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## INDUSTRIAL ESPIONAGE ACTIVITIES OF SOVIET BLOC DESCRIBED

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[Article by Ion Pacepa: "The Big Reaping"]

[Text] (How do the Eastern European countries carry on industrial espionage?

Senior fellow at the Center for International and Strategic Studies at Georgetown University in Washington, Michael Ledeen has collected the testimony of Ion Pacepa, deputy director of Romanian counter-espionage and personal counsellor of President Ceausescu until his defection to the West in 1978.)

In 1952, Lavrenti Beria, chief of Soviet State Security, gave the order to the Romanian secret services to engage in industrial espionage. "Ever since WW II, he told them, technological intelligence has proven to be essential for our defense and for our economy. Such a department would give effective support to our revolutionary Marxist-Leninist-Stalinist struggle".

Sergei Petrovich, a Soviet general supervised the organization of our industrial espionage services. He gave us an interesting report on the activity of his country. According to him, the "work" of the Rosenbergs in the United States "was no less important than the victory over Germany". They brought about the end of the atomic monopoly of the United States and since they did not confess, their death paved the way for anti-American and anti-imperialist propaganda and for anti-atomic bomb peace movements. They inaugurated an era in which technology became the main support of politics."

At the beginning of the 1950's the Soviets set up a vast organization-- Evaluation, Verification and Naturalization -- which employed more than a thousand engineers, translators, and designers. It continues to draw up the list of needs of the KGB and the secret services of the other countries of the Warsaw Pact. It receives technological and technical-military information and transforms what it considers to be useful into "Soviet projects".

Over the years, the Ministry of the Interior created its own industry in Bucharest. In all the hotels in Bucharest, the telephones can have listening devices activated by pressing a button. Microphones are carefully hidden in each room, a closed-circuit television permits the constant surveillance of the restaurant rooms, the corridors and the bathrooms. Cameras installed <sup>o</sup> outside hotels such as the Athenee Palace, the Intercontinental, the Lido and the Nord monitor the movements of foreigners. In the very best restaurants, agents act as maitre d'hotel or waiters, providing them with the opportunity to hide microphones under the tables, in the ashtrays, or in the ice buckets. Prostitutes, on the payroll of the counter-espionage service, stroll around in the bars, in the hotel corridors, the restaurants, the theaters, the Opera House, the concert halls, the amphitheatres, the movie houses, the streets and the ~~xxxx~~ parks. The results of this work are distributed as follows: compromising information on foreigners goes to the security services and the money, the clothing and the gifts go to the agents.

About 1970-1975, Colonel Christian Scornea was watching a possible informer on chemical weapons, Horst von Hajek, a professor of engineering. Hajek was born in Germany. During WW II he served as a commanding officer in the area of chemical weapons. After the fall of the Third Reich, in order to hide his past he went to Portugal where he became <sup>a</sup> military adviser and an armaments engineer. Later, he returned to West Germany and he became a technical advisor for NATO. The Romanian investigation revealed that Hajek was rich but that he had family problems and that women were his weak point. He was invited to Bucharest and was introduced to Adriana Oros, a beautiful young lady who was the answer to his dreams. Adriana was only 21 years old, She worked as a prostitute in a night club in a large hotel. Obviously, she was collaborating with our intelligence services, Hajek fell in love with her. Their liaison was recorded on film and magnetic tape. Hajek spent 40,000 <sup>dollars</sup> for a house for Adriana and her mother. He could not get along without this young woman

and he used to spend one week each month in Bucharest. In 1977 he was recruited as an agent. Hajek contributed greatly to the modernization of our chemical industry. Thanks to him, an enormous napalm plant was built in Bucharest, under the cover of a detergent manufacturing factory. Napalm bombs were manufactured on the basis of plans transmitted illegally, via Africa, from Portugal to Romania. A secret exhibit and experiments were organized for the president.

#### Cultural and scientific agreements

In 1978, more than 98 percent of the engineers, physicians, economists and professors who went abroad were secret agents. Some of them were even intelligence officers. When the secret service (the CIE) was reorganized in 1972, President Ceausescu decreed that each citizen who would be going abroad, as a diplomat or on the basis of a bilateral agreement, must be an intelligence officer or a CIE collaborator. "Only those individuals deserve to work abroad", he said.

An old case illustrates very well the dimensions of this espionage enterprise. A little before 1960, Alexandru Moghioros, at that time minister of agriculture, was crazy about an American hybrid corn which was characterized by its resistance to climate changes and by its productivity. After five years of drought, hybridization was the only hope of Romanian agriculture; it did not have any credits for the import of genetic materials.

