

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

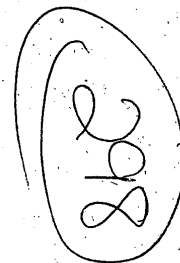


TOP SECRET

25X1

basic imagery interpretation report

Developments at Soviet Solid Propellant Research and Development Facilities (S)



STRATEGIC WEAPONS INDUSTRIAL FACILITIES

BE: Various
USSR

Top Secret

25X1

RCA-09/0019/82

OCTOBER 25X1 1982

Copy 23

Page Denied

Top Secret

25X1
25X1

INSTALLATION OR ACTIVITY NAME Developments at Soviet Solid Propellant Research and Development Facilities					COUNTRY UR
UTM COORDINATES NA	GEOGRAPHIC COORDINATES See below	CATEGORY See below	BE NO. See below	COMIREX NO. See below	NIETB NO. See below
MAP REFERENCE ACIC. USATC; Series 200, Sheets 0103-25, 0153-04, 0154-23, 0155-20, 156-11, 0165-01, and 0167-05; scale 1:200,000					
LATEST IMAGERY USED [Redacted]			NEGATION DATE (If required) NA		

25X1

Installation Name	Geographic Coordinates	Category	BE No	COMIREX No	NIETB (MRN) No
Kazan Missile Propulsion R&D Facility	55-53-32N 048-50-02E	[Redacted]	[Redacted]	[Redacted]	[Redacted]
Krasnoarmeysk Solid Motor Development Facility	56-06-40N 038-10-20E				
Leningrad Solid Motor Test Facility 1	60-03-58N 030-36-04E				
Leningrad Weapons Test Facility 3	60-15-30N 030-44-41E				
Moskva Solid Motor Production Plant Lyubertsy	55-36-36N 037-52-44E				
Perm Special Design Bureau	58-06-30N 056-22-30E				
Petrokrepost Explosives and Solid Motor Plant Morozov	59-59-07N 030-58-55E				
Votkinsk Missile Final Assembly and Checkout Facility	57-02-13N 054-08-40E				
Votkinsk Missile Machine and Steel Plant 235	57-02-39N 053-59-11E				

25X1

ABSTRACT

1. (S/WN) This report describes developments at nine Soviet solid propellant research and development (R&D) facilities. It updates a previous NPIC report, [Redacted] and is based on all relevant satellite imagery acquired through the information cutoff date of [Redacted]. A location map, 11 annotated photographs, and six tables are included.

25X1
25X1

2. (TSU, [Redacted]) This report includes imagery-derived indications of the continued support of missile systems currently in the Soviet's R&D cycle. Additionally, recent developments at Votkinsk Missile Final Assembly and Checkout Facility suggest that final assembly of prototype missiles may be underway there. Krasnoarmeysk Solid Motor Development Facility is involved in mobile missile-related activity that includes constructing two sliding-roof, single-bay garages and handling possible missile airframes. Construction underway at Petrokrepost Explosives and Solid Motor Plant Morozov indicates preparation for the support of new production items. Leningrad Solid Motor Test Facility 1 may become involved in a new surface-to-air missile (SAM) testing or crew training program, possibly for the SA-N-4 follow-on. Construction at two facilities in Kazan and at one in Krasnoarmeysk suggests that all three facilities are involved in the same type of test program, possibly for a hybrid and/or a ramjet propulsion system.¹

25X1



25X1
25X1

Top Secret

25X1

25X1

INTRODUCTION

3. (S/WN) Developments observed at nine Soviet solid propellant R&D facilities (Figure 1) are discussed in this report which updates a previous NPIC report, [redacted]. These developments indicate a Soviet commitment to bringing into production several new solid-propellant missile systems and, possibly, missile systems with hybrid and/or ramjet propulsion systems.

25X1

BASIC DESCRIPTION

Kazan Missile Propulsion R&D Facility

4. (TSZU) Upon its completion, an engine test building under construction just outside of the facility's southeast wall will probably be incorporated into the facility (Figure 2). The building was in a midstage of construction by the end of the reporting period and contained three test cells and three exhaust stacks. Construction of an engine test building at this facility may be related to activities at Kazan Aircraft Engine Plant 16 [redacted] where two new engine test cells were being added to the large engine test building during the reporting period. Kazan Missile Propulsion R&D Facility and Aircraft Engine Plant 16 have both been associated with the P.F. Zubets Propulsion Design Bureau.³ The air-breathing engine test building at Krasnoarmeysk Solid Motor Development Facility was also being expanded during this reporting period. Krasnoarmeysk has been associated with the Zubets Design Bureau,³ and the expansion program there may be related to activity at Kazan. NK-8 engine shipping crates have been observed at all three facilities, establishing an additional indication of their possible involvement in the same type of propulsion test program.

