

Scientific and Technical Intelligence in the years 1956-1961

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Abstract.

The post-war industrial transformation led to economic underdevelopment in the capitalist countries. This thesis examines the activities of scientific and technical intelligence between 1956 and 1961. The thesis also mentions Scientific and Technical Intelligence.

Keywords

History of Technology, Science, Technology, Agency, Security, Cold War

Introduction

Communist Czechoslovakia had been struggling with a number of economic problems since the early 1950s. The main problem was the transition from light engineering to heavy industry. The Czechoslovak economy was also affected by the expulsion of the Sudeten Germans, among whom were many capable scientists, technicians and entrepreneurs. After 25 February 1948, there was another exodus. This time it was mainly Czechoslovak citizens, but there were also many capable scientific and technical experts among them. Another disaster was the purges at universities carried out in the early 1950s. All these personnel problems contributed to the lagging behind of Czechoslovak science in the mid-1950s behind the Western one. Economic difficulties not only led to problems in the industrial sphere, but also led to insufficient investment in Czechoslovak science. In order to address this lag, a scientific and technical intelligence agency was created within the state security. This was tasked with industrial espionage against capitalist countries.

State Security

Victory in World War II secured the Soviet Union's position as the second global superpower. Joseph Stalin decided to Sovietize the countries occupied by the Soviet army. The only exception to this was to be Austria, which was assured neutrality by agreement of the superpowers. Czechoslovakia, on the other hand, was to be incorporated into the Eastern Bloc. This process was to be facilitated by the Czechoslovak-Soviet treaty concluded on 12 December 1943 in Moscow. This treaty, initiated by Edvard Beneš, led, among other things, to a close link between the interests of Czechoslovakia and the Soviet Union in the

scientific and economic spheres. Another key event was the announcement of the Košice Government Programme on 5 April 1945. This programme significantly strengthened the position of the Czechoslovak Communists and enabled them to gain important ministries in the government. A key power ministry was the Ministry of the Interior. Václav Nosek was appointed to head this ministry on 15 May 1945, and since his appointment he had secretly helped the Communists seize power. The Communist Party of Czechoslovakia, however, was pushing for power along several lines. The Communist Party intended to use the national committees to seize power. These committees existed in the form of district, regional and provincial national committees. As a result of Czechoslovak Government Decree No. 4 of 5 May 1945, the national committees were given the power to exercise the competences of local public administration if no public administration existed in a given place. [1]

The Communist Party of Czechoslovakia had wanted to control the security forces in Czechoslovakia and the intelligence services since the Košice government programme. While it was successful from the beginning with the security services, it was much more problematic with the intelligence services. This was due to two factors. The first was that the democratic parties tried to prevent the communists from controlling the intelligence services and also publicly pointed out their actions in this area. But the second factor, which was even more important, was that the members of the intelligence services were personnel from the period of the First Republic, exile or democratic resistance. The laws of inter-war Czechoslovakia, which insisted on the apolitical nature of intelligence personnel, were also a safeguard. All this made it difficult for the communists to take power in Czechoslovakia. However, the communists tried to counter these barriers by creating a so-called parallel security structure.[2]

That is why the Communist Party of Czechoslovakia began to create the so-called Provincial Security Unions. In addition, the so-called ZOB II was created. These were in charge of intelligence activities. Its workers were exclusively members of the Communist Party. However, the experience of these workers in intelligence activities was very little. Therefore, Štěpán Plaček, who was the head of the provincial security departments, tried to obtain

information about the nature of intelligence work by interviewing former members of the German intelligence services. Thanks to ZOB II, the communists gradually managed to take control of Czechoslovak intelligence. High-ranking members of the Communist Party also cooperated with Soviet advisers and also provided the Soviets with information. Karel Smíšek, a former NKVD agent, played a crucial role in this process, mediating Rudolf Slánský's radio contact with the Soviet Union. [3]

