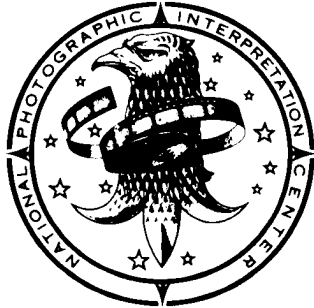
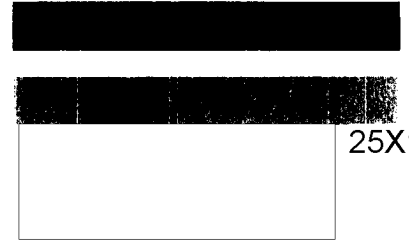


Top Secret



PHOTOGRAPHIC
INTERPRETATION
REPORT

NATIONAL PHOTOGRAPHIC
INTERPRETATION CENTER

**LAUNCH ASSIST DEVICE TEST
PROGRAMS, PAVLOGRAD SOLID
MOTOR TEST FACILITY, USSR (S)**



Top Secret



25X1
25X1

PIR-064/79

SEPTEMBER 1979

Copy **131**

Page Denied

Top Secret RUFF [redacted]
[redacted]

25X1
25X1

LAUNCH ASSIST DEVICE TEST PROGRAMS PAVLOGRAD SOLID MOTOR TEST FACILITY, USSR (S)

ABSTRACT

1. (TSR) This report is an analysis of the SS-17 and SS-18 Launch Assist Device (LAD) test area and associated LAD test programs at the Pavlograd Solid Motor Test Facility [redacted] USSR. The LAD test position previously referred to as the SS-17 LAD test position is in fact a LAD test position for both missile systems. The position referred to as the SS-18 LAD test position is probably an SS-18 canister test position.

25X1

2. ([redacted]) Probable LADs and airframe/canister sections for the SS-17 and SS-18 missiles were identified at the LAD test position during this study. At least four series of static tests were observed at the LAD test position between May 1971 and October 1978; these tests correlate with the observation of flight tests of new SS-17 and SS-18 modifications (mods) or variants.

25X1

3. (U) The information cutoff date for this report is [redacted] The report contains two tables, a graph, and 11 photographs.

25X1

INTRODUCTION

4. (TSR) The SS-17 and SS-18 missiles are cold-launched from silos. The LADs for these missiles are probably filled with solid propellants at the Pavlograd Solid Motor Production Plant [redacted] The design, research, and development of the LADs is performed at the Pavlograd Ordnance Research and Development Facility [redacted] [redacted] LADs have been static tested at the Pavlograd Solid Motor Test Facility for design characteristics and performance specifications. The testing of LADs, with the ejection of the complete airframe from the missile canister, has occurred at Tyuratam ICBM Launch Test Site H1/2 [redacted]

25X1
25X1
25X1

25X1

5. (TSR) The LAD test position at Pavlograd consists of a lattice-type cylindrical tiedown structure approximately [redacted] the test position has at least two detachable circular tops used for containing test articles. Airframe and canister sections from both the SS-17 and SS-18 missile systems can fit into the cylindrical tiedown structure. At least four series of static tests were observed at this LAD test position from May 1971 through October 1978. Probable LADs and airframe/canister sections for the SS-17 and SS-18 missile systems were identified at this test position during those static tests.

25X1

6. (TSR) The SS-18 canister test position at Pavlograd consists of a probable full-depth silo that has been used in training and/or silo loading exercises. This silo has been used infrequently since late 1971.

[redacted]

25X1

Top Secret RUFF [redacted]

25X1

BASIC DESCRIPTION

7. (TSR) Several distinct test articles have been identified at the LAD test area of the Pavlograd Solid Motor Test Facility. These include probable SS-17 LADs [redacted] meters long by [redacted] in diameter, probable SS-18 LADs [redacted] in diameter, and probable SS-17 and SS-18 airframe/canister sections. The average diameter of the probable SS-17 LAD is approximately 62 percent of the diameter of the SS-17 missile canister, and the average diameter of the probable SS-18 LAD is approximately 75 percent of the diameter of the SS-18 missile canister (Figure 1).

25X1
25X1
25X1

8. [redacted] At least four series of static tests of LADs have been identified at the Pavlograd LAD test position (Table 1). The first three static test series were followed by new modifications and/or variant flight testing for the SS-17 and/or SS-18 missiles at Tyuratam Missile and Space Test Center SSM [redacted]. The fourth static test series, occurring late in 1978, indicates that additional variants, new modifications, or follow-ons for the SS-17 and/or SS-18 might be flight tested during 1979.

