

AD-A037 938

ARMY ELECTRONICS COMMAND WHITE SANDS MISSILE RANGE N--ETC F/G 4/2
15002A LITTLE JOHN MISSILE NUMBER 1936, ROUND NUMBER 722 RG (7 --ETC(U)
DEC 76

UNCLASSIFIED

DR-933

NL

| OF |
ADA037938



END
DATE
FILMED
4-77

AD A 037938

DR-933
December 1976

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

AD

12
B.S.

METEOROLOGICAL DATA REPORT

15002A LITTLE JOHN
MISSILE NO. 1936, ROUND NO. 722 RG
(7 December 1976)

BY

WSMR METEOROLOGICAL TEAM

DDC
RECEIVED
APR 8 1977
[Signature]

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

AD No. —
DDC FILE COPY

.....
ECOM

UNITED STATES ARMY ELECTRONICS COMMAND

DISPOSITION INSTRUCTIONS

Destroy this report when it is no longer needed. Do not return to the originator.

DISCLAIMER

The findings in this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

The citation of trade names and names of manufacturers in this report is not to be construed as official Government indorsement or approval of commercial products or services referenced herein.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR-933	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 15002A LITTLE JOHN MISSILE NO 1936, ROUND NO 722 RG (7 December 1976). <i>Number</i>		5. TYPE OF REPORT & PERIOD COVERED
7. AUTHOR(s) WSMR Meteorological Team		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Meteorological data rept.		8. CONTRACT OR GRANT NUMBER(s) DA Task/IT665702D127-02
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Command Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 1942
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) US Army Electronics Command Ft. Monmouth, New Jersey		12. REPORT DATE December 1976
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		13. NUMBER OF PAGES 27
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		15. SECURITY CLASS. (of this report) UNCLASSIFIED
18. SUPPLEMENTARY NOTES		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) 1. Ballistics 2. Meteorology 3. Wind		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of 15002A Little John, Missile Number 1936, Round Number 722 RG, are presented in tabular form.		

DDO
RECEIVED
APR 8 1977
RESERVED
A

400 844

LB

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

A large, empty rectangular box with a black border, occupying most of the page. It is intended for the user to enter the security classification of the page when data is entered.

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

INTRODUCTION

15002A Little John, Missile Number 1936, Round Number 722 RG, was launched from L-306, White Sands Missile Range (WSMR), New Mexico, at 1340 HRS MST, 7 December 1976. The scheduled launch time was 1330 HRS MST.

DISCUSSION

Meteorological data were recorded and reduced by the WSMR Meteorological Team, Atmospheric Sciences Laboratory (ASL), WSMR, New Mexico. The data are presented in the following tabulations.

ELEVATION	4,005.0	FEET/MSL
PRESSURE	882.0	MBS
TEMPERATURE	11.0	°C
RELATIVE HUMIDITY	53	%
DEW POINT	1.7	°C
DENSITY	1,075.9	GM/M ³
WIND SPEED	04	MPH
WIND DIRECTION	180	DEGREES
CLOUD COVER	3	CI

TABLE I. SURFACE OBSERVATIONS TAKEN AT L-306,
1340 HRS MST/7 DECEMBER 1976.

T-TIME (MIN-SEC)	SPEED (MPH)	DIR DEG	T-TIME (MIN-SEC)	SPEED (MPH)	DIR DEG	T-TIME (MIN-SEC)	SPEED (MPH)	DIR DEG
-5.00	3.0	132	-0 9.5	5.0	180	-0 0.50	5.0	181
-4.30	4.0	131	-0 9.0			-0 0.25		
-4.00	6.0	151	-0 8.5			0 0.00		
-3.30	4.0	154	-0 8.0			+0 0.25		
-3.00	5.0	151	-0 7.5			+0 0.50		181
-2.30	8.0	183	-0 7.0			+0 0.75		182
-2.00	7.0	183	-0 6.5			+0 1.00		182
-1.45	6.0	175	-0 6.0			+0 1.25		182
-1.30	7.0	173	-0 5.5			+0 1.50		183
-1.15	6.0	171	-0 5.0			+0 1.75		
-0.60		171	-0 4.5		180	+0 2.00		
-0.55		172	-0 4.0		181	+0 2.25		
-0.50		180	-0 3.5			+0 2.50		
-0.45	6.0		-0 3.0			+0 2.75		
-0.40	4.0		-0 2.5			+0 3.00		
-0.35	4.0		-0 2.0			+0 3.25		
-0.30	6.0		-0 1.75			+0 3.50		183
-0.25	6.0		-0 1.50			+0 3.75		186
-2.20	6.0		-0 1.25			+0 4.00		186
-0.15	5.0		-0 1.00			+0 4.25		174
-0.10	5.0	180	-0 0.75	5.0	181	+0 4.50	5.0	174

TABLE II. ANEMOMETER-MEASURED WIND SPEED AND DIRECTION, POLE NO. 1
15002A LITTLE JOHN, MISSILE NO. 1936, ROUND NO. 722 RG
LAUNCHED FROM L-306, 1330 MST/7 DECEMBER 1976

WSTM COORDINATES: X = 468,607.93 Y = 438,513.71 Z = 4,005.00

NOTE: WIND DIRECTION DATA ARE REFERENCED TO THE FIRING AZIMUTH 170.0°.

