

AD-A079 999 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/O 4/2
19702A 6SRS, MISSILE NUMBER 004, ROUND NUMBER B-30, 17 AUGUST 1--ETC(U)
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AUGUST 1979

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9 METEOROLOGICAL DATA REPORT

6 19792A GSRS
Missile B-30
Round B-30
17 August 1979

Number

by

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White Sands Meteorological Team

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ATMOSPHERIC SCIENCES LABORATORY
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 19702A GSRS, Missile Number 004, Round Number B-30, are presented in tabular form.		

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INTRODUCTION

19702A GSRS, Missile Number 004, Round Number B-30, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1118 PDT, 17 August 1979. The scheduled launch time was 1100 PDT.

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 RPTS T-9 pilot observation at:

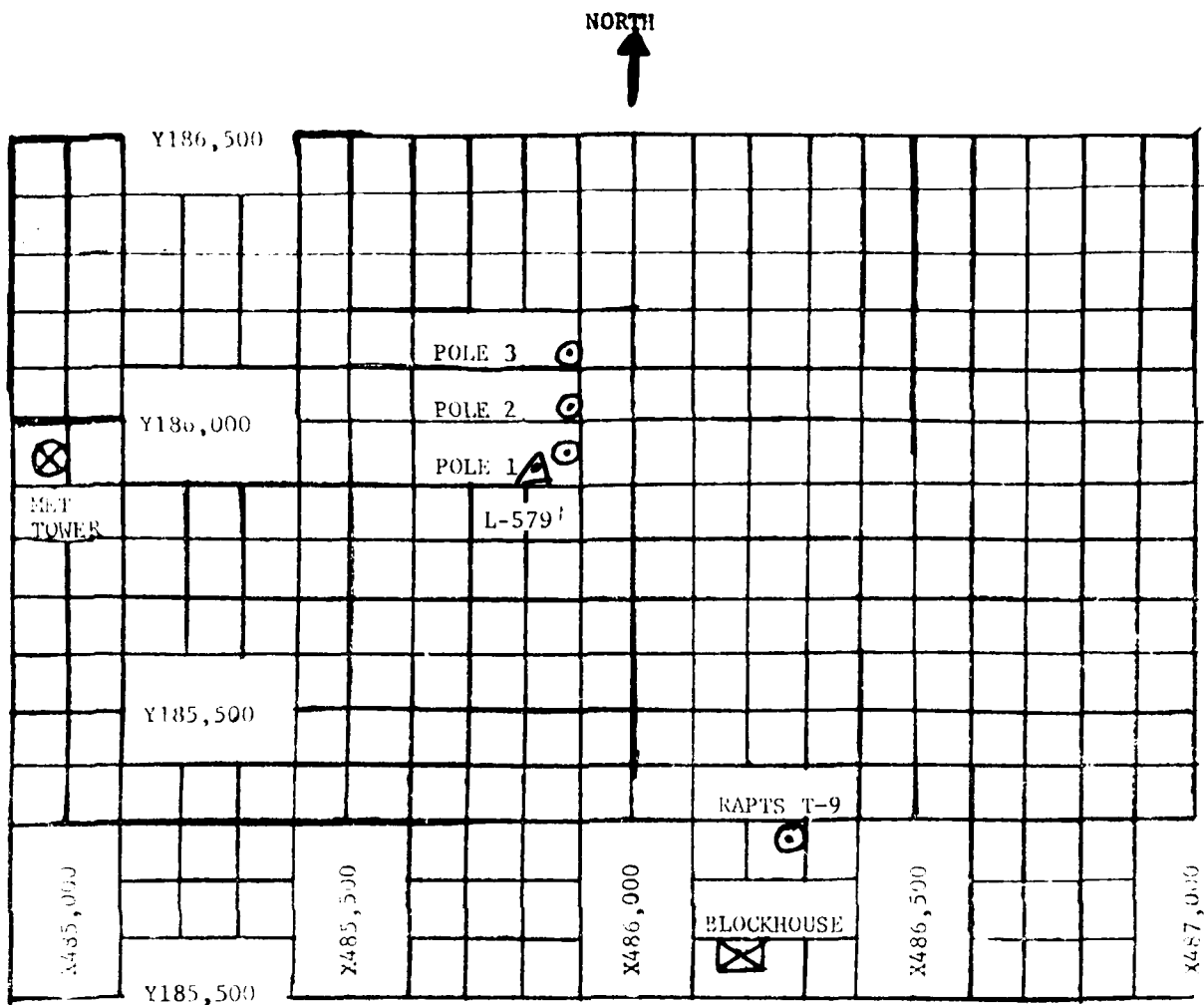
SITE AND ALTITUDE

LC-33 1080 Meters
NICK SITE 2040 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 61,500 feet in 500-foot increments.

