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19319A MLRS MISSILE NUMBER BN-175 BN-141 BN-172 ROUND
NUMBER V-324/PQ-64. (U) ARMY ELECTRONICS RESEARCH AND
DEVELOPMENT COMMAND WSMR NM ATM. D C KELLER SEP 82
ERADCOM/ASL-DR-1260 F/G 4/2

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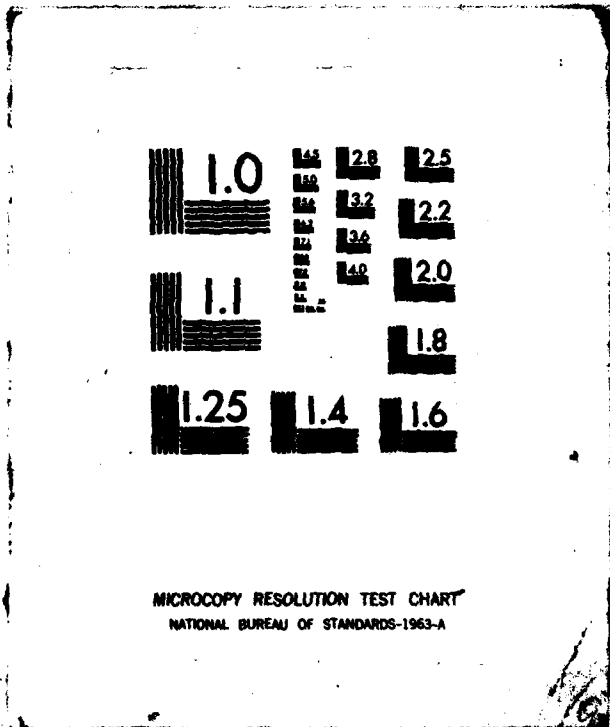
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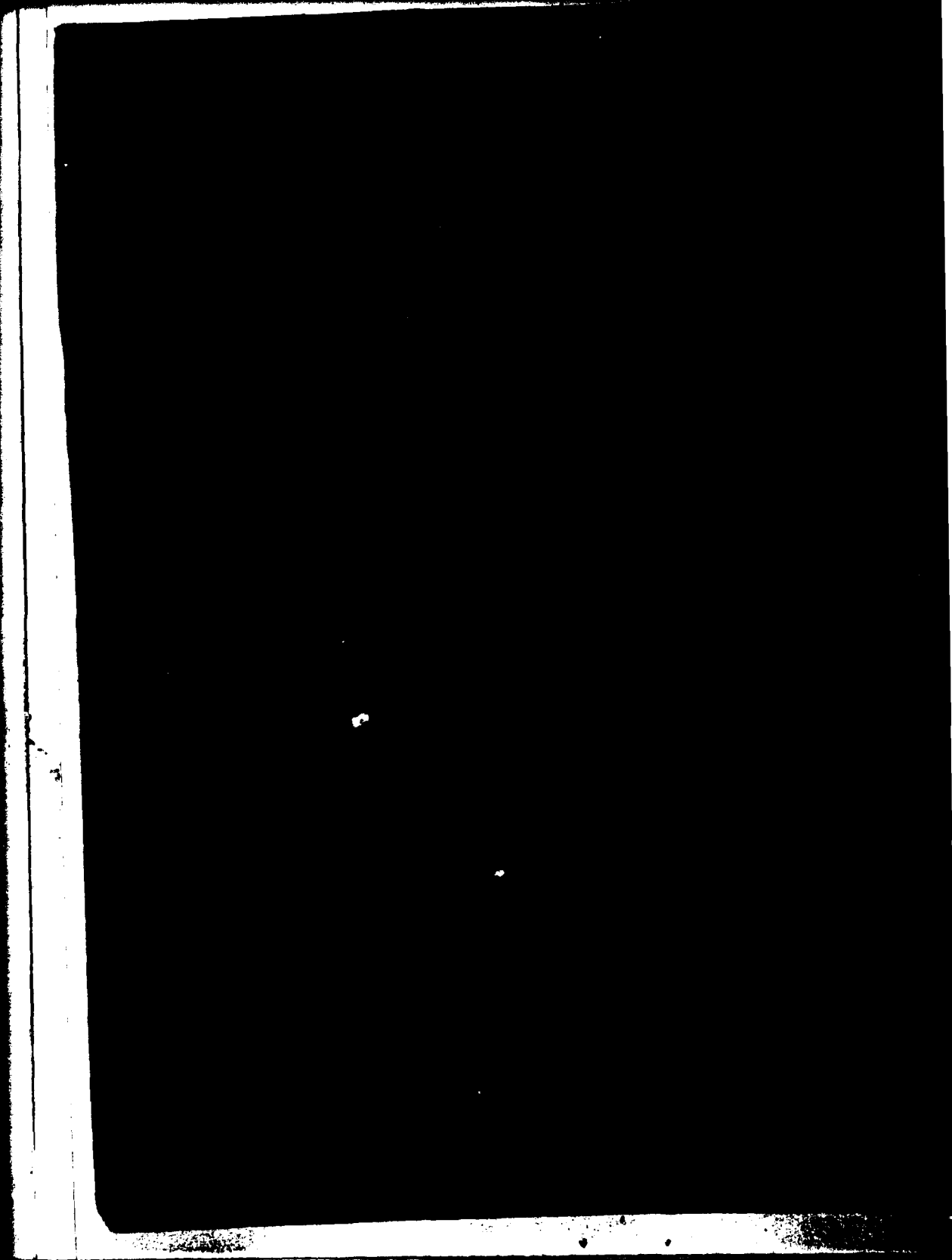
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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1260	2. GOVT ACCESSION NO. A121647	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 19319A MLRS Missile Number BN-175, BN-141, BN-172 Round Number V-324/PQ, V-325/PQ-65, V-326/PQ-66	5. TYPE OF REPORT & PERIOD COVERED	
	6. PERFORMING ORG. REPORT NUMBER	
7. AUTHOR(s) White Sands Meteorological Team	8. CONTRACT OR GRANT NUMBER(s) DA Task 1F665702D127-02	
9. PERFORMING ORGANIZATION NAME AND ADDRESS	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS	
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Research & Development Cmd Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico 88002	12. REPORT DATE September 1982	
	13. NUMBER OF PAGES 27	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) US Army Electronics Research and Development Cmd Adelphi, MD 20783	15. SECURITY CLASS. (of this report) UNCLASSIFIED	
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE	
16. DISTRIBUTION STATEMENT (of this Report)		
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17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Approved for public release; distribution unlimited.		
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 19319A MLRS, Missile Number BN-175, BN-141, BN-172, Round Number V-324/PQ-64, V-325/PQ-65 V-326/PQ-66 are presented in tabular form.		

