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RCA-04/0018/69



Basic Imagery Interpretation Report

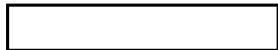


**NATIONAL
PHOTOGRAPHIC
INTERPRETATION
CENTER**

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VOLGOGRAD SAM COMPLEX C21-5



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**DEPLOYED AAA/SAM FACILITIES
USSR
OCTOBER 1968**

COPY NO. 102

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Approved For Release 2007/02/09 : CIA-RDP78T04563A000100010053-4
 TOP SECRET [redacted] RCA-04/0018/69 [redacted]

INSTALLATION OR ACTIVITY NAME: Volgograd SAM Complex C21-5
 COUNTRY: UR

UTM COORDINATES: NA
 GEOGRAPHIC COORDINATES: 48-21-40N 044-17-32E [redacted]

MAP REFERENCE: SAC. USATC 200, Sheet 0235-21HL, 4th ed, Mar 64, Scale 1:200,000 (SECRET)

LATEST IMAGERY USED: [redacted]
 NEGATION DATE (if required): [redacted]

ABSTRACT

Volgograd SAM Complex C21-5 is one of the eight complexes which together form the southern barrier of SA-5 defenses of the USSR. This complex consists of a launch area containing three launch sites, a tracking/guidance facility, missile-handling and support facilities, and an air warning radar facility. Although it was the eighteenth of the SA-5 complexes for which construction was initiated, the Volgograd complex was unique in configuration and design when first observed. Its distinguishing features included the heavily revetted launch positions and the subsurface electronic equipment shelters. Subsequently, these features have been incorporated into a significant number of other SA-5 complexes. In addition, this is the first complex at which a low-level acquisition radar, Squat Eye, has been identified. This radar in combination with an unidentified height finder also present probably gives the air warning radar facility the capability of providing the necessary target data to cope with low-level penetration attempts.

Although the SA-5 missile has not yet been observed here, an operational capability for the complex may be expected within the next 6 to 12 months.

INTRODUCTION

Volgograd SAM Complex C21-5 [redacted] is at 48-21-40N 044-17-32E, approximately 22.5 nautical miles (nm) south-southwest of Volgograd, USSR. The complex is at an elevation of approximately 350 feet above mean sea level and is oriented on an azimuth of 150 degrees. The direction of fire is, therefore, to the southeast in the general direction of Iran and Turkey and away from the city of Volgograd. This is the second SA-5 complex deployed in the Caspian-Black Sea Area and the eighteenth complex for which construction was started. The Volgograd SA-5 complex is now one of the eight forming the southern barrier of SA-5 defenses of the USSR (Figure 1).

BASIC DESCRIPTION

Volgograd SAM Complex C21-5 was first observed in [redacted] and was unique in design and configuration among the 18 SA-5 complexes under construction at that time. The complex is distinguished by its heavily revetted launch positions and subsurface electronic equipment shelters. Subsequently, similar revetments have been observed at at least seven other complexes and, in varying form, electronic equipment shelters have been observed throughout the system. In addition, association of a low-level acquisition radar, Squat Eye, with the SA-5 system was first established at this complex.

The basic components of the complex are consistent with other SA-5 complexes and include three launch sites, a tracking/guidance facility, a missile-handling facility, a support facility, and an air warning radar facility. The operational components, launch sites and radar facilities, are in a more advanced stage of construction than the support and missile-handling facilities. The SA-5 missile has not yet been observed at this complex; however, an operational capability for the complex may be expected within the next 6 to 12 months.

Table 1 presents a chronology of the complex development denoting the date significant occurrences were first observed, and the measurements provided in this report are accurate, unless otherwise noted, within plus or minus 5 feet or 2 percent, whichever is greater.

NOTE: This is published as an Interim Basic Report in response to a COMIREX-approved requirement and with concurrence of DIAAP-9.