SITE AND TIME

SMR 1000 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 L/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 1115 MDT,
17 August 1979, at LC-33, 19702A GSPS,
Missile Number 004, Round Number B-30.

ELEVATION	3977.30	FT/MSL
PRESSURE	885.1	MBS
TEMPERATURE	20.8	°C
RELATIVE HUMIDITY	68	%
DEW POINT	14.6	°C
DENSITY	1042	GM/M ³
WIND SPEED	06	MPH
WIND DIRECTION	120	DEGREES
CLOUD COVER	3	Sfa
CLOUD COVER	1	As
CLOUD COVER	5	Cl

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

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	131	05	-30	122	04	-30	110	06
-20	131	04	-20	135	05	-20	110	06
-10	128	03	-10	126	03	-10	107	06
0.0	125	02	0.0	116	03	0	105	06
+10	087	02	+10	126	04	+10	104	05

Type 19702A GSRS, Missile No. 004, Round No. B-30 launched
from LC-33 on 17 August 1979 at 1118 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 83.0 ft. AGL

NOTE: Wind directions are referenced True North.

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

LEVEL #1 12 ft.			LEVEL #2 62 ft.		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	146	05	-30	123	05
-20	142	05	-20	131	04
-10	148	04	-10	131	04
0.0	143	04	0.0	126	05
+10	150	04	+10	125	06
LEVEL #3 102 ft.			LEVEL #4 202 ft.		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	132	03	-30	124	06
-20	132	03	-20	124	08
-10	140	05	-10	135	07
0.0	137	06	0.0	126	07
+10	135	07	+10	128	07

WTSM Coordinates: X484,982.64 Y185,957.73 E3983.00 (base)

Type 19702A CSRS, Missile No. 601, Round No. B-50 launched
from LC-33 on 17 August 1975 at 1118 MDT.

NOTE: Wind directions are referenced True North.

PILOT BALLOON MEASURED WIND DATA*
(30 meter increments)

TABLE 4

RELEASED FROM LC-33 DATE 17 August 1979 TIME 1050 MDTRELEASE POINT COORDINATES (WSTM) X= 486,037.24 Y= 182,350.16 H= 3,977.30MISSILE TYPE 19702A GSPS MISSILE NO. 004 ROUND NO. B-30MISSILE LAUNCHED FROM LC-33 DATE 17 August 1979 TIME 1118 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
SEC	150	02.0
30	113	02.0
60	075	01.5
90	038	01.0
120	360	00.5
150	030	01.5
180	059	02.5
210	089	03.5
240	118	04.5
270	127	04.5
300	136	04.5
330	145	04.5
360	154	04.5

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
390	134	04.0
420	113	03.5
450	093	03.0
480	072	02.5
510	093	03.0
540	111	03.5
570	130	04.0
600	149	04.0
630	160	04.5
660	170	05.0
690	180	05.5
720	190	05.5
750	191	06.5

HEIGHT mtrs. ASL	DIRECTION DEGREES	SPEED MPH
780	191	07.0
810	191	07.5
840	191	08.0
870	194	08.5
900	197	09.0
930	200	09.5
960	203	09.5
990	209	09.5
1020	214	09.0
1050	219	08.5
1080	224	08.0
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

HEIGHT mtrs. ASL	DIRECTION DEGREES	SPEED MPH
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*
(30 meter increments)

