AD-A094 832 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
19311C MLRS, MISSILE NUMBER V18-003, ROUND NUMBER V132/DF5, 17 --ETC(U)
DEC 80
UNCLASSIFIED ERADCOM/ASL-DR-1166 NL

AD A094832

DR-1166
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LEVEL II

METEOROLOGICAL DATA REPORT

1937IC MLRS

Missile [redacted] V18-[redacted]

Round [redacted] V132/0F5

17 Dec[redacted]80

by

White Sands Meteorological Team

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM

UNITED STATES ARMY ELECTRONICS COMMAND

81 2 10 013

[illegible]

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SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

REPORT DOCUMENTATION PAGE

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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 19311C MLRS, Missile No. V18-003, Round No. V132/DF5 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DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE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

INTRODUCTION

19311C MLRS, Missile Number V18-003, Round Number V132/DF5, was launched from LC 33, White Sands Missile Range (WSMR), New Mexico, at 1530 MST on 17 December 1980. The scheduled launch time was 1530 MST.

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 (°C), relative humidity, dew point (°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) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

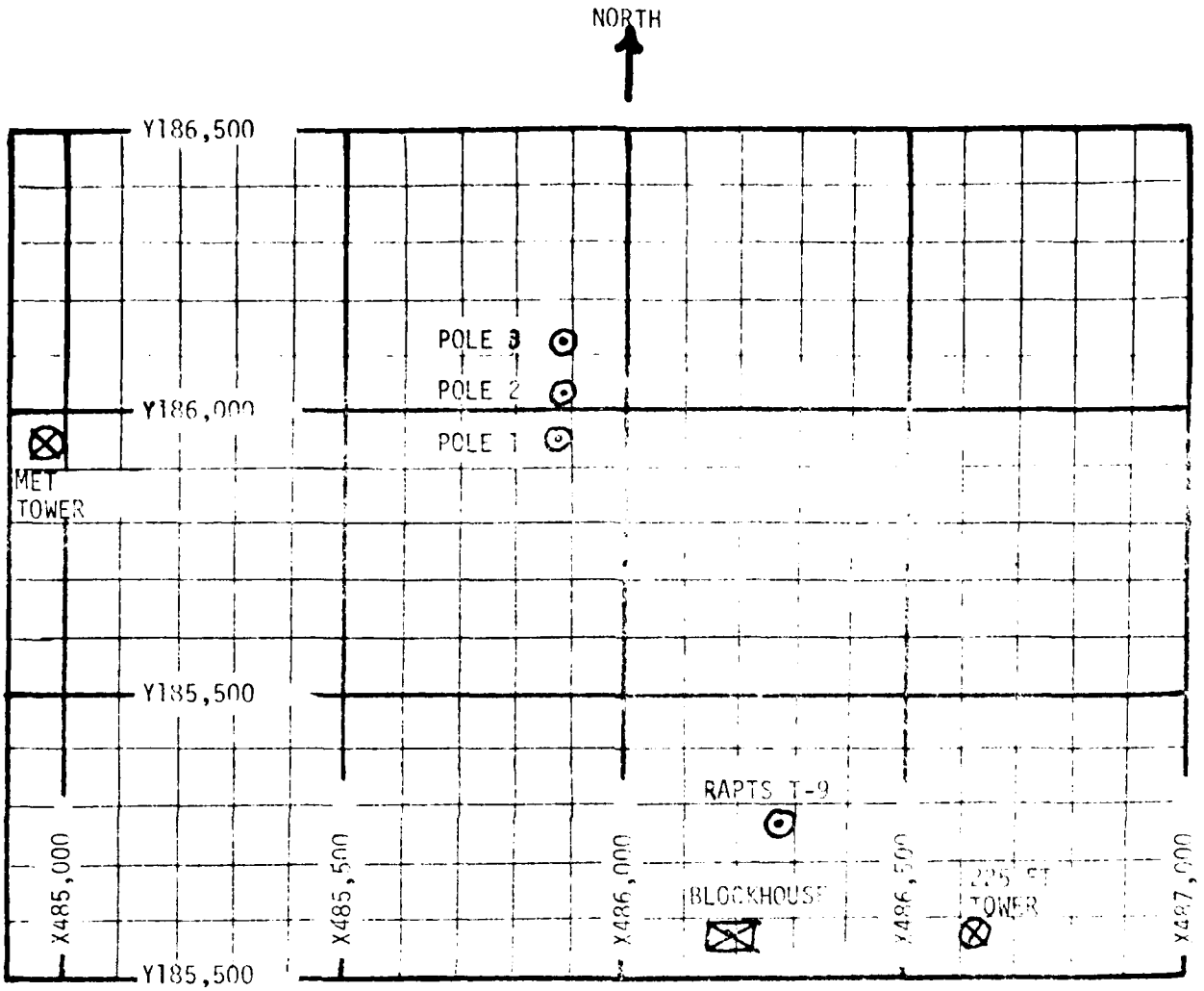
b. Upper Air

(1) Low level wind data were obtained from RAWIN T-0 (final) observation at:

SITE AND ALTITUDE	
LC 33	2km
NICK	2km

(b) Air structure data (rawinsonde) were collected at the following met sites. Data were collected from surface to as high as possible in 500-foot increments.

SITE AND TIME
WSD 1530 MST



1. MET TOWER - 4 Bendix Model T-120 Anemometers at 12 ft, 53 ft, 102 ft and 202 ft with E/A recorders.

2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.

   (a) Pole #1 - 38.7 ft

   (b) Pole #2 - 53.0 ft

   (c) Pole #3 - 83.6 ft

3. 225 FT WIND TOWER - 5 Bendix Model T-120 Anemometers at 35 ft, 88 ft, 128 ft, 168 ft and 200 ft with 5 X-Y visual indicators in Blockhouse.