Moghioros turned to the intelligence services. They took the project in hand and, during the next five years, several dozen agronomists left for the United States. They were all intelligence officers or agents. They visited federal research institutes, private organizations, agricultural facilities. In five years, they collected the genetic materials necessary for the development of the hybrid corn in Romania. A special diplomatic pouch was prepared for transporting them to Bucharest without damage. The Romanians recruited several talented American specialists, including one at the research center of the Department of Agriculture in Beltsville, Maryland. He alone provided them with a collection of American hybrids.

After seven years of intensive reproduction<sup>ro</sup>, Romania is becoming a significant producer of genetic materials and one of the largest producers of hybrid corn in Europe. In 1978, the operation made it possible for Romania to save about 300 billion dollars.

In 1978, about 70 percent<sup>N</sup> of the Romanians assigned abroad were dealing with foreign trade and were intelligence officers. In Romania, the first deputy minister of foreign trade and 11 directors in the ministry were CIE agents. The same held true for 38 of the 41 heads of foreign trade enterprises.

In every meeting with the directors of Western farms, espionage was the most important element. All foreign special<sup>ISTS</sup>s contacted became the subject of a report and each transaction was evaluated on the basis of the technological information which it might provide.

One of the most spectacular operations was targeted against the West German tank, the Leopard II. Our intelligence service obtained a model, thanks to an agent who worked for the Kirschfield A.<sup>G</sup> firm in Dusseldorf. However, the manufacture of the engine was too complicated for our specialists. So they sought assistance from the manufacturer and the distributor of the tank, the M.<sup>T. U.</sup> group.

This operation was entrusted to me. I received my instructions only from Ceausescu. I established contact with one of the M.<sup>T. U.</sup> officials who had the code name of "Leonard". He was said to have sympathy for the inde<sup>e</sup>pendence of Romania in foreign policy.

Leonard had me visit the military sections of his plant in Augsburg and he authorized me to examine the tank in detail. a few days later, we arrived in Bucharest, on board an M.<sup>T. U.</sup> jet, where he was to join Helmut Schmidt on an official visit. We were alone. Leonard explained to me that the Leopards I and II were intended for NATO and that, without the full agreement of Bonn, it would be very difficult to export all <sup>OR</sup> part of the tanks. However, the M.<sup>T. U.</sup> had just set up plans for a Diesel engine based, almost entirely, on those of the Leopard II. This engine belonged to the M.<sup>T. U.</sup> which was ready to sell a license to Romania.

On the basis of a confidential agreement which Leonard signed, a Swiss firm specializing in this type of contract, whose personnel were M. <sup>T.U.</sup> retirees, would deliver us the necessary components <sup>N</sup> for transforming the M. <sup>T.U.</sup> engine into a tank engine. I informed Ceausescu. The President thanked Leonard. Later, after the contracts were signed, Leonard went to the Romanian Embassy on Cologne with some very heavy suitcases which contained the lubrication system as well as the original parts of the <sup>e</sup> Leopard II engine and their diagrams. This "gesture of confidence" inaugurated the transfer of a NATO defense system to a Communist country under the cover of "drilling units".

The Leopard III operation showed us that retired foreign specialists were a good source of technological intelligence. In 1977, the CIE compiled a list of these retired specialists in Western countries. Later on we learned that they were no longer held to secrecy, even if they had worked for national defense.

#### International cooperation

The CIE utilized, little by little, every contract for cooperation with firms in capitalist countries to place intelligence officers <sup>and</sup> agents and/photographs. Thus, in the framework of French-Romanian cooperation, <sup>IN</sup> the production of a compact Renault car, the Dacia, more than 100 French technicians were in Romania. [the technical level of] They brought with them abundant documentation which supplied information exceeding/ the equipment which we had bought legally. All this was photographed secretly. Later on, the photographs permitted us to make many modifications to the Dacia without spending a cent.

Toward the end of the 1970's a new joint project was launched with Citroen. More than 150 Romanian engineers and technicians went to France to study a new compact car. Several of them, intelligence officers or agents, were equipped with <sup>S</sup> minuscule cameras, of the latest model, and ultra-sensitive film. After their return to Romania, the films were developed and we learned some manufacturing secrets that Citroen did not want to include in the contract.

Third countries and fictitious companies  
direct

When the/import of technology was prohibited by regular legislation or by an extraordinary embargo, we had recourse to firms created to perform <sup>ORM</sup> transfers illegally. In most cases, it was a question of a technology with military application.

