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THE STRUGGLE FOR GERMAN MILITARY EQUIPMENT IN THE PERIOD 1944–1946 AMONG THE USSR, THE USA AND THE GREAT BRITAIN

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Abstract. *This paper introduces in details how the Soviets captured the German Rocket Technology by investigating and collecting the technology of V-2 rockets in Poland and Germany. This paper further states that, the USSR's acquisition of the German Rocket Technology began with the search and inspection in 1944, and after World War II, large research institutes were built in the Soviet occupied zones to explore more ways to obtain German Rocket Technology, such as collecting data on rocket equipment, recruiting German rocket experts, etc. The above methods helped the USSR a lot in quickly capturing German Rocket Technology and building its own rocket industry.*
Keywords: *the USSR; German Rocket Technology; Capturing.*

БОРЬБА ЗА НЕМЕЦКИЕ ВОЕННЫЕ ТЕХНОЛОГИИ МЕЖДУ СССР, США И ВЕЛИКОБРИТАНИЕЙ В 1944–1946 ГГ.

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Аннотация. *В статье подробно рассказывается, как Советский Союз осваивал немецкую ракетную технику, изучая и собирая технологию производства ракет V-2 в Польше и Германии. Автор также описывает, как в 1944 г. специалисты из СССР искали и приобретали немецкую ракетную технику, а после Второй мировой войны в советских оккупированных зонах были построены крупные исследовательские институты, чтобы собирать данные о ракетном оборудовании, привлекать немецких экспертов по ракетам и т.д. Вышеупомянутые методы помогли СССР быстро захватить немецкую ракетную технику и построить собственную ракетную промышленность.*
Ключевые слова: *СССР; немецкая ракетная техника; захват.*

During World War II, Germany made breakthroughs in rocket development. From the night of June 12th to June 13th 1944, three finned-rockets V-1 were launched for the first time by the Germans from the front in North France to London. The Germans then made improvements to all the 55 launchers based on the results of the shooting, and started intensive rocket attacking since June 16th: about 500 rockets were launched to attack London within 2 days and nights. On July 13th 1944, the Ukraine First Front Army initiated Ivov-Sandomierz Battle, one of the steps to liberate Poland. The Germans' rocket test field for V-2, Debica Field, was also located there.

After being attacked by V-1, Britain once again faced the threats of V-2. In July 1944, Churchill and Stalin exchanged a couple of letters on searching for and protecting the German rocket equipment and spare parts in the vicinity of

Debica Field. Churchill requested permission for searching for German rockets and wreckage in designated areas by British experts, in order to make in-depth study to find countermeasures against this new weapon. The British and the Americans worked in concert for a period of time to study the wreckage of German rockets obtained by the British, which was carried out jointly by the British and the Americans.

One year before that, on August 17th 1943, the British Air Force, based on the investigation data, bombarded Peenemünde Rocket Center on Usedom Island, Germany, which was mainly used for the development, experiment, assembly and production of long-range rockets. After being bombarded, the Germans decided to evacuate all the equipment in Peenemünde to safer places. The experiments on V-1 and V-2 rockets resumed after they were moved to Debica Test Field in Blizna, Poland.

After its allies landed in Normandy on June 6th 1944, the USSR became active in its military cooperation with the British and American Armies. The American Air Force adopted large-scale shuttle operations: after bombarding East Germany and the Balkans, the heavy bombers landed on the Ukraine Airport and flew back instead of returning to Britain or Italy. In this way, it created a great opportunity for the allies to jointly search for the German Rocket Technology.

On July 22nd 1944, Stalin consented to the request from Churchill, and ordered Shakhurin (А. И. Шахурин) in People's Commissariat in Aviation Industry (НКАП) to dispatch an expert team to Poland. This expert team was formed in a week, consisting of Pobedonostsev (Ю. А. Победоносцев), Tikhonravov (М. К. Тихонравов), Chernyshev (Н. Г. Чернышев), Sorkin (Р. Е. Соркин), Sehtman (М. О. Шехтман), Ivanov (Н. М. Иванов), Lieutenant Fedosyuk (Ю.А. Федосюк), with Fedolov (П. И. Фёдоров) from the First Scientific Institute as the team leader. At the same time, another team in the First Scientific Institute also worked to analyze the collected data, with team members of Mishin (В. П. Мишин), Pilyugin (Н. А. Пилюгин), Isayev (А. М. Исаев), A. Y. Bereznyak (А.Я. Березняк, Chertok (Б. Е. Черток).