TABLE 1

RELEASED FROM LC-33 DATE 17 August 1979 TIME 1118 MDT
 RELEASE POINT COORDINATES (WSTM) X= 486,037.24 Y= 182,350.16 H= 3,977.2
 MISSILE TYPE 19702A GPS MISSILE NO. 004 ROUND NO. B-30
 MISSILE LAUNCHED FROM LC-33 DATE 17 August 1979 TIME 1118 MDT
 NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT METER	DIRECTION DEGREES	SPEED MPH
30	120	06.0
60	120	05.0
90	120	03.5
120	120	02.5
150	120	01.0
180	135	04.0
210	149	06.5
240	163	09.0
270	177	11.5
300	172	10.0
330	166	08.5
360	160	07.0
390	154	05.5

HEIGHT METER	DIRECTION DEGREES	SPEED MPH
300	149	05.5
420	143	05.5
450	137	05.5
480	131	05.0
510	135	04.5
540	139	04.0
570	143	03.5
600	146	02.5
630	162	03.5
660	178	04.0
690	194	04.5
720	210	05.0
750	206	06.0

DELAS-MG-MT-WS Form 46A
1 APRIL 79

Replaces AMSEL-BL-MT-WS Form 46
which are obsolete.

HEIGHT mtrs. AGL	DIRECTION DEGREES	SPEED MPH
280	202	06.5
810	198	07.5
840	194	08.0
870	198	08.5
900	202	08.5
930	206	08.5
960	209	08.5
990	218	07.5
1020	227	06.5
1050	236	05.5
1080	244	04.0
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

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

AFJAG-MS-MT-WS Form 46A (page 2)
1 APRIL 79

PILOT BALLOON MEASURED WIND DATA*
(30 meter increments)

TABLE 6

RELEASED FROM NICK SITE DATE 17 August 1979 TIME 1050 MDT
 RELEASE POINT COORDINATES (WSIM) X= 470,734.56 Y= 255,775.64 H= 4,126.57
 MISSILE TYPE 19702A GSRS MISSILE NO. 004 ROUND NO. B-30
 MISSILE LAUNCHED FROM LC-33 DATE 17 August 1979 TIME 1118 MDT
 WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT METER	DIRECTION DEGREES	SPEED MPH
C A L M		
30	359	2.0
60	358	3.5
90	357	5.0
120	356	6.5
150	022	6.0
180	047	5.0
210	073	4.0
240	098	3.0
270	091	3.5
300	083	3.5
330	076	3.5
360	068	3.5

HEIGHT METER AGL	DIRECTION DEGREES	SPEED MPH
390	069	3.5
420	069	3.5
450	070	3.5
480	070	3.0
510	070	3.5
540	070	4.0
570	070	4.5
600	070	4.5
630	082	4.5
660	093	4.5
690	104	4.5
720	115	4.5
750	111	5.0

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
780	107	5.0
810	103	5.0
840	099	5.0
870	101	5.5
900	103	6.0
930	105	6.5
960	106	6.5
990	110	6.5
1020	114	6.5
1050	118	6.5
1080	122	6.0
1110	116	6.0
1140	109	6.0
1170	103	6.0
1200	096	5.5
1230	109	5.5
1260	122	5.0
1290	135	4.5
1320	147	4.0
1350	136	4.0
1380	124	4.0
1410	112	4.0

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
1440	100	3.5
1470	097	5.0
1500	094	6.0
1530	091	7.0
1560	088	8.0
1590	086	8.0
1620	084	7.5
1650	082	7.5
1680	080	7.0
1710	072	7.0
1740	064	6.5
1770	056	6.0
1800	047	5.5
1830	034	4.5
1860	020	3.0
1890	006	2.0
1920	352	0.5
1950	360	1.5
1980	008	2.5
2010	016	3.5
2040	024	4.0
2070		

PILOT BALLOON MEASURED WIND DATA*
(30 meter increments)

TABLE 7

RELASED FROM NICK DATE 17 August 1979 TIME 1118 MDT
 RELEASE POINT COORDINATES (WSTM) X= 470,734.56 Y= 255,755.64 H= 4,126.57
 MISSILE TYPE 19702A GPS MISSILE NO. 004 ROUND NO. B-30
 MISSILE LAUNCHED FROM LC-33 DATE 17 August 1979 TIME 1118 MDT
 NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT meters AGL	DIRECTION DEGREES	SPEED MPH
30	335	6.0
60	339	6.0
90	343	5.5
120	347	5.5
150	350	5.0
180	014	5.0
210	037	5.0
240	060	5.0
270	083	5.0
300	083	5.0
330	082	4.5
360	081	4.0
390	080	3.5

