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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
19702A GSR5, MISSILE NUMBERS 306, 309, ROUND NUMBERS B-31, B-32--ETC(U)
AUG 79

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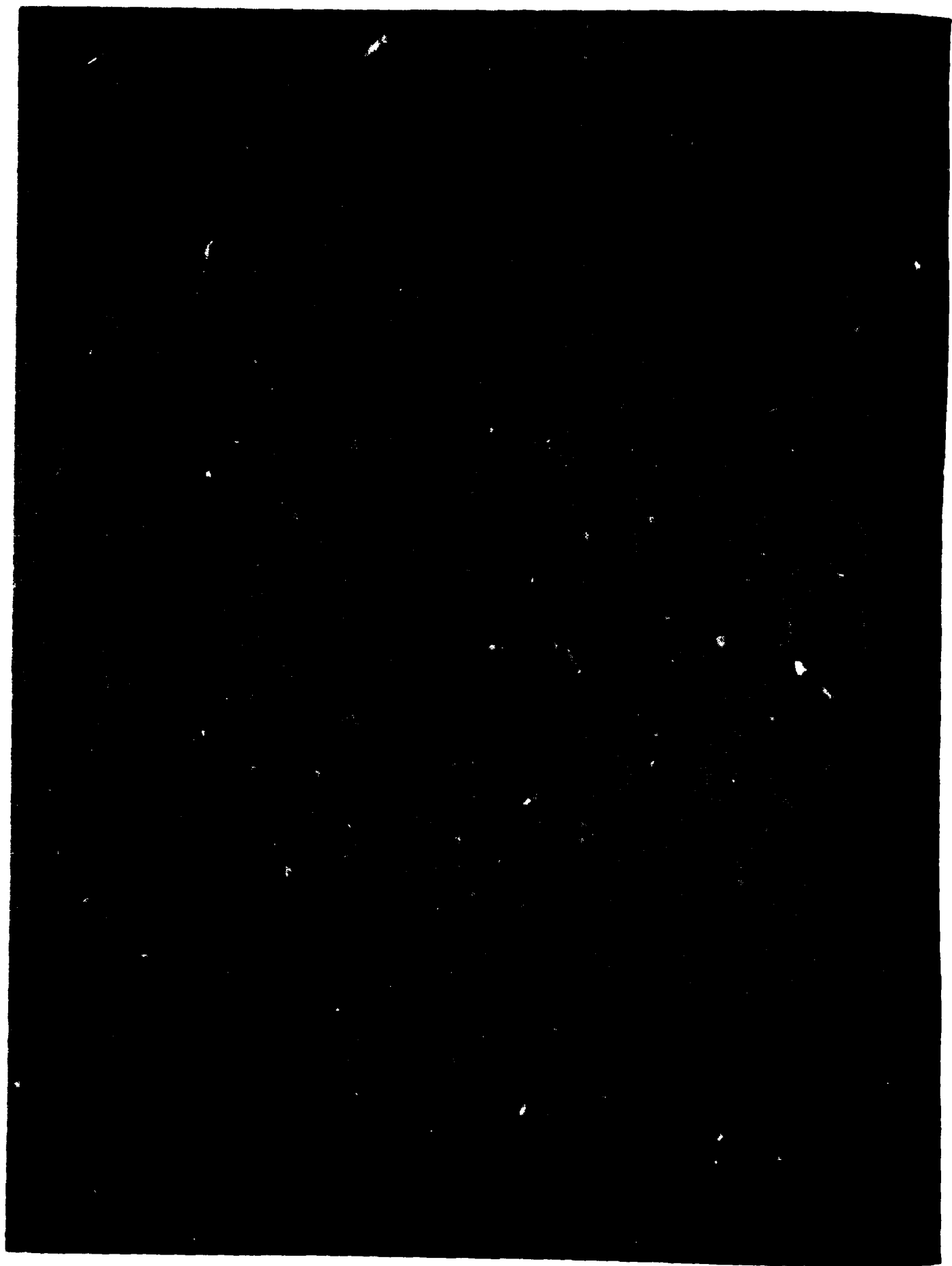
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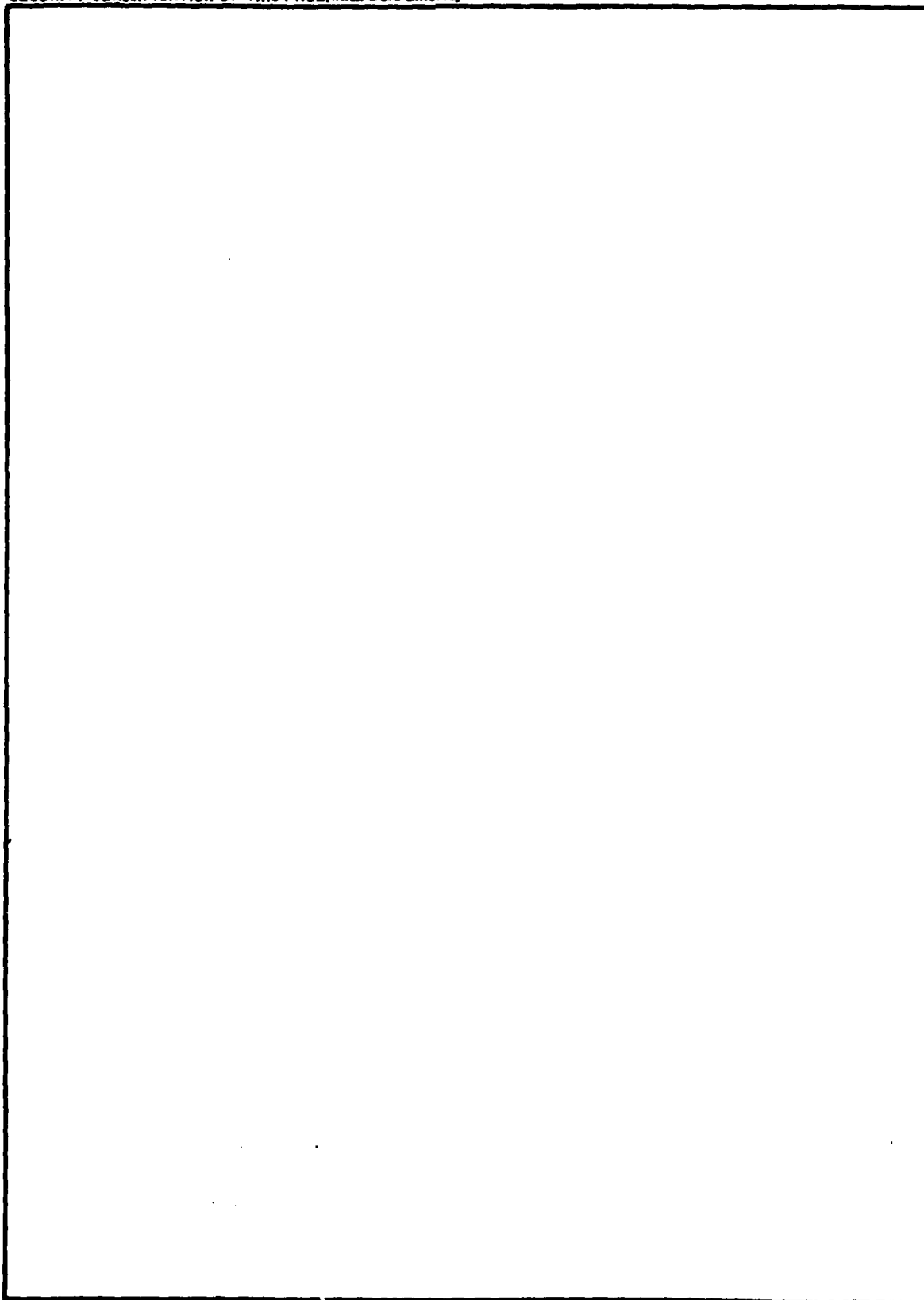