25X1
25X1

Test Series 1 (May 1971—January 1972)

9. (TSR) Construction of the LAD test position began between July and August 1970; the position was externally complete by [redacted]. The first series of static tests at this position occurred between [redacted]. The LAD test position was being assembled on [redacted] (Figure 2). The presence of a van, a crane, one probable SS-17 LAD, and one probable SS-17 airframe/canister section near the test position suggests that test preparations were in progress. The probable SS-17 LAD was [redacted] meter long and [redacted] in diameter, and the probable SS-17 airframe/canister section was [redacted] in diameter.

25X1
25X1
25X1
25X1
25X1
25X1

10. (TSR) Test preparations were observed on [redacted]. An airframe/canister section at least [redacted] and at least [redacted] in diameter was being lowered into the LAD test position (Figure 3). Extension poles approximately 19 meters long (probably used as alignment guides) had been placed onto the LAD test structure. Three probable SS-18 LADs and two probable SS-17 LADs were on the concrete apron between the two test positions. A fourth probable SS-18 LAD was in the storage area. Dimensions of these six probable LADs and all additional test articles seen within this test area since [redacted] are given in Table 2. The top portion of the LAD test position had been removed by [redacted]. Although the test position was unoccupied on that date, a large crane and a van were near the test position. The SS-18 canister test position had been covered. Three probable SS-18 LADs were on the concrete apron near the SS-18 canister test position and a fourth probable SS-18 LAD was in an area where expended test articles are temporarily stored before removal from the site.

25X1
25X1
25X1
25X1
25X1
25X1
25X1

11. (TSR) The LAD test position had been disassembled by [redacted] and remained inactive until [redacted]. The SS-18 canister test position had been covered by [redacted] and remained covered until [redacted].

25X1
25X1
225X1

[redacted]

Top Secret

25X1

Page Denied

Next 3 Page(s) In Document Denied

Top Secret RUFF [redacted]

25X1

Test Series 2 (January 1973—January 1974)

12. (TSR) A new series of LAD tests had begun by [redacted] A new cylindrical tiedown structure had been emplaced at the LAD test position by that date, and activity which indicated additional tests was observed at the test position. One probable SS-18 LAD [redacted] long and [redacted] in diameter was near the new cylindrical tiedown structure (Figure 4). The original cylindrical tiedown structure had been removed from the test position and temporarily placed in storage near a lightning arrester, although this tiedown structure did not appear to be damaged. The replacement of the original structure may indicate a new design for the LAD test program. Test-related activity at this test position continued from [redacted]

25X1

25X1

25X1

13. (TSR) The test position was observed only four times during 1974; on [redacted] [redacted] A large crane and a large cylindrical container were near the test position on [redacted] The large cylindrical container was probably a discarded test article from a prior test. There was no evidence of test activity or preparations for test activity at the test position during the latter three dates in 1974.

25X1

25X1

25X1

25X1

Test Series 3 (October 1975—August 1977)

14. (TSR) Sporadic activity was observed at the test position between [redacted] and [redacted] No evidence of test preparations or activity related to test preparations was observed at the test position until [redacted] when four cylindrical objects [redacted] long and [redacted] in diameter were observed on the concrete apron near the LAD test position (Figure 5). These cylindrical objects were dissimilar to any test articles previously seen at this test position. It could not be determined whether these four cylindrical objects were used as test articles, or whether they were used to modify the cylindrical tiedown structure.

25X1

25X1

25X1

25X1

15. (TSR) The circular top was removed from the LAD test structure on [redacted] [redacted] but had been rejoined to the structure by [redacted] (Figure 6). A probable SS-18 airframe/canister section [redacted] long and [redacted] in diameter was on the apron on [redacted] and had probably been inserted into the cylindrical test structure by [redacted] This probable airframe/canister section was seen on [redacted] (Figure 7) in the temporary storage area, indicating that it was tested some time after [redacted] The SS-18 canister test position was inactive on all three dates, [redacted] Two probable SS-18 LADs were observed on the edge of the storage area on [redacted] These probable LADs were [redacted] with diameters of [redacted] respectively. Both probable LADs may have been used in static tests prior to [redacted]

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

16. (TSR) Test activity continued through 1975 and into 1976. The test series activity that began in October 1975 may have continued through August 1977 or may have been a test series that ended in June 1976 and was followed by another series from June 1976 through August 1977.

