

AD-A085 529

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/8 4/2
12822A LANCE MISSILE NUMBER 4362, ROUND NUMBER 346-ECL, 2 MAY 1--ETC (U)
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1. REPORT NUMBER DR 11-5	2. GOVT ACCESSION NO. AD-A085 529	3. REPORT'S CATALOG NUMBER
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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 12822A LANCE, Missile No. 4362, Round No. 346-ECL, are presented in tabular form.		

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INTRODUCTION

12822A LANCE, Missile Number 4362, Launch Vehicle 346-ECL, was launched from Red Rio, White Sands Missile Range (WSMR), New Mexico, at 0809 MDT on 02 May 1980. The scheduled launch time was 0800 MDT.

DISCUSSION

Metecological 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 Red Rio Met Site at T-0 minutes.

(2) 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 PANTS T-0 pilot observation at:

SITE AND ALTITUDE

NOT AVAILABLE

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

SITE AND TIME

RED RIO 0800 MDT

JALLEN 0830 MDT

TABLE 1. SURFACE OBSERVATION TAKEN AT 0800 MDT,
 2 May 1980, at Red Rio, 12822A LANCE,
 Missile No. 4362, Round No. 346-ECL.

ELEVATION	6305	FT/MSL
PRESSURE	810.4	MB
TEMPERATURE	8.3	°C
RELATIVE HUMIDITY	82	
DEW POINT	5.4	°C
DENSITY	998	GM/M ³
WIND SPEED	08	KTS
WIND DIRECTION	360	DEGREES
CLOUD COVER	4 C1	

STATION ALTITUDE 6331.86 FEET MSL
 2 MAY 60
 ASSEMBLY NO. 3

SIGNIFICANT LEVEL DATA
 1230350003
 RED RIO

GEODETIC COORDINATES
 33.77850 LAT DEG
 106.24993 LON DEG

TABLE 2.

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT	
	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		
810.4	6331.9	8.3	5.4	62.0
799.8	6689.2	7.6	1.0	63.0
740.0	8460.0	5.5	-2.0	55.0
700.0	10263.2	.9	-6.0	60.0
617.2	13543.5	-6.7	-12.2	65.0
597.8	14359.7	-9.5	-10.3	94.0
557.0	16147.5	-12.0	-28.4	24.0
535.8	17121.1	-13.3	-35.6	13.0
500.0	18940.6	-16.7	-35.3	18.0
438.6	22037.9	-23.0	-40.0	18.0
431.8	22414.5	-23.0	-40.1	19.0
400.0	24242.0	-27.5	-44.4	18.0
377.4	25609.6	-30.8	-46.3	20.0
333.4	28462.5	-38.0	-44.3	51.0
321.4	29290.2	-39.9	-43.6	66.0
300.0	30320.7	-43.3	-47.3	64.0
286.2	31867.5	-45.5	-50.4	57.0
250.0	34812.5	-49.2		
238.4	35836.3	-50.3		
228.2	36778.5	-49.3		
223.2	37255.9	-50.3		
213.6	39203.3	-49.3		
200.0	39623.7	-49.5		
178.0	42134.6	-50.3		
150.0	45763.8	-56.7		
142.0	46904.1	-58.7		
114.2	51406.6	-59.7		
104.6	53206.0	-62.4		
100.0	54122.3	-62.2		
89.8	56322.0	-61.0		
70.0	61423.7	-61.6		
59.3	64800.2	-63.8		
50.0	68280.2	-60.8		
39.4	73226.7	-56.5		
30.4	78681.1	-55.4		

STATION ALTITUDE 6331.86 FEET MSL
 2 MAY 60
 ASCENSION NO. 3

UPPER AIR DATA
 1230350000
 RED RIO

GEODLTIC COORDINATES
 33.77850 LAT DEG
 106.24993 LONG DEG

TABLE 3.