T-TIME (MIN-SEC)	SPEED (MPH)	DIR DEG	T-TIME (MIN-SEC)	SPEED (MPH)	DIR DEG	T-TIME (MIN-SEC)	SPEED (MPH)	DIR DEG
+0 4.75	5.0	174	+0 10.00	5.0	174	+0 20.50	4.0	173
+0 5.00			+0 10.50	4.0		+0 21.00	4.0	
+0 5.25			+0 11.00			+0 21.50	4.0	
+0 5.50			+0 11.50			+0 22.00	4.0	
+0 5.75			+0 12.00			+0 22.50	3.0	
+0 6.00			+0 12.50			+0 23.00		
+0 6.25			+0 13.00			+0 23.50		
+0 6.50			+0 13.50			+0 24.00		
+0 6.75			+0 14.00			+0 24.50		
+0 7.00			+0 14.50			+0 25.00	3.0	
+0 7.25			+0 15.00			+0 25.50	2.0	
+0 7.50			+0 15.50			+0 26.00		
+0 7.75			+0 16.00			+0 26.50		
+0 8.00			+0 16.50		174	+0 27.00		
+0 8.25			+0 17.00		173	+0 27.50		
+0 8.50			+0 17.50			+0 28.00		
+0 8.75			+0 18.00			+0 28.50		173
+0 9.00			+0 18.50			+0 29.00		171
+0 9.25			+0 19.00			+0 29.50		170
+0 9.50			+0 19.50			+0 30.00	2.0	169
+0 9.75	5.0	174	+0 20.00	4.0	173			

TABLE II. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TO THE FIRING AZIMUTH 170.0°.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)	HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	222	3.0	2100	192	7.0
100	217	2.0	2200	192	7.0
200	224	1.0	2300	192	7.0
300	222	2.0	2400	192	5.0
400	210	2.0	2500	188	9.0
500	208	2.0	2600	183	12.0
600	206	2.0	2700	179	15.0
700	203	3.0	2800		16.0
800	200	4.0	2900		17.0
900	196	5.0	3000		17.0
1000	193	6.0	3100	179	18.0
1100	193		3200	180	19.0
1200	194		3300	180	20.0
1300	194		3400	180	21.0
1400	195		3500	181	22.0
1500	194		3600	181	22.0
1600	192		3700	181	23.0
1700	191		3800	182	24.0
1800	191	6.0	3900	182	25.0
1900	191	7.0	4000	CROSSED BASE LINE	
2000	191	7.0			

TABLE III. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 1
RELEASED FROM L-306, AT 1330 MST/7 DECEMBER 1976
15002A LITTLE JOHN, MISSILE NO. 1936, ROUND NO. 722 RG

PIBAL RELEASE POINT WSTM COORDINATES:

X = 467,067.46 Y = 440,662.81 Z = 3,997.06

NOTE: WIND DIRECTION DATA ARE REFERENCED TO THE FIRING AZIMUTH 170.0°.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)	HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR		CALM	2100	343	12.0
100	053	2.0	2200	340	15.0
200	053	3.0	2300	337	18.0
300	053	5.0	2400	335	22.0
400	053	7.0	2500	334	25.0
500	056	7.0	2600	333	28.0
600	063	6.0	2700	332	31.0
700	073	5.0	2800	331	34.0
800	082	4.0	2900	331	35.0
900	066	4.0	3000	332	36.0
1000	048	4.0	3100	332	36.0
1100	033	4.0	3200	332	36.0
1200	025	5.0	3300	332	37.0
1300	020	5.0	3400	331	37.0
1400	016	6.0	3500	330	37.0
1500	013	6.0	3600	330	36.0
1600	006	7.0	3700	329	36.0
1700	360	7.0	3800	328	35.0
1800	356	8.0	3900	328	35.0
1900	350	9.0	4000	328	35.0
2000	346	11.0	4100	328	35.0

TABLE IV. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 1
RELEASED FROM D 3 1/2, AT 1340 MST/7 DECEMBER 1976
15002A LITTLE JOHN, MISSILE NO. 1936, ROUND NO. 722 RG

PIBAL RELEASE POINT WSTM COORDINATES:

X = 443,023.73 Y = 388,397.95 Z = 3,972.63

APPROXIMATELY: 7 1/2 MILES SOUTHWEST OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
4200	329	35.0
4300	330	
4400	331	
4500	332	
4600	334	
4700	336	35.0
4800	338	36.0
4900	340	35.0
5000	342	35.0
5100	334	34.0
5200	336	34.0
5300	347	32.0
5400	348	31.0
5500	349	30.0
5600	349	29.0

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
5700	350	28.0
5800	350	27.0
5900	350	26.0
6000	350	25.0
6100	351	24.0
6200	350	25.0
6300	350	25.0
6400	350	26.0
6500	350	27.0
6600	349	28.0
6700	349	29.0
6800	348	29.0
6900	346	29.0
7000	345	29.0