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INTRODUCTION

19310A MLRS, Missile Numbers BN-141, BN-175 and BN-172, Round Numbers V-324/PQ-64, V-325/PQ-65 and V-326/PQ-66, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1508:21, 1508:26 and 1508:33 MDT, 24 Sep 1982. The scheduled launch times were 1500, 1500:045 and 1500:09MDT.

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 anemometer 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 Pilot-balloon observations at:

SITE AND ALTITUDE

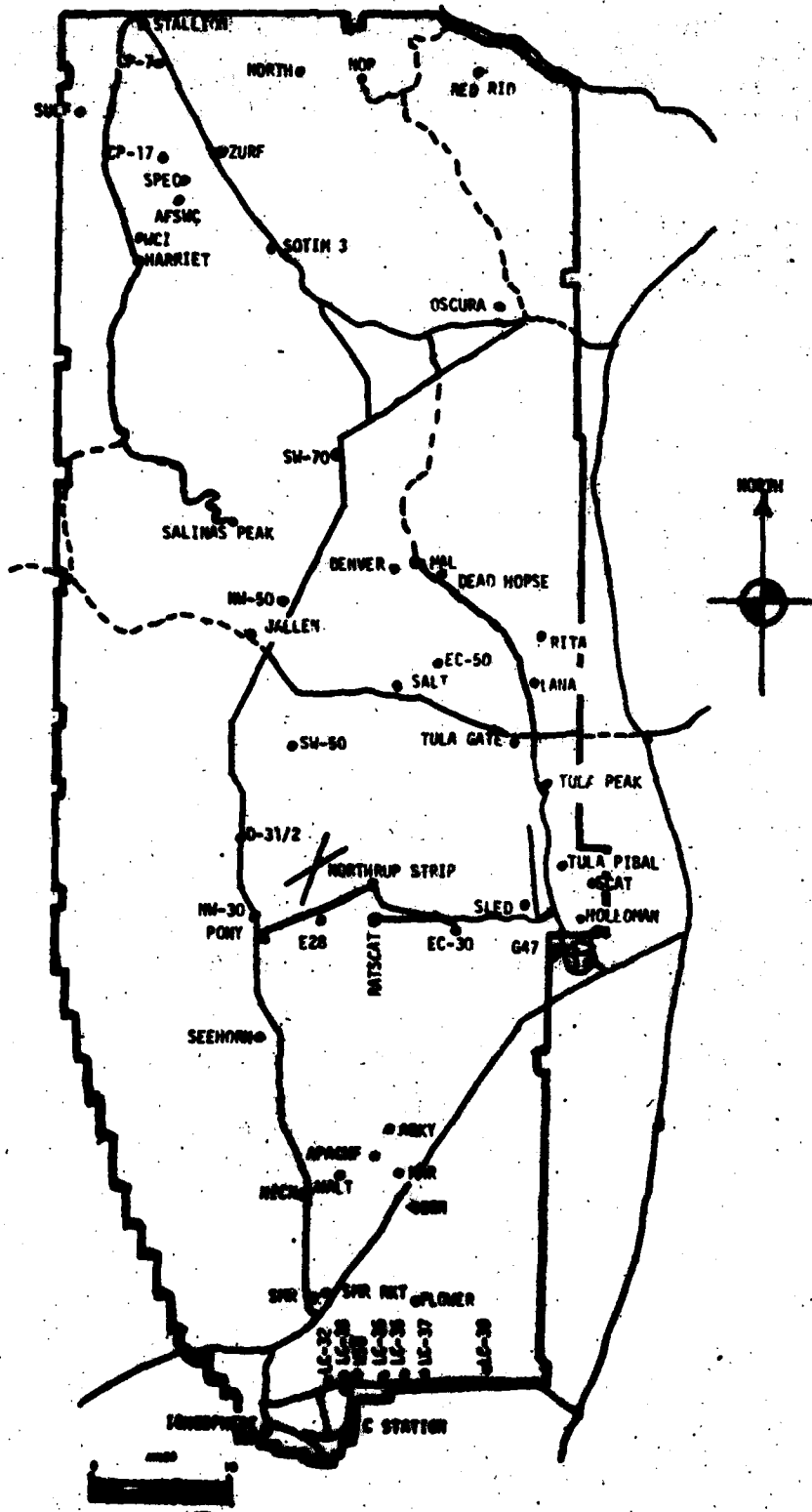
WSD 2KM
DON 2KM

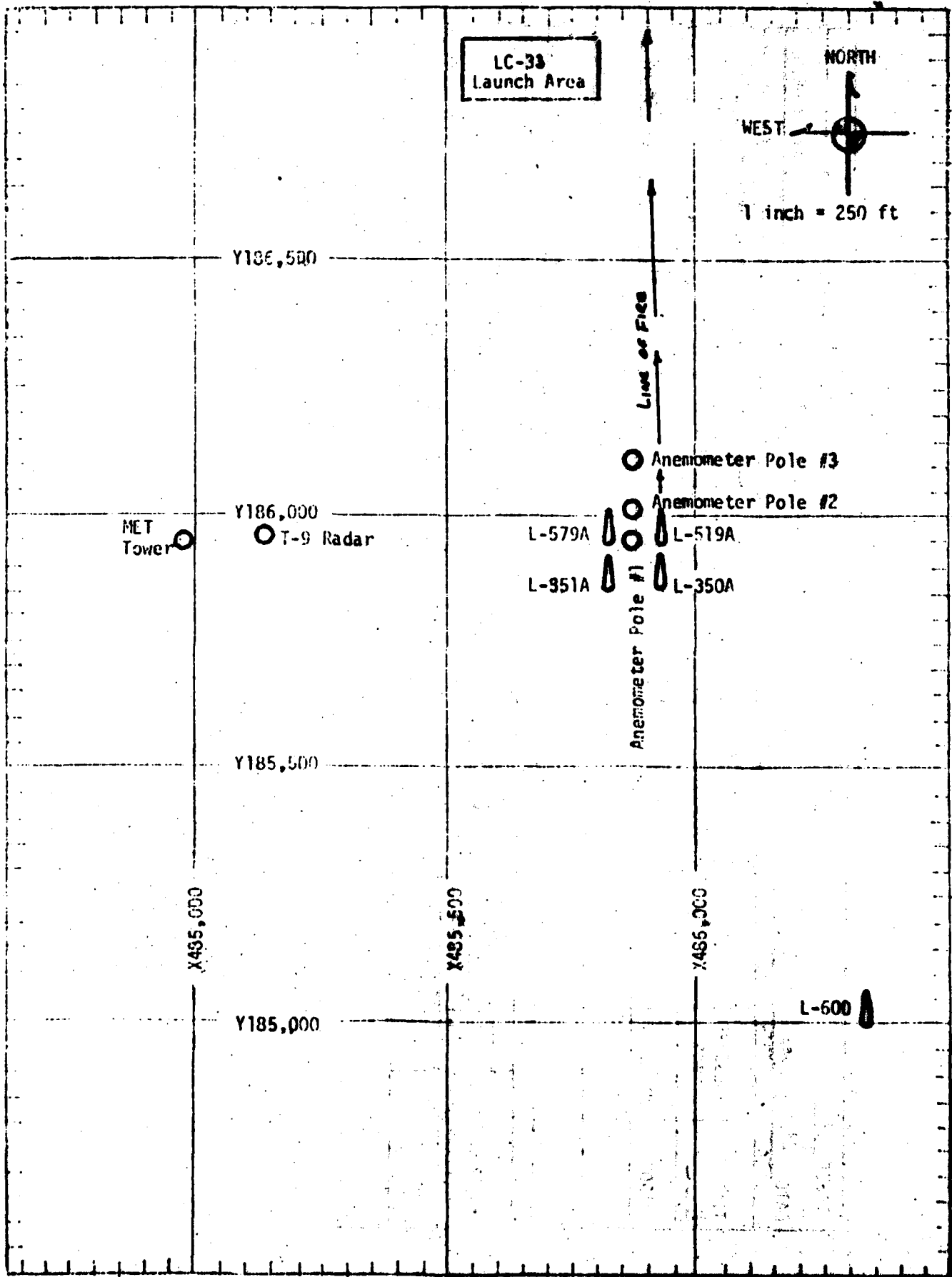
(2) Air structure data (rawinsonde) were collected at the following Met Sites.

SITE AND TIME

LC-37 1200 MDT
WSD 1300 MDT
LC-37 1400 MDT
WSD 1505 MDT

WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

STATION LC-33 E & A																					
TABLE 1		DATE 24 Sep 82		PRESSURE mbs		TEMPERATURE OF °C		DEW POINT OF °C		RELATIVE HUMIDITY %		DENSITY gm/m ³		WIND		VISIBILITY					
TIME H - - -		DAY MONTH YEAR		PRESSURE mbs		TEMPERATURE OF °C		DEW POINT OF °C		RELATIVE HUMIDITY %		DENSITY gm/m ³		DIRECTION degs In		SPEED kts		CHARACTER kts		VISIBILITY	
1508				881.6		30.2		9.9		28		1011		005		09				50 ml	

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	AMT	TYPE	AMT	TYPE	
	1	CU	8	C1	25,000		H. ALDS

PSYCHROMETRIC COMPUTATION