GEOMETRIC ALTITUDE MSL FELT	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	
6331.9	810.4	8.3	62.0	996.9	654.9	300.0	8.0	1.000206
6500.0	805.4	8.0	73.1	994.4	654.4	307.7	6.8	1.000234
7000.0	790.6	7.2	61.6	979.4	653.3	342.2	3.6	1.000248
7500.0	770.1	6.6	59.3	963.6	652.6	209.5	1.9	1.000243
8000.0	761.9	6.0	57.1	948.1	651.8	219.3	4.3	1.000237
8500.0	747.9	5.4	55.1	933.0	651.0	233.9	4.8	1.000232
9000.0	734.0	4.1	56.5	920.0	649.5	241.9	5.0	1.000228
9500.0	720.3	2.8	57.9	907.1	648.0	239.5	4.1	1.000224
10000.0	706.9	1.6	59.3	894.5	648.4	240.6	3.4	1.000220
10500.0	693.7	.4	60.4	881.7	644.9	246.0	2.9	1.000216
11000.0	680.5	-.8	61.1	868.7	643.5	268.8	3.6	1.000212
11500.0	667.6	-2.3	61.9	855.0	642.1	263.4	5.2	1.000208
12000.0	654.9	-3.1	62.6	843.4	640.7	291.6	7.5	1.000204
12500.0	642.4	-4.3	63.4	831.0	639.3	295.0	10.0	1.000200
13000.0	630.2	-5.4	64.2	818.8	637.9	300.0	12.5	1.000196
13500.0	618.2	-6.6	64.9	806.8	636.5	313.4	15.1	1.000193
14000.0	606.5	-6.3	81.2	795.0	634.0	317.9	17.3	1.000192
14500.0	594.5	-9.7	68.5	784.8	632.9	319.6	18.1	1.000189
15000.0	582.9	-10.4	68.9	771.8	631.9	319.7	17.3	1.000187
15500.0	571.4	-11.1	49.4	759.0	630.9	319.6	15.8	1.000186
16000.0	560.3	-11.8	29.8	746.4	630.0	319.6	14.1	1.000180
16500.0	549.2	-12.5	20.0	733.7	629.1	312.2	13.2	1.000186
17000.0	538.4	-13.1	14.4	721.2	628.2	303.5	12.7	1.000182
17500.0	527.7	-14.0	14.1	709.4	627.2	300.8	13.0	1.000180
18000.0	517.2	-15.0	15.6	697.9	626.0	299.1	13.5	1.000177
18500.0	506.9	-16.0	17.0	686.6	624.8	304.8	14.6	1.000159
19000.0	496.7	-17.0	13.0	675.5	623.6	308.9	15.7	1.000152
19500.0	486.7	-18.0	18.0	664.3	622.4	310.4	16.9	1.000150
20000.0	476.8	-19.0	18.0	653.4	621.1	311.4	18.2	1.000147
20500.0	467.1	-20.0	18.0	642.6	619.9	312.0	19.6	1.000144
21000.0	457.7	-21.0	18.0	632.1	618.7	311.4	21.1	1.000142
21500.0	448.4	-21.9	18.0	621.7	617.5	310.1	22.5	1.000140
22000.0	439.3	-22.9	18.0	611.5	616.3	307.1	24.4	1.000137
22500.0	430.3	-23.2	19.0	599.6	616.0	304.2	26.6	1.000135
23000.0	421.3	-24.4	18.7	590.1	614.4	302.5	28.2	1.000132
23500.0	412.6	-25.7	18.4	580.0	612.9	301.1	29.9	1.000130
24000.0	404.1	-26.9	18.1	571.6	611.4	300.4	31.7	1.000128
24500.0	395.6	-28.1	18.4	562.4	609.9	300.3	33.7	1.000126
25000.0	387.3	-29.3	19.1	553.5	608.5	300.5	36.0	1.000124
25500.0	379.2	-30.5	19.6	544.4	608.6	302.0	38.5	1.000122