The first investigation in Debica was carried out from August 5th to September 4th 1944. Meanwhile, the People's Commissariat in Foreign Affairs of the USSR was exchanging diplomatic correspondences under stress with the American and British Embassies from July 28th to August 25th 1944. One of the missions of the Soviet diplomats was to stall the British and American experts in their investigation in Debica, increasing the possibility of the Fedolov (Фёдоров) team capturing the German Rocket Technology ahead of others. It is worth mentioning that the anarchy of the British and the Americans contributed a lot to the Soviet experts finishing their task. In this way, the first (and the only) ally (the USSR-Britain-US) jointly investigated the Debica Field since August 26th 1944. Therefore, there were two teams working in parallel for the same task [1] in Poland from August 26th to September 4th.

The US investigation team is a small one, with only 4 members: Lieutenant Colonel John A. Omara as the team leader; Lieutenant Edward M. Usher; Stephen Joseph Zand (Foreign Policy Archive of the Russian Federation (WUA RF), Fund 06 (Secretariat VM Molotova), a Polish-American air observer andthe technical assistant to the group leader; and a fourth expert whose name cannot be found in the files. The British team is bigger than the American one: Colonel Terence Robert Beaumont Sanders as the commanding officer, Lieutenant Colonel Arthur Douglas Merriman, Senior Captain Charles G. Barber, G. Uilkinson, Eric D. Akkerman, and 2 Civilian Experts Standish Masterman and Joffrey D. Kollin (Foreign Policy Archive of the Russian Federation (WUA RF), Fund 06 (Secretariat VM Molotova).

The investigation of the ally continued for about one month: from August 26th to September 28th 1944. Although the Soviets conducted an investigation in advance, the wreckage of German rockets found by the ally was more important. It was made possible by the excellent investigation by the British, because of the accurate position for detailed investigation location unveiled to them by Poland spies.

In October, November and early December of 1944, they conducted the third investigation for hunting and collecting German Rocket Technology (the second one for the Fedolov team). Afterwards, in January 1945, the Fedelov team carried out investigation for the third time (the fourth time altogether), which turned out to be the last one. On February 7th 1945, the plane carrying the Fedolov team crashed near Kiev on the way back to the USSR. All the team members fell victims to this plane crash (except Pobedonostsev and

Tikhonravov who didn't take that flight because they were scheduled to return later). The first stage of USSR's study in German Rocket Technology ended up this way [2].

On April 23rd 1945, several days before Germany's surrender, a team led by General Petrovo (Н. И. Петров), Director of Scientific Institute of Aircraft Equipment (НИСО) flew to Germany to investigate the drawings and test samples of German rockets. A month later, after Germany was defeated, another team led by Goremykin (И. Л. Горемы́кин), First Vice-Commissar of People's Commissariat of Ammunitions, also headed for Germany on May 18th. Afterwards, on May 31st 1945, the National Defense Commission (ГОКО) immediately issued 2 resolutions strictly confidential: On Investigation and Transportation of Equipment, Drawings and Test Samples in Germany Jet Bomb Plants and Laboratories (№ 8897) [3, P. 169–170], On Transportation of Equipment, Files and Jet Bomb Assemblies from Peenemünde Test & Research Institute of Jet Science in Germany (№ 8823) [3, P. 25–26], both of which elaborated on the transportation work of the equipment and files related to rocket technology.

The Soviet Military Management Organization in Germany (СВАГ) was founded on June 6th, 1945, marking the establishment of a uniquely endowed large-scale organization designed to study the scientific and technological department responsible for developing German Rocket Technology. The Research Administration of Scientific and Technological Achievements in Germany (Управление по изучению достижений науки и техники в Германии) was established in the Soviet Military Management Organization in Germany. According to the No. 9475 resolution issued on July 8th 1945 by the National Defense Commission, a special technological committee was established to study the German Jet-Propelled Weapons, and the committee would be led by General Gaidukov (Л. М. Гайдуков). Soon in accordance with the resolutions at the Soviet Ministers Conference, a Special Committee (Особый комитет) in Germany fully responsible for the research work was founded, which was led by General Nosovsky (Н. Э. Носовский).

The work was conducted systematically in several directions: search, collection and transportation of materials, wreckage, and equipment related to jet technology; search of German Rocket Technology experts and dispatch of them to related research sites; establishment of scientific and technological organizations in Germany to learn new technology with the help of German experts; patent-related work and purchase of German inventions; other forms of work (establishment of scholars committee in the Soviet Military Management Organization in Germany, exhibitions of confiscated weapons in the USSR, publication of a series of military books, such as *Summary of Captured Technology*, etc.).

The places "providing" Rocket Technology were extensively distributed. V-2 rudders and a series of instruments were found in the Air Force Research Center (Luftwaffe) in Adlershof, Berlin. Interesting findings were also discovered in companies such as Askania, Telefunken, Lorentz, Siemens and Ian Anderson. A Berlin Research Institute was established by the USSR to make dedicated researches on Controllable Surface-to-Air Missiles.