HEIGHT meters AGL	DIRECTION DEGREES	SPEED MPH
390	077	3.5
420	073	3.0
450	069	3.0
480	065	2.5
510	065	3.0
540	065	3.0
570	065	3.0
600	064	3.0
630	072	3.5
660	080	4.0
690	088	4.5
720	096	5.0
750	097	5.0

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
780	097	5.0
810	098	5.0
840	098	5.0
870	088	4.5
900	078	3.5
930	068	2.5
960	057	1.5
990	042	2.0
1020	026	2.0
1050	011	2.5
1080	355	2.5
1110	331	2.5
1140	307	2.5
1170	283	2.5
1200	258	2.5
1230	253	2.5
1260	247	2.0
1290	241	1.5
1320	235	1.0
1350	278	1.0
1380	320	0.5
1410	003	0.5

HEIGHT mtrs AGL	DIRECTION DEGREES	SPEED MPH
1440	000	00
1470	007	0.5
1500	329	1.0
1530	291	1.5
1560	253	1.5
1590	271	2.0
1620	289	2.0
1650	307	2.0
1680	325	2.0
1710	315	2.0
1740	304	2.0
1770	294	2.0
1800	283	2.0
1830	287	2.5
1860	290	3.0
1890	293	3.5
1920	296	3.5
1950	306	4.0
1980	316	4.0
2010	326	4.0
2040	335	4.0
2070		

DELAS-MS-MT-WS Form 46A (page 2)
1 APRIL 79

STATION ALTITUDE 3997.30 FEET MSL
17 AUG. 79
ASCENSION NO. 273

SIGNIFICANT LEVEL DATA
2420000273
U.S.S.

GEODETIC COORDINATES
32°48'00" N
100°42'00" W

TABLE 8

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE	REL. HUM.
MILLIBARS	MSL FEET	AIR DEGP/101	PERCENT
		DEGREES CENTIGRADE	
983.8	3997.3	22.1	63.0
875.4	4239.0	19.5	65.0
850.0	5095.4	16.3	78.0
815.0	5272.9	14.5	78.0
794.8	5973.9	13.7	68.0
744.3	6763.3	10.2	62.0
733.0	9129.8	10.0	71.0
708.0	10455.5	7.4	69.0
649.8	12329.7	2.6	75.0
631.0	13206.1	2.4	54.0
587.4	15128.2	-1.9	55.0
573.6	15522.9	-2.1	59.0
561.0	16301.4	-2.5	18.0
500.0	19291.3	-9.7	25.0
479.4	20355.1	-11.9	20.0
450.0	21613.1	-12.7	20.0
441.0	22300.7	-14.1	41.0
433.4	22534.0	-15.1	23.0
407.0	24552.6	-20.1	24.0
382.8	29227.4	-22.2	53.0
352.2	27257.8	-25.3	67.0
342.2	28569.0	-27.5	70.0
300.0	31600.1	-35.1	73.0
297.4	35133.9	-43.4	49.7
250.0	35779.9	-45.2	
224.4	38122.5	-51.0	
200.0	40551.7	-57.4	
195.0	42077.3	-58.4	
130.0	41522.1	-57.3	
130.0	45300.1	-57.1	
150.0	40541.0	-58.0	
120.4	49730.1	-63.0	
114.4	52300.0	-65.0	
110.0	52704.7	-64.1	
107.0	53297.3	-63.0	
100.0	54776.1	-64.4	
96.4	59176.5	-64.0	
70.0	61930.9	-61.3	