STATION ALTITUDE 6031.96 FEET MSL
 2 MAY 40
 ASL, SMO: 110. 3

UPPER AIR DATA
 1250350003
 REC: TIC

GEODETIC COORDINATES
 33.77050 LAT DEP
 106.26093 LONG ELM

TABLE 3 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	TEMPERATURE ULMPPOINT	REL. HUM. PERCENT	DENSITY GM/CM ³ WATER	SPEED OF SOUND M/SEC	WIND DIRECTION DEGREES (TRK)	WIND VELOCITY KNOTS	INDEX OF REFRACTION
20000.0	371.1	-31.8	-45.4	24.2	535.5	605.3	303.0	41.0	1.000120
25000.0	303.1	-33.0	-44.7	29.7	520.7	603.7	304.2	43.4	1.000118
27000.0	335.3	-34.3	-44.3	35.1	518.1	602.1	304.3	45.8	1.000110
27500.0	347.6	-35.6	-44.2	40.5	509.7	600.5	303.2	45.3	1.000114
28000.0	340.2	-36.8	-44.2	46.0	501.4	598.9	302.1	51.0	1.000112
28500.0	332.8	-38.1	-44.3	51.7	493.2	597.3	301.1	54.0	1.000111
29000.0	325.6	-39.2	-43.9	60.7	484.6	595.9	300.1	57.1	1.000109
29500.0	318.4	-40.4	-44.3	65.7	476.4	594.4	299.2	60.1	1.000107
30000.0	311.3	-41.5	-45.4	65.1	468.1	593.0	298.1	63.8	1.000105
30500.0	304.4	-42.6	-46.6	64.4	459.9	591.6	296.9	66.3	1.000103
31000.0	297.7	-43.7	-47.8	62.8	451.6	590.2	296.0	73.3	1.000101
31500.0	291.0	-44.7	-49.3	59.5	443.8	588.8	295.6	76.6	1.000099
32000.0	284.5	-45.7	-51.0	54.4**	435.6	587.6	297.8	84.3	1.000097
32500.0	278.0	-46.3	-53.2	44.2**	426.9	586.0	293.6	90.2	1.000095
33000.0	271.7	-46.9	-55.8	35.1**	418.4	585.0	298.7	98.0	1.000093
33500.0	265.3	-47.6	-58.9	25.4**	410.0	583.2	296.5	105.7	1.000091
34000.0	259.3	-48.2	-63.1	15.7**	401.8	581.5	298.1	111.3	1.000089
34500.0	253.6	-48.8	-70.4	6.0**	393.6	580.5	297.6	114.6	1.000088
35000.0	247.8	-49.4			385.9	582.7	297.1	114.5	1.000086
35500.0	242.1	-49.9			377.9	582.0	296.6	114.5	1.000084
36000.0	236.6	-50.1			369.6	581.8	296.4	113.7	1.000082
36500.0	231.2	-49.6			360.2	582.5	296.6	113.5	1.000080
37000.0	225.9	-49.8			352.2	582.3	298.1	113.7	1.000078
37500.0	220.7	-50.0			344.6	581.9	299.3	113.1	1.000077
38000.0	215.6	-49.5			336.9	582.6	300.5	111.5	1.000075
38500.0	210.7	-49.3			327.9	582.8	301.5	109.3	1.000073
39000.0	205.9	-49.4			320.5	582.7	302.0	106.1	1.000071
39500.0	201.1	-49.5			313.3	582.6	302.4	102.9	1.000070
40000.0	196.5	-49.6			306.3	582.5	302.6	99.7	1.000068
40500.0	192.0	-49.8			299.5	582.2	302.9	96.7	1.000067
41000.0	187.6	-49.9			292.8	582.0	303.0	94.9	1.000065
41500.0	183.3	-50.1			286.3	581.8	303.2	93.0	1.000064
42000.0	179.1	-50.3			279.9	581.6	303.3	91.0	1.000062
42500.0	175.0	-50.9			274.3	580.7	303.3	88.6	1.000061
43000.0	170.9	-51.8			269.0	579.6	303.0	87.6	1.000060
43500.0	166.9	-52.7			263.8	578.4	302.5	86.3	1.000059
44000.0	163.0	-53.6			258.6	577.3	302.1	85.7	1.000058
44500.0	159.2	-54.5			253.6	576.1	301.6	85.6	1.000056
45000.0	155.5	-55.4			248.7	574.9	301.1	85.6	1.000055
45500.0	151.9	-56.2			243.9	573.8	300.6	85.6	1.000054

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

STATION ALTITUDE 6331.86 FEET MSL
 2 MAY 60
 ASCENDING NO. 5

UPPER AIR DATA
 1230350003
 RED RIO

GEODETIC COORDINATES
 33.77850 LAT DEG
 106.24993 LONG DEG

TABLE 3. (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KINOTS	WIND DATA		INDEX OF REFRACTION
							DIRECTION DEGREES (TN)	SPEED KINOTS	
40000.0	148.3	-57.1			239.1	572.0	300.4	65.2	1.000053
40500.0	144.8	-58.0			234.4	571.4	299.7	84.4	1.000052
47000.0	141.3	-58.7			229.6	570.5	290.9	83.6	1.000051
47500.0	136.0	-58.8			224.3	570.3	290.3	60.9	1.000050
48000.0	134.7	-58.9			219.0	570.2	297.7	77.8	1.000049
48500.0	131.4	-59.1			213.9	570.0	297.7	74.7	1.000048
49000.0	128.3	-59.2			208.9	569.9	296.3	71.8	1.000047
49500.0	125.2	-59.3			204.0	569.7	299.5	68.6	1.000045
50000.0	122.2	-59.4			199.2	569.6	302.1	64.7	1.000044
50500.0	119.3	-59.5			194.6	569.4	305.0	61.0	1.000043
51000.0	116.5	-59.6			190.0	569.3	300.6	52.3	1.000042
51500.0	113.7	-59.3			185.7	569.0	313.0	43.9	1.000041
52000.0	110.9	-60.6			181.8	568.0	310.2	37.5	1.000040
52500.0	108.3	-61.3			178.1	567.0	317.1	32.0	1.000040
53000.0	105.7	-62.1			174.4	566.0	310.9	28.1	1.000039
53500.0	103.1	-62.3			170.4	565.6	313.6	27.4	1.000038
54000.0	100.6	-62.2			166.2	565.0	310.5	26.9	1.000037
54500.0	98.2	-62.0			162.0	564.1	311.7	22.0	1.000035
55000.0	95.8	-61.7			157.8	563.5	313.8	17.0	1.000035
55500.0	93.5	-61.4			153.8	563.0	317.0	12.3	1.000034
56000.0	91.2	-61.2			149.9	567.2	323.0	7.9	1.000033
56500.0	89.0	-61.0			146.2	567.4	322.6	4.7	1.000033
57000.0	86.9	-61.1			142.7	567.3	322.2	5.1	1.000032
57500.0	84.8	-61.1			139.3	567.3	313.5	5.6	1.000031
58000.0	82.7	-61.2			136.0	567.2	300.1	6.3	1.000030
58500.0	80.7	-61.3			132.7	567.1	300.2	7.2	1.000030
59000.0	78.8	-61.3			129.0	567.0	294.1	7.2	1.000029
59500.0	76.9	-61.4			126.5	566.9	289.2	6.7	1.000028
60000.0	75.0	-61.4			123.5	566.9	273.0	5.6	1.000027
60500.0	73.2	-61.5			120.5	566.8	240.7	3.3	1.000027
61000.0	71.5	-61.6			117.7	566.7	189.3	3.2	1.000026
61500.0	69.7	-61.6			114.9	566.6	132.8	6.1	1.000026
62000.0	68.0	-62.0			112.3	566.1	118.0	10.7	1.000025
62500.0	66.4	-62.3			109.7	565.7	108.9	14.5	1.000024
63000.0	64.8	-62.6			107.2	565.3	101.9	17.9	1.000024
63500.0	63.2	-63.0			104.8	564.8	98.2	20.5	1.000023
64000.0	61.7	-63.3			102.4	564.4	90.6	21.5	1.000023
64500.0	60.2	-63.6			100.0	563.9	93.9	22.5	1.000022
65000.0	58.7	-63.6			97.6	563.9	99.0	23.4	1.000022
65500.0	57.3	-63.2			95.1	564.5	103.1	24.4	1.000021