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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19702A GSRS, Missile Numbers 308, 309, Round Numbers B-31, B-32 are presented in tabular form. A		

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INTRODUCTION

19702A GSRS , Missile Numbers 308 and 309 , Round Numbers B-31 and B-32 , were launched from LC-33 , White Sands Missile Range (WSMR), New Mexico, at 1200 and 1200:04 MDT, 18 August 1979 . The scheduled launch times were 1200 and 1200:04 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 RAPTS T-9 pibal observation at:

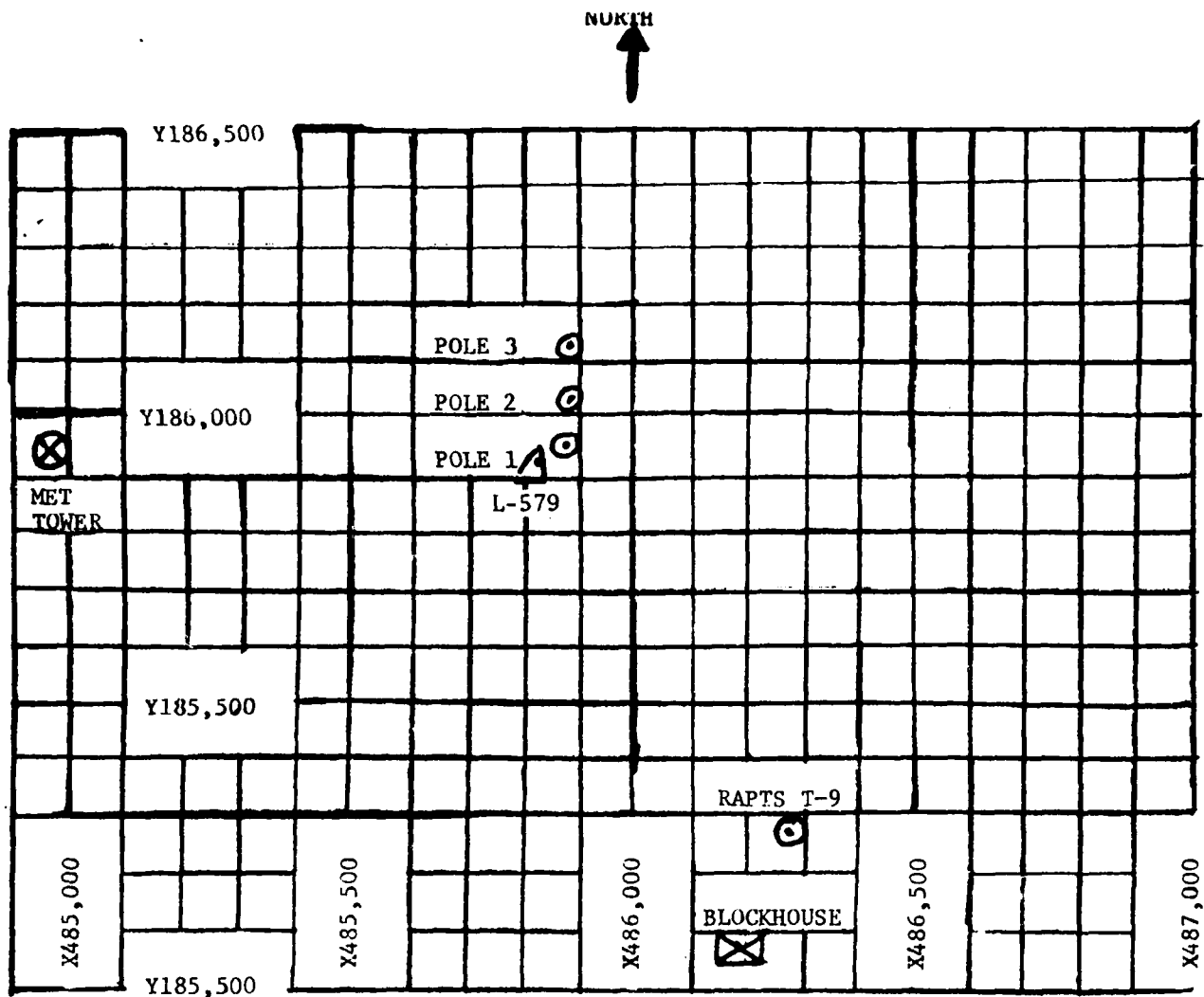
SITE AND ALTITUDE

LC-33 1000 Meters
NICK 1020 and 960 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 83,000 feet in 500-foot increments.

SITE AND TIME

SMR 1100 MST



1. MET TOWER - 4 Bendix Model T-20 Anemometers at 12 ft, 62 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. RAPTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

TABLE 1. Surface Observations Taken at 1200 MDT,
18 August 1979, LC-33, 19702A GSRS,
Missile Numbers 308, 309; Round Numbers
B-31, B-32.

ELEVATION	3,977.30	FT/MSL
PRESSURE	883.4	MDS
TEMPERATURE	21.5	C
RELATIVE HUMIDITY	77	%
DEW POINT	17.3	C
DENSITY	1,036	GM/M ³
WIND SPEED	03	KTS
DIRECTION	150	DEGREES
CLOUD COVER	3	Cu
CLOUD COVER	3	Ac
CLOUD COVER	1	Ci

TABLE 2. LC-33 FIXED POLE ANEMOMETER-MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	123	7.0	-30	138	7.0	-30	141	8.0
-20	128	6.0	-20	139	7.0	-20	147	9.0
-10	132	5.0	-10	132	5.0	-10	143	9.0
0.0	126	4.0	0.0	124	3.0	0.0	137	6.0
+10	124	4.0	+10	119	3.0	+10	137	6.0

Type 19702 A GSRS, Missile No. 308, 309, Round No. B-31, B-32 launched
from LC-33 on 18 August 1979 at 1.00, 1200:04 MDT.

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 = X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

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

LEVEL #1 12 ft.			LEVEL #2 62 ft.		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	136	4.0	-30	131	4.0
-20	150	6.0	-20	144	6.0
-10	159	7.0	-10	156	6.0
0.0	156	6.0	0.0	145	7.0
+10	153	6.0	+10	137	7.0
LEVEL #3 102 ft.			LEVEL #4 202 ft.		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	156	6.0	-30	126	7.0
-20	153	4.0	-20	143	8.0
-10	168	5.0	-10	143	8.0
0.0	155	8.0	0.0	143	9.0
+10	153	9.0	+10	143	9.0

WTSM Coordinates: X484,982.64 Y185,957.73 H3983.00 (base)

Type 19702A GSRS, Missile No. 308,309, Round No. B-31, B-32 launched from LC-33 on 18 August 1979 at 1200, 1200:04 MDT.