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STATION ALTITUDE 3997.30 FEET MSL
17 AUG. 79
ASCENSION NO. 273

UPPER AIR DATA
2090000273
5 M R

GEOCENTRIC COORDINATES
32.40034 LAT DEG
106.42307 LONG DEG

TABLE 8 (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY G/CUBIC CMETER	SPEED OF SOUND M/SEC	WIND DATA DIRECTION SPEED KNOTS	INDEX OF REFRACTION
23500.0	422.7	-16.7	23.3	570.9	624.0	197.3	1.000130
24000.0	414.2	-17.9	23.6	569.2	622.5	200.4	1.000128
24500.0	405.9	-19.2	23.8	556.6	620.9	203.2	1.000126
25000.0	397.7	-20.4	25.2	547.9	619.5	204.0	1.000124
25500.0	389.6	-21.4	29.4	533.9	615.0	203.0	1.000122
26000.0	381.6	-22.4	34.9	520.0	617.0	193.5	1.000120
26500.0	373.8	-23.5	47.0	521.4	613.5	197.5	1.000117
27000.0	366.1	-24.7	60.4	515.1	614.2	191.2	1.000117
27500.0	358.5	-25.7	67.5	504.5	613.0	197.2	1.000115
28000.0	351.1	-26.5	68.6	499.0	612.0	192.4	1.000113
28500.0	343.8	-27.3	69.8	486.9	611.0	192.5	1.000111
29000.0	336.5	-28.5	70.4	476.9	609.5	187.0	1.000109
29500.0	329.4	-29.7	70.9	471.1	608.0	179.9	1.000107
30000.0	322.4	-30.9	71.4	460.5	606.4	177.4	1.000105
30500.0	315.6	-32.2	71.8	456.0	604.9	177.4	1.000103
31000.0	308.9	-33.4	72.3	446.7	603.5	178.0	1.000102
31500.0	302.3	-34.7	72.8	441.5	601.7	177.8	1.000100
32000.0	295.8	-35.9	70.8	434.1	600.2	176.0	1.000098
32500.0	289.3	-37.1	67.3	426.6	599.0	173.2	1.000096
33000.0	283.0	-38.3	62.8	419.6	597.1	175.1	1.000094
33500.0	276.8	-39.5	60.4	412.5	595.0	170.0	1.000093
34000.0	270.7	-40.7	56.9	405.0	594.0	170.9	1.000091
34500.0	264.8	-41.9	53.4	398.7	592.5	170.1	1.000089
35000.0	259.0	-43.1	49.9	392.1	591.0	179.2	1.000088
35500.0	253.2	-44.4	21.5**	385.6	589.2	163.2	1.000086
36000.0	247.5	-45.8		379.2	587.4	161.1	1.000084
36500.0	241.8	-47.2		372.8	585.9	162.0	1.000083
37000.0	236.3	-48.5		366.5	583.9	163.1	1.000082
37500.0	230.9	-49.9		360.4	582.1	164.5	1.000080
38000.0	225.7	-51.3		354.3	580.5	160.5	1.000079
38500.0	220.4	-52.5		348.0	578.7	158.6	1.000078
39000.0	215.3	-53.7		341.7	577.1	191.0	1.000076
39500.0	210.2	-54.9		335.5	575.5	193.8	1.000075
40000.0	205.3	-56.1		329.5	574.0	190.7	1.000073
40500.0	200.5	-57.3		323.5	572.4	199.5	1.000072
41000.0	195.7	-58.5		317.5	571.1	202.5	1.000071
41500.0	191.1	-57.4		310.6	572.2	203.6	1.000069
42000.0	186.5	-57.3		301.1	572.5	210.1	1.000067
42500.0	182.1	-57.3		294.0	572.5	214.7	1.000065
43000.0	177.8	-57.3		287.0	572.5	219.9	1.000064

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

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4 JUL 1981 14:10:10

STATION ALTITUDE 3497.2 FEET
 17 AUG 79 1903 MAG 831
 ASCENSION NO. 273

UPPER AIR DATA
 2290000273
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LONG DEG