TABLE IV. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

STATION ALTITUDE 4051.00 FEET MSL
 7 DEC. 76 1000 HRS MST
 ASCENSION NO. 396

SIGNIFICANT LEVEL DATA
 3420030396
 JALLEN

WSTM SITE COORDINATES
 4FC491.60 FEET E
 464023.05 FEET N

TABLE V

PRESSURE GEOMETRIC ALTITUDE		TEMPERATURE		REL. HUM. PERCENT
MILLIBARS	MSL FEET	AIR DEGREES	DEWPOINT CENTIGRADE	
882.6	4051.0	-1.4	-5.4	74.0
872.1	4363.6	-2.6	-5.7	79.0
864.3	4557.9	-2.2	-5.5	78.0
856.6	4832.8	.8	-8.4	50.0
850.0	5037.2	1.8	-8.6	48.0
821.6	5936.1	1.2	-9.4	45.0
775.2	7330.0	-1.2	-11.3	46.0
700.0	10141.0	-6	-10.8	46.0
655.8	11851.9	-1.2	-14.0	37.0
617.0	13440.6	-4.3	-17.8	34.0
535.4	16872.8	-11.9	-15.5	51.0
500.0	18770.1	-15.2	-24.4	45.0
456.6	21005.3	-20.1	-30.7	38.0
400.0	24177.2	-28.7	-38.0	40.0
325.2	28924.3	-41.7	-45.7	41.0
300.0	30704.5	-46.7		
276.4	32473.9	-51.6		
250.0	34591.9	-57.1		
240.0	35435.8	-58.5		
231.6	36182.4	-55.6		
202.6	38951.7	-61.5		
200.0	39216.6	-59.7		
192.0	40060.1	-58.3		
155.4	44370.4	-65.6		
150.0	45082.0	-63.9		
137.0	46927.4	-60.7		
120.8	49501.1	-62.0		
108.4	51689.5	-65.9		
100.0	53307.1	-65.2		
86.0	56317.8	-67.9		

STATION ALTITUDE 4051.00 FEET MSL
 7 DEC. 76 1000 HRS MST
 ASCENSION NO. 396

SIGNIFICANT LEVEL DATA
 3420030396
 JALLEN

WSTM SITE COORDINATES
 45C451.60 FEET E
 464023.05 FEET N

TABLE V (CONT)

PRESSURE GEOMETRIC ALTITUDE		TEMPERATURE		REL. HUM.
MILLIBARS	MSL FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT
70.0	60411.2	-66.9		
64.5	62043.8	-66.7		
60.4	63366.4	-63.1		
55.2	65186.1	-65.2		
50.0	67189.7	-62.4		
47.2	68362.7	-63.1		
43.0	70273.5	-59.4		
39.8	71865.0	-61.6		
30.0	77747.4	-54.7		
21.8	84498.3	-55.6		
20.0	86317.6	-52.6		
15.4	90595.4	-48.9		
13.8	94317.8	-52.6		
10.0	101265.9	-48.9		
8.9	103812.6	-47.1		

UPPER AIR DATA
 3420030396
 JALLEN
 TABLE VI

STATION ALTITUDE 4051.00 FEET MSL
 7 DEC. 76 1000 HRS MST
 ASCENSION NO. 396

WSTM SITE COORDINATES
 464023.05 FEET E
 464023.05 FEET N

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	DEGREES (M)	KNOTS	DIRECTION	
4051.0	882.6	-1.4	-5.4	74.0	1125.5	642.8	60.0	1.5		1.000272
4500.0	867.6	-2.4	-5.6	78.4	1114.2	641.6	348.3	2.6		1.000269
5000.0	851.2	1.6	-8.5	46.7	1077.7	646.2	325.0	5.2		1.000256
5500.0	835.3	1.5	-9.0	45.5	1058.0	646.1	317.7	8.1		1.000251
6000.0	819.6	1.1	-9.5	45.0	1039.7	645.6	314.0	11.0		1.000247
6500.0	804.2	.2	-10.2	45.4	1022.4	644.6	310.6	13.8		1.000242
7000.0	789.0	-.6	-10.9	45.8	1007.4	643.5	311.3	16.9		1.000238
7500.0	774.2	-1.2	-11.2	46.0	990.3	642.9	325.2	21.8		1.000234
8000.0	759.5	-1.1	-11.2	46.0	971.2	643.0	333.0	25.7		1.000230
8500.0	745.2	-1.0	-11.1	46.0	952.5	643.2	338.0	26.3		1.000226
9000.0	731.1	-.8	-11.0	46.0	934.1	643.3	340.7	25.7		1.000222
9500.0	717.3	-.7	-10.9	46.0	916.0	643.4	342.1	24.4		1.000218
10000.0	703.8	-.6	-10.8	46.0	898.3	643.6	340.4	27.5		1.000214
10500.0	690.5	-.7	-11.4	44.1	881.7	643.5	340.0	30.7		1.000209
11000.0	677.4	-.9	-12.3	41.5	865.7	643.2	342.1	33.5		1.000205
11500.0	664.7	-1.1	-13.3	38.9	850.0	643.0	344.1	35.2		1.000201
12000.0	652.1	-1.5	-14.3	36.7	835.2	642.5	346.0	36.0		1.000196
12500.0	639.7	-2.5	-15.5	35.8	822.4	641.3	347.6	36.2		1.000193
13000.0	627.5	-3.4	-16.7	34.8	809.7	640.1	349.1	36.5		1.000189
13500.0	615.6	-4.4	-17.8	34.3	797.3	638.9	350.4	36.1		1.000186
14000.0	603.6	-5.5	-17.9	36.8	785.1	637.6	351.6	35.4		1.000183
14500.0	591.9	-6.6	-18.2	35.2	773.0	636.3	351.1	35.1		1.000180
15000.0	580.4	-7.8	-18.5	41.7	761.2	635.0	349.2	35.2		1.000177
15500.0	569.2	-8.9	-18.8	44.2	749.6	633.6	346.8	36.1		1.000174
16000.0	558.2	-10.0	-19.2	46.7	738.1	632.3	344.1	37.5		1.000172
16500.0	547.3	-11.1	-19.6	45.2	726.5	631.0	342.8	38.6		1.000169
17000.0	536.7	-12.1	-20.2	50.6	715.6	629.7	342.0	39.5		1.000166
17500.0	526.0	-13.0	-21.4	45.0	702.8	628.6	338.2	41.0		1.000163
18000.0	515.6	-13.9	-22.6	47.4	692.3	627.5	336.3	43.0		1.000160
18500.0	505.4	-14.7	-23.8	45.9	680.9	626.5	336.0	45.1		1.000157