TIME:	1508	
DRY BULB TEMP.	30.2	
WET BULB TEMP.	17.2	
WET BULB DEPR.	13.0	
DEW POINT	9.9	
RELATIVE HUMID.	28	

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.29 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	015	13	T-30	013	10	T-30	014	15
T-20	015	11	T-20	010	12	T-20	015	16
T-10	015	13	T-10	003	09	T-10	024	16
T 0.0	010	10	T 0.0	013	07	T 0.0	021	15
T +10	010	09	T+10	002	10	T+10	009	15

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

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	024	07	T-30	021	10
T-20	042	10	T-20	020	12
T-10	030	10	T-10	012	10
T 0.0	006	09	T 0.0	014	12
T +10	007	10	T+10	014	12

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	020	12	T-30	012	13
T-20	013	12	T-20	012	14
T-10	004	11	T-10	013	13
T 0.0	007	13	T 0.0	013	13
T +10	006	13	T+10	009	13

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 24 Sep 1982

SITE: WSD
 TIME: 1508 MDT
 WSTM COORDINATES:
 X= 488,852.29
 Y= 184,982.45
 H= 3,993.75

SITE: DON
 TIME: 1508 MDT
 WSTM COORDINATES:
 X= 511,988.37
 Y= 247,396.36
 H= 3,996.83

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		
150	030	14
210	015	14
270	023	14
330	028	12
390	022	13
500	031	11
650	026	10
800	019	07
950	312	06
1150	298	08
1350	300	08
1550	302	08
1750	289	07
2000	Balloon Burst	

Data obtained from
 Single-Theodolite Tracked
 Pilot-balloon observations.