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

PILOT BALLOON MEASURED WIND DATA

TABLE 4.

RELEASED FROM LC-33 DATE 18 August 1979 TIME 1150 MDT
 RELEASE POINT COORDINATES (WSTM) X= 486,037.24 Y= 182,350.16 H= 3,977.3
 MISSILE TYPE 19702A GSRS MISSILE NOS. 308, 309 ROUND NOS. B-31, B-32

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH

HEIGHTS - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	150	01.0
30	149	02.5
60	137	04.0
90	126	05.5
120	114	06.5
150	121	07.0
180	127	07.0
210	134	07.5
240	140	07.5
270	143	08.5
300	146	09.0
330	149	10.0
360	152	10.5

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
390	153	09.5
420	154	08.5
450	155	07.5
480	156	06.0
510	168	05.5
540	180	05.0
570	192	04.5
600	203	03.5
630	207	04.0
660	210	04.0
690	214	04.5
720	217	04.5
750	227	05.0

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED KTS
780	236	05.0
810	246	05.0
840	255	05.0
870	269	06.0
900	282	07.0
930	296	08.0
960	309	09.0
990	308	09.0
1020	307	09.0
1050	306	09.0
1080	304	09.0
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED KTS
1440		
1470		
1500		
1530		
1560		
1590		
1620		
1650		
1680		
1710		
1740		
1770		
1800		
1830		
1860		
1890		
1920		
1950		
1980		
2010		
2040		
2070		

PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM LC-33 DATE 18 August 1979 TIME 1200 MDTRELEASE POINT COORDINATES (WSTM) X= 486,037.24 Y= 182,350.16 H= 3,977.3MISSILE TYPE 19702 A GSRS MISSILE NOs. 308, 309 ROUND NOs. B-31, B-32MISSILE LAUNCHED FROM LC-33 DATE 18 August 1979 TIME 1200, 1200.04 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHTS - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	150	03.0
30	155	03.0
60	159	02.5
90	164	02.0
120	168	01.5
150	166	03.0
180	163	04.0
210	160	05.5
240	157	06.5
270	164	08.5
300	170	10.5
330	176	12.5
360	182	14.5

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
390	185	13.0
420	188	11.0
450	191	09.5
480	193	07.5
510	192	08.5
540	191	09.0
570	190	09.5
600	189	10.0
630	187	09.5
660	185	09.0
690	183	08.5
720	180	07.5
750	199	07.0

[illegible]

PILOT BALLOON MEASURED WIND DATA

TABLE 6

RELEASED FROM NICK SITE DATE 18 August 1979 TIME 1150 MDTRELEASE POINT COORDINATES (WSTM) X= 470,734.56 Y= 255,775.64 H= 4,126.57MISSILE TYPE 19702 A GSRS MISSILE NOs. 308, 308 ROUND NOs. B-31, B-32MISSILE LAUNCHED FROM LC-33 DATE 18 August 1979 TIME 1200, 1200:04 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHTS - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	125	08.0
30	136	07.0
60	146	05.5
90	143	08.0
120	139	10.0
150	145	10.5
180	150	11.0
210	149	12.5
240	148	13.5
270	151	12.5
300	153	11.0
330	155	10.0
360	156	09.0

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
390	158	08.5
420	160	07.5
450	162	06.5
480	164	05.5
510	166	04.5
540	168	03.0
570	171	02.5
600	174	02.0
630	191	03.0
660	207	03.5
690	198	03.0
720	188	02.0
750	192	02.0

[illegible][illegible]

PILOT BALLOON MEASURED WIND DATA

TABLE 7

RELEASED FROM NICK SITE DATE 18 August 1979 TIME 1212 MDT
 RELEASE POINT COORDINATES (WSTM) X= 470,734.56 Y= 255,775.64 Y= 4,126.57
 MISSILE TYPE 19702 A GSRS MISSILE NOs. 308, 309 ROUND NOs. B-31, B-32
 MISSILE LAUNCHED FROM LC-33 DATE 18 August 1979 TIME 1200, 1200:04 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHTS - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	125	3.0
30	112	2.0
60	060	1.0
90	357	1.5
120	341	3.0
150	335	4.0
180	331	5.5
210	330	7.0
240	328	8.0
270	327	9.5
300	327	11.0
330	326	12.5
360	327	13.0

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
390	328	13.0
420	330	12.5
450	331	12.5
480	333	12.5
510	335	12.5
540	337	12.5
570	338	12.0
600	340	12.0
630	342	12.0
660	344	12.0
690	346	11.5
720	349	11.0
750	352	10.0

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STATION ALTITUDE 3997.30 FEET MSL
18 AUG. 79
ASLENSION NO. 276

SIGNIFICANT LEVEL DATA
2300000270
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LONG DEG