4. RAPTS T-9 - Radar Automatic Pilot-Balloon Tracking System T-9 Radar

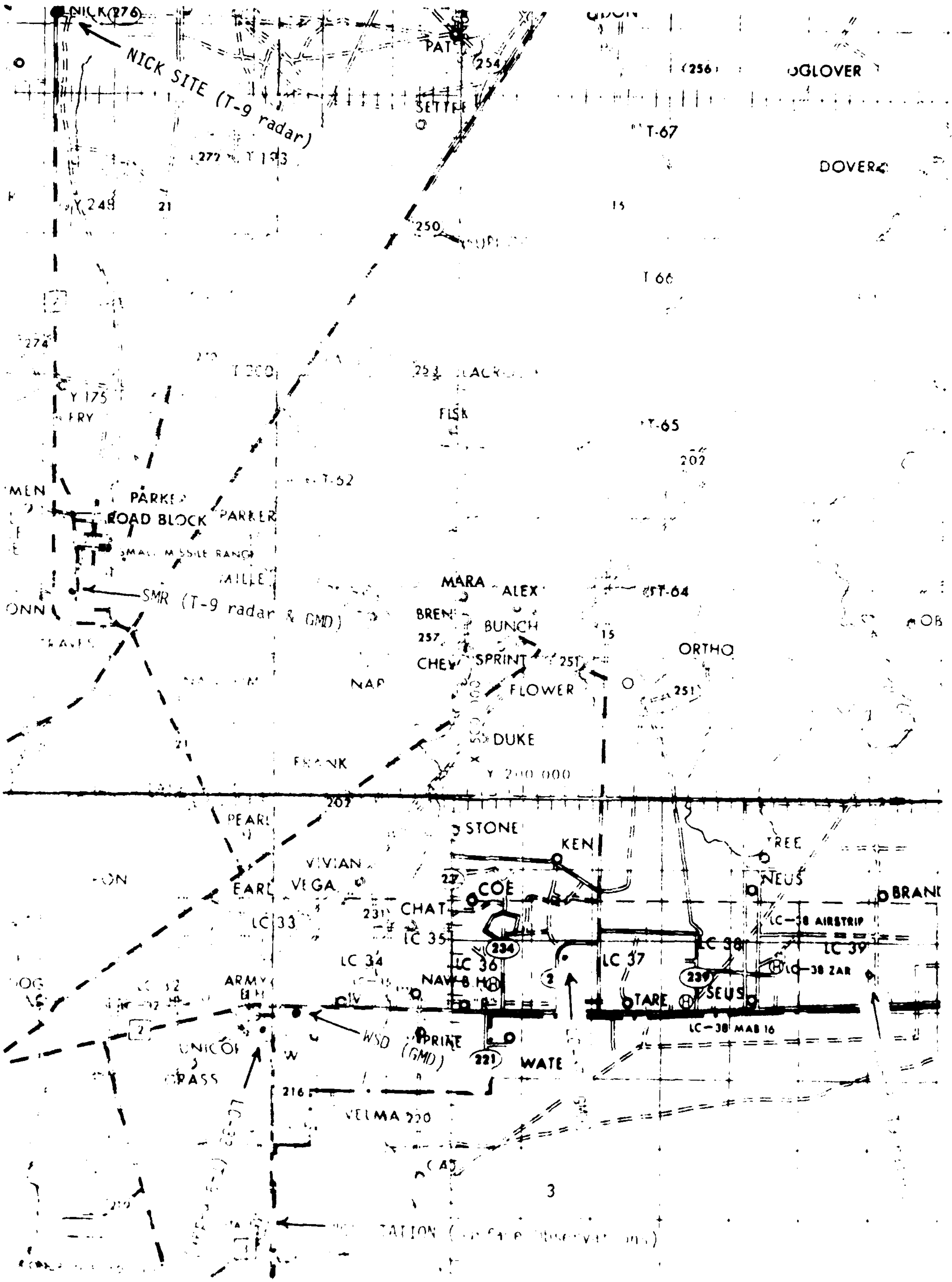

NICK (276)
NICK SITE (T-9 radar)
PAT
254
256
GLOVER
T-67
DOVER
250
T 66
Y 175
FRY
FISK
T-65
202
T-62
PARKER
ROAD BLOCK
PARKER
SMALL MISSILE RANGE
MARA
ALEX
T-64
SMR (T-9 radar & GMD)
BUNCH
257
15
ORTHO
CHEV
SPRINT
251
FLOWER
NAP
DUKE
FRANK
Y 200 000
202
PEARL
STONE
KEN
TREE
VIVIAN
NEUS
EARL
VEGA
COE
BRAN
CHAT
LC 33
LC 35
LC-38 AIRSTRIP
234
LC 34
LC 36
LC 37
LC 38
LC 39
239
LC-38 ZAR
NAV B.H.
TARE
SEUS
ARMY B.H.
LC-38 MAB 16
WSD (GMD)
PRINT
221
WATE
GRASS
216
VELMA 220

TABLE 1. Surface Observations taken at 1530 MST, 17 December 1980, at LC-33, 19311C MLRS, Missile No. V18-003, Round No. V132/DF5

ELEVATION	3983	FT/MSL
PRESSURE	881.8	MBS
TEMPERATURE	19.0	°C
RELATIVE HUMIDITY	30	%
DEW POINT	0.1	°C
DENSITY	1050	GM/M³
WIND SPEED	03	KTS
WIND DIRECTION	120	DEGREES
CLOUD COVER	CLEAR	

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.[illegible] Y186,116.0[illegible] H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	150	01	-30		CALM	T-30	159	02