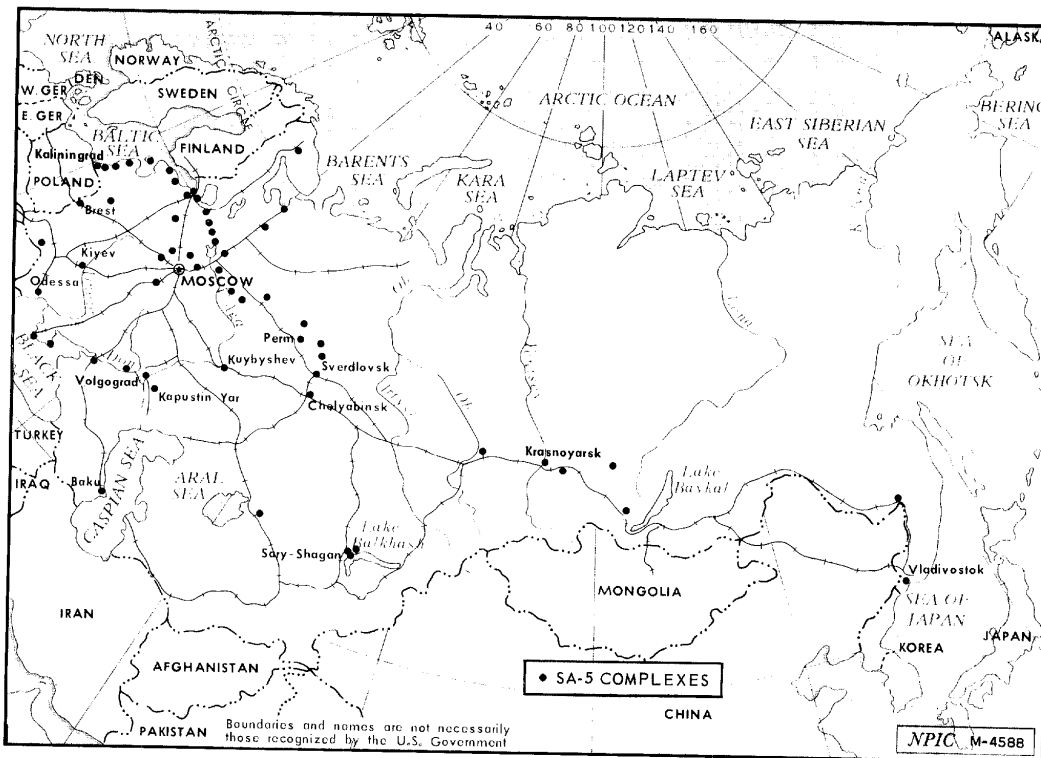


FIGURE 1. LOCATION OF VOLGOGRAD SAM COMPLEX C21-5.

Launch Area

The launch area contains three launch sites designated A, B, and C, each consisting of six revetted launch positions and a site control center (Figure 2). Construction of Site A (Figure 3) has progressed more rapidly than that of either Site B or Site C. Launchers are emplaced at the six positions of Site A and a missile-ready shelter appears to be externally complete at position A6. Placement of missile dolly tracks has been completed at only this position. Launchers are also emplaced at four positions of Site B and are adjacent to the launch point at the other two positions. Six launchers are in the revetted area of position C3. Two missile dollies are observed in the revetted area of both positions A4 and A5. Each of the site control centers consists of a subsurface electronic equipment shelter with three van compartments. 1/ All launch positions are connected by cables to their respective control centers and the control centers appear to be connected by cables to each other. A cable also extends from each control center to the engagement radar position associated with that site. These cables converge at a point northwest of the launch area and then extend as a single line to the control center of the tracking/guidance facility. From here, the cables radiate to the engagement radar positions. An additional cable extends from the control center of Site C toward the tracking/guidance facility. A tower or mast north of Site A is possibly associated with communications.

Tracking/Guidance Facility

The tracking/guidance facility consists of three radar positions and a control center (Figure 2). Engagement radars occupy each of the mounded radar positions. Surrounding each of the radars is a circular foundation [redacted] in diameter. At the most northwest- 25X1
 ern position which is associated with Site B, the circular foundation has been covered, thus leaving exposed only the upper portion of the engagement radar including the reflectors and feed. These foundations, rising 10 feet in height, probably serve to dissipate wind pressure otherwise exerted against the surface area of the radar's lower components. Other protective functions are obviously indicated. Electronic equipment shelters at the radar positions include two van compartments. At the control center, the shelter contains six van compartments. The cable from the air warning radar facility terminates at this electronic equipment shelter. A probable communications mast [redacted] high and two 25X1
 associated vans are northwest of the control center.

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Missile-Handling and Support Facilities

Construction of the missile-handling and support facilities is somewhat less advanced than that of the operational components of the complex (Figure 2). A propellant loading facility is under construction at the missile-handling facility. Two revetted pads, [redacted] for the placement of fuel tanks are presently under construction. Five horizontal tanks, each 30 by 5 feet, are adjacent to one pad and three horizontal tanks, each [redacted] are adjacent to the other. Between the two pads is a buried tank [redacted] in diameter.

Three major buildings, [redacted] and the possible foundation for a thermal plant are noted at the support facility. Two of these buildings are externally complete and numerous other buildings/structures including a security building are also present. Two buried tanks, each [redacted] in diameter and similar to that previously mentioned at the missile-handling facility, are within the vicinity of these buildings. Twelve radar transporter vans are parked southeast of the support facility. These vans were probably used as transporters of the engagement radars. A soccer field is between this facility and the launch area.

Air Warning Radar Facility

The air warning radar facility is approximately 4 nm north-northeast of the launch complex (Figure 4). Present at the facility is the normal complement of two Back Net and two Side Net radars. These radars are mounted on elevated positions and are connected by cables to an equipment shelter with 11 van compartments.

