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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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SUBJECT	Department III for Powder-Fueled Rockets at Design Bureau No. 3 in Krasnoarmeysk	DATE DISTR.	25 February 1954
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THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
THE APPRAISAL OF CONTENT IS TENTATIVE.
(FOR KEY SEE REVERSE)

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25X1 1. Design Bureau No. 3 (KB 3) was located in Krasnoarmeysk (N 56-06, E 38-07), about 50 kilometers north-northeast of Moscow. The Institute was involved in the further development of German rockets. It was composed of four and, later, of three German departments, including Department III in charge of powder-fueled rockets.

2. Prior to early 1947, when some Soviet engineers refused to accept work orders from Germans, Soviet aids were assigned to the German work groups. As a result of these difficulties, a new Soviet institute for the "Construction of Rockets and Projectiles" was established near the Yaroslavskiy Railroad Station in Moscow, where Soviet engineers in a sort of contest worked on the projects handled by German engineers. [redacted]

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25X1 [redacted] He thought that the institute had probably moved to the new buildings at Putilovo which were being constructed under the supervision of Candidate Tarnovskiy (fnu).

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3. [redacted] various civilian Soviet engineers [redacted] included Andrey Ivanovich Davishev, Chief, Design Bureau No. 3; Colonel Dyatlov (fnu),
25X1 Chief of the Institute for the "Construction of Rockets and Projectiles", a qualified organizer and designer; Candidate Tarnovskiy (fnu), an intelligent
25X1 physicist and ballistic engineer and provisional chief of the new institute under construction at Putilovo; Rabinovich (fnu), an intelligent engineer
25X1 stationed at Leningrad, expert on remote control systems with special interest in the remote control system of the Rheintochter-type rocket; Lieutenant Colonel Rashkov (fnu), escorting officer of the Schmetterling and Rheintochter units;

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Major Umanskiy (fnu), an expert on liquid-fueled rocket power units; Candidate Rotshteyn (fnu), escorting officer of the Sokol device; Major Shukov (fnu), expert on remote controlled air-to-air rockets; and Captain, 3rd Rank, Vasilevskiy (fnu), chief of a department at Berlin.

4. In some respects, the Soviet armament industry employed more efficient working methods than the German did. For example, before a new project was started, a so-called Technical Council was held, with the initiator of the project or the inventor giving a detailed lecture on the subject to a board of experts, who had already been issued a copy of the lecture. After one expert who was specifically elected for this purpose had pointed out all disadvantages of the project, pleading that it be cancelled, the other members of the board gave their opinion and a decision was made as to whether or not the project was to be started. [redacted]

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5. In the USSR much more theoretical research was involved in a project than was the case in the German armament industry. In the USSR the smallest details were figured out theoretically before a unit was constructed, as mathematics were found to be less expensive than practical tests. While in Germany dispersion errors were determined by test firing, in the USSR these figures were calculated. Excellent results were obtained with regard to variations in the material and tolerances in the production.

6. Occasionally the Soviets pretended projects worked out by the German engineers to be their products. The Germans usually had to submit their research material, never to see it again. Only in individual cases, when new projects were based on the results obtained in previous research, were the old sketches returned [redacted] In such cases, the German headings had been cut out and replaced by Russian titles, and the names of the Soviet engineers had replaced the German names.

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10. An airborne AT rocket designated Molniya was the first development project handled [redacted] in the USSR. The head of the powder-fueled rocket contained seven hollow-charge projectiles similar to the Panzerfaust. The rocket was to be fired by aircraft flying at low altitudes at a range of 600 to 800 meters. The unit was stable, with narrow instability range at small angles of attack. A light twist was achieved and maintained by turbulence nozzles and vanes. [redacted] the hitting probability of stable rockets was widely increased by this light twist. The Molniya type rocket had a maximum diameter of 320 mm, a combustion period of 0.6 seconds, and a specific thrust (specifischer impuls) of 190 to 195 seconds.