T-20	150	01	-20		CALM	T-20	159	02
T-10	150	01	-10		CALM	T-10	159	02
0.0	150	01	0.0	163	01	0.0	159	03
+10	150	01	+10	156	01	+10	159	03

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS

LEVEL #1, 12 FEET X484,882.64, Y185,957.73, H3993.91 (Grad)			LEVEL #2, 52 FEET X484,[illegible], Y185,957.7[illegible], [illegible]		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	126	02	T-30	126	03
T-20	134	03	T-20	125	03
T-10	135	03	T-10	122	04
0.0	120	03	0.0	123	03
+10	114	03	+10	128	04

LEVEL #3, 102 FEET X484,88[illegible].64, Y185,957.73, H3[illegible] (Grad)			LEVEL #4, 152 FEET X484,[illegible], Y185,[illegible], [illegible]		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	115	03	T-30	117	03
T-20	115	03	T-20	114	02
T-10	117	03	T-10	114	02
0.0	118	04	0.0	114	02
+10	119	03	+10	106	01

PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM LC 33 DATE 17 December 1980 TIME 1530 MST

COORDINATES (WSTM) X= 486,037.24 Y= 182,350.16 H 3977.30

NOTE: WIND DIRECTIONS ARE REFERENCED TO

HEIGHTS ARE METERS AGL XX OR FEET AGL ___.