UPPER AIR DATA
 3420030396
 JALLEN
 WSTM SITE COORDINATES
 45C451.60 FEET E
 464023.05 FEET N

UPPER AIR DATA
 3420030396
 JALLEN
 TABLE VI (CONT)

STATION ALTITUDE 4051.00 FEET MSL
 7 DEC. 76
 ASCENSION NO. 396
 1000 HRS MST

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
19000.0	495.4	-15.7	-25.1	44.3	665.5	625.3	236.6	46.5	1.000154
19500.0	485.4	-16.8	-26.5	42.7	659.3	623.9	336.4	45.2	1.000151
20000.0	475.6	-17.9	-27.9	41.1	648.8	622.6	336.4	43.2	1.000148
20500.0	465.1	-19.0	-29.3	39.6	638.5	621.2	337.8	41.0	1.000145
21000.0	456.7	-20.1	-30.7	38.0	628.4	619.9	338.5	39.5	1.000143
21500.0	447.3	-21.4	-31.8	38.3	618.8	618.2	338.3	39.8	1.000140
22000.0	438.0	-22.8	-33.0	38.6	609.3	616.5	338.2	40.2	1.000138
22500.0	429.0	-24.2	-34.1	38.9	600.0	614.8	338.2	40.9	1.000136
23000.0	420.1	-25.5	-35.3	39.3	590.5	613.1	338.4	41.1	1.000133
23500.0	411.5	-26.9	-36.4	39.6	581.9	611.5	338.7	40.9	1.000131
24000.0	403.0	-28.2	-37.6	39.9	573.0	609.8	339.0	40.4	1.000129
24500.0	394.4	-29.6	-38.8	40.1	564.0	608.1	339.5	39.6	1.000127
25000.0	385.9	-31.0	-40.0	40.2	555.0	606.3	339.8	38.5	1.000125
25500.0	377.6	-32.3	-41.2	40.3	546.1	604.6	339.7	38.8	1.000123
26000.0	369.4	-33.7	-42.5	40.4	537.4	602.9	339.6	38.6	1.000121
26500.0	361.5	-35.1	-43.7	40.5	528.8	601.2	339.6	38.0	1.000119
27000.0	353.7	-36.4	-44.9	40.6	520.4	599.4	339.8	37.4	1.000117
27500.0	346.0	-37.8	-46.2	40.7	512.2	597.7	341.5	37.4	1.000115
28000.0	338.6	-39.2	-47.4	40.8	504.0	595.9	343.1	37.6	1.000113
28500.0	331.3	-40.5	-48.6	40.9	496.1	594.2	343.7	38.5	1.000111
29000.0	324.1	-41.9	-50.3	39.3**	488.2	592.4	344.8	39.4	1.000109
29500.0	316.8	-43.3	-54.4	27.7**	480.2	590.6	346.9	40.4	1.000107
30000.0	309.7	-44.7	-59.9	16.2**	472.3	588.8	349.2	41.2	1.000105
30500.0	302.8	-46.1	-70.0	4.7**	464.6	587.0	351.6	41.7	1.000104
31000.0	295.9	-47.5			456.9	585.2	353.4	42.1	1.000102
31500.0	289.2	-48.9			449.2	583.4	353.9	42.1	1.000100
32000.0	282.5	-50.3			441.6	581.6	354.6	42.7	1.000098
32500.0	276.1	-51.7			434.2	579.8	355.5	43.5	1.000097
33000.0	269.6	-53.0			426.5	578.1	356.4	46.0	1.000095
33500.0	263.3	-54.2			419.0	576.4	357.3	48.4	1.000093

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

UPPER AIR DATA
 3420030396
 JALLEN
 TABLE VI (CONT)

STATION ALTITUDE 4051.00 FEET MSL
 7 DEC. 76 1000 HRS MST
 ASCENSION NO. 396

WSTM SITE COORDINATES
 45C491.60 FEET E
 464023.05 FEET N

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES(TN)	SPEED KNOTS	
34000.0	257.1	-55.6		411.6	574.7	257.7	49.8	1.000052
34500.0	251.1	-56.9		404.4	572.9	357.2	50.5	1.000090
35000.0	245.1	-57.8		396.5	571.7	255.0	49.5	1.000088
35500.0	239.3	-58.3		388.0	571.1	251.6	48.2	1.000086
36000.0	233.6	-58.3		375.4	573.7	347.5	47.1	1.000084
36500.0	228.1	-56.3		366.4	573.7	244.5	45.6	1.000082
37000.0	222.6	-57.3		359.4	572.3	341.6	44.1	1.000080
37500.0	217.3	-58.4		352.5	570.9	338.1	42.6	1.000079
38000.0	212.1	-59.5		345.8	569.5	333.8	41.0	1.000077
38500.0	207.1	-60.5		339.3	568.1	329.1	39.7	1.000076
39000.0	202.1	-61.2		332.2	567.2	322.9	39.3	1.000074
39500.0	197.3	-59.2		321.3	569.8	316.7	39.4	1.000072
40000.0	192.6	-58.4		312.4	570.9	311.3	39.1	1.000070
40500.0	187.9	-59.0		305.7	570.0	306.2	38.5	1.000068
41000.0	183.3	-59.9		299.5	568.9	302.1	39.1	1.000067
41500.0	178.9	-60.7		293.4	567.8	298.9	39.3	1.000065
42000.0	174.6	-61.6		287.4	566.7	297.1	40.5	1.000064
42500.0	170.3	-62.4		281.6	565.5	296.5	42.4	1.000063
43000.0	166.2	-63.3		275.9	564.4	296.6	44.3	1.000061
43500.0	162.2	-64.1		270.3	563.2	297.5	46.1	1.000060
44000.0	158.3	-65.0		264.8	562.1	298.0	47.5	1.000059
44500.0	154.4	-65.3		258.8	561.7	297.9	47.8	1.000058
45000.0	150.6	-64.1		251.0	563.3	297.6	48.2	1.000056
45500.0	147.0	-63.2		243.8	564.5	295.7	48.5	1.000054
46000.0	143.4	-62.3		236.9	565.7	293.9	49.6	1.000053
46500.0	139.9	-61.4		230.2	566.8	291.8	51.2	1.000051
47000.0	136.5	-60.7		223.9	567.8	289.9	52.8	1.000050
47500.0	133.2	-61.0		218.7	567.5	289.9	54.1	1.000049
48000.0	130.0	-61.2		213.7	567.1	290.3	55.2	1.000048
48500.0	126.9	-61.5		208.8	566.8	292.2	55.7	1.000047

