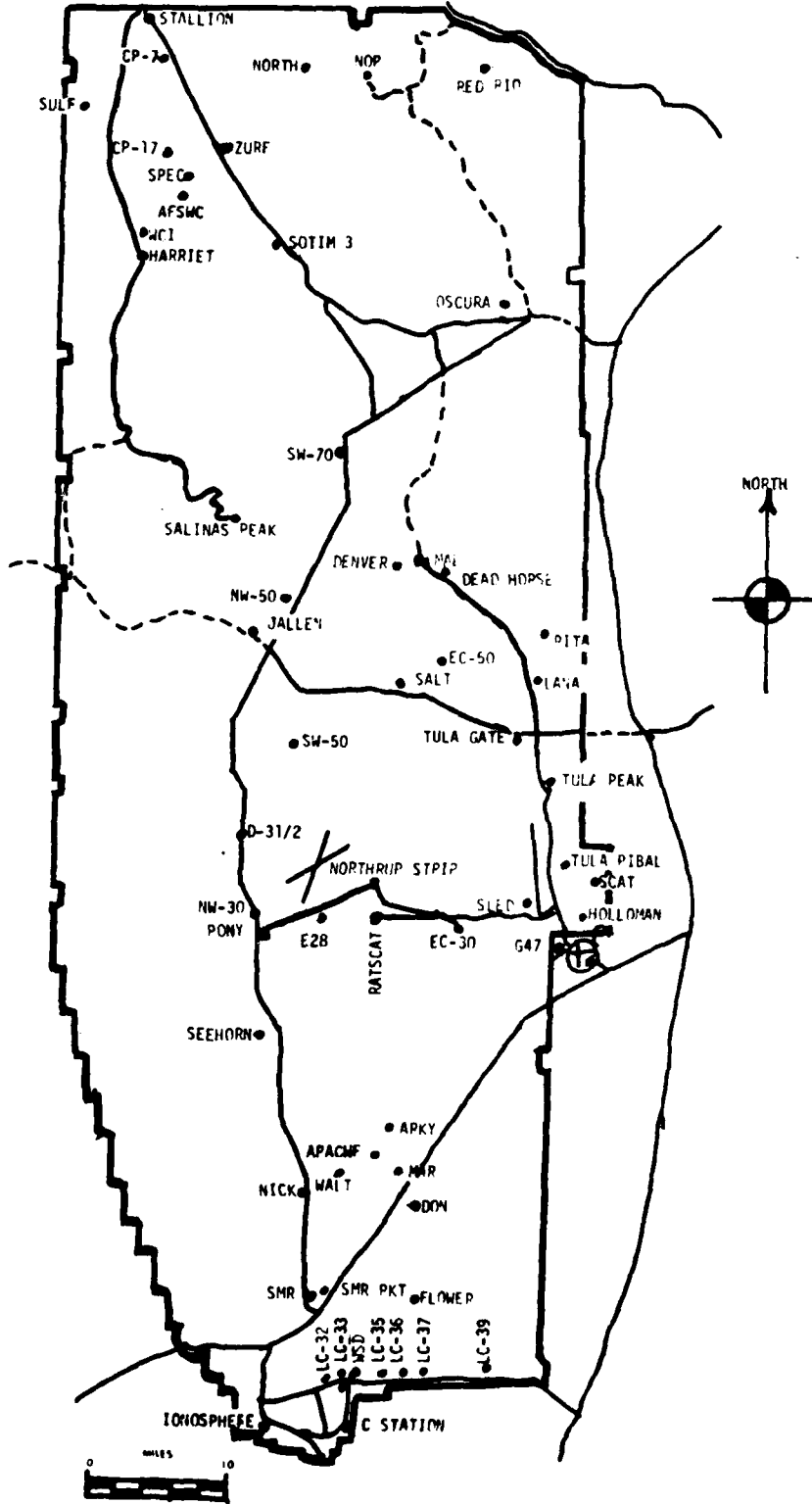
MAL 2 km

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

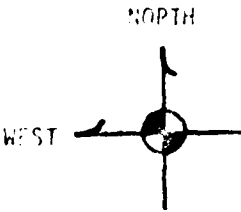
SITE AND TIME

LANA 0730 MDT
RITA 0800 MDT
LANA 0940 MDT

WSMR METEOROLOGICAL SITES



DEAD HORSE
MET SITE



1 inch = 1000 ft

Y493,000

X521,000

X523,000

Y491,000

BASE
#107

EAST
#108

LINE OF FIRE

1-508

BASE
#107

SOUTH
#106

Y489,000

319

Y487,000

9

PROJECT SURFACE OBSERVATION

TABLE 1
 DATE 13 DAY 32 MONTH Oct YEAR 32
 STATION: DEADHORSE
 X=519,982.11 Y=490,249.23 H=4133.12

TIME M D I	PRESSURE mbs	TEMPERATURE OF OC	DEW POINT OF OC	RELATIVE HUMIDITY %	DENSITY gm/m ³	WIND		VISIBIL- ITY
						DIRECTION degs Tn	SPEED kts	
0940	879.9	9.4	3.6	67	1084		CALM	50

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	HGT	AMT	HGT	AMT	HGT	
0							CLEAR

PSYCHROMETRIC COMPUTATION

TIME:	0940
DRY BULB TEMP.	9.4
WET BULB TEMP.	6.4
WET BULB DEPP.	3.0
DEW POINT	3.6
RELATIVE HUMID.	67

TABLE 2

ANEMOMETER DATA *
30 FOOT LEVEL OF 30 METER TOWER

X= 519,923.74 Y= 489,901.20 H= 4132.51 (BASE)