An additional equipment shelter of similar design is 660 feet east of the four radars described above. Adjacent to this shelter is a mast-mounted Squat Eye radar. This is the first known association of a low-level acquisition radar with an SA-5 complex. A second mast, probably to be used in a communications role, is also adjacent to the equipment shelter. Both masts are 100 feet in height. Immediately north of the equipment shelter is an unoccupied radar mound. Northeast of the shelter and connected to it by cable is an unidentified height finder radar mounted on a van. This may be the radar that will eventually occupy the mound mentioned above. The combination of the Squat Eye and the height finder radars probably gives the facility the capability of providing necessary target data for coping with low-level penetration attempts. Although no SA-3 site has been observed in this area, the future identification of such a site in the vicinity of this complex is highly probable.

Two unidentified associated areas are northeast of the air warning radar facility. Three rectangular excavations are present at one of the areas while six similar excavations are at the second. Association of these areas with the complex is based primarily on their location and the date on which their construction was first observed. No significant activity has been observed at these areas during the past 12 months. Their function has not yet been identified.

Table 1. Chronology of Complex Development

Activity	Date
No construction activity	
Initial construction	
Construction of site control centers	
Construction of tracking/guidance facility	
Construction of launch positions	
Air warning radar facility identified	
Unidentified associated areas identified	
Support facility construction	
Construction of missile-handling facility	
First launch positions occupied by launchers	
Tracking/guidance facility occupied	
Air warning radar facility occupied	
Squat Eye radar identified	

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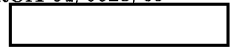
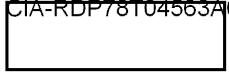
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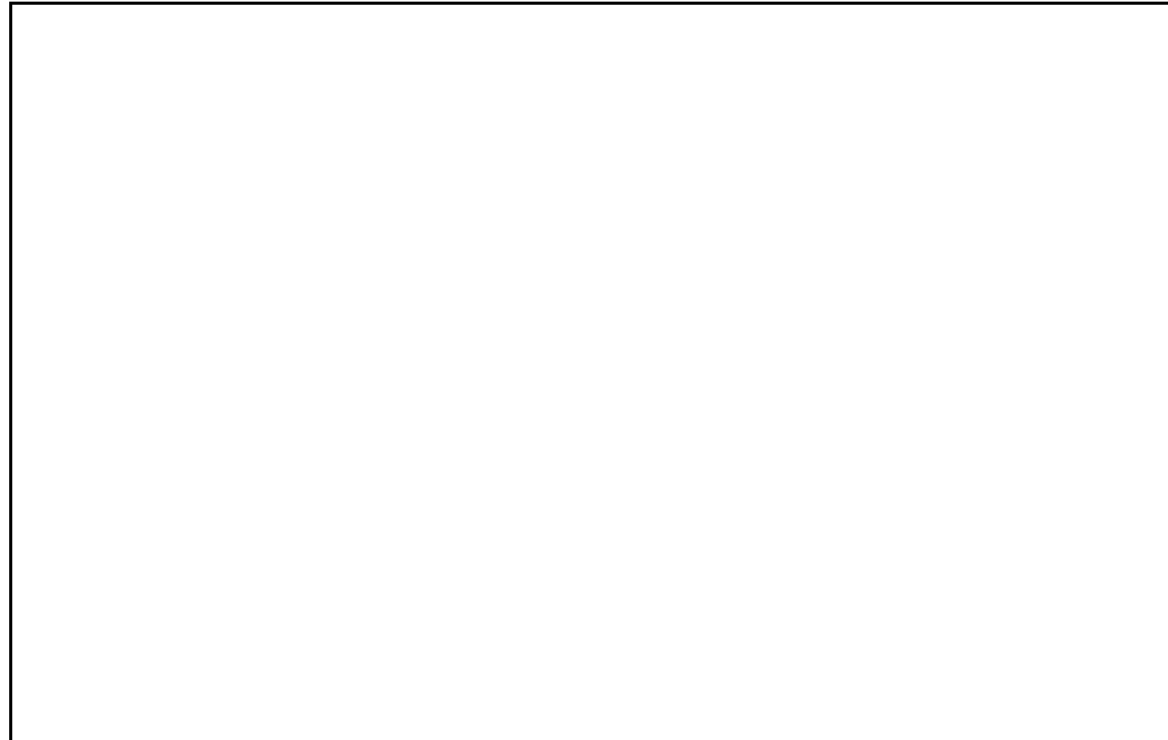
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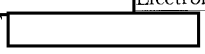
MAPS OR CHARTS

SAC. USATC 200, Sheet 0235-21HL, 4th cd., Mar 64, Scale 1:200,000 (SECRET)

DOCUMENT

- 1. NPIC. [Redacted] Electronic Equipment Shelters at Deployed SA-5 Complexes, USSR, Jun 68 (TOP SECRET)

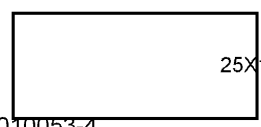
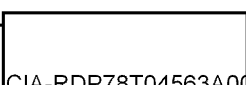
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