TABLE 8

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR	DEW-POINT DEGREES CENTIGRADE	
882.7	3997.3	24.2	13.4	51.0
876.6	4196.2	22.1	11.5	51.0
850.0	5072.7	19.6	10.9	57.0
306.2	6559.5	15.0	10.2	73.0
790.6	6843.5	14.8	10.4	75.0
767.2	7938.3	13.2	7.9	70.0
738.0	9010.4	12.2	2.1	50.0
700.0	10438.4	8.8	-2.2	53.0
627.6	13339.2	1.0	-4.0	69.0
532.6	15342.8	-3.3	-5.6	84.0
565.4	16121.7	-4.2	-15.7	40.0
557.0	16509.3	-4.8	-19.3	31.0
548.4	17290.3	-6.0	-15.2	48.0
515.6	18497.5	-7.2	-25.7	21.0
500.0	19232.3	-9.0	-23.0	31.0
460.4	21359.8	-15.0	-21.2	59.0
420.8	23577.6	-19.9	-23.6	72.0
408.4	24307.3	-20.3	-37.3	20.0
400.0	24813.0	-21.2	-41.5	14.0
366.6	26906.3	-27.0	-42.0	21.0
314.6	30400.8	-34.6	-50.0	19.0
300.0	31509.2	-36.7		
250.0	35639.5	-46.7		
234.2	37058.6	-49.0		
213.8	39040.0	-46.7		
206.0	40438.2	-46.7		
180.6	42679.5	-51.8		
163.2	44858.9	-54.1		
150.0	46621.9	-58.8		
135.4	48713.8	-64.5		
120.8	51002.1	-66.6		
113.0	52346.1	-62.9		
104.2	53904.4	-65.2		
100.0	54811.1	-65.3		
65.6	57883.1	-66.0		
70.0	61992.4	-62.7		
60.0	65004.5	-63.3		
59.0	65408.3	-59.2		
50.0	68933.1	-56.2		
30.0	79831.3	-49.7		

STATION ALTITUDE 3997.30 FEET MSL
 18 AUG. 79 1100 HRS MST
 ASCENSION NO. 276

SIGNIFICANT LEVEL DATA
 2300000270
 S M R

GEODLTIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

TABLE 8 (Cont)

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR	DEW-POINT DEGREES CENTIGRADE	
25.8 83107.2			-48.3

STATION ALTITUDE 3497.30 FEET MSL
18 AUG. 79 1100 HRS MST
ASCENSION NO. 276

UPPER AIR DATA
2300000Z70
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LONG DEG

TABLE 9

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3957.3	882.7	24.2	51.0	1027.3	674.0	200.0	4.1	1.000295
4000.0	882.6	24.2	51.0	1027.3	674.0	199.9	4.1	1.000295
4500.0	867.3	21.2	53.1	1020.3	670.4	163.2	4.1	1.000266
5000.0	852.2	19.8	56.5	1007.5	666.7	164.2	4.5	1.000282
5500.0	837.2	18.3	61.6	994.9	667.0	156.3	5.2	1.000280
6000.0	822.4	16.7	67.0	982.5	665.2	155.0	4.5	1.000277
6500.0	807.9	15.2	72.4	970.4	663.5	164.7	2.9	1.000273
7000.0	793.6	14.6	74.5	954.9	662.9	256.2	4.1	1.000270
7500.0	779.4	13.9	72.1	940.7	661.9	271.8	8.6	1.000262
8000.0	765.5	13.1	68.8	926.7	660.9	272.1	12.4	1.000255
8500.0	751.8	12.7	59.5	912.2	660.1	265.3	13.3	1.000244
9000.0	738.3	12.2	50.2	895.0	659.3	257.9	13.6	1.000233
9500.0	724.9	11.1	51.0	865.5	657.9	250.7	14.1	1.000229
10000.0	711.8	9.9	52.1	873.2	656.5	242.6	15.3	1.000225
10500.0	698.9	8.7	53.2	861.1	655.1	236.0	16.7	1.000220
11000.0	685.0	7.4	56.0	849.3	653.5	231.0	18.1	1.000217
11500.0	673.4	6.0	58.7	837.6	651.9	228.8	19.0	1.000213
12000.0	660.9	4.7	61.4	826.2	650.4	228.1	18.7	1.000210
12500.0	648.7	3.4	64.1	814.9	648.8	227.4	18.6	1.000206
13000.0	636.8	2.0	66.9	803.8	647.2	226.7	18.8	1.000203
13500.0	625.0	.8	69.9	792.7	645.6	224.0	20.0	1.000199
14000.0	613.2	-.3	73.7	780.9	644.3	222.3	21.7	1.000196
14500.0	601.6	-1.4	77.5	769.3	643.0	221.4	23.2	1.000193
15000.0	590.3	-2.5	81.4	757.9	641.7	220.0	24.6	1.000190
15500.0	579.1	-3.5	75.1	746.3	640.5	222.0	24.6	1.000185
16000.0	568.1	-4.1	46.9	734.4	639.5	224.1	24.6	1.000175
16500.0	557.2	-4.8	31.2	722.7	638.5	224.1	24.7	1.000168
17000.0	546.5	-5.6	41.7	710.0	637.7	221.4	25.4	1.000167
17500.0	536.0	-6.2	43.3	698.7	636.9	217.1	26.6	1.000164
18000.0	525.7	-6.7	32.1	686.7	636.2	218.3	26.4	1.000159
18500.0	515.5	-7.2	21.0	675.0	635.5	220.3	25.8	1.000154
19000.0	505.6	-8.4	27.4	664.7	634.2	220.5	25.4	1.000153
19500.0	495.7	-9.6	33.9	654.8	632.7	236.1	25.7	1.000151
20000.0	485.9	-11.1	40.7	643.4	630.9	239.9	28.1	1.000150
20500.0	476.0	-12.5	47.4	636.2	629.2	242.3	30.6	1.000148
21000.0	467.0	-14.0	54.2	627.1	627.5	243.1	34.1	1.000146
21500.0	457.8	-15.3	59.8	617.9	625.6	242.7	37.0	1.000144
22000.0	448.6	-16.4	62.8	608.2	624.3	241.4	39.6	1.000142
22500.0	439.0	-17.5	65.7	598.5	623.1	230.2	40.2	1.000139
23000.0	430.8	-18.6	68.6	589.1	621.8	234.4	41.7	1.000137