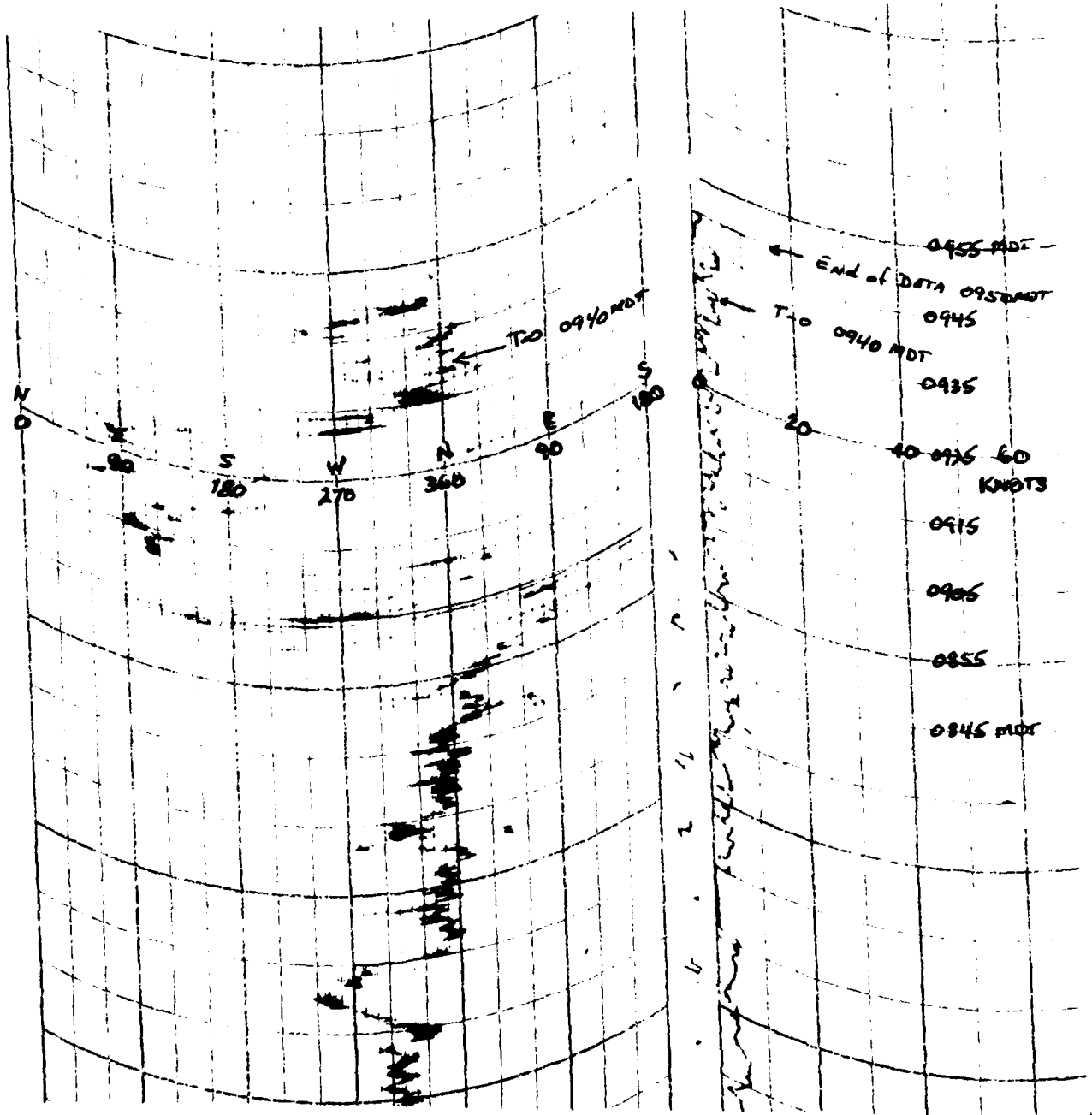


TABLE 3

ANEMOMETER DATA
60 FOOT LEVEL OF 30 METER TOWER

X- 519,923.74 Y- 489,901.20 H-4132.51 (BASE)