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
sfc	Calm	
150	132	06
210	040	02
270	356	04
330	019	02
390	171	06
500	161	02
650	229	02
800	241	06
950	277	08
1150	276	12
1350	290	14
1550	292	18
1750	294	16
2000	274	16

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS

PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM NICK DATE 17 December 1980 TIME 1530 MST

COORDINATES (WSTM) X= 470, 734.56 Y 255,775.64 4126.57

NOTE: WIND DIRECTIONS ARE REFERENCED TO

HEIGHTS ARE METERS AGL xx OR FEET AGL ___.

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
sfc	150	01
150	164	06
210	164	06
270	161	05
330	158	04
390	158	03
500	183	02
650	240	05
800	251	09
950	265	12
1150	281	15
1350	280	22
1550	290	20
1750	287	18
2000	281	14

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS

STATION ALTITUDE 3989.00 FEET MSL
17 DEC. 80 1530 HRS MST
ASCENSION NO. 004

SIGNIFICANT LEVEL DATA
3520020666
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 6

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
881.0	3989.0	19.6	3.7	35.0
867.6	4421.8	19.3	2.2	32.0
850.0	4998.4	17.6	1.6	34.0
818.4	6054.9	14.2	-.6	36.0
797.6	6767.0	13.1	-2.0	35.0
740.6	8984.0	14.4	-7.6	21.0
721.4	9542.4	12.0	-9.6	21.0
700.0	10368.1	10.7	-10.7	21.0
693.6	10619.5	11.0	-11.7	19.0
657.4	12080.9	8.5	-14.4	18.0
639.8	13197.2	6.1	-16.4	18.0
603.6	14320.6	1.1	-17.7	23.0
585.0	17241.2	[illegible]	-25.5	18.0
536.8	17432.3	-6.0	-24.7	21.0
500.0	19244.8	-10.6	-29.1	20.0
400.0	24759.0	-22.0	-36.2	23.0
379.4	[illegible]027.9	-25.5	-40.5	23.0
33[illegible]	[illegible]1.2	-32.0	-46.0	24.0
324.5	[illegible]701.9	-35.0	-48.5	24.0
308.0	[illegible]6.5	-37.0	-50.4	24.0
300.0	31175.3	-39.3		