25X1

5. (S/WN) Three [redacted] foundations for inflatable buildings were under construction in October 1981 at the Kazan R&D Facility. Construction was continuing through [redacted] on a new power substation switching yard, and an arch-roofed building was constructed in the motor pool area during the reporting period.

25X1

25X1

Krasnoarmeysk Solid Motor Development Facility (SMDF)

6. (TS [redacted]) Krasnoarmeysk SMDF is considered the national qualifications and acceptance test facility for solid propellant motors in the Soviet Union.⁴ Construction of two sliding-roof, mobile missile-associated, single-bay garages at the original design bureau 3 test area (Figure 3) suggest the possibility of a more extensive involvement of Krasnoarmeysk in mobile missile system development than rocket motor qualification testing. Single-bay, sliding-roof garages have been associated with the SS-20 mobile IRBM and developmental mobile missile systems. Because Krasnoarmeysk functions within the research, development, test, and evaluation cycle of solid-propellant missile development, it is conceivable that the facility supports development of follow-ons to the SS-20 and/or SS-16 mobile missile systems. Vehicles used in support of mobile missile systems and possible airframes or airframe mockups have also been observed at Krasnoarmeysk.

25X1



FIGURE 1. LOCATION OF NINE SOLID PROPELLANT ROCKET MOTOR R&D FACILITIES, USSR

Page Denied

Top Secret

25X1
25X1



7. (S/WN) The clearing of an area near the fenceline in the original design bureau 3 test area during October 1978 was the first indication of single-bay garage construction. Also during that time, a MAZ-543 missile support van (MSV) was seen for the first time in the facility. By late December, the MSV had departed or was inside a structure. In mid-October 1979, excavations for the single-bay garage foundations were observed. Between [redacted] a canvas-covered, [redacted] cylindrical object was observed on a dolly transporter in the test area (Figure 4). The object resembled a ballistic missile airframe or airframe mockup. On [redacted] holddown rings were around the object, suggesting preparations for transport. On imagery of [redacted] the MSV was again observed, with two [redacted] van trucks which have also been associated with mobile missile systems. By September, garage components had begun to arrive in the facility, and in late November footings were being emplaced. The MSV and [redacted] van trucks were not seen at the facility in 1981 until [redacted] when the completed single-bay garages were observed. Also on [redacted] an object resembling the one observed in April and May 1980 was in the test area. The MSV was last seen in the facility in January 1982, but the two [redacted] van trucks were still present as of [redacted]

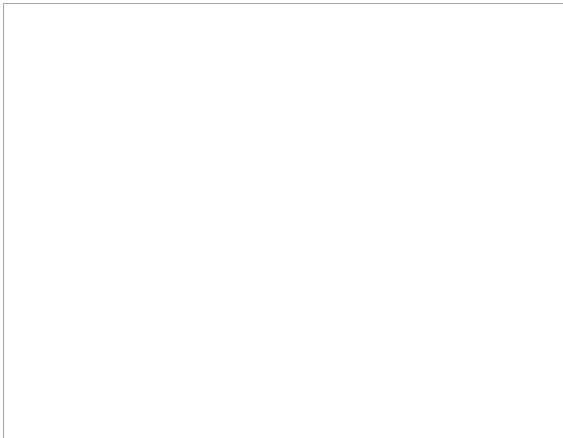
25X1
25X1
25X1
25X1
25X1
25X1
25X1

[redacted] No supporting wall structures have been added to the connecting roof section.

25X1

8. (S/WN) The number of air pressure tanks has nearly tripled in the air-breathing engine test facility (Figure 6) since 1980. Originally, 28 pressure tanks were on two racks. At the end of the reporting period, there were 82 tanks, most of which have been emplaced on racks. External modifications to the test building have not been observed, although an accessway for the pipeline that serves the air-pressure tanks and building has been constructed near one of the exhaust stacks. This activity may be associated with a new propulsion test program or may be an extension of the program(s) taking place at Kazan Missile Propulsion R&D Facility and Kazan Aircraft Engine Plant 16 (see paragraph 4).

9. (S/WN) Building modification and construction of a new administration/engineering building were observed in the design bureau 3 support area. Numerous crates and cylindrical objects were observed in the munitions loading and storage area; the rocket motor assembly, checkout, and test area; and the probable missile receiving and checkout area (Table 1).