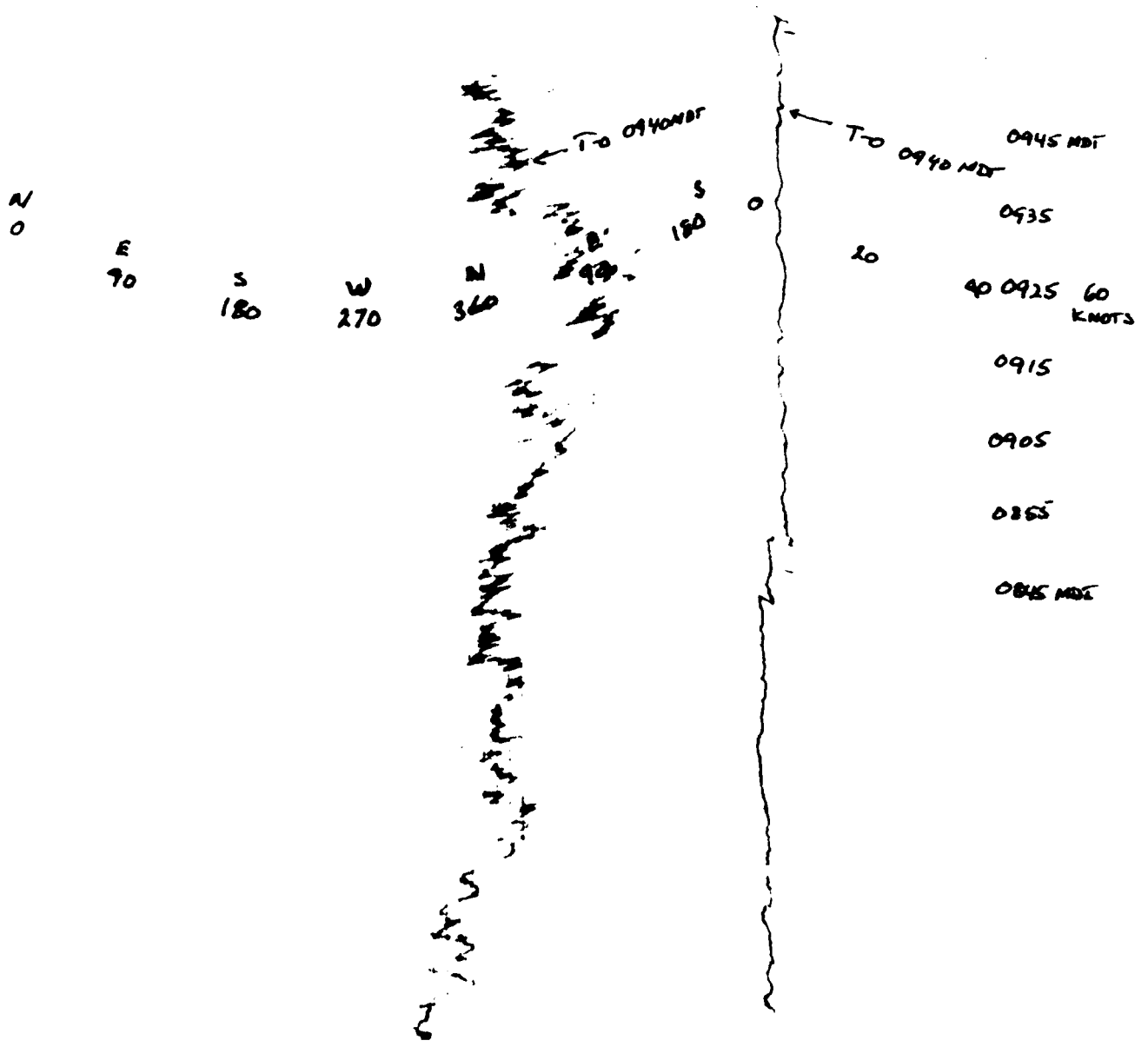


TABLE 4

U.S. NAVY
OFFICE OF NAUTICAL SURVEYING

NO. 519,923,74 (REVISED) (1954)