In 1975, we recruited a businessman in Tokyo. He established a fictitious company for the purpose of sending us sophisticated micro-electric equipment from Japan, the United States, West Germany, Great Britain and Italy.

High <sup>pressure</sup> hydraulic presses, <sup>e</sup> very sophisticated and with very high performance, were imported from Sweden and South Africa through the intermediary of a company registered in Helsinki, by another one of our agents, this time a citizen of the Federal Republic of Germany.

An export-import firm was established in Vienna by a Romanian intelligence officer, for the purpose of the illegal transfer of highly-sophisticated optical equipment, via Austria.

A British export company was conceived by one of our agents in London for the acquisition of a radar and different types of military equipment and some computers. They were sent to Romania after having passed through a number ~~of~~ <sup>OF</sup> third countries.

Illegal intelligence have ✓

Many CIE/officers changed their identity completely. They have become West German citizens, Greeks, Turks, Israelis, French or Italians, thanks to false birth certificates, false university diplomas and other falsified documents. As a rule, they left Romania illegally because, in their newly-adopted country, they could not have any rapprochement with us. Ceausescu gave us instructions: "Every illegal intelligence officer, sent abroad during peacetime, must learn how to set up cells in research institutes and important industrial firms and to supply us with technological information. Each one should be better than the best of the foreign agents. Some will have to create foreign firms for the wide-scale transfer into Romania of peak technologies under embargo and even weapons technologies." Thanks to our

strong German-speaking minority, it was easy to place a large number of ~~off~~ illegal officers in Germany, in Austria and even in Switzerland. In Austria, most of the nationalized industries were infiltrated: Voest and its technical department Linz Donauwitz; Alpine, with its nuclear energy sector and its foundry; the headquarters of Elin Union, another famous metallurgy company; the Stickstoffwerke chemical products company; the prestigious Wagner-Biro engineering company. There were also officers in the private companies, such as the Siemens -Austria electricity company and the Norma microprocessors company.

In West Germany, some well-trained officers, with false identification papers, have made a way for themselves and occupy important positions in Siemens, Erelanged and its nuclear sector at Karlsruhe, AEG in Dusseldorf, Hoechst in Frankfurt, and Thyssen. They use universities, such as those in Karlsruhe and Giessen, as springboards for getting the best positions in Canada and the United States. Although it was limited in quantity, the industrial intelligence supplied by the illegal division in 1977-1978 was of very high quality. It consisted, in particular, of very secret original projects, copies identical to the original, kept in the most secure strongboxes of the companies. Here are some examples:

- a complete design for the Linz Donauwitz technology, which was immediately integrated into the Romanian metallurgical plants; this saved time and several millions of dollars production costs.
- various designs of nuclear reactors and their security systems/
- the complete design for the construction of a heavy water installation for a nuclear power plant.
- the design for a shell factory drawn up by West Germany and intended for Egypt.

#### Clandestine photography

Clandestine photography is often used in the pursuit of intelligence and is still one of the most effective espionage techniques. This method permitted us not only to steal foreign secrets but also to learn the real cost of the products which they offered for our purchase. One can imagine our advantage in the negotiations!

The documents which we copied were/so detailed that we could simply cancel



the contracts; all we had to do was to reproduce the system described, by our own means. This was, in part, the situation in regard to the enormous rolling mills ordered from France and from the Federal Republic of Germany for the Galati metallurgical combine. We were able to construct entire installations on the basis of documents photographed clandestinely. When an industrial ministry had problems <sup>the</sup> in/researching, studying or engineering of a project, it would try, first of all, to resolve them by means of clandestine photography.

When the Ministry of the Chemical Industry ran aground in drawing up plans for a large polystyrene industrial installation, it sent fake letters to the largest chemical products companies in the Federal Republic of Germany, Great Britain, France and Italy. It indicated that it wanted to acquire a license for the installation of a polystyrene plant. Six Western companies came to Bucharest to offer their services. In order to prove its superiority, a French firm sent a mission with a detailed design of an ultra-modern installation. Very much aware of the importance of this file and, justifiably, cautious, the French demanded that their documents be locked up each night in the hotel safe. These valuable documents were more than sufficient for finding a "Rumanian solution to the problem"; they rapidly began to construct an immense polystyrene plant in the Borzesti petrochemical complex!

The United States and Europe

The Romanian secret services have rarely succeeded in directly obtaining intelligence information in the United States/ But, on the other hand, the "tapping" of European branches working under American licence proved to be far more "profitable."