STATION ALTITUDE 6331.86 FLIT MSI
 2 MAY 60 0800 MDT
 ASCENSION NO. 3

UPPER AIR DATA
 1230350003
 RED RIO
 TABLE 3 (continued)

GEODETIC COORDINATES
 33.77850 LAT DEG
 106.24993 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION, DEGREES (T)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
6000.0	55.9	-62.8		92.8	565.1	107.3	25.3	1.000021
6050.0	54.6	-62.3		90.2	565.0	111.4	26.3	1.000020
6100.0	53.2	-61.9		87.8	566.2	114.1	26.4	1.000020
6150.0	51.9	-61.5		85.5	566.8	113.7	25.5	1.000019
6200.0	50.7	-61.0		83.3	567.4	117.1	24.4	1.000019
6250.0	49.5	-60.6		81.1	568.0	116.7	22.5	1.000018
6300.0	48.3	-60.2		79.0	568.5	116.1	20.8	1.000018
6350.0	47.1	-59.7		77.0	569.1	116.2	18.6	1.000017
7000.0	46.0	-59.3		75.0	569.7	116.5	16.6	1.000017
7050.0	44.9	-58.9		73.0	570.3	116.6	14.1	1.000016
7100.0	43.9	-58.4		71.2	570.9	117.2	10.8	1.000016
7150.0	42.8	-58.0		69.3	571.4	117.9	7.5	1.000015
7200.0	41.8	-57.6		67.5	572.0	119.7	9.7	1.000015
7250.0	40.8	-57.1		65.8	572.6	120.6	12.1	1.000015
7300.0	39.8	-56.7		64.1	573.2	121.3	13.4	1.000014
7350.0	38.9	-56.4		62.5	573.5	121.6	13.9	1.000014
7400.0	38.0	-56.3		61.0	573.6	121.7	14.7	1.000014
7450.0	37.1	-56.2		59.6	573.8	119.4	19.2	1.000013
7500.0	36.2	-56.1		58.1	573.9	117.9	23.8	1.000013
7550.0	35.4	-56.0		56.7	574.0	113.5	25.2	1.000013
7600.0	34.5	-55.9		55.4	574.2	112.3	27.1	1.000012
7650.0	33.7	-55.8		54.1	574.3			1.000012
7700.0	32.9	-55.7		52.8	574.4			1.000011
7750.0	32.2	-55.6		51.5	574.6			1.000011
7800.0	31.4	-55.5		50.3	574.7			1.000011
7850.0	30.7	-55.4		49.1	574.8			1.000011

STATION ALTITUDE 6331.40 FLEET MSL
 2 MAY 80 0800 MDT
 ASCENT/SLD, NO. 3

MANDATORY LEVELS
 1250350003
 REL HIO
 TABLE 4

GEODETTIC COORDINATES
 33.77820 LAT 116
 106.24993 LONG 116

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUMID. PERCENT	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS
800.0	6678.	7.6	03.	354.2	3.6
750.0	8418.	5.5	05.	231.8	4.7
700.0	10254.	.9	00.	244.3	3.1
650.0	12194.	-3.6	03.	293.9	0.5
600.0	14251.	-9.2	01.	319.8	10.5
550.0	16446.	-12.4	00.	312.9	13.3
500.0	18816.	-16.7	10.	308.0	15.3
450.0	21308.	-21.8	10.	310.4	22.2
400.0	24205.	-27.5	10.	300.2	32.5
350.0	27308.	-35.2	09.	303.5	47.5
300.0	30771.	-43.3	04.	296.3	71.4
250.0	34741.	-49.2		297.3	114.6
200.0	39533.	-49.5		302.5	162.2
175.0	42397.	-50.9		303.3	09.0
150.0	45046.	-50.7		300.0	85.3
125.0	49405.	-59.3		299.0	00.4
100.0	53962.	-62.2		310.5	20.0
80.0	58503.	-61.3		290.0	7.4
70.0	61220.	-61.6		138.8	5.2
60.0	64339.	-63.6		90.2	22.6
50.0	68031.	-60.8		110.9	23.5
40.0	72628.	-56.8		121.3	13.3

