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SEPTEMBER 1979

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METEOROLOGICAL DATA REPORT

19304C GSRS
Missile No. 1061, 1076
Round No. V-68, V-69
7 September 1979

by

White Sands Meteorological Team

DTIC
SELECTED
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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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19304C GSRS
Missile Numbers, 1061, 1076,
Round Numbers, V-68, V-69

7 September 1979

AUTHOR(S)
White Sands Meteorological Team

data rept.

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September 02

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- 1. Ballistics
- 2. Meteorology
- 3. Wind

SUMMARY (Continue on reverse side if necessary and identify by block number)
Meteorological data gathered for the launching of 19304C CSRS, Missile Numbers 1061, 1076, Round Numbers V-68, V-69 are presented in tabular form.

410-663

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INTRODUCTION

19304C GSRS, Missile Numbers 1061 and 1076, Round Numbers V-68 and V-69, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1130:01 and 1130:04 MDT, 7 September 1979. The scheduled launch times were 0940 and 0940:02.5 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

SITE AND ALTITUDE

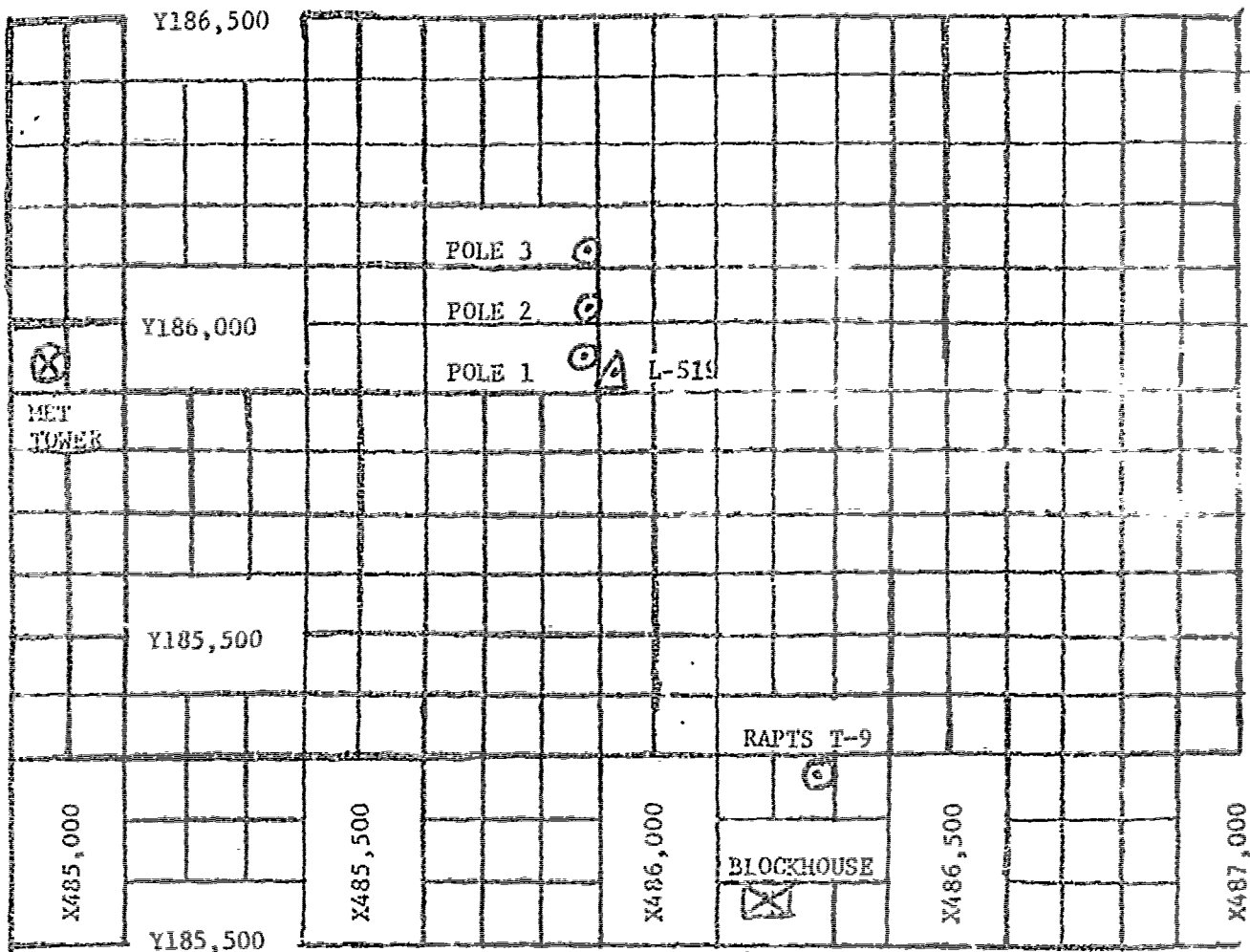
LC33 2160 Meters
SMR 2160 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 28,000 feet in 500-foot increments.