STATION ALTITUDE 5989.00 FEET MSL
17 DEC. 69 1530 MDT
ASCENSION NO. 008

UPPER AIR DATA
35200[illegible]
WHITE SANDS

TABLE 7

GEODETIC COORDINATES
32.49093 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	RELATIVE HUMIDITY PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
5989.0	881.3	19.6	3.7	35.8	1094.6	667.7	120.0	1.9	1.000268
6000.0	880.7	19.6	3.7	35.9	1094.4	667.7	120.3	1.9	1.000268
6500.0	850.2	19.1	2.1	32.3	1057.6	667.0	155.0	.9	1.000261
7000.0	820.0	17.6	1.6	34.8	1015.3	665.3	230.2	1.0	1.000257
7593.0	789.8	16.0	.5	34.9	1003.0	663.4	259.7	2.2	1.000252
8000.0	760.3	14.4	-.5	35.0	990.8	661.5	280.7	3.4	1.000248
8500.0	730.3	13.5	-1.5	35.4	976.2	660.4	289.4	5.0	1.000243
9000.0	700.9	13.3	-2.6	33.1	959.6	660.1	283.4	9.3	1.000237
9500.0	672.1	13.7	-4.0	29.0	941.4	660.5	289.2	13.1	1.000231
10000.0	644.0	14.0	-5.7	24.9	923.5	660.9	2[illegible]	14.7	1.000224
10500.0	616.2	14.4	-7.6	21.8	906.2	661.2	274.2	16.0	1.000218
11000.0	589.7	13.2	-8.6	21.0	893.5	659.8	295.6	16.3	1.000214
11500.0	564.5	12.1	-9.5	21.0	881.8	658.5	282.4	15.8	1.000210
12000.0	540.5	11.3	-10.2	21.0	867.6	657.5	282.1	13.5	1.000206
12500.0	518.0	10.3	-11.2	20.8	853.3	657.0	281.8	12.0	1.000202
13000.0	496.9	10.3	-12.4	18.7	839.4	656.4	281.6	11.8	1.000198
13500.0	476.6	9.5	-13.3	18.4	826.7	655.4	280.7	12.0	1.000195
14000.0	457.4	8.6	-14.3	18.1	814.2	654.3	278.7	12.8	1.000191
14500.0	438.9	7.6	-15.2	18.0	802.3	653.1	277.4	12.8	1.000188
15000.0	421.3	6.5	-16.0	18.0	790.7	651.8	276.4	12.3	1.000185
15500.0	404.7	4.8	-16.7	19.3	781.0	649.8	277.6	12.7	1.000182
16000.0	388.1	2.6	-17.2	21.5	772.7	647.2	279.3	13.4	1.000180
16500.0	372.6	.7	-18.2	22.7	763.3	645.0	278.7	13.6	1.000177
17000.0	357.9	-.4	-19.6	21.8	752.0	643.7	278.1	13.9	1.000174
17500.0	343.8	-1.5	-21.0	20.8	740.8	642.3	277.9	14.3	1.000171
18000.0	330.4	-2.6	-22.5	19.9	729.8	641.0	277.7	14.5	1.000168
18500.0	317.4	-3.7	-23.9	19.0	718.9	639.7	277.6	13.7	1.000165
19000.0	304.9	-4.3	-25.4	18.1	708.3	638.3	276.8	13.5	1.000162
19500.0	293.0	-6.2	-28.9	21.0	698.2	636.7	275.3	13.7	1.000160
20000.0	281.5	-7.4	-29.1	20.7	687.9	635.2	274.0	14.1	1.000157
20500.0	270.4	-8.7	-29.3	20.4	677.9	633.7	273.0	14.9	1.000154
21000.0	259.8	-10.1	-29.5	20.1	668.0	632.1	272.0	15.3	1.000152
21500.0	249.6	-11.2	-29.5	20.1	657.2	630.7	270.6	15.3	1.000149
22000.0	239.8	-12.3	-29.5	20.6	647.4	629.3	269.1	15.4	1.000147
22500.0	230.2	-13.4	-31.1	20.7	637.1	628.0	267.5	15.8	1.000144
23000.0	221.0	-14.5	-32.0	21.0	627.1	626.6	266.1	16.3	1.000142
23500.0	212.0	-15.6	-32.8	21.[illegible]	617.[illegible]	625.3	264.7	16.8	1.000140
24000.0	203.2	-16.7	-33.6	21.[illegible]	607.5	623.9	263.5	17.4	1.000137
24500.0	194.5	-17.9	-34.4	21.5	597.9	622.5	262.5	17.7	1.000135
25000.0	186.2	-19.0	-35.3	21.8	588.[illegible]	621.2	261.6	18.0	1.000133