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

STATION ALTITUDE 4051.00 FEET MSL
 2 MAY 60
 ASCENSION NO. 130

SIGNIFICANT LEVEL DATA

1230030130
 JALLEN

TABLE 5

GEODETIC COORDINATES
 33.16712 LAT DEG
 100.49511 LONG LLG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
879.6	4051.0	14.0	55.0
869.4	4373.4	12.5	51.0
850.0	4892.8	10.2	53.0
808.6	6354.7	8.9	55.0
789.0	7021.2	7.9	55.0
711.4	9800.7	2.4	61.0
700.0	10228.7	.7	64.0
655.6	11947.4	-3.0	58.0
610.8	13774.0	-8.0	77.0
602.0	14144.3	-9.0	72.0
593.2	14519.4	-8.6	59.0
584.4	14900.6	-8.3	21.0
541.0	16852.1	-12.9	25.0
516.2	19024.3	-14.8	24.0
500.0	18815.7	-16.3	31.0
483.6	19638.7	-17.8	39.0
467.2	20849.5	-21.8	32.0
444.8	21673.9	-21.8	23.0
430.0	22491.1	-23.3	24.0
400.0	24217.9	-27.5	32.0
386.4	25033.1	-29.8	47.0
372.4	25395.9	-31.4	55.0
358.8	26757.6	-34.4	47.0
338.8	28070.6	-37.0	44.1
325.6	28972.7	-38.4	45.2
300.0	30807.1	-43.1	49.1
250.0	34903.0	-48.8	
237.6	35499.9	-50.5	
227.2	36060.8	-50.7	
222.0	37359.4	-49.2	
200.0	39616.7	-48.8	
192.6	40430.6	-50.1	
170.2	43033.7	-51.6	
150.0	45758.1	-56.2	
123.4	49799.3	-61.4	
106.8	52753.6	-61.6	
100.0	54094.0	-63.0	
94.6	55219.4	-63.8	
88.6	56553.4	-61.1	
75.0	59940.8	-64.0	

STATION ALTITUDE 4051.00 FEET MSL
2 MAY 80
ASCENSION NO. 130

SIGNIFICANT LEVEL DATA
1230030130
JALLEN

GEODETIC COORDINATES
33.16712 LAT DEG
106.49511 LONG DEG

TABLE 5 (continued)

GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	HUMIDITY PERCENT
70.0 61349.2	-61.9	
55.4 66094.0	-65.0	
50.0 66174.9	-61.9	
43.8 70907.3	-57.9	
39.4 75114.9	-57.6	