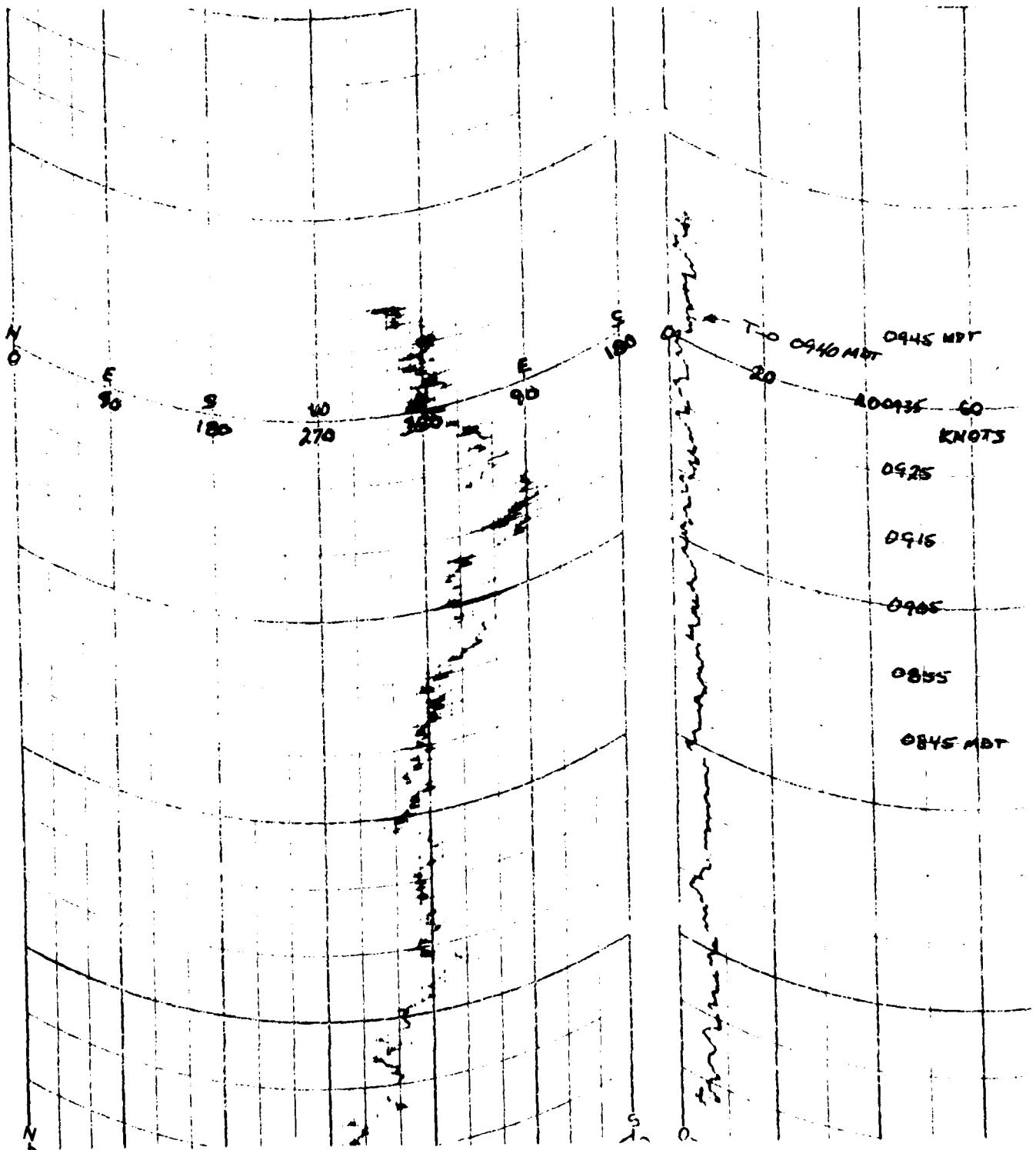


TABLE 5

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 13 Oct 82

SITE: MAL
TIME: 0940 MDT
WSTM COORDINATES:
X= 509,421.05
Y= 495,563.18
H= 4,126.31

<u>LAYER MIDPOINT</u> <u>METERS AGL</u>	<u>DIRECTION</u> <u>DEGREES</u>	<u>SPEED</u> <u>KNOTS</u>
SURFACE	020	04
150	018	07
210	022	06
270	032	08
330	043	07
390	043	07
500	038	08
650	030	10
800	029	10
950	031	07
1150	332	01
1350	167	03
1550	144	02
1750	135	06
2000	110	10

TABLE 6

AIMING AND T-TIME COMPUTER MET MESSAGES

13 Oct 82

LANA 0750 MDT		RITA 0800 MDT	
METCM1331062		METCM1332062	
131360127879		131400128880	
00338002	27730879	00000000	27650880
01154001	27830868	01570003	27880870
02311005	29010843	02314007	27980844
03305005	27810802	03316006	27810803
04230006	27630755	04207004	27630755
05142012	27270709	05167012	27310710
06101006	26960666	06099011	26980667

LANA 0940 MDT
METCM1331062
141570127879
00000000 28390879
01025002 28300869
02326001 28090843
03218004 27870803
04159012 27630755
05156011 27300709
06056002 26930666

GEODLTIC COORDINATES
 33.13510 LAT DEG
 106.13446 LON DEG

SIGNIFICANT LEVEL DATA
 2800320010
 LANA

TABLE 7

STATION: ALTITUDE 4173.04 FEET MSL
 13 OCT. 82 0730 HRS MDT
 ASCENSION: NO. 10

GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREE F	TEMPERATURE REL. HUMID. PERCENT
4173.4	3.6	88.0
4698.7	7.1	91.0
5065.6	7.3	89.0
5712.7	7.6	85.0
6024.1	5.2	77.0
7485.5	4.0	65.0
9063.4	2.5	57.0
10145.8	-1.8	60.0
10258.1	-6	61.0
11435.7	-3.4	44.0
12513.9	-4.3	43.0
13540.0	-5.8	34.0
14257.5	-7.4	33.0