STATION ALTITUDE 3997.30 FEET MSL
18 AUG. 79 1100 HRS MST
ASCENSION NO. 276

UPPER AIR DATA
230000Z76
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LONG DEG

TABLE 9 (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ MLTER	SPEED OF SOUND ANOTS	DIRECTION OF WIND DEGREES (TH)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	422.1	-19.7	-23.5	71.5	579.8	620.4	232.2	42.0	1.000135
24000.0	413.6	-20.1	-29.7	41.9	569.2	619.8	230.9	42.4	1.000130
24500.0	405.2	-20.6	-38.8	17.7	558.9	619.1	231.8	42.6	1.000128
25000.0	396.9	-21.7	-41.5	14.6	549.8	617.8	232.9	42.7	1.000123
25500.0	388.7	-23.1	-41.7	16.3	541.5	616.1	234.0	42.8	1.000122
26000.0	380.7	-24.5	-41.9	18.0	533.3	614.4	234.5	42.5	1.000120
26500.0	372.9	-25.9	-42.3	19.6	525.2	612.7	234.8	42.0	1.000118
27000.0	365.1	-27.2	-42.8	20.9	517.1	611.0	232.7	43.2	1.000116
27500.0	357.4	-28.3	-43.8	20.7	508.4	609.7	230.5	44.8	1.000114
28000.0	349.8	-29.3	-44.9	20.4	499.8	608.4	229.3	47.0	1.000112
28500.0	342.4	-30.4	-45.9	20.1	491.3	607.0	228.9	48.8	1.000110
29000.0	335.2	-31.5	-46.9	19.8	483.1	605.7	231.2	48.9	1.000108
29500.0	328.1	-32.5	-48.0	19.5	474.9	604.4	233.1	48.9	1.000106
30000.0	321.1	-33.6	-49.0	19.3	466.9	603.0	234.5	48.7	1.000104
30500.0	314.3	-34.6	-50.2	18.7**	459.1	601.7	235.2	48.5	1.000103
31000.0	307.5	-35.6	-56.2	9.9**	451.0	600.3	235.5	48.1	1.000101
31500.0	300.9	-36.6	-72.3	1.2**	443.1	599.2	236.0	48.1	1.000099
32000.0	294.3	-37.8			435.5	597.7	236.7	48.2	1.000097
32500.0	287.7	-39.0			428.1	596.1	237.4	48.2	1.000095
33000.0	281.4	-40.2			420.6	594.6	238.2	48.2	1.000094
33500.0	275.1	-41.4			413.7	593.0	238.8	48.7	1.000092
34000.0	269.1	-42.7			406.7	591.4	239.0	49.2	1.000091
34500.0	263.1	-43.9			399.8	589.9	239.9	48.6	1.000089
35000.0	257.3	-45.1			393.0	588.3	240.9	48.0	1.000088
35500.0	251.6	-46.4			386.4	586.7	241.1	48.0	1.000086
36000.0	245.9	-47.3			379.2	585.5	241.3	46.0	1.000084
36500.0	240.3	-48.1			372.0	584.4	241.9	49.8	1.000083
37000.0	234.8	-48.9			364.8	583.4	242.4	52.0	1.000081
37500.0	229.5	-48.5			359.9	583.9	243.9	53.8	1.000079
38000.0	224.3	-47.9			346.9	584.7	245.8	55.1	1.000077
38500.0	219.2	-47.3			333.1	585.4	247.5	58.4	1.000075
39000.0	214.2	-46.7			329.8	586.2	249.3	62.4	1.000073
39500.0	209.3	-46.7			322.1	586.2	251.2	65.9	1.000072
40000.0	204.6	-46.7			314.3	586.2	253.0	69.3	1.000070
40500.0	200.0	-46.7			307.7	586.2	254.1	69.0	1.000069
41000.0	195.4	-47.9			302.2	585.7	254.9	66.5	1.000067
41500.0	190.9	-49.0			296.8	585.2	255.8	63.9	1.000066
42000.0	186.6	-50.2			291.5	584.7	258.2	61.0	1.000065
42500.0	182.3	-51.4			286.4	584.2	259.7	58.1	1.000064
43000.0	178.1	-52.1			280.7	579.2	255.8	55.5	1.000063