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		
150	350	04
210	337	08
270	337	09
330	339	09
390	341	10
500	343	11
650	346	12
800	348	12
950	348	12
1150	341	11
1350	321	10
1550	302	09
1750	286	10
2000	290	11

Data obtained from
 Single-Theodolite Tracked
 Pilot-balloon observations.

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGES
24 SEPTEMBER 1982

LC-37 1200 MDT		WSD 1300 MDT		LC-37 1400 MDT		WSD 1505 MDT	
METCM1324063		METCM1324064		METCM1324063		METCM1324064	
241800124881		241900122884		24200124880		242110122882	
00587004	30060881	00027014	30450884	00560005	30450880	00052010	30700882
01002010	30000871	01042012	30230874	01587010	30230870	01039013	30380872
02637016	29820847	02038010	29890849	02046009	30010846	02025015	30020848
03011007	29590809	03041004	29650811	03022005	29750808	03037007	29700810
04538008	29300763	04529008	29320766	04546008	293 0763	04557007	29380765
05562005	28920720	05516008	28920722	05532008	28930720	05537008	28930765
06544002	28480678	06443002	28460680	06500003	28480678	06538005	28470680
07243003	28030639	07309003	27980641	07388003	27970638	07501005	28020640
08627003	27680601	08631005	27720603	08605004	27660601	08574009	27680602
09638009	27470565	09631009	27460566	09609011	27460565	09615011	27410566
10590008	27250531	10595009	27200532	10592010	27180530	10579011	27120532
11565006	26910498	11560007	26870500	11548009	26870498	11512010	26860499
12589013	16360453	12611015	26320454	12575014	26300452	12594017	26360453

STATION ALTITUDE 4851.37 FEET MSL
 24 SEP. 82 1200 HRS MDT
 ASCENSION NO. 97

SIGNIFICANT LEVEL DATA
 2670180097
 LC-37
 TABLE 6

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	HUMIDITY PERCENT
881.3	4051.4	25.7	11.5	41.0
862.3	4680.3	24.7	9.4	38.0
850.0	5093.5	24.2	6.5	32.0
823.9	5985.6	21.7	5.8	35.0
811.3	6424.8	21.9	5.8	35.0
737.9	9104.5	16.8	2.8	39.0
700.0	10571.2	13.1	-3.2	32.0
652.0	12515.9	8.0	-4.8	40.0
612.9	14180.3	3.4	-5.0	34.0
607.4	14420.7	3.1	-10.8	35.0
588.8	15249.0	3.1	-18.2	19.0
570.8	16072.9	1.3	-19.7	19.0
561.9	16488.6	1.3	-20.4	18.0
527.4	18157.6	-1.0	-23.6	16.0
500.0	19549.5	-3.9	-26.0	16.0
455.0	21969.2	-10.0	-31.6	15.0
425.8	23645.8	-11.8	-32.5	16.0
400.0	25208.6	-15.8	-34.6	18.0

STATION ALTITUDE 4051.77 FEET MSL
 24 SEP. 62
 ASCENSION NO. 97

UPPER AIR DATA
 2670160097
 LC-37
 TABLE 7

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31252 LON DEG

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(TN)	SPEED KNOTS	INDEX OF REFRACTION
4051.4	861.3	25.7	41.0	1021.3	675.4	330.0	4.1	1.000285
4500.0	867.7	25.0	38.9	1008.5	674.5			1.000277
5000.0	852.8	24.3	33.4	994.2	673.4			1.000265
5500.0	838.0	23.1	33.4	981.4	671.9			1.000259
6000.0	823.5	21.7	35.0	968.9	670.4			1.000248
6500.0	809.1	21.8	35.1	951.7	670.5			1.000244
7000.0	795.0	20.8	35.9	938.1	669.3			1.000239
7500.0	781.0	19.9	36.6	924.8	668.2			1.000235
8000.0	767.3	18.9	37.4	911.6	667.1	312.3	7.1	1.000231
8500.0	753.9	18.0	38.1	898.6	666.0	306.2	7.6	1.000225
9000.0	740.6	17.0	38.8	885.8	664.9	300.9	6.9	1.000219
9500.0	727.5	15.8	37.1	874.0	663.4	311.5	5.7	1.000212
10000.0	714.5	14.5	34.7	862.6	661.8	315.3	4.6	1.000209
10500.0	701.8	13.3	32.3	851.3	660.2	313.5	3.5	1.000206
11000.0	689.1	12.0	33.8	839.8	658.7	305.1	2.2	1.000200
11500.0	676.6	10.7	35.8	828.4	657.2	100.6	1.0	1.000196
12000.0	664.4	9.4	37.9	817.2	655.6	121.5	2.5	1.000193
12500.0	652.4	8.0	39.9	806.2	654.1	128.7	2.8	1.000176
13000.0	640.4	6.7	44.1	795.2	652.5	125.0	2.1	1.000171
13500.0	628.6	5.3	48.3	784.4	650.9	49.5	0.8	1.000168
14000.0	617.0	3.9	52.5	773.8	649.3	357.3	3.1	1.000165
14500.0	605.6	3.1	33.5	762.5	648.0	333.4	6.2	1.000162
15000.0	594.3	3.1	23.8	748.6	647.9	352.0	7.9	1.000159
15500.0	583.3	2.6	19.0	736.3	647.2	352.1	9.2	1.000156
16000.0	572.4	1.5	19.0	725.5	645.9	349.4	9.4	1.000153
16500.0	561.7	1.3	18.0	712.4	645.6	346.1	9.4	1.000148
17000.0	551.1	.6	17.4	700.8	644.8	339.4	8.9	1.000146
17500.0	540.7	-.1	16.8	689.4	644.0	331.4	8.4	1.000143
18000.0	530.6	-.8	16.2	678.2	643.2	325.3	7.3	1.000141
18500.0	520.5	-1.7	16.0	667.6	642.0	319.1	6.5	1.000139
19000.0	510.6	-2.8	16.0	657.5	640.8	317.8	6.5	1.000136
19500.0	500.9	-3.8	16.0	647.5	639.6	316.2	6.7	1.000134
20000.0	491.3	-5.0	15.8	638.0	638.1	314.6	7.2	1.000132
20500.0	481.8	-6.3	15.6	628.7	636.5	313.5	8.4	1.000129
21000.0	472.5	-7.6	15.4	619.5	635.0	312.5	9.9	1.000129
21500.0	463.4	-8.8	15.2	610.5	633.5	311.4	12.5	1.000129
22000.0	454.4	-10.0	15.0	601.5	632.0	307.5	15.3	1.000134
22500.0	445.5	-10.6	15.3	590.9	631.4	306.6	17.4	1.000132
23000.0	436.8	-11.1	15.6	580.5	630.8	305.1	19.2	1.000132
23500.0	428.3	-11.6	15.9	570.3	630.1			