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The hollow-charge projectiles were equipped with electric impact fuzes fed with electric power by a propeller which was driven by the air flow.

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11. 20 test models for experimental purposes. Although the Soviets at first approved only two units, they finally constructed five models. Firing tests showed that an average of one and one-half to two rockets were required to destroy one tank. The development and testing activities ended in the fall of 1947. The Soviets produced a series of 100 units.

25X1 25X1 the Soviets continued to work on the Molniya project until the German engineers were released.

12. A supersonic powder-fueled air-to-air rocket was designated Sokol. The unit had a diameter of 320 mm, an explosive charge of 65 kg, a combustion period of 10 seconds, a thrust of 1,200 kg, a total weight of 280 kg, and a combat range of 1,200 to 1,800 meters. The service ceiling of the rocket was 12 km plus. Three rockets were carried by one aircraft and fired individually in pursuit flight. The rocket was controlled by a combined Kehl-Colmar airborne remote control system and tracked on the target after an adjustment period of five seconds. The canard-type straight-wing missile had a wing span of 1.8 to 2.0 meters. Power to feed the electro-mechanical rudder control system was produced by an air pressure turbine installed in the head of the unit. This turbine drove a three-phase generator operating at 500 cycles per second. The design sketches showing only the assembly parts had to be sealed and submitted to the Soviet experts. The project was continued until late 1947.

13. The Zenit-type AA rocket was a very efficient two-stage rocket with a minimum diameter of 68 mm and a maximum diameter of 120 mm. The unit climbed to an altitude of 18 kilometers within 20 seconds, accelerated at a rate of 830 meters per second per each stage, carried an explosive charge of 50 kg, and was equipped with an impact fuze functioning with a delay of p.5 (sic) milliseconds. The rocket was to be launched from a multiple frame in accordance with an AA system, with the control unit aiming at the predicted target position. The design plans of this rocket were completed in 1948. The Soviets turned it over to higher authorities, however, with a delay of one

25X1 year. several test models were being constructed.

14. Another project involved the construction of an airborne rocket launching unit for rapid firing of a great number of missiles. Forty-eight powder-fueled rockets were to be moved into launching position by two non-ending automatic elevators and launched alternatively. The rockets had a diameter of five to six cm and were to be fired at a rate of 10 rockets per second. Each rocket carried 500 grams of explosives. They were equipped with impact fuzes and traveled with an acceleration of 600 meters per second at a range of 1,200 meters. The development was terminated in mid-1948. Further information on the project was not obtained.

15. The so-called ring magazine was an air-to-air weapon. Fifty mines were arranged in an annular magazine around a powder-fueled rocket. The unit was held together by a sheet metal coat which was ejected in flight direction when the fuze started to operate. The released mines were centrifuged from the rocket and covered the target in a wide cone of dispersion. The rocket

25X1 had a diameter of 21 to 24 cm, and the mines were five cm in diameter. The total diameter of the unit was 31 to 34 cm. The rocket accelerated at a

25X1 rate of 400 to 420 meters per second.

25X1 the Soviets had constructed eight to ten models of the unit which varied with regard to the arrangement of the projectiles

25X1 within the magazine. two or three different

25X1 models had been constructed by the Soviets.

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16. After early 1949, working on civilian projects.

25X1 German engineers subordintate to the Ministry of Agricultural Machine

25X1 Building and most of the projects worked on involved farming machines, including the designing of an automatic repair unit for combines.

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[redacted] Comment. Lieutenant Colonel Rashkov was previously reported as working for the Soviet designing office established at Gema in Berlin after the war and was later reported as a researcher on Rheintochter and Schmetterling type rockets at Plant No. 88. Major Umanskiy was mentioned in connection with the Soviet development of an A-4 rocket with a pressure-resistant steel body, at Branch No. 1 at Ostashkov. Major Umanskiy was probably involved in the experiments for this development project.