25X1
25X1

Leningrad Solid Motor Test Facility 1

10. (S/WN) Modifications to the deckhouse mockup (Figure 7) have been observed since March 1982 and have included the removal of the twin-arm SAM launcher. These modifications may be preparations for a new naval SAM testing or crew training program. The new naval SAM could be the follow-on to the SA-N-4. The deckhouse was previously used with probable modified versions of the SA-N-1 and SA-N-3 missile systems.

11. (S/WN) The two SS-N-3/-12 crates previously at test position 1 were removed from the facility between [redacted]. The Tarantul 1 PPG mockup remained at test position 1 throughout the reporting period (Figure 8). A possible blast mark was observed on the blast deflector behind the single SS-N-2C-sized missile launch tube on imagery of [redacted]

25X1
25X1

Top Secret

25X1

Top Secret

25X1

25X1

Leningrad Weapons Test Facility 3

12. (S/WN) The canvas-covered [redacted] framework constructed at test position 4 in July 1980 had been removed from the facility by [redacted] the single SS-N-3/-12 crate that was previously on the hardstand in front of the assembly/checkout building had been removed from the facility. An SS-N-3/-12 crate was later seen on the hardstand on imagery of [redacted]

25X1

25X1

25X1

Moskva Solid Motor Production Plant Lyubertsy

13. (S/WN) The possible laser R&D facility in the northeast quadrant of the plant (Figure 9) has been separately targeted under [redacted] All significant events at that facility will be reported in directed-energy summary cables and hard-copy reports. The facility consists of three horizontal test cells, one probable magnetohydrodynamic facility with a probable cyclone separator, an earth-covered structure, two laboratory buildings, six large spherical tanks, two large conduits, and several support buildings.

25X1

14. (S/WN) Within the solid motor production plant, construction continued on the nine-cell laboratory/test building and on a high-bay building. The nine-cell laboratory/test building was externally complete and the high-bay building was in a late stage of construction as of the end of the reporting period. A foundation for a new storage tank was under construction in the POL storage area in May 1981 and was completed by January 1982. Numerous containers were consistently observed in the open storage area (Table 2).

Perm Special Design Bureau

15. (S/[redacted]) Perm Special Design Bureau^{5,6} is a newly identified facility just north of Perm, near the Kama River Reservoir (Figure 10). The facility is road served and is reportedly involved in the development of solid-propellant missiles. It consists of five separately secured areas with 26 major buildings that are probably used for component testing and production, engineering, administration, storage, and support. A large number of shipping containers and handling rings was observed in the facility (Table 3) through [redacted]