STATION ALTITUDE 4051.00 FEET MSL
 2 MAY 60 0830 MDT
 ASCENDING 100. 130

UPPER AIR DATA
 1230030130
 JALLEN

GEODETIC COORDINATES
 33.16712 LAT DEG
 100.45511 LONG DEG

TABLE 6

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ MLTER	SPEED OF SOUND M/SEC	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.0	879.6	14.0	53.0	1063.2	601.4	30.0	4.1	1.000276
4500.0	865.4	12.0	51.4	1053.8	600.9	28.0	4.5	1.000268
5000.0	849.8	10.2	53.0	1041.7	600.7	27.0	5.1	1.000263
5500.0	834.3	9.7	53.7	1028.5	600.2	26.2	5.6	1.000259
6000.0	819.2	9.2	54.5	1007.6	600.0	29.7	4.9	1.000255
6500.0	804.3	8.7	55.0	991.3	600.0	35.0	2.1	1.000250
7000.0	789.0	7.9	55.0	975.9	604.1	140.7	2.7	1.000246
7500.0	775.1	7.0	56.0	961.3	602.9	161.0	4.9	1.000241
8000.0	760.8	6.0	57.1	947.0	601.7	153.9	4.8	1.000237
8500.0	746.7	5.0	58.2	932.9	600.5	147.4	4.7	1.000233
9000.0	732.9	4.0	59.3	919.0	609.4	155.6	4.9	1.000229
9500.0	719.4	3.0	60.4	905.4	608.2	170.3	4.5	1.000224
10000.0	706.1	1.6	62.4	893.2	608.5	199.6	4.2	1.000210
10500.0	692.8	.1	63.1	881.3	604.7	247.3	5.0	1.000216
11000.0	679.7	-1.0	61.3	868.3	604.4	274.4	8.1	1.000211
11500.0	666.9	-2.0	59.6	855.4	602.0	273.0	11.4	1.000207
12000.0	654.3	-3.1	58.5	842.6	604.7	270.1	13.7	1.000202
12500.0	641.7	-4.5	63.7	830.6	609.0	259.6	14.6	1.000198
13000.0	629.4	-5.9	68.9	819.0	607.4	255.3	15.9	1.000197
13500.0	617.3	-7.2	74.1	807.5	605.8	260.6	17.2	1.000194
14000.0	605.4	-8.6	73.9	796.1	604.1	260.6	19.6	1.000190
14500.0	593.7	-8.6	40.7	781.2	603.9	269.2	21.6	1.000181
15000.0	582.1	-8.5	21.2	766.0	603.9	260.2	20.8	1.000174
15500.0	570.7	-9.7	22.2	754.4	602.4	268.2	16.6	1.000172
16000.0	559.5	-10.9	23.3	742.9	601.0	273.9	15.6	1.000169
16500.0	548.6	-12.1	24.3	731.7	609.6	274.0	14.6	1.000166
17000.0	537.8	-13.1	24.9	720.3	600.3	268.9	14.2	1.000164
17500.0	527.1	-14.0	24.4	708.2	607.3	269.6	15.5	1.000161
18000.0	516.7	-14.8	24.0	696.4	600.3	253.2	17.1	1.000158
18500.0	506.4	-15.7	20.2	685.0	605.2	249.0	18.6	1.000155
19000.0	496.3	-16.6	32.8	673.7	604.1	240.3	20.1	1.000153
19500.0	486.3	-17.5	37.7	662.5	600.0	242.6	20.8	1.000151
20000.0	476.5	-19.0	36.9	652.9	601.2	240.0	19.5	1.000148
20500.0	466.8	-20.6	34.0	643.9	619.2	237.3	17.6	1.000146
21000.0	457.3	-21.8	30.4	633.7	617.7	241.7	17.1	1.000143
21500.0	448.0	-21.8	24.9	620.6	617.7	246.6	17.0	1.000140
22000.0	438.8	-22.4	23.4	609.5	617.0	251.0	18.7	1.000137
22500.0	429.8	-23.3	24.0	599.3	615.6	243.4	20.7	1.000135
23000.0	420.9	-24.5	26.4	589.7	614.3	254.3	23.1	1.000133
23500.0	412.2	-25.8	28.7	580.3	612.0	244.9	25.7	1.000131

STATION ALTITUDE 4051.00 FEET MSL
 2 MAY 60 0830 MDT
 ASCENDING NO. 130

UPFLR AIR DATA
 1230030130
 JALLEN

GEODETIC COORDINATES
 33.16712 LAT DEG
 106.49511 LONG DEG

TABLE 6 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
2400.0	403.7	-27.0	31.0	571.1	611.3	255.3	28.3	1.000128
2450.0	395.2	-28.3	37.2	562.2	609.7	255.3	30.0	1.000127
2500.0	386.9	-29.7	46.4	553.6	607.9	255.4	31.4	1.000125
2550.0	378.8	-30.7	51.3	544.0	606.7	255.0	31.0	1.000123
2600.0	370.7	-31.8	54.0	534.9	605.3	255.0	31.1	1.000121
2650.0	362.8	-33.5	49.4	527.3	603.1	254.6	32.2	1.000119
2700.0	355.0	-34.9	47.0	519.0	601.4	253.5	34.3	1.000117
2750.0	347.4	-35.9	47.0	509.9	600.1	252.2	37.6	1.000114
2800.0	339.8	-36.9	47.0	501.0	598.9	251.4	40.1	1.000112
2850.0	332.5	-37.7	53.2	491.7	597.9	250.9	41.1	1.000110
2900.0	325.2	-38.5	59.9	482.7	596.9	249.9	44.1	1.000103
2950.0	318.0	-39.6	57.4	474.6	595.2	248.6	46.7	1.000106
3000.0	311.0	-41.0	55.0	466.7	593.6	248.5	49.3	1.000105
3050.0	304.1	-42.3	52.5	459.0	591.9	248.6	51.9	1.000103
3100.0	297.4	-43.4	48.5**	450.6	590.6	249.6	55.8	1.000101
3150.0	290.7	-44.1	42.2**	442.0	589.6	250.9	60.1	1.000099
3200.0	284.1	-44.8	35.8**	433.4	588.7	251.7	65.7	1.000097
3250.0	277.7	-45.5	29.4**	425.0	587.8	252.3	71.3	1.000095
3300.0	271.4	-46.2	23.0**	416.7	586.9	252.5	74.3	1.000093
3350.0	265.3	-46.9	16.6**	408.6	585.9	252.7	76.3	1.000091
3400.0	259.3	-47.7	10.3**	400.6	585.0	252.9	75.0	1.000089
3450.0	253.5	-48.4	3.9**	392.8	584.1	252.9	73.3	1.000088
3500.0	247.7	-49.1		385.2	583.1	252.6	71.3	1.000086
3550.0	242.0	-49.9		377.7	582.1	251.6	70.0	1.000084
3600.0	236.5	-50.5		370.1	581.3	250.4	69.7	1.000082
3650.0	231.1	-50.6		361.7	581.1	249.9	69.9	1.000081
3700.0	225.7	-50.3		352.6	581.6	251.3	70.9	1.000079
3750.0	220.6	-49.2		343.1	583.0	253.2	70.9	1.000076
3800.0	215.5	-49.1		335.1	583.2	256.2	69.3	1.000075
3850.0	210.6	-49.0		327.3	583.3	258.4	67.2	1.000073
3900.0	205.8	-48.9		319.7	583.4	259.9	64.5	1.000071
3950.0	201.1	-48.8		312.3	583.5	259.3	63.3	1.000070
4000.0	196.5	-49.4		305.9	582.7	257.6	62.7	1.000068
4050.0	192.0	-50.1		299.9	581.8	256.2	61.2	1.000067
4100.0	187.6	-50.4		293.4	581.4	254.5	59.2	1.000065
4150.0	183.2	-50.7		287.0	581.0	253.6	58.2	1.000064
4200.0	179.0	-51.0		280.7	580.7	253.0	58.4	1.000063
4250.0	174.9	-51.3		274.6	580.3	253.6	58.2	1.000061
4300.0	170.9	-51.6		268.6	579.9	254.4	57.2	1.000060
4350.0	166.9	-52.3		263.3	578.9	255.4	55.9	1.000059