STATION ALTITUDE 4051.00 FEET MSL
 7 DEC. 76
 ASCENSION NO. 396
 UPPER AIR DATA
 3420030396
 JALLEN
 WSTM SITE COORDINATES
 45C451.60 FEET E
 464023.05 FEET N

TABLE VI (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
							DIRECTION DEGREES(TN)	SPEED KNOTS	
49000.0	123.8	-61.7			204.0	566.4	294.7	56.1	1.000045
49500.0	120.8	-62.0			199.3	566.1	297.4	56.1	1.000044
50000.0	117.9	-62.9			195.3	564.9	300.4	55.5	1.000043
50500.0	115.0	-63.8			191.3	563.7	303.4	54.7	1.000043
51000.0	112.2	-64.7			187.4	562.5	306.2	52.6	1.000042
51500.0	109.4	-65.6			183.6	561.3	309.2	50.6	1.000041
52000.0	106.7	-65.8			179.3	561.0	310.3	46.7	1.000040
52500.0	104.1	-65.5			174.7	561.3	311.2	42.4	1.000039
53000.0	101.5	-65.3			170.2	561.6	309.5	38.1	1.000038
53500.0	99.0	-65.4			166.0	561.6	304.8	33.8	1.000037
54000.0	96.6	-65.8			162.3	561.0	298.8	30.9	1.000036
54500.0	94.2	-66.3			158.6	560.3	292.3	30.8	1.000035
55000.0	91.9	-66.7			155.0	559.7	286.7	31.2	1.000035
55500.0	89.6	-67.2			151.5	559.1	286.1	32.9	1.000034
56000.0	87.4	-67.6			148.1	558.5	285.5	34.5	1.000033
56500.0	85.2	-67.9			144.6	558.2	288.1	35.0	1.000032
57000.0	83.1	-67.7			140.9	558.4	290.5	35.5	1.000031
57500.0	81.0	-67.6			137.3	558.5	292.5	35.6	1.000031
58000.0	79.0	-67.5			133.9	558.7	294.4	35.6	1.000030
58500.0	77.1	-67.4			130.5	558.9	296.5	35.4	1.000029
59000.0	75.1	-67.2			127.1	559.0	299.0	34.6	1.000028
59500.0	73.3	-67.1			123.9	559.2	301.7	33.9	1.000028
60000.0	71.5	-67.0			120.8	559.4	304.8	34.0	1.000027
60500.0	69.7	-66.9			117.7	559.5	307.8	34.2	1.000026
61000.0	68.0	-66.8			114.8	559.6	307.6	32.3	1.000026
61500.0	66.3	-66.8			111.9	559.7	305.2	29.1	1.000025
62000.0	64.6	-66.7			109.1	559.8	300.8	25.5	1.000024
62500.0	63.1	-65.5			105.8	561.4	292.6	21.5	1.000024
63000.0	61.5	-64.1			102.5	563.3	282.9	19.1	1.000023
63500.0	60.0	-63.3			99.6	564.4	280.2	21.7	1.000022

STATION ALTITUDE 4051.00 FEET MSL
 7 DEC. 76 1000 HRS MST
 ASCENSION NO. 756

UPPER AIR DATA
 3420030356
 JALLEN
 TABLE VI (CONT)