25X1

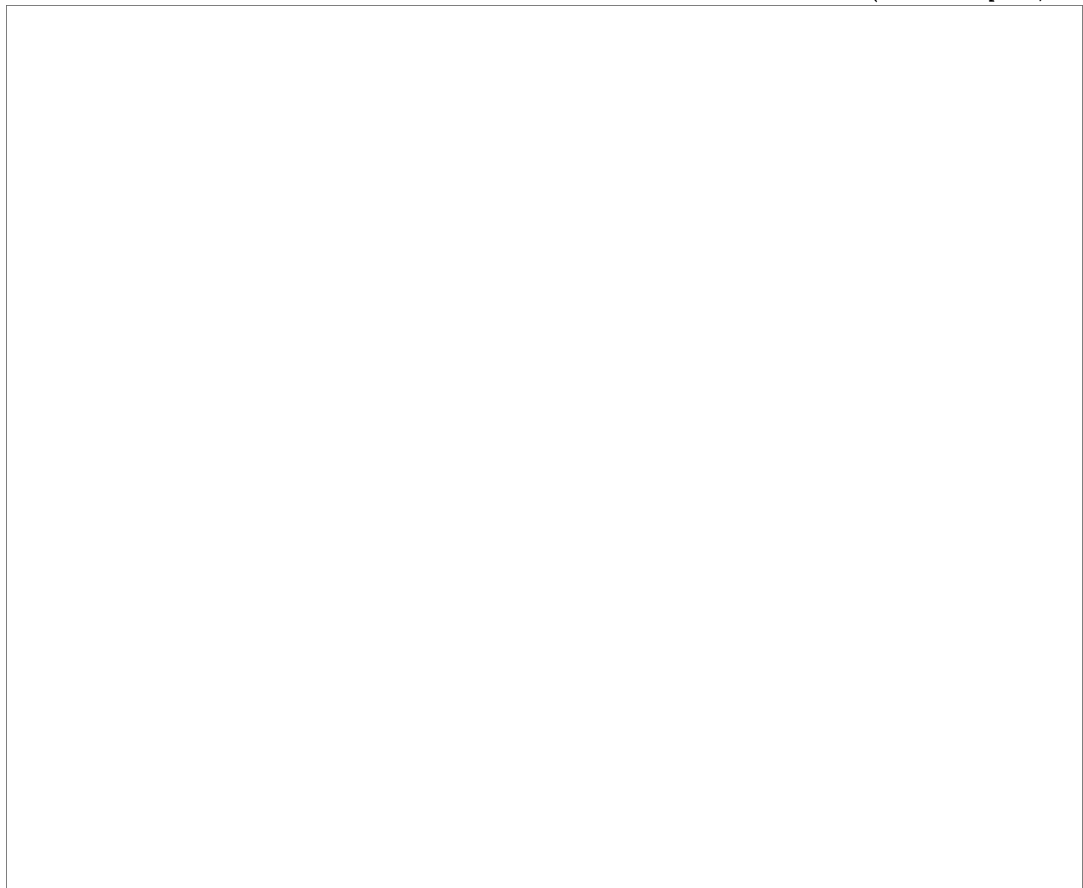
25X1

Petrokrepost Explosives and Solid Motor Plant Morozov

16. (T/[redacted]) Petrokrepost is a solid-propellant R&D facility (Figure 11) involved in the production of upper stages for the SS-16 and SS-20 missile systems.⁷ Recent information (Continued p. 10)

25X1

25X1



Top Secret

RCA-09/0019/82

25X1

Page Denied

Next 3 Page(s) In Document Denied

Page Denied

Next 1 Page(s) in Document Denied

Top Secret [redacted]

25X1
25X1

REFERENCES

IMAGERY

(S/WN) All applicable satellite imagery acquired through the information cutoff date of [redacted] was used in the preparation of this report.

25X1

MAP OR CHART

ACIC. US Air Target Charts; Series 200; Sheets 0103-25, 0153-04, 0153-23, 0155-20, 0156-11, 0167-05; scale 1:200,000 (UNCLASSIFIED)

DOCUMENTS

- 1.
2. NPIC. [redacted] RCA-09/0008/81. *Developments at Soviet Solid Propellant R&D Facilities (S)*, May 81 (TOP SECRET [redacted]) 25X1
25X1
3. NPIC. [redacted] RCA-09/0027/76. *Activity at Facilities Associated with the P.F. Zubets Design Bureau*, Jun 76 (TOP SECRET [redacted]) 25X1
25X1
4. NPIC. [redacted] RCA-09/0002/79. *Developments at Soviet Solid Propellant R&D Facilities (TSR)*, Feb 79 (TOP SECRET [redacted]) 25X1
25X1
5. CIA. [redacted] IS M 82-10056]X, *Perm Special Design Bureau of Machine Building, USSR (S)*, Apr 82 (TOP SECRET [redacted]) 25X1
25X1
6. CIA. IR 5-300-0193/81, *Soviet Missile Design Bureau (U)*, Oct 81 (CONFIDENTIAL [redacted]) 25X1
7. NPIC. [redacted] RCA-09/0005/80. *Activity and Developments at Soviet Solid Propellant Research and Development Facilities (S)*, Jun 80 (TOP SECRET [redacted]) 25X1
25X1
8. DIA. [redacted] DST-1850S-007-80-SAO, *Rocket Propulsion Development and Test Programs and Facilities—ECC (U)*, Nov 80 (TOP SECRET [redacted]) 25X1
25X1
9. CIA. [redacted] SW 80-10012]X, *Technical and Operational Characteristics of Soviet Ballistic Missiles (U)*, Jun 80 (TOP SECRET [redacted]) 25X1
25X1
10. CIA. [redacted] WI 79-10001 J, *Soviet New-Generation Missiles and Space Launch Vehicles in Preflight Development (U)*, Feb 79 (TOP SECRET [redacted]) 25X1
25X1
11. DIA. [redacted] *Trends and Developments in Foreign Technology, Weapons, and Systems (U)*, Sep 80 (TOP SECRET [redacted]) 25X1
25X1
12. NPIC. [redacted] RCA-09/0006/80. *Activity and Developments at Selected Soviet SSM Research, Development, and Production Installations (S)*, Jun 80 (TOP SECRET [redacted] item***) 25X1
25X1

*Extracted information is classified SECRET [redacted] 25X1
 **Extracted information is classified TOP SECRET [redacted] 25X1
 ***Extracted information is classified SECRET [redacted] 25X1

REQUIREMENT

COMIREX J02
Project 542041J
Distribution 86-004

(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

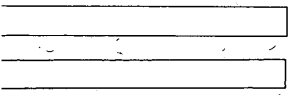
[redacted]

Top Secret

RCA-09/0019/82

25X1

Top Secret



Top Secret