SITE AND TIME

SMR 1130 MST

NORTH



1. MET TOWER - 4 Bendix Model T-20 Anemometers at 12 ft, 62 ft, 102 ft, and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.
 - (a) Pole #1 - 38.7 ft
 - (b) Pole #2 - 53.0 ft
 - (c) Pole #3 - 83.6 ft
3. RAPTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

CR 100

TABLE 1. Surface Observations taken at 1130 MDT,
 7 September 1979, at LC-33, 19304C GSRS,
 Missile Numbers 1061, 1076, Round
 Numbers V-68, V-69.

ELEVATION	3977.30	FT/MSL
PRESSURE	883.7	MBS
TEMPERATURE	28.3	$^{\circ}\text{C}$
RELATIVE HUMIDITY	40	%
DEW POINT	13.3	$^{\circ}\text{C}$
DENSITY	1014	GM/M^3
WIND SPEED	02	KTS
WIND DIRECTION	100	DEGREES
CLOUD COVER	Clear	

LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	311	01	-30		CALM	-30		CALM
-20	310	02	-20		CALM	-20		CALM
-10	307	02	-10	316	01	-10		CALM
0.0	305	03	0.0	324	01	0.0	315	02
+10	305	02	+10	314	02	+10	318	02

POLE #1 = X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL

POLE #2 = X485,874.93 Y186,012.00 H4033.57 53.0 ft AGL

POLE #3 = X485,877.29 Y186,116.06 H4063.92 83.6 ft AGL

TABLE 2

TYPE 19304C GSRS MISSILE NOS. 1061, 1076 ROUND NOS. V-68, V-69

LAUNCHED FROM LC-33 DATE 7 September 1979, TIMES: 1130:01, 1130:04 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

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

LEVEL #1 12 Feet			LEVEL #2 62 Feet		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	102	04	-30	046	02
-20	100	03	-20	055	02
-10	098	03	-10	062	02
0.0	098	01	0.0	081	02
+10	073	01	+10	088	03
LEVEL #3 102 Feet			LEVEL #4 202 Feet		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	058	01	-30		CALM
-20	058	02	-20		CALM
-10	058	02	-10		CALM
0.0	092	02	0.0		CALM
+10	092	03	+10		CALM

WTSM COORDINATES: X484,982.64 Y185,057.73 H3980.00 (base)

TABLE 3

TYPE 19304C GSRS MISSILE NOS. 1061, 1076, ROUND NOS. V-68, V-69

LAUNCHED FROM LC-33 DATE 7 September 1979 TIMES: 1130:01, 1130:04 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM LC-33 DATE 7 September 1979 TIME 1130 MDT

RELEASE POINT COORDINATES (WSTM) X=486,037.24 Y=132,350.16 H=3977.30

MISSILE TYPE 19304C GRS MISSILE NOS. 1061, 1076 ROUND NOS. V-68, V-69

MISSILE LAUNCHED FROM LC-33 DATE: 7 September 1979 TIMES: 1130:01, 1130:04 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	100	02
60	127	02
120	154	02
180	181	02
240	207	02
300	248	03
360	288	03
420	329	03
480	009	04
540	357	04
600	345	05
660	333	05
720	321	06
780	322	06
840	323	05
900	324	05
960	325	05
1020	321	06
1080	316	07

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
1140	312	09
1200	307	10
1260	310	09
1320	313	08
1380	316	08
1440	318	07
1500	321	08
1560	324	08
1620	327	09
1680	329	09
1740	332	10
1800	334	12
1860	337	13
1920	339	14
1980	344	14
2040	349	15
2100	354	15
2160	359	15
2220		

PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM SMR DATE 7 September 1979, TIME 1130 MDT

RELEASE POINT COORDINATES (WSTM) X=472,441.28 Y=412,137.54 H=3999.0

MISSILE TYPE 19304C GSRS MISSILE NOS. 1061, 1076 RANGE NOS. V-68, V-69

MISSILE LAUNCHED FROM LC-33, DATE 7 September 1979 TIMES: 1130:01, 1130:04 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	030	04
60	038	04
120	045	03
180	052	03
240	059	02
300	033	02
360	006	02
420	340	02
480	212	02
540	280	03
600	247	04
660	214	06
720	180	06
780	178	06
840	176	06
900	174	06
960	172	06
1020	171	07
1080	169	07