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LON DEG

UPPER AIR DATA
 2670180097
 LC-37

TABLE 7 Cont'd

STATION ALTITUDE 4051.37 FEET MSL
 24 SEP. 82
 ASCENSION NO. 97

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
							DIRECTION DEGREES (T)	SPEED KNOTS	
24000.0	419.8	-12.7	-32.9	16.5	561.3	620.8	351.6	20.4	1.000127
24500.0	411.5	-14.0	-33.6	17.1	553.0	627.3			1.000125
25000.0	403.4	-15.3	-34.3	17.7	544.7	625.7			1.000123

STATION ALTITUDE 051.37 FMS MSL
 24 SEP. 82
 ASCENSION NO. 97

MANDATORY LEVELS
 2070180097
 LC-37
 TABLE 8

GEODETTIC COORDINATES
 32.40175 LAT DEG
 106.31232 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5090.	24.2	6.5	32.	9999.0	9999.0XX
800.0	6819.	21.1	5.3	36.	9999.0	9999.0XX
750.0	8640.	17.7	3.3	36.	304.6	7.8
700.0	10561.	13.1	-3.2	32.	315.5	3.4
650.0	12585.	7.8	-4.7	41.	122.8	2.6
600.0	14729.	3.1	-13.3	29.	354.8	4.6
550.0	17032.	.5	-21.4	17.	345.8	9.4
500.0	19521.	-3.9	-26.0	16.	317.7	6.5
450.0	22215.	-10.3	-31.8	15.	335.0	13.8
400.0	25166.	-15.8	-34.6	18.		

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3989.00 FEET MSL
 24 SEP. 82
 ASCENSION NO. 485

SIGNIFICANT LEVEL DATA
 2670020485
 WHITE SANDS
 TABLE 9

GEODETLIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

PRESSURE GEOMETRIC MILLIBARS MFL FEET	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT
803.6	29.5	36.0
468.2	26.3	37.0
850.0	24.1	41.0
827.6	22.3	40.0
807.8	22.3	33.0
760.0	19.1	40.0
731.2	16.0	44.0
700.0	12.6	39.0
676.5	10.4	34.0
630.8	4.6	49.0
624.9	4.2	41.0
599.9	3.9	18.0
550.9	.6	18.0
520.9	-1.5	16.0
500.0	-4.5	16.0
486.9	-10.0	16.0
423.5	-13.1	16.0
400.0	-16.6	18.0

STATION ALTITUDE 3989.00 FEET MSL
 24 SEP. 62 1300 HRS MDT
 ASCENSION NO. 485

UPPER AIR DATA
 2670020485
 WHITE SANDS
 TABLE 10

GEODETIC COORDINATES
 32-4943 LAT DEG
 106-37033 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY G/CM ³	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
3989.0	803.6	29.5	36.0	1010.6	679.9	15.0	14.0	1.000287
4000.0	803.3	29.4	36.0	1010.5	679.8	15.0	13.9	1.000287
4500.0	800.2	26.3	37.0	1004.5	676.0	15.6	11.6	1.000277
5000.0	853.3	24.5	40.3	993.2	674.0	16.4	9.6	1.000274
5500.0	836.6	23.2	40.5	980.7	672.4	17.7	7.4	1.000268
6000.0	824.1	22.3	38.8	967.0	671.2	20.2	5.2	1.000261
6500.0	809.8	22.3	33.7	950.7	671.1	16.6	4.1	1.000251
7000.0	795.6	21.3	35.2	937.3	669.9	16.7	3.3	1.000248
7500.0	781.7	20.2	37.7	924.5	668.7	316.9	4.7	1.000245
8000.0	768.1	19.0	40.1	911.8	667.4	303.2	7.1	1.000242
8500.0	754.5	17.9	41.5	899.2	666.1	298.6	9.4	1.000239
9000.0	741.2	16.8	42.4	886.7	664.8	294.5	9.4	1.000235
9500.0	728.1	15.7	43.5	874.7	663.4	290.2	8.2	1.000230
10000.0	715.1	14.3	41.5	863.7	661.8	285.7	6.4	1.000223
10500.0	702.4	12.9	39.4	852.8	659.9	281.8	4.1	1.000217
11000.0	689.7	11.6	36.8	841.3	658.4	277.0	2.7	1.000211
11500.0	677.3	10.5	34.2	829.9	656.9	236.0	2.1	1.000205
12000.0	664.9	9.0	37.7	819.0	655.2	212.2	2.2	1.000203
12500.0	652.7	7.4	41.7	808.4	653.4	195.6	2.5	1.000201
13000.0	640.8	5.9	45.6	798.0	651.6	185.6	2.6	1.000198
13500.0	629.1	4.5	46.6	787.5	649.9	185.4	1.4	1.000195
14000.0	617.4	4.1	38.2	774.4	649.3	298.8	1.3	1.000186
14500.0	606.0	4.0	23.7	760.8	648.9	351.8	4.0	1.000179
15000.0	594.7	3.5	18.0	748.2	648.2	359.6	6.7	1.000174
15500.0	583.6	2.6	18.0	736.7	647.2	2.6	8.4	1.000171
16000.0	572.7	1.7	18.0	725.3	646.1	354.0	9.1	1.000168
16500.0	562.0	.8	18.0	714.2	645.0	352.1	9.3	1.000165
17000.0	551.4	.0	17.5	702.7	644.1	346.9	9.4	1.000162
17500.0	541.1	-.7	16.0	691.2	643.3	342.1	9.5	1.000159
18000.0	530.9	-1.4	16.1	680.0	642.5	338.4	8.7	1.000156
18500.0	520.8	-2.3	16.4	669.5	641.3	329.4	7.9	1.000153
19000.0	510.9	-3.4	16.0	659.3	640.1	321.9	7.3	1.000151
19500.0	501.2	-4.4	16.0	649.2	639.9	313.7	6.9	1.000148
20000.0	491.5	-5.5	16.0	639.5	637.5	313.7	7.4	1.000146
20500.0	482.0	-6.7	16.0	630.0	636.0	315.5	8.1	1.000143
21000.0	472.7	-7.4	16.0	620.0	634.6	321.8	10.0	1.000141
21500.0	463.6	-9.1	16.0	611.4	633.2	330.1	12.2	1.000139
22000.0	454.6	-10.2	16.0	602.0	631.8	340.1	15.4	1.000137
22500.0	445.6	-11.0	16.0	592.0	630.9	348.5	19.0	1.000134
23000.0	436.9	-11.6	16.0	582.2	629.9	348.5	20.9	1.000132