WSTM SITE COORDINATES
 450491.60 FEET E
 464023.05 FEET N

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT			KNOTS	KNOTS	DIRECTION [DEGREES(TN)]	SPEED KNOTS	
64000.0	58.5	-63.8		97.4	563.6	278.0	24.4	1.000022		
64500.0	57.1	-64.4		95.3	562.9	275.2	25.2	1.000021		
65000.0	55.7	-65.0		93.2	562.1	280.4	25.9	1.000021		
65500.0	54.4	-64.6		90.9	562.4	283.4	25.6	1.000020		
66000.0	53.0	-64.1		88.3	563.3	287.9	24.5	1.000020		
66500.0	51.7	-63.4		85.9	564.3	291.4	23.3	1.000019		
67000.0	50.5	-62.7		83.5	565.2	288.3	20.3	1.000019		
67500.0	49.2	-62.6		81.6	565.3	284.2	17.5	1.000018		
68000.0	48.0	-62.9		79.6	564.9	276.6	15.1	1.000018		
68500.0	46.9	-62.8		77.7	565.0	266.0	13.2	1.000017		
69000.0	45.8	-61.9		75.4	566.3	260.1	12.8	1.000017		
69500.0	44.7	-60.9		73.3	567.6	266.5	14.6	1.000016		
70000.0	43.6	-59.9		71.2	568.9	271.5	16.5	1.000016		
70500.0	42.5	-59.7		69.4	569.2	273.3	19.6	1.000015		
71000.0	41.5	-60.4		68.0	568.2	274.3	22.9	1.000015		
71500.0	40.5	-61.1		66.6	567.3	274.8	25.6	1.000015		
72000.0	39.5	-61.4		65.1	566.8	274.7	26.6	1.000014		
72500.0	38.6	-60.9		63.3	567.6	274.6	27.7	1.000014		
73000.0	37.7	-60.3		61.7	568.4	273.8	27.4	1.000014		
73500.0	36.8	-59.7		60.0	569.2	272.8	26.4	1.000013		
74000.0	35.9	-59.1		58.5	570.0	271.8	25.7	1.000013		
74500.0	35.1	-58.5		56.9	570.8	272.3	26.7	1.000013		
75000.0	34.2	-57.9		55.4	571.5	272.7	27.8	1.000012		
75500.0	33.4	-57.3		53.9	572.3	271.7	28.2	1.000012		
76000.0	32.6	-56.7		52.5	573.1	269.4	28.1	1.000012		
76500.0	31.9	-56.2		51.1	573.9	267.1	28.1	1.000011		
77000.0	31.1	-55.6		49.8	574.6	263.2	27.2	1.000011		
77500.0	30.4	-55.0		48.5	575.4	258.9	26.5	1.000011		
78000.0	29.6	-54.7		47.3	575.8	254.2	25.5	1.000011		
78500.0	28.9	-54.8		46.2	575.7	247.7	23.8	1.000010		

UPPER AIR DATA
 3420030356
 JALLEN
 TABLE VI (CONT)

STATION ALTITUDE 4051.00 FEET MSL
 7 DEC. 76
 ASCENSION NC. 756

WSTM SITE COORDINATES
 450491.60 FEET E
 464023.05 FEET N

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SOUND SPEED KNOTS	WIND DATA DIRECTION (DEGREES(TN))	SPEED KNOTS	INDEX OF REFRACTION
79000.0	28.3	-54.9		45.1	575.6	240.4	22.3	1.000010
79500.0	27.6	-54.9		44.1	575.5	234.0	21.4	1.000010
80000.0	27.0	-55.0		43.1	575.4	229.1	20.6	1.000010
80500.0	26.3	-55.1		42.1	575.3	223.9	20.0	1.000009
81000.0	25.7	-55.1		41.1	575.2	233.0	20.4	1.000009
81500.0	25.1	-55.2		40.1	575.1	245.4	21.9	1.000009
82000.0	24.5	-55.3		39.2	575.1	255.7	24.4	1.000009
82500.0	24.0	-55.3		38.3	575.0	261.6	27.7	1.000009
83000.0	23.4	-55.4		37.4	574.9	266.2	31.2	1.000008
83500.0	22.8	-55.5		36.6	574.8	267.9	34.1	1.000008
84000.0	22.3	-55.5		35.7	574.7	265.0	34.6	1.000008
84500.0	21.8	-55.6		34.9	574.6	262.2	35.6	1.000008
85000.0	21.3	-54.8		33.9	575.7	261.4	36.8	1.000008
85500.0	20.8	-53.9		33.0	576.8	261.9	38.2	1.000007
86000.0	20.3	-53.1		32.1	577.9	262.3	39.5	1.000007
86500.0	19.8	-52.4		31.3	578.8	266.3	41.5	1.000007
87000.0	19.4	-52.0		30.5	579.3	270.7	43.8	1.000007
87500.0	18.9	-51.6		29.8	579.9	274.6	46.3	1.000007
88000.0	18.5	-51.1		29.0	580.5	277.8	47.0	1.000006
88500.0	18.1	-50.7		28.3	581.0	280.9	47.7	1.000006
89000.0	17.7	-50.3		27.6	581.6	283.9	48.5	1.000006
89500.0	17.3	-49.8		26.9	582.2	283.7	46.7	1.000006
90000.0	16.9	-49.4		26.3	582.7	281.8	43.6	1.000006
90500.0	16.5	-49.0		25.6	583.3	279.7	40.6	1.000006
91000.0	16.1	-49.3		25.0	582.9	276.8	38.0	1.000006
91500.0	15.7	-49.8		24.5	582.2	272.8	36.2	1.000005
92000.0	15.4	-50.3		24.0	581.6	268.4	34.6	1.000005
92500.0	15.0	-50.8		23.5	580.9	264.1	33.3	1.000005
93000.0	14.7	-51.3		23.0	580.3	264.2	32.6	1.000005
93500.0	14.3	-51.8		22.5	579.6	264.2	31.9	1.000005

STATION ALTITUDE 4051.00 FEET MSL
 7 DEC. 76 1000 HRS MST
 ASCENSION NO. 306

UPPER AIR DATA
 3420030396
 JALLEN
 TABLE VI (CONT)