STATION ALTITUDE 3989.00 FEET MSL
17 DEC. 80 1530 HRS MST
ASCENSION NO. 068

UPPER AIR DATA
352002066
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 7 (cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TO)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	420.9	-20.1	-36.1	22.3	579.3	619.8	261.1	18.5	1.000131
24000.0	412.5	-21.2	-36.9	22.6	570.2	618.4	260.6	19.0	1.000129
24500.0	404.2	-22.3	-37.8	22.9	561.3	617.1	261.6	19.8	1.000126
25000.0	396.0	-23.4	-38.6	23.0	552.2	615.7	263.1	20.7	1.000124
25500.0	387.8	-24.4	-39.5	23.0	543.1	614.5	261.9	21.1	1.000122
26000.0	379.8	-25.4	-40.4	23.0	534.1	613.2	259.5	21.4	1.000120
26500.0	371.9	-26.7	-41.5	23.2	525.7	611.6	257.1	21.7	1.000118
27000.0	364.1	-28.1	-42.5	23.4	517.4	609.9	254.2	22.2	1.000116
27500.0	356.4	-29.3	-43.6	23.6	509.2	608.3	245.5	23.1	1.000114
28000.0	348.9	-30.7	-44.7	23.8	501.3	606.7	241.1	23.9	1.000112
28500.0	341.6	-32.0	-45.7	23.9	493.4	605.0	239.2	24.3	1.000111
29000.0	334.3	-33.3	-46.8	24.0	485.4	603.4	237.4	24.9	1.000109
29500.0	327.1	-34.5	-47.9	24.0	477.5	601.9			1.000107
30000.0	320.1	-35.6	-48.9	24.0	469.4	600.4			1.000105
30500.0	313.2	-36.7	-49.8	24.0	461.3	599.1			1.000103
31000.0	306.4	-37.9	-53.1	18.5**	453.6	597.6			1.000101

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

STATION ALTITUDE 3989.00 FEET MSL
17 DEC. 72 1530 HRS. MST
ASCENSION NO. 68

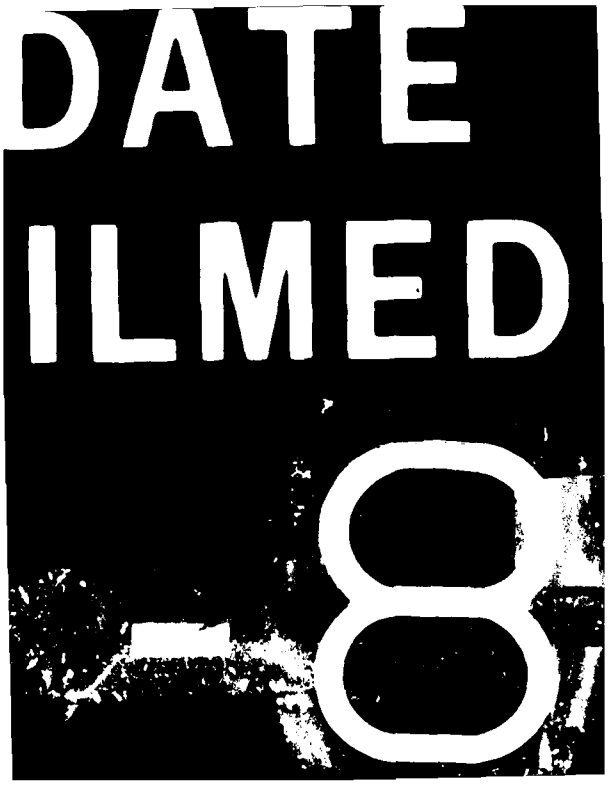
MANDATORY LEVELS
352002068
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 8

PRESSURE	GEOPOTENTIAL	TEMPERATURE		REL.HUM.*	WIND DATA	
		AIR	DEWPOINT	PERCENT	DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE			DEGREES(TN)	KNOTS
850.0	4995.	17.6	1.6	34.	235.6	1.0
800.0	6673.	13.2	-1.6	35.	266.9	6.6
750.0	8462.	14.4	-7.6	21.	278.0	10.0
700.0	10373.	10.7	-10.7	21.	281.3	12.1
650.0	12374.	7.8	-15.0	18.	277.6	12.9
600.0	14513.	.7	-18.2	23.	276.0	13.6
550.0	16753.	-4.4	-24.8	16.	277.4	13.5
500.0	19218.	-10.6	-29.1	20.	271.3	15.3
450.0	21947.	-16.4	-33.3	21.	263.7	17.3
400.0	24717.	-22.9	-38.2	23.	262.5	20.3
350.0	27883.	-30.5	-44.5	24.	241.5	23.8
300.0	31413.	-39.3				

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


DATE
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8