STATION ALTITUDE 4173.4 FEET MSL
 13 OCT. 82
 ASCENSION NO. 19

UPPER AIR DATA
 2860326010
 LANA

TABLE 0

VELOCITY COORDINATES
 33.13510 AT LEG
 106.15446 L IN DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	TEMPERATURE DEPOSIT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND METERS	WIND DIRECTION DEGREES (TR)	WIND SPEED KNOTS	INDEX OF REFRACTION
4173.4	878.6	3.6	1.8	85.0	110.0	649.1	170.0	1.9	1.000200
4500.0	850.0	5.8	4.2	89.9	109.2	651.0	184.7	2.4	1.000261
5000.0	852.1	7.3	5.2	86.9	105.4	653.7	179.7	3.1	1.000278
5500.0	830.4	7.2	4.6	83.6	103.5	653.5	170.0	3.9	1.000272
6000.0	821.1	6.4	3.4	81.1	101.6	652.0	174.0	4.6	1.000265
6500.0	800.0	5.7	2.3	78.6	100.0	651.0	158.4	4.6	1.000259
7000.0	791.2	5.0	.8	73.3	987.7	650.0	132.0	4.9	1.000252
7500.0	776.6	4.6	-1.4	64.0	971.5	650.1	110.5	5.7	1.000245
8000.0	762.2	3.9	-2.6	62.4	955.9	649.5	111.4	6.2	1.000238
8500.0	748.0	3.2	-3.8	59.9	940.0	648.4	100.1	6.6	1.000232
9000.0	734.1	2.6	-5.0	57.3	925.5	647.0	90.0	6.9	1.000227
9500.0	720.4	1.2	-6.1	58.2	913.0	645.9	87.0	7.8	1.000225
10000.0	700.9	-4	-7.2	59.6	901.0	644.1	61.0	9.9	1.000219
10500.0	693.6	-1.0	-6.1	58.4	880.5	642.2	70.5	10.2	1.000214
11000.0	680.4	-1.9	-10.2	53.0	872.5	642.1	70.0	8.7	1.000209
11500.0	667.5	-2.8	-12.4	47.0	859.0	641.0	60.4	6.1	1.000204
12000.0	654.0	-3.6	-14.1	43.0	845.4	640.0	51.2	5.5	1.000199
12500.0	642.5	-4.3	-16.9	43.0	831.5	639.2	53.2	5.8	1.000195
13000.0	630.0	-5.0	-18.9	38.7	817.7	638.2			1.000191
13500.0	618.0	-5.7	-18.9	34.4	804.4	637.5			1.000186
14000.0	606.0	-5.8	-20.2	33.4	792.1	636.0			1.000183

STATION ALTITUDE 4173.44 FEET MSL
 13 OCT. 62 0730 HRS MDT
 ASCENSION NO. 10

MANDATORY LEVELS
 200.0720010
 LANA
 TABLE 0

GEODTIC COORDINATES
 33.13510 LAT DEG
 106.13440 LONG DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT		DIRECTION DEGREES (IN)	SPEED KNOTS
950.0	5062.	7.3	5.1	80.	179.3	3.2
900.0	6698.	5.4	1.8	70.	147.4	4.6
750.0	8424.	3.3	-3.0	60.	107.7	0.6
700.0	10249.	2.6	-7.2	61.	78.8	10.9
650.0	12190.	-3.9	-14.4	43.	10.7	3.1
600.0	14242.	-7.4	-20.9	33.		