WSTM SITE COORDINATES
 450491.60 FEET E
 464023.05 FEET N

GEOMETRIC ALTITUDE MSL FEET	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	
94000.0	14.0	-52.3		22.1	579.0	264.3	31.3	1.000005
94500.0	13.7	-52.5		21.6	578.7	265.1	33.1	1.000005
95000.0	13.4	-52.2		21.1	579.0	255.9	35.6	1.000005
95500.0	13.1	-52.0		20.6	579.4	266.6	38.1	1.000005
96000.0	12.8	-51.7		20.1	579.7	269.2	40.5	1.000004
96500.0	12.5	-51.4		19.6	580.1	273.1	42.9	1.000004
97000.0	12.2	-51.2		19.1	580.4	276.6	45.5	1.000004
97500.0	11.9	-50.9		18.7	580.8	279.1	47.6	1.000004
98000.0	11.6	-50.6		18.2	581.1	279.9	47.8	1.000004
98500.0	11.4	-50.4		17.8	581.5	280.6	48.0	1.000004
99000.0	11.1	-50.1		17.3	581.8	281.3	48.2	1.000004
99500.0	10.9	-49.8		16.9	582.2	277.8	50.3	1.000004
100000.0	10.6	-49.6		16.5	582.5	274.5	52.6	1.000004
100500.0	10.4	-49.3		16.1	582.9	271.5	55.0	1.000004
101000.0	10.1	-49.0		15.7	583.2			1.000004
101500.0	9.9	-48.7		15.4	583.6			1.000003
102000.0	9.7	-48.4		15.0	584.1			1.000003
102500.0	9.5	-48.0		14.6	584.5			1.000003
103000.0	9.2	-47.7		14.3	585.0			1.000003
103500.0	9.0	-47.3		13.9	585.4			1.000003

STATION ALTITUDE 4051.00 FEET MSL
 7 DEC. 76 1000 HRS MST
 ASCENSION NC. 366

MANDATORY LEVELS
 3420030356
 JALLEN
 TABLE VII

WSTM SITE COORDINATES
 450491.60 FEET E
 484023.05 FEET N

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA		
		AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION (DEGREES(TK))	SPEED KNOTS	
850.0	5036.	1.8	-8.6	46.	324.2	5.4	
800.0	6638.	-0.0	-10.4	46.	305.9	14.6	
750.0	8326.	-1.0	-11.1	46.	336.3	26.1	
700.0	10135.	-0.6	-10.8	46.	335.9	28.5	
650.0	12076.	-1.7	-14.5	37.	746.3	36.1	
600.0	14150.	-5.9	-18.0	38.	252.0	35.2	
550.0	16366.	-10.8	-19.5	49.	343.0	38.4	
500.0	18750.	-15.2	-24.4	45.	336.3	45.8	
450.0	21334.	-21.0	-31.5	38.	338.4	39.8	
400.0	24145.	-28.7	-38.0	40.	335.2	40.2	
350.0	27229.	-37.1	-45.5	41.	340.7	37.4	
300.0	30655.	-46.7			352.6	41.9	
250.0	34529.	-57.1			356.8	50.3	
200.0	39137.	-59.7			320.3	39.3	
175.0	41977.	-61.5			297.1	40.3	
150.0	44977.	-63.9			257.3	48.3	
125.0	48687.	-61.6			293.7	55.9	
100.0	53162.	-65.2			306.9	35.5	
80.0	57584.	-67.5			293.4	35.6	
70.0	60227.	-66.9			307.2	34.2	
60.0	63298.	-63.3			280.2	21.7	
50.0	66663.	-62.4			287.0	19.3	
40.0	71504.	-51.5			274.8	20.1	
30.0	77446.	-54.7			256.9	26.1	
25.0	81289.	-55.2			247.3	22.3	
20.0	85049.	-52.6			264.5	40.6	
15.0	92105.	-50.8			264.1	33.3	
10.0	100764.	-48.9					

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

STATION ALTITUDE 4051.00 FEET MSL
 7 DEC. 76 1330 HRS MST
 ASCENSION NO. 397

SIGNIFICANT LEVEL DATA
 3420030397
 JALLEN

WSTM SITE COORDINATES
 45C451.60 FEET E
 464023.05 FEET N

TABLE VIII

PRESSURE GEOMETRIC		TEMPERATURE		REL. HUM. PERCENT
MILLIBARS	ALTITUDE MSL FEET	AIR DEGREES	DEWPOINT CENTIGRADE	
880.8	4051.0	8.8	-4.7	38.0
950.0	5014.7	7.0	-7.0	36.0
790.8	6950.2	3.4	-5.5	39.0
768.0	7729.0	3.0	-9.3	40.0
715.4	9606.5	.1	-11.3	42.0
700.0	10181.7	2.2	-11.0	37.0
650.8	12107.5	.0	-13.3	36.0
578.4	15181.6	-5.2	-18.9	33.0
500.0	18879.8	-14.0	-26.4	34.0
427.8	22711.8	-22.2	-34.3	32.0
400.0	24322.1	-26.7	-37.8	34.0
358.2	26905.7	-33.8	-43.6	36.0