Czechoslovak intelligence gained considerable autonomy within the State Security. However, it also had to cope with the decline of its agents. The situation was most acute in the Berlin area. The intelligence service also lacked a sufficient number of capable agents. The May 1950 agreement between Czechoslovak and Soviet intelligence was intended to address these defects. However, this treaty did not significantly improve the situation and only led to a greater politicisation of intelligence. On the basis of the treaty, foreign intelligence was assigned a Soviet KGB officer who had his own staff of up to seven intelligence officers. Under the treaty, Czechoslovak intelligence was also divided into seven parts - the so-called sectors. Sectors I-III were responsible for the actual performance of intelligence activities. Sector IV was the study sector. The study sector carried out the analysis of intelligence information and also increased the qualifications of the staff. Sectors IV-VII were concerned with personnel activities and clerical tasks. However, problems continued to affect the intelligence service, one of which was the escape of Zdeněk Toman, first from prison and then from the Republic. As a result, the intelligence service lost a number of collaborators in Western Europe. [4]

A major purge in the intelligence service took place in February 1951. This purge began with the arrest of the head of the intelligence service, Oskar Valeš. As a result of this purge, 70 intelligence officers were transferred to the Public Security Service. Here they did simple police work. This work caused them considerable material damage, as they were used to well-paid work in the intelligence service. As a result, they were in a bad social situation. One of the reasons for the purges was the unreliability of the former intelligence officers. After leaving their jobs, some former workers were monitored by state security, as there was a fear that some of these workers might flee to the West. [5]

An important milestone in the development of Czechoslovak intelligence was the death of Joseph Stalin, as the dictator's death led to a reduction in international tensions in the Cold War. Both the intelligence services of NATO countries and those of the Eastern bloc began to focus more on economic espionage and ideological influence on the population of the other camp. As a result,

Western intelligence agencies began to turn more to the Czechoslovak exile. This led Czechoslovak intelligence to launch various espionage operations against the Czechoslovak exile. For this purpose, the secret service recruited agents among the Czechoslovak exiles. Radio Free Europe was also a major adversary of Czechoslovak intelligence. Therefore, the State Security tried to disrupt its broadcasts. Also unpleasant for the interests of Czechoslovak intelligence was the First Republic journalist living in American exile, Ferdinand Peroutka.[6]

Scientific and Technical Intelligence in the years 1956-1957

Although scientific and technical intelligence was not originally part of state security, the political and security elite were aware of the importance of the information they received about Western science and technology. For this reason, the Scientific and Technical Intelligence Service was established in 1953. The first members of this intelligence agency were 7 graduates of technical and scientific schools. They were joined by 3 original employees of the State Security Service. One of them was Věroslav Sobek. Sobek had graduated from the Faculty of Mathematics and Physics at Charles University and was temporarily placed at the head of the new intelligence agency because the 7 graduates still had to undergo a course in intelligence work. Scientific and Technical Intelligence functioned as the 11th Department of the First Administration. Since the object of interest of the newly formed intelligence agency was Western countries, it was necessary for its members to study the main European languages. Intelligence officers had knowledge of English, German French and Italian. Scientific and Technical Intelligence had four departments. The first department focused on the United States, the second on Great Britain, and the third on France and Italy. The fourth department targeted neighboring Germany and Austria. Rudolf Barák, the Minister of the Interior, was also involved in the development of scientific and technical intelligence, and headed the ministry from 1953 until 1961. In 1961, Barák was arrested, imprisoned and charged with corrupt practices.[7]

Czechoslovak scientific and technical intelligence was able to obtain materials from West Germany for the production of silicone varnishes, oils, lubricants and silicone rubber. These documents were also subsequently provided to the Soviet Union. Silicone oils and varnishes were mainly used in aviation, as they were very resistant to cold temperatures, down to minus seventy degrees Celsius. Since jet aircraft were operated at high altitudes where temperatures were low, these silicone oils were an important commodity for the Czechoslovak aviation industry. Silicone oils also found their application in the engineering industry as they were more durable than other standard industrial oils used at the time. They were also

highly resistant to both extremely low and extremely high temperatures. Scientific and Technical Intelligence also monitored the scientific progress of silicones in West Germany in the second half of the 1950s. A significant contribution to the development of the Czechoslovak chemical industry was made by the activities of the Scientific and Technical Intelligence in West Germany. Here, a secret intelligence agent with the code name ALEXANDRE managed to obtain materials explaining the production of low-pressure ethylene. This discovery was made by the West German chemist Karl Ziegler. Until then, ethylene was normally produced under an apparatus pressure of 1,000 atmospheres. However, Ziegler was able to produce ethylene using a lower pressure. The Czechoslovakian agent also obtained plans for the production of catalysts for the polymerization of ethylene. Czechoslovak intelligence continued to monitor the work of the German chemist Ziegler, as he was also working on the production of advanced plastics. [8]