The technology of silicon production - an essential "raw material" in electronics - was one of the priority targets of our secret services.

This is even more important considering ~~that this technology was extremely~~ ~~enhanced in the communist countries~~ the strict embargo of this technology with regard to communist countries. Our repeated efforts to obtain such technology in the United States <sup>remained</sup> ~~remained~~ fruitless. However, in 1970 an American branch operating in France that formerly sold Romania two production lines for semi-conductors of German origin made it possible for us to obtain what we wanted. A French citizen, whom we had successfully recruited, was providing us regularly the technological documentation from the American parent enterprise; indeed the office in which I was holding my business meetings was quite rapidly overstuffed with piles of documents. Shortly afterward a special installation, well disguised, at the very heart of an electronics plant situated between Buc<sup>A</sup>arest and the Otopeni International Airport, began the production of high-quality industrial semi-conductors.

The production technology of silicon crystals, which is strictly controlled in the United States, <sup>was</sup> ~~was~~ handed over to us by an electronics company in Milan thanks to a special contract providing for the delivery of part of the equipment necessary for the production process.

We used similar methods to obtain information about integrated circuits. Since we were unable to <sup>obtain</sup> the necessary information from Texas Instruments in the United States, we undertook to cooperate with a well-known British firm which was producing under a Texas Instruments licence micro-electronic equipment.

As a result we obtained thousands of photocopies of technical documents under embargo in the United States; these documents were ~~initially~~ delivered to us by a well-paid Briton we recruited and, thus, for the first ~~human~~ time Romania had access to the world of integrated circuits. This "hit" ["coup"] paved the way for an institute for secret research established not too far from Bucarest, equipped with materials <sup>h</sup> produced under an American license <sup>5</sup> in Europe and Japan and which were illicitly imported through a third country. Manea Manescu who, at that that time, was prime minister, said: "If Texas Instruments did not sell its technology to Europe we would have never managed to obtain it. Within a short time we will produce an increasing amount of integrated circuits. I would not be surprised to see in the near future Western firms in trouble."

#### The Price of Industrial Espionage

In 1978 the C.I.E prepared the balance-sheet of industrial espionage. Its conclusions were indeed impressive: more than 35% of the industrial inventory was based, in part at least, on intelligence operations. <sup>Especially,</sup> Above all the chemical industry with complete plants built in Borzesti (polystyrene), Iasi (synthetic leather and polyurethane), Brasov (melamine and photosensitive materials), Transylvania (color film and photographic paper), Codlea (coloring agents), Victoria (plastic explosives), Bucarest (radial tires)...

The pharmaceutical industry was in second position followed by metallurgy (with an impressive number of new technologies for special steels, carbide and non-metallic alloys as well as the steel plants, modernized rolling mills, and a new aluminum factory). The silicone semi-conductors and the integrated circuits were among the most important contributions to the electronics industry. New digital machine tools, Diesel engines, and Bosch injector pumps were the result of intelligence operations. In the sphere of nuclear energy Romania had received enough information to be able to build industrial installations for heavy water: 30% of the components for nuclear reactors and 40% of the safety systems. Those are merely a

few examples. From the end of the 1960's to the end of the 1970's we managed to nearly save ~~near~~ 800 million dollars by replacing legal but costly imports with illegal products, thanks to espionage.

Obviously military technology was very important to Romania, especially after the decision in 1972 to modernise<sup>z</sup> the armed forces of the country and to build a new tank (on the model of Leopard II), new fighter airplanes (produced in cooperation with Yugoslavia), bomber planes and parachute jump planes (based on the West German Fokker 614), napalm bombs and other materiel for biological and chemical warfare, as well as launching systems. In addition to technical intelligence Romanians were seeking <sup>all sorts</sup> of information on military technology by studying even small models bought at toy stores in NATO countries:

The instruction and maintenance manuals were taken over, legitimately, by the Soviet Ministry of Defense. A West German citizen, of Romanian origin, who worked for a number of years as a guard in a military base near Munich, was recruited mainly for the purpose of supplying us with copies of such manuals. Several years went by. He had won the confidence of the Americans and he was charged with "burning" secret military documents; he arranged to bring to his handler sacks filled with this valuable "waste", an abundant harvest of "Secret Defense" manuals dealing with various ~~items~~ <sup>items</sup> of American military equipment.