** AT LAST USE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

UPPER AIR DATA
 1230030130
 JALLEN

STATION ALTITUDE 4051.00 FEET MSL
 2 MAY 20 0830 MDT
 ASCLS101.00. 130

GEODLTIC COORDINATES
 35.10712 LAT DEG
 106.49511 Lon DEG

TABLE 6 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4400.0	163.0	-53.2			250.1	577.0	257.5	53.6	1.000057
4500.0	159.2	-54.0			253.1	576.7	259.4	52.2	1.000050
4500.0	155.5	-54.9			246.2	575.5	259.7	52.4	1.000055
4500.0	151.8	-55.8			243.3	574.4	260.0	52.6	1.000054
4600.0	146.3	-56.5			238.4	573.4	259.3	51.1	1.000053
4600.0	144.7	-57.2			233.4	572.6	258.5	49.0	1.000052
4700.0	141.3	-57.8			228.5	571.7	258.3	48.0	1.000051
4700.0	137.9	-58.4			223.7	570.0	258.0	47.7	1.000050
4800.0	134.6	-59.1			219.1	570.0	258.5	47.0	1.000049
4800.0	131.4	-59.7			214.5	569.1	258.3	46.5	1.000048
4900.0	128.3	-60.4			210.0	568.3	258.4	45.0	1.000047
4950.0	125.2	-61.0			205.0	567.4	258.0	44.2	1.000046
5000.0	122.2	-61.4			201.0	566.9	257.4	42.7	1.000045
5000.0	119.2	-61.4			196.2	566.8	258.0	40.5	1.000044
5100.0	116.4	-61.5			191.3	566.0	262.3	38.4	1.000043
5150.0	113.6	-61.5			186.9	565.7	264.2	35.6	1.000042
5200.0	110.8	-61.5			182.4	565.7	260.3	33.3	1.000041
5250.0	108.1	-61.6			178.0	565.5	260.5	30.2	1.000040
5300.0	105.5	-61.9			174.0	565.3	270.4	26.0	1.000039
5350.0	103.0	-62.4			170.2	565.0	271.7	23.0	1.000038
5400.0	100.5	-62.9			166.5	564.9	269.7	23.2	1.000037
5450.0	98.0	-63.3			162.7	564.4	267.0	22.5	1.000036
5500.0	95.6	-63.6			159.0	563.9	266.9	20.5	1.000035
5500.0	93.3	-63.2			154.0	564.4	260.2	18.4	1.000034
5600.0	91.0	-62.2			150.4	563.8	255.9	15.5	1.000033
5650.0	88.8	-61.2			146.0	563.2	255.7	12.1	1.000033
5700.0	86.7	-61.5			142.7	563.0	253.0	9.1	1.000032
5750.0	84.0	-61.9			139.5	563.2	260.9	9.3	1.000031
5800.0	82.5	-62.3			136.4	563.0	258.9	9.5	1.000030
5850.0	80.5	-62.8			133.3	563.1	253.1	9.0	1.000030
5900.0	78.6	-63.2			130.4	564.5	247.1	9.5	1.000029
5950.0	76.7	-63.6			127.5	563.9	245.3	9.4	1.000028
6000.0	74.8	-63.9			124.5	563.5	243.1	9.0	1.000028
6050.0	73.0	-63.2			121.1	564.3	244.7	8.7	1.000027
6100.0	71.2	-62.4			117.7	565.5	247.5	8.3	1.000026
6150.0	69.5	-62.0			114.0	565.1	252.1	8.1	1.000026
6200.0	67.8	-62.3			112.0	563.7	250.0	7.8	1.000025
6250.0	66.1	-62.7			109.5	563.2	259.1	7.7	1.000024
6300.0	64.5	-63.0			107.0	564.8	279.0	7.4	1.000024
6350.0	63.0	-63.3			104.5	564.3	309.1	5.4	1.000023