UPPER AIR DATA
 3420030357
 JALLEN

STATION ALTITUDE 40°1.00 FEET MSL
 7 DEC. 76 1330 HRS MST
 ASCENSION NO. 397

WSTM SITE COORDINATES
 45°04'51.60 FEET E
 46°40'23.05 FEET N

TABLE IX

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE						
4051.0	880.8	8.8	-4.7	38.0	1086.3	654.8	120.0	4.1	1.000263
4500.0	866.3	8.0	-5.8	37.1	1071.7	653.7	55.8	1.6	1.000258
5000.0	850.5	7.0	-7.0	36.0	1055.7	652.6	345.9	4.3	1.000253
5500.0	834.8	6.1	-7.6	36.5	1039.7	651.5	335.1	8.2	1.000248
6000.0	819.3	5.2	-8.3	37.0	1024.0	650.4	335.1	10.8	1.000244
6500.0	804.2	4.2	-9.0	37.5	1008.5	649.3	338.6	12.2	1.000240
7000.0	789.3	3.4	-9.5	38.1	993.0	648.3	345.0	14.7	1.000236
7500.0	774.6	3.1	-9.3	39.4	975.4	648.0	351.1	17.6	1.000232
8000.0	760.2	2.6	-9.5	40.3	959.0	647.4	257.1	21.1	1.000228
8500.0	745.9	1.8	-10.1	40.8	943.7	646.5	1.9	22.9	1.000224
9000.0	732.0	1.0	-10.6	41.4	928.7	645.5	7.0	22.8	1.000221
9500.0	718.3	.3	-11.1	41.9	913.9	644.6	10.5	21.3	1.000217
10000.0	704.8	1.5	-11.0	38.6	899.6	646.1	13.3	19.0	1.000212
10500.0	691.6	1.8	-11.3	36.8	874.9	646.5	10.7	21.0	1.000208
11000.0	678.7	1.3	-11.6	36.6	860.4	645.8	5.8	23.0	1.000204
11500.0	665.9	.7	-12.5	36.3	846.0	645.1	359.3	25.3	1.000200
12000.0	653.5	.1	-13.1	36.1	831.5	644.4	355.3	26.4	1.000197
12500.0	641.1	-.7	-14.0	35.6	818.6	643.5	352.4	27.0	1.000193
13000.0	628.0	-1.5	-14.9	35.1	805.6	642.5	350.2	27.1	1.000189
13500.0	616.9	-2.4	-15.8	34.6	792.8	641.4	343.9	25.4	1.000186
14000.0	605.2	-3.2	-16.7	34.2	780.2	640.4	338.2	24.4	1.000182
14500.0	593.7	-4.0	-17.7	33.7	767.9	639.4	334.3	24.0	1.000179
15000.0	582.4	-4.9	-18.6	33.2	755.7	638.4	332.6	25.4	1.000176
15500.0	571.2	-6.0	-19.6	33.1	744.1	637.1	331.9	26.9	1.000173
16000.0	560.1	-7.1	-20.6	33.2	732.5	635.6	333.1	28.4	1.000170
16500.0	549.1	-8.3	-21.6	33.4	721.9	634.2	333.9	29.5	1.000167
17000.0	538.4	-9.5	-22.6	33.5	711.0	632.8	334.5	30.2	1.000164
17500.0	527.9	-10.7	-23.6	33.6	700.3	631.3	332.6	31.8	1.000161
18000.0	517.6	-11.9	-24.6	33.8	689.8	629.9	330.7	33.7	1.000158
18500.0	507.5	-13.1	-25.6	33.9	679.5	628.4	332.7	34.8	1.000155

STATION ALTITUDE 4051.00 FEET MSL
 7 DEC. 76 1330 HRS MST
 ASCENSION NO. 397

UPPER AIR DATA
 3420030397
 JALLEN

WSTM SITE COORDINATES
 45C491.60 FEET E
 464023.05 FEET N

TABLE IX (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILL IBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPED KNOTS	
19000.0	497.6	-14.3	-26.6	33.9	665.2	627.0	334.9	35.2	1.000153
19500.0	487.5	-15.3	-27.7	33.7	658.4	625.7	337.5	34.6	1.000150
20000.0	477.7	-16.4	-28.7	33.4	647.9	624.4	337.8	34.0	1.000148
20500.0	468.1	-17.5	-29.8	33.2	637.5	623.1	336.6	33.4	1.000145
21000.0	458.7	-18.5	-30.8	32.9	627.3	621.8	334.2	33.7	1.000142
21500.0	449.4	-19.6	-31.8	32.6	617.3	620.4	331.7	34.1	1.000140
22000.0	440.4	-20.7	-32.9	32.4	607.4	619.1	330.7	34.5	1.000138
22500.0	431.5	-21.7	-33.9	32.1	597.7	617.8	329.7	35.7	1.000135
23000.0	422.7	-23.0	-34.9	32.4	588.5	616.2	328.5	36.7	1.000133
23500.0	414.0	-24.4	-36.0	33.0	579.6	614.5	327.0	37.5	1.000131
24000.0	405.4	-25.8	-37.1	33.6	570.8	612.8	324.8	38.0	1.000129
24500.0	397.0	-27.2	-38.2	34.1	562.1	611.0	323.9	37.2	1.000127
25000.0	388.6	-28.6	-39.3	34.5	553.4	609.3	324.0	35.4	1.000125
25500.0	380.4	-29.9	-40.4	34.9	544.7	607.6	325.8	34.7	1.000122
26000.0	372.3	-31.3	-41.6	35.3	536.3	605.9			1.000120
26500.0	364.5	-32.7	-42.7	35.7	527.9	604.2			1.000118

STATION ALTITUDE 4051.00 FEET MSL
 7 DEC 7F
 ASCENSION NO. 397

MANDATORY LEVELS
 3420030397
 JALLEN

WSTM SITE COORDINATES
 46491.60 FEET E
 464023.05 FEET N

TABLE X

Y	PRESSURE		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
	MLL	IBARS	AIR DEGREES	TEMPPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
	850.0	5013.	7.0	-7.0	36.	245.2	4.4
	800.0	6639.	4.0	-9.1	38.	340.6	12.9
	750.0	8354.	2.0	-5.5	41.	.5	22.9
	700.0	10175.	2.2	-11.0	37.	12.3	19.7
	650.0	12131.	-1	-13.3	36.	354.3	26.7
	600.0	14220.	-3.6	-17.2	34.	336.4	24.2
	550.0	16458.	-8.2	-21.5	22.	232.9	29.5
	500.0	18950.	-14.0	-26.4	34.	334.3	35.3
	450.0	21457.	-19.5	-31.8	33.	331.7	34.1
	400.0	24290.	-26.7	-37.8	34.	323.9	37.8