The weapons samples were almost as important as the documents. The specimen could be tested, analyzed, re-drawn and compared. Models of different types of NATO weapons were obtained by commercial contacts or agents sympathetic to the cause who worked in Europe in factories dealing with military production, especially in Germany and Austria. Among our big "suppliers", one could also find the Palestinian and Druze militias who gave us, through their contacts with the CIE, many weapons taken from their adversaries. I remember a very good catch: a Renault tank, captured by the Druze and transported to Romania in a refrigerator truck.

Israel also gave us technical intelligence and military samples. This is why: Romania exchanged Romanian Jews <sup>o</sup> for valuable intelligence, a type of exchange <sup>in</sup> to which the Israelis often engaged. The methods of these exchanges <sup>e</sup> were very delicate because they involved the espionage services of the two countries.

In 1978, I was able to organize ~~xxx~~ a national exhibit of military technology. Western military ~~xxx~~ equipment and weapons could be found there, alongside our own products. Set up at Baneasa, it showed an almost complete range of materials being used in the armies and the police forces in Western Europe, a large selection of NATO infantry equipment and various models of mines and shells. Inside, we exhibited different lasers used by the military, computers and other microelectronic equipment, used mainly by the air force and the artillery. Outside, miles around, there was other equipment as well as the chief attraction of the exhibit: a British Centurion tank. There was also a new attraction, a smaller Renault tank, which had arrived the night before <sup>with</sup>, to our great fright, a live shell in the cannon. The laser-guided artillery pieces were tested by pulling on hundreds of balloons. In "our" section, out in the open, there was a new tank which resembled the Leopard. It was equipped with a <sup>brand new</sup> Diesel engine which came from the German <sup>TU</sup> M.T.M. company.

All these examples illustrate very well the enormous consequences of Communist intelligence activity, without the direct intervention of the KGB. I remember very well the words said to me by General Zakarov, head of the Soviet foreign intelligence service: "When it is a question of agents, we need your assistance and the assistance of the other fraternal countries. Taken together, they and you have much more important and more diversified trade with the West than we do. You have more recent emigres and a richer <sup>e</sup> maneuvering base for recruiting new agents (...). Together and only together can we change the balance of military forces and acquire a decisive socialist superiority. And only together.

can we make technological espionage one of the most effective and most productive operations in our history." I have no reason to think that this vast enterprise lost its importance after my departure from Romania.

he threat

In 1978, when he returned from Moscow, Ceausescu told me that Brezhnev had him visit, secretly, a "micro-electronics city". I had announced to him, proudly, that it had been set up by the KGB on the basis of the most recent technological intelligence and that its personnel includes several thousand KGB and army employees. Ceausescu had never seen such a collection of micro-electronic equipment. Brezhnev said to him:

"Technological cities of this type employ more than 20,000 engineers and technicians. Most of them work in our nuclear installations, but now that we can destroy the West several times, our priority is to construct missiles capable of striking at American missiles even before they are launched, of paralyzing NATO before it strikes first, of hitting, with precision, not only all possible targets in Western Europe but also the White House, Wall Street and <sup>(the automotive)</sup> industry in Detroit."

Ceausescu was very much impressed, both by the size of this "city" and by the ~~complex~~ almost complete secrecy which <sup>sur</sup> surrounded it. Such operations clearly illustrate the need for the Western countries to put an end to the industrial espionage of the communist bloc. This is not easy but it is possible to limit and to discourage the efforts of the Warsaw Pact countries. These countries have indescribable economic problems which have as their direct cause the economic and political structure of the communist societies and cannot be resolved in a socialist system. In order to survive and to develop, the socialist countries need real money, real markets, and only the capitalist world can supply these things to them. Poland ~~and~~ and Romania alone have borrowed 40 billion dollars to survive and they are making enormous sacrifices to repay these debts. Some Americans, like Senator

Jackson , have discovered how to use this economic reality as a lever, in order to improve human rights in the communist countries, linking the obtaining of the "most favored nation" clause to the right to emigrate. It would be very useful if it were possible to find a way to grant most favored nation treatment in exchange for giving up industrial espionage.

For the communist countries, the American law-on export control is a "dreaded" enemy; they try, with all their might, to distort it by presenting it as an attack on the fundamental principles of democracy or as an attempt by the United States to impose its policies on its allies. In reality, this law is, for the free world, a powerful means of protecting a scientific and technological asset which is our pride and our strength.

Most of the successful thefts of Western secrets have taken place in Western Europe and in Japan and not in the United States. These serious matters should be brought before public opinion in these countries so that they can better evaluate the policies of their leaders.

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