[redacted]

Top Secret

25X1

Page Denied

Next 1 Page(s) In Document Denied

Top Secret RUFF [REDACTED]

25X1

17. (TSR) Extension poles were observed on the ground near the test structure on [REDACTED] [REDACTED] These poles, probably used as alignment guides during preparations for certain static tests, had not been at the test position since [REDACTED] Additional poles had been delivered to the site by [REDACTED] and appeared to have been removed by [REDACTED] Probable airframe/canister sections of various sizes were seen near both test positions between [REDACTED] (Figure 7) and [REDACTED] Four probable airframe/canister sections were in the temporary storage area on [REDACTED] indicating that they were expended test articles. The original cylindrical tiedown structure had also been moved closer to the temporary storage area between [REDACTED] Two additional probable airframe/canister sections were on dollies near the LAD test position on [REDACTED] indicating test preparations. By [REDACTED] these probable airframe/canister sections had been placed in the temporary storage area with the other four probable airframe/canister sections and the original cylindrical tiedown structure. All seven test articles had been removed from the site between [REDACTED]

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

18. (TSR) Evidence of additional test activity was observed at the LAD test position on [REDACTED] (Figure 8) when a probable airframe/canister section was observed within the test structure. The probable airframe/canister section was [REDACTED] in diameter. Two large shipping crates, [REDACTED] were observed near the SS-18 canister test position. Two circular detachable tops were observed on the ground next to the LAD test position. This was the first time that two detachable tops had been seen at the test position and may indicate that the original detachable top had to be replaced. These detachable tops had inner diameters of [REDACTED] The two shipping crates were also new to the test position and may have been used to bring new test articles to the test position. One probable SS-17 LAD, [REDACTED] in length and diameter, was on the ground near a large crane.

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

19. (TSR) Test activity was observed on [REDACTED] when a canvas-covered probable airframe/canister section [REDACTED] in diameter was on the ground at the LAD test position (Figure 9). At least six extension poles had been mounted on top of the cylindrical tiedown structure, increasing its height to 18 meters above ground level. This was the third time that extension poles had been seen at this test position during test preparations. The canvas-covered probable airframe/canister section had probably been a test article in a test conducted between [REDACTED] the probable test article had been placed in a temporary storage area.

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

20. (TSR) Another canvas-covered probable airframe/canister section, [REDACTED] long by [REDACTED] in diameter, was near the test position on [REDACTED] and a possible dome cover was on top of the LAD test position. By [REDACTED] the test structure was empty. A probable airframe/canister section [REDACTED] in diameter was near the test position on [REDACTED] and may have been used as a test article prior to that date.

25X1

25X1

25X1

25X1

25X1

25X1

21. (TSR) Six probable SS-17 LADs, each [REDACTED] in diameter, were placed next to the SS-18 canister test position between [REDACTED] They were probably expended in static tests between April and October. Two probable airframe/canister sections, one of which was canvas covered, were observed in the temporary storage area on [REDACTED] These probable airframe/canister sections were [REDACTED]

25X1

25X1

25X1

25X1

25X1

25X1

Top Secret

25X1

Page Denied

Top Secret RUFF [redacted]

25X1



25X1

meters long with respective diameters of [redacted] The two shipping crates, which had been onsite since [redacted] had also been placed in the temporary storage area by [redacted]

25X1
25X1
25X1

22. (TSR) The LAD test position was inactive from [redacted] [redacted] (Figure 10), when a ladder was observed against the cylindrical tiedown structure at the test position. Three [redacted] towers, probably work stands, had been brought to the test area by [redacted] These towers or probable work stands remained in place immediately south of the SS-18 canister test position through [redacted] [redacted] they had been moved west of the SS-18 canister test position, possibly to make room for more test activity.

25X1
25X1
25X1
25X1
25X1
25X1

Test Series 4 (September 1978—October 1978)

23. (TSR) The last series of static tests occurred between [redacted] [redacted] A large crane was at the LAD test position on [redacted] poles [redacted] long were neatly stacked on the concrete apron. One pole was being inserted into the test structure on [redacted] (Figure 11). Only seven poles remained on the ground on that date. On [redacted] a large cylindrical container was on the ground approximately midway between the LAD test position and the SS-18 canister test position.

25X1
25X1
25X1
25X1
25X1

[redacted]

Top Secret

25X1

Top Secret RUFF



25X1



25X1

The diameter of this container appeared to be much larger than the diameter of the LAD test structure. The environmental cover had been removed from the SS-18 canister test position by [redacted]. This was the first clear evidence of activity at the SS-18 canister test position since [redacted]. The large cylindrical container may have been a test article for the SS-18 canister position. A probable airframe/canister section [redacted] [redacted] in diameter, a canvas-covered object at least [redacted] long on a dolly, and the unmeasurable cylindrical container were observed on the concrete apron on imagery of [redacted]. The [redacted] probable airframe/canister section was in an area of the test site where previously expended probable airframe/canister sections have usually been stored prior to removal from the site. This [redacted] probable airframe/canister section was probably involved in a LAD test between [redacted]. The canvas-covered object could possibly be for a later test, which could have occurred at this site between [redacted]. No probable LADs were seen at the test site during the latter static test series. The test site has been inactive since [redacted].