STATION ALTITUDE 3989.00 FEET MSL
 26 SEP. 62
 ASCENSION NO. 485

UPPER AIR DATA
 2670020485
 WHITE SANDS
 TABLE 10 Cont'd

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CURIC METER	SOUND KNOTS	WIND DATA DIRECTION SPEED KNOTS	INDEX OF REFRACTION
23500.0	420.3	-12.6	16.0	572.6	624.9	350.1 22.8	1.000130
24000.0	419.9	-13.6	16.3	563.4	627.7		1.000127
24500.0	411.5	-14.9	17.0	554.8	620.2		1.000125
25000.0	403.3	-16.1	17.7	546.4	624.7		1.000123

STATION ALTITUDE 3409.00 FEET MSL
 29 SEP. 82
 ASCENSION NO. 485

MANDATORY LEVELS
 26700.20485
 WHITE SANDS
 TABLE 11

GEODETIC COORDINATES
 32.40083 LAT DEG
 106.37033 LON DEG

PRESSURE GEOPOTENTIAL MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	REL. HUM. PERCENT	TEMPERATURE	
					DEWPOINT	WET-BULB
850.0	24.1	16.7	9.1	41.	10.0	
800.0	21.7	12.7	3.4	34.	5.3	
750.0	17.6	297.2	9.4	42.	4.5	
700.0	12.5	280.6	3.7	39.	-1.0	
650.0	7.1	193.3	2.5	43.	-4.8	
600.0	3.0	357.3	5.7	18.	-18.2	
550.0	-1.1	346.3	9.4	17.	-21.9	
500.0	-4.5	312.8	6.9	16.	-26.5	
450.0	-10.6	343.6	17.1	16.	-31.5	
400.0	-16.6			18.	-35.3	

STATION ALTITUDE 4051.37 FEET MSL
 24 SEP. 82 1400 HRS PDT
 ASCENSION NO. 98

SIGNIFICANT LEVEL DATA
 2670180093
 LC-37
 TABLE 12

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
880.3	4051.4	29.5	12.4	35.0
866.0	4461.4	26.8	8.7	32.0
850.0	5068.1	25.8	8.8	34.0
826.6	5972.3	23.8	9.0	39.0
806.3	6585.3	23.1	6.8	35.0
766.8	8015.5	19.6	7.4	45.0
710.1	10168.4	14.2	-1.0	35.0
700.0	10565.3	13.5	-1.3	36.0
642.8	12894.2	6.3	-5.3	43.0
629.8	13443.7	4.8	-5.0	49.0
613.1	14162.0	3.1	-13.6	28.0
588.1	15270.6	3.1	-18.2	19.0
533.2	17858.9	-1.3	-23.2	17.0
517.9	18620.1	-2.5	-24.1	17.0
510.4	18999.9	-3.5	-25.6	16.0
500.0	19534.2	-4.2	-26.2	16.0
453.4	22000.0	-10.6	-30.8	17.0
426.3	23593.5	-12.8	-28.3	31.0
400.0	25101.4	-16.3	-29.1	32.0