Another achievement of the Scientific and Technical Intelligence Agency was the acquisition of plans for a natural gas sorting facility. Intelligence also obtained materials describing the process for producing crystalline urea. These plans had been procured in Italy by an undercover agent, code-named SHIP, who was intimately acquainted with high-ranking chemists at the Montecatini plant. This agent had already passed on to scientific and technical intelligence the plans which would later make it possible to build the ammonia plant. The natural gas sorting plant was important for Czechoslovak industry, which could use the natural gas reserves in southern Slovakia. The plant with this technology was subsequently also used for the production of crystalline urea. Plans for a natural gas sorting plant and for the production of crystalline urea were drawn up by a secret agent in 1956. The value of both these plans was estimated by the Minister of Chemical Industry, Mr Púčil, to be in excess of CZK 1 000 000. [9]

Despite considerable efforts, scientific and technical intelligence was unable to obtain collaborators in the German nuclear programme. Access to the nuclear programs of other capitalist countries was also unavailable to intelligence officers. Therefore, the scientific and technical intelligence leadership decided to establish contacts with young Western nuclear physicists while they were still studying at the university. Scientific and Technical Intelligence also exerted its influence on young physicists through the agents it had at the International Atomic Energy Agency in Vienna. Although S&T Intelligence was not able to achieve success in its search for information on the US missile program, it at least opened a path in the form of a former designer of the German V1 and V2 missiles. This man was arrested by the gendarmes after the end of World War II and detained by the Czechoslovak authorities. After a thorough

interrogation and a short stay, he was released from prison and travelled abroad. However, his wife and two children remained in Czechoslovakia. Despite the fact that she divorced him after some time and found a new husband, the rocket engineer's children still remained with her in Czechoslovakia. The rocket engineer lived in Venezuela, and it was there that Czechoslovak intelligence made contact with him. She told him that if he cooperated with intelligence, his children would be allowed to study in Czechoslovakia. He agreed to the proposal, but he was a businessman and no longer had much contact with his former collaborators. So members of the Scientific and Technical Intelligence Service considered letting him join the missile program, but after the Soviets launched the Sputnik satellite, members of the US missile program themselves approached him with an offer to work for them. This was advantageous to the Czechoslovak unit, but after the outbreak of the revolution in Venezuela, contact with their agent was cut off.[10]

Scientific and technical intelligence gathered information in scientific and technical fields that were promising for the development of the Czechoslovak economy. These were fields such as nuclear energy, chemistry, engineering, medicine, metallurgy. Scientific and technical intelligence also established contacts with economic ministries, universities, the Academy of Sciences, and corporate research institutes. This activity pursued two objectives. First, for the intelligence staff to gain greater insight into a given scientific field, and also to develop an understanding of the field in which a given institute or enterprise was researching in order to identify ways in which intelligence could be of assistance to them. With some institutions, cooperation was smooth, but with others it was highly problematic. However, it depended on the institution concerned. Intelligence depended on its collaborators, whom it could trust, to communicate with these institutions. Intelligence often passed on secret material that contained the blacked-out name of a capitalist enterprise, but there was still a fear of revealing the source. The Science and Technology Unit obtained information abroad primarily from human sources. The most popular source was compatriots, who procured secret materials as a kind of act of patriotism. Other sources used were people with a leftist orientation. The advantages of exploiting these two groups were that they were not paid and Czechoslovakia did not lose valuable foreign exchange. In addition, people also provided information for a fee, which was costly, but was usually a negligible item compared to the benefit of the information received. It should be noted that a state security officer recruiting potential agents had to have at least a basic knowledge of psychology and human behaviour. However, every Czechoslovak intelligence officer was trained in these areas. Intelligence-supplied materials were not always useful. It could be that the materials provided by intelligence were ahead of the

level of domestic research, or it could be an area of research that Czechoslovak science did not focus on.[11]