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

STATION ALTITUDE 3997.30 FEET MSL
18 AUG. 79 1100 HRS MST
ASCENSION NO. 276

UPPER AIR DATA
2300000270
S M R

GEODETIC COORDINATES
32.44034 LAT DEG
106.442507 LON DEG

TABLE 9 (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (T.W)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
43500.0	174.0	-52.7		274.9	578.5	253.5	53.1	1.000021
44000.0	169.9	-53.2		269.1	577.8	251.1	50.7	1.000060
44500.0	166.0	-53.7		263.5	577.1	245.4	47.6	1.000059
45000.0	162.1	-54.5		255.2	576.1	240.1	45.5	1.000058
45500.0	158.3	-55.8		253.7	574.3	234.6	43.9	1.000056
46000.0	154.5	-57.1		249.2	572.5	229.0	43.0	1.000056
46500.0	150.9	-58.5		244.6	570.8	224.5	42.4	1.000055
47000.0	147.2	-59.8		240.5	569.0	220.9	42.1	1.000054
47500.0	143.7	-61.2		236.2	567.2	217.4	41.9	1.000053
48000.0	140.2	-62.6		231.9	565.4	214.0	42.0	1.000052
48500.0	136.8	-63.9		227.6	563.5	213.0	42.5	1.000051
49000.0	133.5	-64.8		223.1	562.4	211.4	42.6	1.000050
49500.0	130.2	-65.2		218.1	561.8	209.0	41.7	1.000049
50000.0	127.0	-65.7		213.2	561.1	207.6	40.7	1.000047
50500.0	123.9	-66.1		208.4	560.5	206.7	37.9	1.000046
51000.0	120.8	-66.6		203.6	559.9	206.7	33.1	1.000045
51500.0	117.8	-67.2		197.5	561.0	206.7	28.2	1.000044
52000.0	115.0	-67.9		191.3	563.0	204.4	23.9	1.000043
52500.0	112.1	-68.1		185.0	564.6	201.0	19.6	1.000041
53000.0	109.4	-68.8		182.1	563.7	196.3	17.5	1.000041
53500.0	106.7	-69.5		178.2	562.7	191.0	17.5	1.000040
54000.0	104.1	-69.2		174.4	561.8	187.0	17.6	1.000039
54500.0	101.6	-69.3		170.2	561.7	186.5	17.0	1.000038
55000.0	99.1	-69.3		166.1	561.0	186.0	16.5	1.000037
55500.0	96.6	-69.5		162.1	561.4	186.3	16.0	1.000036
56000.0	94.2	-69.6		158.2	561.5	188.0	15.8	1.000035
56500.0	91.9	-69.7		154.4	561.1	189.9	15.5	1.000034
57000.0	89.7	-69.8		150.6	561.0	188.2	13.9	1.000034
57500.0	87.5	-69.9		147.0	560.8	177.9	11.8	1.000033
58000.0	85.3	-69.9		143.4	560.8	166.0	10.0	1.000032
58500.0	83.2	-69.5		139.6	561.4	151.1	9.3	1.000031
59000.0	81.2	-69.1		135.9	561.9	134.8	9.3	1.000030
59500.0	79.2	-69.7		132.4	562.5	121.5	9.8	1.000029
60000.0	77.3	-69.3		128.9	563.0	118.8	8.1	1.000029
60500.0	75.4	-69.9		125.5	563.5	115.1	6.5	1.000028
61000.0	73.5	-69.5		122.2	564.1	110.0	5.7	1.000027
61500.0	71.7	-69.1		118.6	564.6	107.0	6.0	1.000026
62000.0	70.0	-68.7		115.2	565.2	104.7	7.5	1.000026
62500.0	68.3	-68.0		111.2	565.7	103.1	9.1	1.000025
63000.0	66.6	-67.3		110.0	564.4	113.0	11.2	1.000025

STATION ALTITUDE 3997.30 FEET MSL
18 AUG. 79 1100 HRS MST
ASCENSION NO. 276

UPPER AIR DATA
2300000276
5 M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LONG DEG

TABLE 9 (CONT)