STATION ALTITUDE 4051.37 FEET MSL
 24 SEP. 82
 ASCENSION NO. 98

UPPER AIR DATA
 2670180090
 LC-37

GEODETIC COORDINATES
 32.49175 LAT DEG
 106.31232 LONG DEG

TABLE 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	WIND DIRECTION (DEGREES TRUE)	WIND SPEED (KNOTS)	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND VELOCITY (KNOTS)	INDEX OF REFRACTION
4051.4	800.3	29.5	12.4	35.0	1007.0	679.9	315.0	5.1	1.000204
4500.0	866.8	26.7	8.7	32.1	1002.0	676.3	321.0	4.8	1.000271
5000.0	832.0	25.9	8.8	33.8	987.5	675.4	328.3	4.7	1.000268
5500.0	837.4	24.7	8.9	36.7	974.2	674.1	336.0	4.6	1.000266
6000.0	822.9	23.7	8.6	38.3	960.8	672.9	343.9	4.6	1.000262
6500.0	808.7	23.2	7.1	35.5	946.2	672.2	351.7	4.6	1.000254
7000.0	794.6	22.1	7.1	37.9	933.1	671.8	348.1	4.8	1.000252
7500.0	780.8	20.9	7.3	41.4	920.0	669.7	327.3	5.6	1.000250
8000.0	767.2	19.6	7.4	44.9	906.2	668.3	313.0	6.9	1.000248
8500.0	753.7	18.4	5.5	42.7	896.5	666.7	308.0	7.6	1.000240
9000.0	740.3	17.1	3.6	40.4	884.9	665.1	307.0	7.5	1.000233
9500.0	727.2	15.9	1.6	38.1	873.4	663.5	306.0	7.5	1.000226
10000.0	714.4	14.6	-3	35.8	862.1	661.9	303.1	6.5	1.000219
10500.0	701.7	13.6	-1.2	35.8	849.8	660.7	297.2	5.1	1.000215
11000.0	689.0	12.2	-2.0	37.3	838.8	659.0	287.1	3.8	1.000212
11500.0	676.5	10.6	-2.8	38.8	828.2	657.2	283.2	3.1	1.000208
12000.0	664.2	9.1	-3.7	40.3	817.7	655.3	253.9	3.3	1.000204
12500.0	652.1	7.5	-4.6	41.8	807.4	653.5	221.5	3.4	1.000201
13000.0	640.3	6.0	-5.3	44.2	797.1	651.7	240.2	2.2	1.000198
13500.0	628.5	4.7	-5.6	47.4	786.2	650.1	309.0	2.4	1.000195
14000.0	616.8	3.5	-11.3	32.7	775.6	648.5	337.6	5.2	1.000185
14500.0	605.4	3.1	-14.9	25.3	762.5	647.9	344.3	7.8	1.000179
15000.0	594.1	3.1	-17.0	21.2	748.4	647.8	344.2	8.7	1.000175
15500.0	583.0	2.7	-18.7	18.8	735.6	647.3	344.2	9.6	1.000171
16000.0	572.1	1.9	-19.6	18.4	724.1	646.3	344.2	10.6	1.000168
16500.0	561.4	1.0	-20.6	18.1	712.7	645.3	344.2	11.5	1.000165
17000.0	550.8	.2	-21.5	17.3	701.6	644.3	340.8	11.4	1.000162
17500.0	540.3	-7	-22.5	17.0	690.8	643.3	335.2	10.8	1.000159
18000.0	530.3	-1.5	-23.3	17.0	679.7	642.3	329.2	10.3	1.000156
18500.0	520.3	-2.3	-24.0	17.0	668.8	641.3	323.4	9.8	1.000153
19000.0	510.4	-3.5	-25.6	16.0	659.0	639.9	317.1	9.4	1.000151
19500.0	500.7	-4.2	-26.2	16.0	648.0	639.1	310.4	9.1	1.000148
20000.0	491.0	-5.4	-27.1	16.2	638.5	637.0	309.3	9.3	1.000146
20500.0	481.5	-6.7	-28.0	16.4	629.1	636.1	310.1	9.7	1.000143
21000.0	472.2	-7.9	-28.9	16.6	620.0	634.8	311.2	10.0	1.000141
21500.0	463.1	-9.2	-29.8	16.8	611.0	633.0	319.5	12.8	1.000139
22000.0	454.1	-10.5	-30.8	17.0	602.1	631.5	325.3	14.1	1.000137
22500.0	445.2	-11.3	-29.1	21.1	591.9	630.6			1.000135
23000.0	436.5	-12.0	-27.6	25.7	581.8	629.8			1.000133
23500.0	427.9	-12.7	-26.5	30.2	571.9	629.0			1.000131

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LON DEG

UPPER AIR DATA
 2670100090
 LC-37

TABLE 13 CONT'D

STATION ALTITUDE 4051.37 FEET MSL
 24 SEP. 62
 ASCENSION NO. 96

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	
24000.0	019.4	-13.7	31.3	562.8	627.7			1.000129
24500.0	011.1	-14.0	31.6	554.0	626.4			1.000127
25000.0	002.9	-15.9	31.9	545.3	625.0			1.000125

STATION ALTITUDE 4851.37 FEET MSL
 24 SEP. 62 1400 HRS PDT
 ASCENSION NO. 98

MANDATORY LEVELS
 2670180096
 LC-37
 TABLE 14

GEODEIC COORDINATES
 32.40175 LAT DEG
 106.31232 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES (TN)	SPEED KNOTS	
850.0	5064.	25.8	8.8	34.	329.3	4.6	
800.0	6804.	22.6	7.0	37.	356.3	4.7	
750.0	8633.	18.0	5.0	42.	307.8	7.5	
700.0	10555.	13.5	-1.3	36.	296.3	5.0	
650.0	12579.	7.2	-4.8	42.	223.7	3.2	
600.0	14719.	3.1	-15.0	23.	344.3	8.2	
550.0	17022.	.1	-21.0	18.	340.5	11.3	
500.0	19506.	-4.2	-26.2	16.	310.1	9.1	
450.0	22196.	-10.9	-30.1	19.	327.4	15.1	
400.0	25139.	-16.3	-29.1	32.			

STATION ALTITUDE: 3989.00 FEET MSL
 24 SEP. 62 1505 HRS PDT
 ASCENSION NO. 406

SIGNIFICANT LEVEL DATA
 2670020480
 WHITE SANDS
 TABLE 15

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
882.5	32.5	8.7	23.0
876.0	29.8	5.1	21.0
850.0	25.8	4.9	26.0
815.2	23.0	4.0	29.0
766.2	19.9	1.8	30.0
700.0	13.2	-8.0	22.0
630.9	5.6	-15.0	21.0
622.5	4.0	-15.1	22.0
549.9	-5	-23.9	15.0
527.1	-2.7	-20.4	14.0
512.2	-3.1	-20.8	14.0
500.0	-4.7	-20.1	14.0
462.4	-8.8	-31.4	14.0
449.0	-9.8	-32.2	14.0
400.0	-17.0	-36.8	16.0