Scientific and Technical Intelligence in the years 1958-1959

In 1958 there was a slight change in the way information was obtained. In earlier years, scientific and technical intelligence had focused largely on obtaining material on basic research in capitalist countries. However, this information could often be found in Western scientific journals, printed conference proceedings or yearbooks. As a result, in 1958 scientific and technical intelligence intensified its interest in scientific knowledge directly applied to industry. However, even in this respect the intelligence service encountered difficulties, as the directors of Western industrial enterprises became increasingly aware of the risk posed to them by the espionage of socialist countries. Therefore, every scientist in Western industry had to devote himself primarily to his research topic, and if he was interested in activities in a field that was not his own, his written inquiry had to be approved by the director of the enterprise. Also, if a worker wanted to take home relevant research materials, he was not allowed to do so for more than 24 hours. Similarly, there was a reluctance on the part of the directors of Western industrial firms to receive visitors or delegations from socialist countries. All these measures made the work of scientific and technical intelligence more difficult. Although nuclear power was not the highest priority for the intelligence service, it still managed to obtain information about the particle accelerator. This machine was located at the Swiss science centre CERN. The knowledge gained about the particle accelerator was also welcomed by Soviet intelligence, to whom it was passed. Scientific and Technical Intelligence was also particularly interested in new processes for the production of heavy water in West Germany. It was among the community of nuclear scientists that S&T Intelligence was trying to penetrate. However, it had little success in this endeavour. Eastern Bloc intelligence was also interested in American missile production. But the Americans kept the secrets of their missile arsenal very carefully guarded. In this respect, the Scientific and Technical Intelligence Service had some success. In fact, it managed to recruit an agent in the Belgian firm JBM, which handled computer operations for Western governments and large companies (including the United States). He supplied her with calculations for the large Belgian corporation AZOT. Thus, at least this success benefited scientific and technical intelligence from its interest in US missiles. [12]

Members of the Scientific and Technical Intelligence Service, they moved in an environment that placed considerable demands on them. They had to have at least a basic understanding of the scientific issues involved, but above all they had to perform their duties as an intelligence

officer. As a result, they had to undergo intensive espionage training. New members of the scientific and technical intelligence service were encouraged to develop their graduate specialisation. As graduates of technical universities, they were well placed to do so. Therefore, chemists were encouraged to follow trends in inorganic and organic chemistry. They also followed industrial innovations in the field of industrial plastics. Mechanical engineering graduates were required to keep abreast of new trends in the automotive, aerospace and space industries. As a rule, graduates were proficient in at least one Western language, with knowledge of English or German being the most widespread. There was a language school within the State Security Service, where those who did not have knowledge of any foreign language could study, yet it was essential for them to learn at least one language for intelligence work. Scientific and technical intelligence officers were also obliged to learn the Romance language if they were to be sent to a given region, Italy or Spain. Beginning graduates worked within the analytical department, which handled liaison with the various residencies abroad where the designated member of the Scientific and Technical Intelligence Service was stationed. The analytical department also collected information on the individual agents that the expatriate intelligence officers managed abroad. Another required skill for an intelligence officer was the ability to drive an automobile. Employees who did not have a driver's license were required to attend a driving school within the State Security Department. However, this was quite difficult, and placed greater demands on participants than standard driving courses. Here, future drivers learned how to recognize if their car was being followed by an enemy intelligence officer. They were also forced to learn driving skills, especially at night. For employees who already held a driving licence, a walking course was compulsory. During this course they were taught to recognise whether they were being followed on the streets of Prague. A similar course is used by many of the world's intelligence agencies. An intelligence officer must learn caution and develop the ability to observe.[13]

For a worker to operate successfully abroad, it was necessary to send him under a cover identity, as an employee of the Czechoslovak embassy or as a person in charge of negotiating deals between Czechoslovak and Western companies. It was therefore necessary for the scientific and technical intelligence officer to study his cover identity thoroughly. Also in this case, the scientific and technical intelligence was helpful to him, as it required its members to be perfectly familiar with the work they were to perform officially abroad. Therefore, when a staff member was to perform a function at the Czechoslovak Embassy, he actually worked in Prague as an official at the Foreign Ministry as part of his training. It was desirable that the worker should not only be able to behave as a constructed identity, but that he should be able to identify

himself perfectly internally with that identity. If an intelligence officer was to be posted, to a given country, he or she first had to become familiar with the history and culture of that country. He also had to learn the patterns of behaviour and actions of the people there. Intelligence officers also had the task of becoming thoroughly familiar with the psychology. For this purpose, they were also trained by psychologists and psychiatrists who worked for state security.[14]