STATION ALTITUDE 4051.00 FEET MSL
 2 MAY 68
 ASCENSION NO. 130

UPPER AIR DATA
 1230030130
 JALLEN

GEODETIC COORDINATES
 33.16712 LAT DEG
 106.49511 LONG DEG

TABLE 6 (continued)

GEOMETRIC ALTITUDE		PRESSURE	TEMPERATURE		REL. HUM.	DENSITY	SPEED OF		WIND DATA		INDEX	
MSL FEET		MILLIBARS	AIR	DEWPOINT	PERCENT	GM/CURIC	SOUND	KNOTS	DIRECTION	SPEED	REFRACTION	OF
			DEGREES	CENTIGRADE		METER	KNOTS		DEGREES(T)	KNOTS		REFRACTION
04000.0	61.4	-63.6	102.1	503.9	355.7	5.5	1.000023					
04500.0	59.9	-64.0	99.8	503.5	15.0	6.6	1.000022					
05000.0	58.5	-64.3	97.5	503.0	21.4	6.5	1.000022					
05500.0	57.0	-64.6	95.3	502.8	28.5	6.7	1.000021					
06000.0	55.7	-64.9	93.1	502.1	30.7	8.5	1.000021					
06500.0	54.3	-64.4	90.6	502.9	45.4	10.5	1.000020					
07000.0	53.0	-63.7	88.1	503.9	47.9	11.3	1.000020					
07500.0	51.7	-62.9	85.6	504.9	48.9	11.1	1.000019					
08000.0	50.4	-62.2	83.3	505.9	48.9	10.3	1.000019					
08500.0	49.2	-61.4	81.0	506.9	37.4	5.6	1.000018					
09000.0	48.0	-60.7	78.8	507.0	35.1	2.3	1.000018					
09500.0	46.9	-60.0	76.6	508.0	28.6	2.3	1.000017					
70000.0	45.8	-59.2	74.5	509.8	197.0	2.8	1.000017					
70500.0	44.7	-58.5	72.5	510.6	114.9	2.3	1.000016					
71000.0	43.6	-57.9	70.6	511.0			1.000016					
71500.0	42.6	-57.8	68.9	511.7			1.000015					
72000.0	41.6	-57.8	67.2	511.6			1.000015					
72500.0	40.6	-57.7	65.6	511.9			1.000015					
73000.0	39.6	-57.6	64.0	511.9			1.000014					

STATION ALTITUDE 4051.00 FEET MSL
 2 M.T. P.O.
 ASCEN. 5100. 100. 130

MANDATORY LEVELS
 1230030130
 JALLEN
 TABLE 7

GEODLTIC COORDINATES
 33.16712 LAT (LEG)
 106.49311 LONG (LEG)

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	AIR TEMPERATURE DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUMIDITY PERCENT	WIND DATA	
					DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4989.	10.2	1.1	53.	27.3	5.1
800.0	6640.	8.5	-0.0	53.	92.7	1.8
750.0	8382.	5.2	-2.4	50.	140.0	4.6
706.0	10219.	.7	-5.3	14.	218.0	4.2
656.0	12158.	-3.6	-10.2	10.	205.1	13.0
600.0	14213.	-8.9	-14.4	13.	208.7	21.1
550.0	16410.	-11.9	-20.3	24.	274.7	14.7
500.0	18791.	-16.3	-29.4	31.	247.8	19.8
450.0	21361.	-21.6	-36.0	20.	243.0	16.8
400.0	24179.	-27.5	-39.1	32.	255.3	25.0
350.0	27280.	-35.5	-42.8	47.	252.7	30.3
300.0	30749.	-43.1	-49.1	51.	249.3	34.0
250.0	34730.	-48.8			252.7	72.1
200.0	39324.	-51.3			259.0	63.2
175.0	42384.	-51.3			253.8	50.2
150.0	45638.	-56.2			259.6	51.9
125.0	49397.	-61.1			258.0	44.2
100.0	53931.	-63.0			269.4	23.1
80.0	58446.	-62.9			252.2	9.5
76.0	61143.	-61.9			250.4	0.1
60.0	64257.	-63.9			14.4	0.6
50.0	67523.	-61.9			40.9	0.9
40.0	72515.	-57.6				

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