HEIGHTS AGL	DIRECTION DEGREES	SPEED KTS
1140	167	07
1200	165	07
1260	155	07
1320	144	06
1380	133	06
1440	122	06
1500	123	07
1560	124	08
1620	125	09
1680	125	10
1740	126	12
1800	127	12
1860	128	13
1920	128	14
1980	108	12
2040	087	09
2100	066	06
2160	045	03
2220		

STATION ALTITUDE 3997.30 FEET MSL
 7 SEP. 79
 ASCENSION NO. 296

SIGNIFICANT LEVELL DATA
 2500060290
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

TABLE 6

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES	DEWPOINT CENTIGRADE	
862.5 3997.3	32.2	12.4	30.0
850.0 5094.3	26.0	8.5	33.0
800.6 6813.1	21.8	5.3	34.0
741.0 8997.1	16.6	-0.0	31.0
712.0 10108.2	13.5	2.7	48.0
700.0 10579.1	12.6	.7	44.0
596.1 14928.4	2.0	-7.1	51.0
556.6 16733.0	-2.5	-10.3	28.0
548.2 17129.0	-3.5	-19.3	28.0
539.8 17530.1	-4.0	-12.9	50.0
506.6 19104.2	-0.3	-27.7	19.0
500.0 19498.6	-8.3	-31.0	14.0
490.2 20004.0	-8.3	-31.0	14.0
470.5 21048.3	-9.8	-19.5	45.0
456.5 21813.2	-11.2	-30.7	18.0
420.0 23858.3	-14.0	-33.7	17.0
400.0 25116.6	-17.3	-39.8	12.0
377.6 26530.8	-19.9	-41.9	12.0
350.0 28367.9	-24.3	-45.4	12.0

STATION ALTITUDE 3997.30 FEET MSL
 7 SEP. 79 1130 HRS MST
 ASCENSION NO. 296

UPPER AIR DATA
 2500060296
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

TABLE 7

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	
3997.3	882.5	32.2	12.4	30.0	1000.6	582.9	0	0	1.000262
4000.0	882.4	32.2	12.4	30.0	1000.6	582.9	115.7	0	1.000282
4500.0	867.5	29.4	10.7	31.4	993.4	679.5	115.7	0.7	1.000275
5000.0	852.7	26.5	8.8	32.7	986.3	676.1	115.7	1.4	1.000268
5500.0	838.1	25.0	7.7	33.2	974.5	674.3	115.7	2.1	1.000262
6000.0	823.6	23.8	6.8	33.5	961.9	672.8	115.7	2.7	1.000257
6500.0	809.4	22.6	5.8	33.8	949.4	671.4	116.7	3.9	1.000252
7000.0	795.3	21.4	4.8	33.7	936.9	669.9	117.5	5.3	1.000246
7500.0	781.4	20.2	3.4	33.1	924.5	668.3	114.5	6.2	1.000240
8000.0	767.6	19.0	2.1	32.4	912.2	667.0	110.2	6.9	1.000235
8500.0	754.2	17.8	0.8	31.7	900.1	665.6	108.4	8.4	1.000229
9000.0	740.9	16.6	-0.6	31.0	888.2	664.1	107.5	10.0	1.000224
9500.0	727.7	15.2	1.2	38.7	876.2	662.7	106.3	11.8	1.000226
10000.0	714.8	13.8	2.5	46.3	864.4	661.2	105.6	13.6	1.000226
10500.0	702.0	12.7	1.0	44.7	852.3	659.9	106.1	15.9	1.000220
11000.0	689.2	11.6	-0.0	44.7	840.4	658.5	106.4	18.3	1.000216
11500.0	676.6	10.4	-0.9	45.5	828.7	657.0	106.3	20.3	1.000212
12000.0	664.2	9.1	-1.8	46.3	817.2	655.5	106.0	22.2	1.000208
12500.0	652.0	7.9	-2.7	47.1	805.8	654.1	103.1	22.7	1.000204
13000.0	640.1	6.7	-3.5	47.9	794.6	652.6	100.2	23.2	1.000200
13500.0	628.4	5.5	-4.4	48.7	783.6	651.2	95.6	23.3	1.000196
14000.0	616.9	4.3	-5.4	49.5	772.7	649.7	91.0	23.5	1.000192
14500.0	605.6	3.0	-6.3	50.3	762.0	648.2	85.6	24.0	1.000184
15000.0	594.5	1.8	-7.5	50.1	751.5	646.7	80.7	24.6	1.000185
15500.0	583.3	0.6	-10.3	43.7	741.0	645.1	76.5	25.4	1.000179
16000.0	572.3	-0.7	-13.4	37.3	730.7	643.5	72.4	26.1	1.000174
16500.0	561.5	-1.9	-16.8	31.0	720.4	642.0	68.4	26.6	1.000169
17000.0	550.9	-3.2	-19.0	23.0	710.2	640.4	64.6	27.6	1.000165
17500.0	540.4	-4.0	-13.2	48.3	698.3	639.7	60.6	28.7	1.000167
18000.0	530.0	-5.2	-16.4	41.1	688.4	638.1	62.5	29.3	1.000162
18500.0	519.8	-6.6	-20.6	31.6	678.7	636.4	64.6	29.9	1.000157
19000.0	509.8	-7.9	-25.7	22.1	669.1	634.7	70.9	27.8	1.000153
19500.0	500.0	-8.3	-31.0	14.0	657.4	634.1	78.4	25.7	1.000149
20000.0	490.3	-8.3	-31.0	14.0	644.7	634.1	80.8	21.7	1.000146
20500.0	480.7	-9.0	-23.8	28.7	633.6	633.4	83.8	17.5	1.000145
21000.0	471.4	-9.7	-19.8	43.6	622.8	632.6	75.6	14.0	1.000146
21500.0	462.2	-10.6	-25.1	29.1	612.9	631.4	62.9	11.2	1.000141
22000.0	453.1	-11.5	-31.0	17.9	603.0	630.3	48.3	10.5	1.000137
22500.0	444.2	-12.1	-31.7	17.7	592.6	629.5	33.6	10.7	1.000134
23000.0	435.4	-12.8	-32.4	17.4	582.5	628.7	27.3	14.1	1.000132