Scientific and Technical Intelligence in the years 1959-1961

The work of the Intelligence Service was extremely successful in 1959. It was the deployment of scientific and technical intelligence that was important, as it saved many millions of crowns as well as hundreds of thousands of hours of scientific work. The Warsaw Pact countries, and especially the Soviet Union, also benefited from the activities of scientific intelligence in 1959. Important were the insights gained by scientific and technical intelligence in the French nuclear programme. These were new techniques for cleaning up areas contaminated by radioactivity. Also important were the methods acquired for the storage of nuclear material. This information was particularly important to the Soviet Union. Nevertheless, it also meant a saving of more than 700,000,- CZK for the Institute for Research, Production and Use of Radioisotope. Scientific and Technical Intelligence was also able to obtain secret materials from the French aerospace industry. This involved obtaining plans for the construction of a French perpendicular take-off aircraft. These documents were used primarily in the Soviet aviation industry. Czechoslovak intelligence also monitored the American aerospace industry. The materials obtained from this source alone saved more than 600,000 hours of research work in five months in 1960. This work would otherwise have had to be done by the Aeronautical Research and Testing Institute. These materials brought the Research and Testing Institute of Aviation and the Moravan Otrokovice enterprise a saving of CZK 4 800 000,-[15]

Czechoslovak intelligence agents managed to obtain an AN/APX-25 in West Germany. This device was installed in combat aircraft belonging to NATO countries. The AN/APX-25 enabled the pilot of the aircraft to distinguish on radar between Allied and enemy aircraft. The documentation of this instrument was also handed over to the Soviet side. Also in West Germany, plans for various NATO countries' radio equipment were obtained. These materials were subsequently handed over to the Institute of Aviation in Kbely. Thanks to them, the Institute was able to complete the development of the RTL-22 airborne radar station. This meant a saving of approximately CZK 10 000 000 for the Institute. Intelligence was also successful in Canada, where it managed to obtain plans for the production of catalysts made of platinum. This platinum

catalyst was more efficient and reliable than the catalysts supplied from the GDR, which had been used in Czechoslovakia up to that time. This catalyst was also installed in a new Czechoslovak-built refinery in Syria. From West Germany, Scientific and Technical Intelligence managed to obtain plans for the production of titanium white. This product was mainly used in the medical industry. A success for the Czechoslovak electrical industry was the work of a Czechoslovak unit in the United States, where they managed to obtain plans for a colour television set and also drawings for a television transmitter.[16]

In the early 1960s, the international situation was still tense. The United States had built up a large atomic arsenal that was aimed at the Soviet Union and its satellites. Western intelligence services also sent agents to Warsaw Pact countries to gather information on enemy nuclear facilities. In 1961, the leadership of the Communist Party even issued a secret directive to the Scientific and Technical Intelligence Service on this penetration. This intelligence agency was also in charge of monitoring enemy industrial spies. Western intelligence agents were also interested in Czechoslovak nuclear research and also in the level of universities where nuclear physics was taught. Czechoslovakia was also of interest in terms of the extensive uranium deposits in the borderlands. However, the interest of the Western intelligence agencies was not only focused on nuclear research, but also on finding out information about the missile units of the Czechoslovak People's Army. The intelligence services of the capitalist states were also interested in whether Soviet missile weapons were deployed on Czechoslovak territory.[17]

Conclusion

Scientific and Technical Intelligence was able to supply the Czechoslovak state and its allies with valuable materials from the Western scientific and industrial environment in the period 1956 to 1961. The Scientific and Technical Intelligence Service was able to work efficiently because its employees were intelligent and educated people. The vast majority of the staff of this intelligence agency was made up of university graduates. Scientific and Technical Intelligence was able to acquire secret materials in such areas as nuclear energy, rocket research, and aerospace. Documents from these areas were particularly useful to the Soviet Union, which focused its intelligence activities on these areas. Not only materials from the above-mentioned areas were profitable for the Czechoslovak domestic industry, but also documents supplied by Czechoslovak intelligence from the Western European chemical industry. These were, for example, silicone oils. The actions of the Scientific and Technical Intelligence Agency saved the Czechoslovak state tens of millions of crowns in the period under review.

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