All the facilities in Institute of Jet Science in Peenemünde, Germany were dismantled and transported to Thuringia (a few were transported to Debica Test Field in Poland), except for those facilities completely out of use. However, the Soviets successfully found some jet bombs and drawings there, by which they could study the structure of jet bombs and work out the logic for deepening research. Besides, a report titled *Long-Range Bombers with Rocket Launchers* was also found there, which was further studied and published in the military publication series of *Summary of Captured Technology*.

Thuringia was supposed to become a Soviet occupied zone according to the agreements reached at the Crimea Conference, but the actual situation was quite another story. While the Soviet Army was fighting to fulfill the political task of leading the occupation of Berlin, its ally spared no effort in occupying South of Thuringia, in which many factories responsible for assembling German rockets and spare parts were located. After South of Thuringia was occupied, the Americans took away 100 complete V-2 rockets ready to launch and about 1000 tons of various devices from there, of which a large amount of rockets were transported to Britain. A large group of rocket developers and experimenters led by Wernher von Braun surrendered to the Americans. Finally, the US Army and the Soviet Army redeployed in order to comply with the Crimea Agreement on the division of occupied zones. The Soviet experts had to work carefully to study the technology and

documents left behind by the Americans, however, these trophies were of less significance.

The US Army took the lead in occupying Nordhausen and captured enough assembled rockets, leaving the Soviet Army with some equipment and assembling components that could make about 10 rockets. Four horizontal tunnels were found in the underground plant in Nordhausen, among which two tunnels were used to produce aircraft turbojet engines, and the third one was used for producing finned-rockets V-1, and the fourth one for V-2. After the Soviets examined rocket technology left over by the US Army, they called the remaining German experts together, and with their help, formed an independent institute led by Soviet experts.

Rabe Institute was established in August 1945 and led by Chertok. Based on Rabe Institute, an institute of larger scale, Nordhausen Institute, led by Gaidukov and with Korolev (С.П. Королёв) as the Chief Engineer, was founded in 1946 dedicated to study of the V-2 rocket technology.

In Prague, the Soviets found some archived military technology files that had special significance, especially the information about the new study on rocket research and development made by the Germans. During the War, the Germans evacuated their files on military technology to Prague, while the team led by Barmin (Бармин) successfully tracked the train transporting the files, and transferred all 60 carriages of files from Prague to Moscow in October 1945 according to the requirements of Special Committee of the People's Commissariat of the USSR in Germany.

In accordance with the No. 09 order issued by the Commander-in-Chief of the Soviet Military Management Organization in Germany on July 18th, 1945, searching for German military scientists and inventors was defined as the top priority. The Technical Department of the Soviet Military Management Organization in Germany was requested by the order to investigate and recruit all the designers, inventors and researchers who had worked in German military industry and military organizations. The Investigation Bureau of the General Staff of Red Army (RKKA) provided much information about the German experts working in the German military industry, which helped a lot in fulfilling the work.

Another way for capturing knowledge in the field of rocket technology were to investigate German patent documents by purchasing German scientific and technological inventions, and sending them back to the USSR. As a country leading the world in the amount inventions and patents, the German government licensed about 70 000 patents within just one year before World War II. On the day of Germany's surrender, 180 000 patent applications still remained to be verified at the competent authority for licenses, which was three times the number in the time of peace.

The work of hunting for German patent documents and sending them back to the USSR quickly began. As for the payment of patent-licensing fees, matters related to Inventor's Certificates, and protection of new technological inventions in the Soviet occupied zone, the German experts made intensive study according to the tasks assigned by Soviet organizations, in which the related situations were relatively complicated, also, as patent licensing was considered as "remnants of the bourgeoisie" in domestic USSR, and experts on patent could hardly be found. Therefore, this work "started from scratch". In spite of that, much work proceeded successfully, which was both conducive to the development of rocket technology and beneficial to the Soviet Patent Law [4].

On May 13th 1946, No. 1017–419 resolution titled *Problems of Jet Weapons* was passed by the Soviet Ministers Conference, in which the practical measures for building the new industry of rocket manufacturing were determined. A Special Committee for Jet Technology (Специальный комитет по реактивной технике) was established for this purpose. The resolution was completed during the second period of the Soviet's research on German Rocket Technology, i.e. April 1945 to May 1946. In the meanwhile, large-scale dismantling work was carried out in the USSR occupied zone in Germany, which was also the process of searching for and studying the achievements of German Rocket Technology (the topic of our report didn't appear in other fields), and dedicated research and technological institutions were established to ensure an effective mastery of the technology.

After that started the third phase, which continued until the start of 1949, and systematic scientific and technological work was carried out in the USSR occupied zones during that period. However, the description of this period is not in the scope of this report, because the resolution made on May 13th 1946 laid all necessary foundations for the development of the Soviet rocket industry, and for the establishment of its space

rocket industry afterwards. 11 years later, the USSR launched the first man-made satellite, and 4 years after that, the first manned spaceflight was realized by Yuri A. Gagarin.

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