GEODETIC COORDINATES
 33.18295 LAT DEG
 106.15114 LO. ULS

SIGNIFICANT LEVEL DATA
 2800-10010

STATION ALTITUDE 4186.74 FEET MSL
 13 OCT. 82
 ASCENSION 110. 10

WITA
 TABLE 10

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
880.4	4186.7	2.6	95.0
860.4	4523.2	5.8	89.0
850.0	5130.6	5.6	84.0
843.1	5350.1	6.0	83.0
807.8	6264.6	3.9	75.0
785.8	7236.3	3.6	66.0
765.6	7930.5	2.2	64.0
736.4	8963.4	1.7	57.0
700.0	10298.8	-1.5	57.0
670.8	11409.6	-3.9	45.0
654.1	11866.0	-4.1	42.0
648.3	12294.1	-4.4	39.0
602.6	13879.5	-7.2	30.0

STATION ALTITUDE 4186.74 FEET MSL
 13 OCT. 62
 ASCENSION NO. 10

UPPER AIR DATA
 286021010
 RITA
 TABLE 11

GEODETIC COORDINATES
 33.18295 LAT DEG
 106.15114 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KIOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KIOTS	INDEX OF REFRACTION
4186.7	880.4	2.6	95.0	1108.9	047.9	00	00	1.000282
4500.0	870.2	5.6	89.4	1093.7	047.0	166.6	1.1	1.000261
5000.0	854.1	5.6	85.1	1063.0	051.0	160.6	2.8	1.000275
5500.0	838.4	5.8	82.1	1043.0	051.7	160.6	4.6	1.000269
6000.0	825.0	5.0	79.0	1027.0	050.7	160.6	0.3	1.000283
6500.0	807.7	4.2	76.0	1011.7	049.7	177.0	6.0	1.000256
7000.0	792.8	3.7	67.7	994.8	049.1	152.0	5.3	1.000249
7500.0	778.1	3.3	65.3	977.9	048.0	142.0	4.8	1.000243
8000.0	763.6	2.8	63.7	961.0	047.9	123.0	4.8	1.000238
8500.0	749.4	2.2	60.1	945.9	047.2	100.5	6.0	1.000232
9000.0	735.4	1.6	57.0	930.5	046.4	90.9	7.6	1.000227
9500.0	721.6	0.4	57.0	917.1	045.0	95.1	9.6	1.000222
10000.0	708.0	-0.8	57.0	903.9	045.5	92.5	11.3	1.000218
10500.0	694.6	-1.9	57.0	890.7	042.1	79.9	11.6	1.000214
11000.0	681.4	-3.0	57.0	877.4	040.8	68.2	11.9	1.000210
11500.0	668.5	-3.9	54.6	863.8	039.7	53.3	10.2	1.000205
12000.0	655.7	-4.2	44.1	848.3	039.3	32.9	8.5	1.000199
12500.0	643.1	-4.8	40.4	833.9	038.0	357.4	6.9	1.000195
13000.0	630.8	-5.6	36.7	820.7	037.5			1.000191
13500.0	618.6	-6.5	32.9	807.7	036.4			1.000186

STATION ALTITUDE 4186.74 FEET MSL
 13 OCT. 82 0800 HRS MDT
 ASCENSION NO. 10

MANDATORY LEVELS
 2800 FT
 PITA
 TABLE 12

GEODETL COORDINATES
 33.18295 LAT DEG
 106.15114 LONG DEG

PRESSURE	GEOPOTENTIAL	AIR	TEMPERATURE	REL. HUM.	WIND DATA	SPEED
MILLIBARS	FEET	DEGREES	DEWPOINT	PERCENT	DIRECTION	KNOTS
		CENTIGRADE			(IN)	
50.0	5127.	5.6	3.1	84.	180.8	3.3
100.0	6753.	3.0	-0.4	74.	168.7	5.6
150.0	8471.	2.3	-4.0	60.	107.1	0.0
200.0	10289.	-1.5	-8.9	57.	85.0	11.5
250.0	12214.	-4.4	-15.2	42.	19.1	7.4