ASCENSION NO. 406
 24 SEP. 62
 1505 HRS PDT

GEODETIC COORDINATES
32.40893 LAT DEG
106.37033 LON DEG

UPPER AIR DATA
2670020460
WHITE SANDS
TABLE 16

STATION ALTITUDE 3989.00 FFFT MSL
24 SEP. 62
1505 HRS MDT
ASCENSION NO. 486

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEEJ OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	TEMP DEGREE				DIRECTION DEGREES(TN)	SPEED KNOTS	
3989.0	882.5	32.5	8.7	23.0	1001.0	682.7	30.0	9.9	1.000269
4000.0	882.2	32.4	8.5	22.9	1001.1	682.6	29.9	9.9	1.000268
4500.0	867.2	28.5	5.1	22.7	997.8	677.9	26.9	9.8	1.000259
5000.0	852.4	26.2	4.9	25.5	988.2	673.3	23.8	9.8	1.000257
5500.0	837.7	24.8	4.6	27.0	975.6	673.8	20.7	9.7	1.000254
6000.0	823.3	23.7	4.2	28.3	962.6	672.5	17.0	9.7	1.000250
6500.0	809.0	22.6	3.8	29.1	949.3	671.2	9.3	8.1	1.000246
7000.0	794.9	21.7	3.1	29.4	935.0	670.2	355.3	6.5	1.000242
7500.0	781.1	20.9	2.5	29.7	922.2	669.2	335.5	6.3	1.000238
8000.0	767.5	20.0	1.9	30.0	908.9	668.2	317.4	7.0	1.000233
8500.0	753.9	18.7	.1	28.6	897.1	668.6	308.8	7.3	1.000227
9000.0	740.5	17.4	-1.8	27.0	885.5	664.9	301.0	7.4	1.000221
9500.0	727.4	16.0	-3.7	25.4	874.1	663.3	301.1	7.4	1.000216
10000.0	714.5	14.7	-5.7	23.8	862.8	661.7	302.2	7.3	1.000210
10500.0	701.8	13.4	-7.7	22.2	851.7	660.1	300.5	6.5	1.000206
11000.0	689.1	12.1	-9.1	21.8	840.3	658.5	296.7	5.5	1.000202
11500.0	676.6	10.7	-10.3	21.7	829.0	656.9	296.5	4.6	1.000198
12000.0	664.3	9.4	-11.5	21.5	817.9	655.3	297.6	3.6	1.000194
12500.0	652.2	8.0	-12.8	21.3	806.9	653.7	294.7	4.6	1.000191
13000.0	640.3	6.7	-14.0	21.1	796.2	652.1	292.7	5.7	1.000187
13500.0	628.6	5.4	-15.0	21.3	785.3	650.6	290.7	6.9	1.000184
14000.0	617.0	4.4	-15.7	21.5	773.5	649.4	299.9	8.1	1.000181
14500.0	605.4	3.6	-17.0	20.4	761.3	648.4	319.3	8.5	1.000178
15000.0	594.1	2.8	-18.3	19.4	749.3	647.5	334.5	9.6	1.000174
15500.0	583.0	2.0	-19.6	18.3	737.6	646.5	340.8	10.6	1.000171
16000.0	572.2	1.2	-20.9	17.2	726.0	645.5	343.8	11.3	1.000168
16500.0	561.5	.4	-22.3	16.2	714.6	644.5	341.6	11.0	1.000164
17000.0	551.0	-.4	-23.7	15.1	703.4	643.6	338.4	10.8	1.000161
17500.0	540.6	-1.4	-24.9	14.6	692.6	642.4	333.7	10.7	1.000158
18000.0	530.4	-2.4	-26.1	14.1	682.0	641.2	324.9	10.2	1.000156
18500.0	520.3	-2.9	-26.6	14.0	670.3	640.6	311.2	9.9	1.000153
19000.0	510.4	-3.3	-26.9	14.0	658.6	640.1	300.5	9.8	1.000150
19500.0	500.6	-4.6	-28.0	14.0	649.2	638.5	291.1	10.0	1.000148
20000.0	491.0	-5.7	-28.8	14.0	639.2	637.3	286.8	10.7	1.000145
20500.0	481.5	-6.7	-29.7	14.0	629.2	636.1	303.4	11.5	1.000143
21000.0	472.2	-7.7	-30.5	14.0	619.5	634.9	317.8	12.7	1.000141
21500.0	463.1	-8.7	-31.3	14.0	609.9	633.6	329.9	14.7	1.000138
22000.0	454.1	-9.4	-31.9	14.0	599.6	632.8	337.0	16.8	1.000136
22500.0	445.2	-10.3	-32.5	14.1	589.9	631.7	342.1	19.0	1.000134
23000.0	436.4	-11.6	-33.3	14.5	581.0	630.2			1.000131

STATION ALTITUDE 3400.00 FEET MSL
 24 SEP. 62
 ASCENSION NO. 486

UPPER AIR DATA
 2670020486
 WHITE SANDS
 TABLE 16 Cont'd

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

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	
23500.0	927.8	-12.8	-34.1	14.0	572.3	624.7			1.000129
24000.0	919.3	-14.1	-34.8	15.2	563.7	627.2			1.000127
24500.0	911.0	-15.3	-35.6	15.5	555.2	629.7			1.000125
25000.0	902.9	-16.5	-36.5	15.9	546.9	624.1			1.000123

STATION ALTITUDE 3989.00 FEET MSL
 24 SEP. 62
 ASCENSION NO. 486

MANDATORY LEVELS
 2670020486
 WHITE SANDS
 TABLE 17

GENEITIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA		
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	5078.	25.8	4.9	26.	23.3	9.8	
800.0	6815.	22.1	3.4	29.	1.1	7.1	
750.0	8641.	18.3	-4	28.	306.7	7.3	
700.0	10562.	13.2	-8.0	22.	300.1	6.4	
650.0	12585.	7.4	-13.0	21.	294.2	4.8	
600.0	14728.	3.2	-17.6	20.	327.7	9.0	
550.0	17026.	-5	-23.9	15.	338.0	10.8	
500.0	19505.	-4.7	-28.1	14.	290.7	10.0	
450.0	22197.	-9.7	-32.1	14.	339.4	17.8	
400.0	25139.	-17.0	-36.8	16.			