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 (TW)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
03500.0	65.6	-62.5		107.5	565.5	116.4	13.3	1.000024
04000.0	63.4	-61.7		104.5	566.6	111.4	13.7	1.000023
04500.0	61.9	-60.8		101.6	567.7	105.4	14.0	1.000023
05000.0	60.4	-60.0		98.6	568.8	100.4	14.3	1.000022
05500.0	59.0	-59.2		95.0	569.9	99.3	14.5	1.000021
06000.0	57.6	-58.8		93.5	570.4	98.2	14.7	1.000021
06500.0	56.2	-58.3		91.1	571.0	95.6	14.2	1.000020
07000.0	54.9	-57.9		88.8	571.6	91.8	13.5	1.000020
07500.0	53.6	-57.5		86.3	572.2	88.0	12.4	1.000019
08000.0	52.3	-57.0		84.3	572.7	86.0	11.3	1.000019
08500.0	51.1	-56.6		82.1	573.3	83.3	10.1	1.000018
09000.0	49.9	-56.2		80.0	573.9	84.7	10.9	1.000018
09500.0	48.7	-55.9		76.1	574.3	87.0	12.4	1.000017
10000.0	47.6	-55.6		73.2	574.7	88.3	13.9	1.000017
10500.0	46.5	-55.3		74.3	575.1	85.6	15.8	1.000017
11000.0	45.4	-55.0		72.5	575.4	83.6	17.6	1.000016
11500.0	44.3	-54.7		70.7	575.8	82.6	19.1	1.000016
12000.0	43.3	-54.4		69.0	576.2	82.1	20.0	1.000015
12500.0	42.3	-54.1		67.3	576.6	81.6	20.9	1.000015
13000.0	41.3	-53.8		65.6	577.0	82.2	21.1	1.000015
13500.0	40.4	-53.5		64.0	577.4	83.0	21.1	1.000014
14000.0	39.4	-53.2		62.5	577.8	83.9	21.0	1.000014
14500.0	38.5	-52.9		60.9	578.2	83.1	20.8	1.000014
15000.0	37.6	-52.6		59.4	578.6	86.4	20.7	1.000013
15500.0	36.8	-52.3		58.0	579.0	87.4	20.9	1.000013
16000.0	35.9	-52.0		56.6	579.4	88.0	21.6	1.000013
16500.0	35.1	-51.7		55.2	579.8	88.6	22.2	1.000012
17000.0	34.3	-51.4		53.8	580.1	89.9	23.2	1.000012
17500.0	33.5	-51.1		52.5	580.5	91.3	24.2	1.000012
18000.0	32.7	-50.8		51.2	580.9	92.3	25.0	1.000011
18500.0	31.9	-50.5		50.0	581.3	91.9	24.8	1.000011
19000.0	31.2	-50.2		48.7	581.7	91.5	24.6	1.000011
19500.0	30.5	-49.9		47.3	582.1	90.8	24.5	1.000011
20000.0	29.8	-49.6		46.4	582.4	89.7	24.8	1.000010
20500.0	29.1	-49.4		45.3	582.7		25.1	1.000010
21000.0	28.4	-49.2		44.2	583.0			1.000010
21500.0	27.8	-49.0		43.2	583.3			1.000010
22000.0	27.1	-48.8		42.2	583.6			1.000009
22500.0	26.5	-48.6		41.2	583.9			1.000009
23000.0	25.9	-48.3		40.2	584.1			1.000009

STATION ALTITUDE 3997.30 FEET MSL
18 AUG. 79
ASCENSION NO. 276

MANDATORY LEVELS
2000060276
S M R
TABLE 10

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	5059.	19.6	10.9	57.	106.4	4.6
800.0	6769.	14.9	10.3	74.	221.1	2.4
750.0	8558.	12.6	4.7	58.	204.4	13.4
700.0	10448.	8.8	-2	53.	236.5	10.6
650.0	12443.	3.5	-2.7	64.	227.5	10.6
600.0	14550.	-1.6	-4.9	70.	221.3	23.4
550.0	16814.	-5.3	-17.3	58.	223.1	24.9
500.0	19255.	-9.0	-23.0	31.	233.0	25.3
450.0	21893.	-16.2	-21.7	62.	241.0	39.2
400.0	24771.	-21.2	-41.5	14.	232.4	42.7
350.0	27950.	-29.3	-44.8	20.	229.3	47.0
300.0	31506.	-36.7			236.1	48.1
250.0	35561.	-46.7			241.1	40.0
200.0	40400.	-46.7			254.1	69.1
175.0	43264.	-52.5			254.1	53.8
150.0	46495.	-58.8			223.7	42.3
125.0	50173.	-66.0			206.7	39.9
100.0	54041.	-63.3			106.3	10.7
80.0	59092.	-64.9			126.8	9.6
70.0	61778.	-62.7			104.8	7.5
60.0	64900.	-59.8			100.1	14.4
50.0	68078.	-50.2			84.2	10.6
40.0	73361.	-53.4			03.2	21.1
30.0	79488.	-49.7			90.2	24.7

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