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

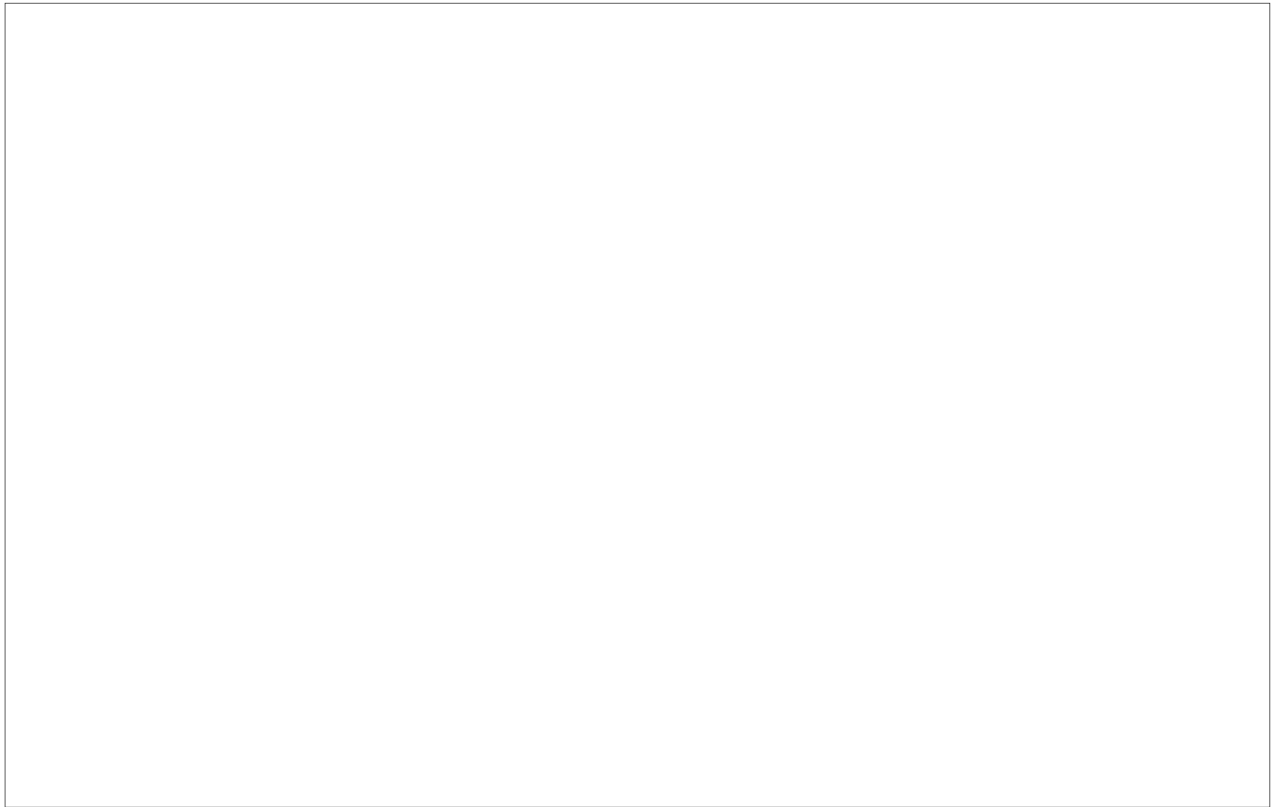


Top Secret

25X1

Top Secret RUFF [redacted]

25X1



25X1

REFERENCES

IMAGERY

(TSR) All applicable KEYHOLE imagery through [redacted] was used in the preparation of this report.

25X1

MAPS OR CHARTS

ACIC. US Air Target Chart, Series 200, Sheet 0234-22, scale 1:200,000 (UNCLASSIFIED)

DOCUMENT

- 1. DIA. [redacted] DST-1070S-311-76-SAO-chg-2. *Tyuratam Missile Test Range (U)*, 14 Jul 78

25X1
25X1

[redacted]

25X1

RELATED DOCUMENT

CIA/NFAC. [redacted] WI 79-10005K. *The Soviet SS-17 ICBM Accelerometer Performance (S)*, Feb 79

25X1
25X1

REQUIREMENT

Project 130071NJ

(S) Comments and queries regarding this report are welcome. They may be directed to [redacted] Soviet Strategic Forces Division, Imagery Exploitation Group, NPIC, [redacted]

25X1
25X1

[redacted]

Top Secret

25X1

Top Secret



Top Secret