TABLE 8 (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	HUMIDITY PERCENT	DENSITY GM/CM ³	SPEED OF SOUND M/S	WIND DATA DIRECTION DEGREES (T)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4350.0	170.6	-53.3		280.2	572.3	220.4	41.6	1.000062
4400.0	169.9	-57.4		273.6	572.3	232.7	39.0	1.000061
4450.0	169.3	-57.7		267.1	572.3	230.9	39.8	1.000059
4500.0	161.3	-57.7		260.8	572.3	240.5	41.1	1.000058
4550.0	157.7	-57.7		254.6	572.2	240.6	43.9	1.000057
4600.0	154.0	-57.7		249.0	571.6	240.1	47.0	1.000055
4650.0	150.3	-58.0		244.0	570.7	240.5	47.6	1.000054
4700.0	146.7	-58.2		238.9	569.6	241.2	47.3	1.000053
4750.0	143.1	-58.4		233.9	568.9	244.1	44.7	1.000052
4800.0	139.7	-58.6		228.6	568.0	247.5	40.7	1.000051
4850.0	136.3	-58.5		224.2	567.0	254.0	36.7	1.000050
4900.0	133.1	-58.0		219.5	566.1	250.6	32.5	1.000049
4950.0	129.9	-58.7		214.9	565.4	250.5	28.8	1.000048
5000.0	126.7	-58.3		210.3	564.4	243.9	26.7	1.000047
5050.0	123.6	-58.8		205.7	563.7	234.4	25.5	1.000046
5100.0	120.6	-58.9		201.1	563.0	222.4	24.7	1.000045
5150.0	117.6	-58.3		196.7	562.3	210.9	24.9	1.000044
5200.0	114.7	-58.3		192.4	561.6	207.6	25.5	1.000043
5250.0	111.6	-58.3		190.9	562.7	208.4	26.1	1.000042
5300.0	108.2	-58.9		181.7	563.6	203.9	25.7	1.000040
5350.0	106.1	-58.7		177.2	563.6	203.2	25.1	1.000039
5400.0	103.9	-58.0		173.1	563.4	197.9	25.0	1.000039
5450.0	101.7	-58.2		169.1	563.1	191.6	25.2	1.000038
5500.0	99.5	-58.4		165.1	562.9	187.6	25.2	1.000037
5550.0	97.3	-58.4		161.0	562.6	189.9	24.7	1.000036
5600.0	95.1	-58.5		157.1	562.8	190.5	23.6	1.000035
5650.0	91.8	-58.5		153.5	562.6	188.3	20.7	1.000034
5700.0	89.6	-58.5		149.5	562.7	183.5	17.8	1.000033
5750.0	87.4	-58.5		145.9	562.7	179.1	13.8	1.000032
5800.0	85.2	-58.5		142.3	562.7	167.6	10.1	1.000032
5850.0	83.0	-58.6		138.9	562.6	153.5	8.7	1.000031
5900.0	81.1	-58.6		135.5	562.6	153.5	8.4	1.000030
5950.0	79.1	-58.3		132.0	563.0	127.4	9.5	1.000029
6000.0	77.2	-58.3		128.5	563.7	121.9	11.7	1.000029
6050.0	75.3	-58.3		125.0	564.4			1.000028
6100.0	73.3	-58.6		121.7	563.0			1.000027
6150.0	71.1	-58.3		118.5	563.7			1.000026

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STATION ALTITUDE 3997.00 FEET MSL
17 AUG. 79
ASCENSION I.O. 273

VACUUMITY LEVELS
2.00000270
5 " H

GEODETIC COORDINATES
32°49'34" LAT DEG
106°42'30" LONG DEG

TABLE 10

PRESSURE GEOPOTENTIAL MILLIBARS	FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
				DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	5095.	10.3	70.	94.7	1.0
800.0	5784.	11.5	63.	200.7	3.0
750.0	6365.	10.6	63.	245.1	8.1
700.0	10445.	7.4	69.	202.8	11.3
650.0	12430.	3.4	74.	257.1	13.0
600.0	14554.	-6.	59.	257.0	13.3
550.0	16025.	-9.8	19.	255.0	11.3
500.0	19264.	-9.7	25.	255.2	10.2
450.0	21911.	-13.3	28.	190.5	27.8
400.0	24810.	-20.1	24.	202.4	30.7
350.0	28023.	-20.6	59.	195.9	30.3
300.0	31017.	-35.1	73.	177.2	40.0
250.0	35701.	-45.2		103.7	53.0
200.0	40453.	-57.4		199.5	55.8
175.0	43220.	-57.3		222.8	42.8
150.0	46415.	-58.0		240.5	47.6
125.0	50129.	-63.0		240.2	20.1
100.0	54500.	-64.4		103.4	25.4
80.0	59082.	-64.5		151.4	0.5
70.0	61777.	-61.8			

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