STATION ALTITUDE 4173.44 FEET MSL
 13 OCT. 82
 ASCENSION 1:0. 11

SIGNIFICANT LEVEL DATA

2800321011
 LANA

TABLE 13

GEOGRAPHIC COORDINATES
 33-13510 LAT DEG
 106-13446 LOG DEG

PRESSURE MILLIBARS	GEOGRAPHIC ALTITUDE METERS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
879.3	4173.4	10.0	3.7	65.0
840.7	5104.3	7.1	4.0	70.0
834.4	5595.3	6.6	2.1	73.0
798.1	6791.2	4.5	-1.5	65.0
740.9	8773.2	1.9	-5.5	58.0
690.6	10285.1	-1.3	-10.6	49.0
674.6	11234.6	-3.5	-12.1	51.0
650.9	12162.7	-6.2	-15.7	40.0
599.5	14202.7	-7.1	-22.1	29.0

STATION ALTITUDE 4173.04 FEET MSL
 19 OCT. 82
 ASCENDING NO. 11

UPPER AIR DATA
 20,0320011
 DATA
 TABLE 14

GEODETIC COORDINATES
 33.13510 LAT DEG
 106.15440 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA WINDSPEED (KNOTS)	INDEX OF REFRACTION
4173.4	879.3	10.0	3.7	65.0	1073.1	650.7	.0	1.000278
4500.0	868.8	9.0	3.1	66.8	1069.2	650.5	.6	1.000275
5000.0	853.0	7.4	2.2	69.4	1055.7	653.0	1.6	1.000270
5500.0	837.3	6.7	2.1	72.4	1039.0	652.8	2.6	1.000266
6000.0	821.9	5.9	.9	70.3	1023.1	651.7	3.6	1.000260
6500.0	806.8	5.0	-.0	66.9	1007.0	650.0	4.2	1.000253
7000.0	791.9	4.2	-1.0	64.3	992.0	649.7	6.8	1.000247
7500.0	777.2	3.6	-2.0	62.5	976.0	648.0	9.2	1.000242
8000.0	762.7	2.9	-3.0	60.7	960.3	646.0	11.0	1.000237
8500.0	748.5	2.3	-4.0	59.0	944.8	647.2	11.6	1.000232
9000.0	734.6	1.4	-6.2	56.6	930.1	646.2	12.0	1.000226
9500.0	720.8	.4	-7.0	53.7	916.4	644.9	12.3	1.000221
10000.0	707.2	-.7	-6.6	50.7	902.8	643.0	10.0	1.000216
10500.0	693.9	-1.8	-11.0	49.5	889.5	642.2	7.6	1.000212
11000.0	680.7	-3.0	-11.0	50.5	876.4	640.8	5.0	1.000208
11500.0	667.7	-3.7	-13.1	47.9	862.2	639.9	3.1	1.000204
12000.0	655.0	-4.1	-15.1	41.9	847.1	639.4	2.8	1.000199
12500.0	642.4	-4.7	-16.7	38.3	832.8	638.7	4.1	1.000194
13000.0	630.1	-5.3	-18.1	35.7	818.9	637.0	5.7	1.000190
13500.0	618.0	-6.0	-19.0	33.1	805.3	637.0		1.000186
14000.0	606.1	-6.7	-21.2	30.5	791.9	636.1		1.000182

MANDATORY LEVELS
 2809320011
 LANA
 TABLE 15

MANDATORY LEVELS
 2809320011
 LANA
 TABLE 15

STATION ALTITUDE 4173.44 FEET MSL
 13 OCT. 82 0040 HRS MDT
 ASCENSION NO. 11

GEODETIC COORDINATES
 33-13510 LAT DEG
 106-15446 LONG DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA		
		AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES (IN)	SPEED KNOTS	ANGLE DEGREES
650.0	5091.	7.1	2.0	70.	174.4	1.8	
600.0	6722.	4.6	-1.3	62.	107.6	5.3	
750.0	8442.	2.3	-4.8	59.	80.9	11.5	
700.0	10261.	-1.3	-10.0	49.	60.8	8.7	
650.0	12186.	-4.2	-15.0	40.	547.4	3.2	
600.0	14245.	-7.1	-22.0	29.			

DATE
ILME