UPPER AIR DATA
 2500060296
 S M P

STATION ALTITUDE 3997.30 FEET MSL
 7 SEP. 79 1130 HRS MST
 ASCENSION NO. 296

GEODETIC COORDINATE:
 32.40034 LAT DEG
 106.42307 LON DEG

TABLE 7 (CONT)

GEOMETRIC ALTIITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRAD				DIRECTION DEGREES(TN)	SPEED KNOTS	
23500.0	426.8	-13.5	-33.1	17.2	572.5	627.8	23.1	13.8	1.000130
24000.0	418.4	-14.4	-34.3	16.4	563.1	626.8	23.1	15.7	1.000127
24500.0	410.1	-15.7	-36.7	14.5	554.7	625.2	23.5	17.2	1.000125
25000.0	401.9	-17.0	-39.2	12.5	546.4	623.6	24.6	17.5	1.000125
25500.0	393.8	-18.0	-40.4	12.0	537.6	622.3	26.7	17.3	1.000121
26000.0	385.9	-18.9	-41.1	12.0	528.7	621.2	30.1	16.2	1.000119
26500.0	378.1	-19.8	-41.8	12.0	519.9	620.1	34.3	15.5	1.000117
27000.0	370.4	-21.0	-42.8	12.0	511.6	618.9	39.1	15.7	1.000115
27500.0	362.6	-22.2	-43.8	12.0	503.6	617.2			1.000113
28000.0	355.4	-23.4	-44.7	12.0	495.7	615.7			1.000111

STATION ALTITUDE 3997.30 FEET MSL
 7 SEP: 79
 ASCENSION NO. 296

MANDATORY LEVELS
 2500060290
 S M R

GEODETIC COORDINATES
 32.46034 LAT DEG
 106.42307 LON DEG

TABLE 8

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5091.	26.0	8.5	33.	115.7	1.5
800.0	6829.	21.7	5.2	34.	117.3	4.9
750.0	8651.	17.4	.3	31.	108.1	8.9
700.0	10568.	12.6	.7	44.	106.1	16.3
650.0	12592.	7.7	-2.8	47.	102.6	22.8
600.0	14737.	2.4	-6.7	51.	83.1	24.3
550.0	17021.	-3.3	-19.1	28.	64.1	27.7
500.0	19471.	-8.3	-31.0	14.	78.2	25.8
450.0	22141.	-11.7	-31.3	18.	43.3	10.5
400.0	25074.	-17.3	-39.8	12.	25.1	17.5
350.0	28316.	-24.3	-45.4			