

HENRY L. ZELCHENKO

# Stealing America's Know-How

## The Story of AMTORG

IN THE SPRING OF 1926 about seventy-five Soviet engineers and mechanics descended on the Ford Motor Company plants to study the manufacture of the Fordson tractor, in accordance with a deal negotiated by the Amtorg Trading Corporation in New York. I was hired and paid by both Ford and Amtorg in the dual role of foreman of the Russian contingent and interpreter.

The following year I went on a visit to the Soviet Union. In Rostov my friend Ledeneff proudly showed me the loot that the guests of the Ford company had collected in their travels through Detroit, Chicago, and Milwaukee plants. Tons of blue-

prints, small tools, half-finished machine parts, even laboratory equipment were piled rafter-high in a small warehouse, and a score of men were sorting the stuff filched in the course of the American sojourn.

I realized then what the Russian engineers had meant when they kept saying while they were in America, "We are here to take what we want, not to be given alms." The picture was sharpened for me at a convention of the North Caucasus machine-building trust in Rostov. The problems of foreign trade were debated for two days, some favoring England, others the United States, as a primary source of materials. The clinching argument for America was delivered by Ledeneff. "In America," he declared, "we get more for our money. What we take free with every dollar we pay the Americans we would never get at any price in England, with

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Scotland Yard hanging onto our tails."

The plain fact is that under the guise of buying American goods, the Soviets for nearly thirty years have been stealing the secrets of American industrial know-how, inventive genius, and military progress. In this vital operation their prime agency has been the Amtorg Trading Corporation. Ostensibly a commercial organization, staffed in part by American Communists and fellow-travelers but mainly by Soviet citizens, it has actually been engaged in large-scale industrial, commercial, and military espionage.

Its amazing success has been made possible on the one hand by the untiring help of the Communist Party here, and on the other by business-hungry but myopic American manufacturers. From the time of its formation in 1923 to the dawn of lend-lease in 1941, this agency did pay piddling sums for what it received or purloined in technical information. But in the war years, when the so-called Soviet Purchasing Commission — filled with the ablest Amtorg-trained spies — functioned in Washington, there was no longer any need to pay. The Kremlin raked in everything in sight, gratis, as its intelligence agents swarmed over our factories, laboratories, and military installations.

In the cold-war years, of course, the scope of Amtorg's enterprise has been more and more restricted.

But it continues to conduct its sordid business from 49 West 37th Street, New York City, and seeks to maintain a skeleton staff against the day when it may again enjoy free and easy access to American technology. "We will always be here," the resident secret-police agent Karzov told me before the war, "because your country is ruled by big business, and big business wants our trade."

IN THE EARLY 1930's I worked in Moscow for two years as Technical Information Director in the Stalin automobile plant, ZIS. When my contract expired, I was summoned by the director, Ivan A. Likhachov. He informed me that a Soviet commission was being sent to Amtorg to buy machinery for the enlargement of his plant. Although I could not, as an American citizen, be made a member of the commission, he wished me to join it on an *ex officio* basis. I was glad to have his offer, as America was then in the throes of the depression, and good jobs were scarce. My intimate knowledge of ZIS and its needs, Likhachov told me, would be highly useful.

What, specifically, did he expect me to do in America? I asked. He smiled and looked at me significantly. Then he picked up a truck-timing gear from his desk and handed it to me. "What's wrong with this gear?" he asked. The

answer was fairly evident. I pointed out that the tooth cutting was bad, the lapping crude, the heat treating faulty.

"That's just what I'm driving at, brother," Likhachov exclaimed. "We must learn how to make this bastard of a part — all parts, in fact, because we don't know anything. You will help us not only in buying machines but in finding out exactly how these parts are manufactured. For every dollar we spend on a machine we expect a hundred — no, a thousand — dollars' worth of knowledge. Understand?"

Thus I returned to New York with the ZIS commission of forty-five men and one woman. Each of them, I became aware, had a definite program to fulfill — to learn the precise method of designing and finishing the parts with the manufacture of which he was concerned at home. "Dependable" people, particularly those who had left their families in Russia as hostages, remained in the United States a year or two, while less trusted people, who might succumb to the temptations of life under capitalism, returned after four to six months and were replaced by new agents.

Our procedure was simplicity itself. We began to send out requests for quotations on machines, tools, furnaces, dies, fire-fighting apparatus, etc. Immediately eager responses began to arrive from everybody and his uncle. In line with our requests,

all quotations were in five copies and accompanied by detailed drawings, descriptive literature, engineering data and instructions. Comrade Chernov, the heat treating engineer, chuckled in great glee: "Those Americans! Before they sell, they give away all there is to know about their products. I never believed they would really hand it over to us."

He shoved a set of blueprints toward me.

"Look, all I have to do is take these prints and instructions and, if possible, take a good look at the furnace in operation, then build it myself. I am a furnace man from way back. Why pay \$45,000 in good American *valuta* when I can build it for 100,000 rubles? We have plenty of rubles but no *valuta*."

**I**F YOU EVER WATCHED the Dance of the Buffoons in the Russian opera *The Snow Maiden* you will understand what I mean when I attest that the Soviet way of trading is a never-ending dance of buffoons, with foreign businessmen in the role of the buffoons. There was a constant stream of salesmen to the Amtorg offices, panting to grab a share of the supposed Russian trade. In their anxiety to make a buck they failed to notice or did not mind the tricks played on them. Amtorg agents singled out now one, now another manufacturer, and spent days or weeks at his plants. They

were dined and wined, provided with all the information they asked for, and returned triumphantly, usually laden with working drawings and operation charts.

WHEN THEY WANT something they cannot steal or extort, Communists can be very disingenuous. "We cannot buy a cat in a bag," they would plead. "We have to see the machine if we are to purchase it." And the normal American reaction was likely to be: "Poor fellows, so eager to learn! Show them everything — they won't be in competition with us anyhow."

The maker of a hardness-testing machine, for instance, was most responsive to our request for a demonstration in his plant. Nor did he discern any illogic when we argued that this was not enough — that we must also see his machine perform in the field.

"All right," he agreed good-naturedly, "where do you want to go?"

"Oh, it's all the same to us," the Russian spokesman shrugged. "Timken Axle Company, Ohio Crankshaft Company, and Packard will do fine."

No doubt it would be a big order, the manufacturer must have reasoned, since Amtorg was sending a fifteen-men delegation evidently bent on thorough examination of his product. It obviously never occurred to him that we had no intention of

buying his machines — only one of the fifteen, indeed, was connected with hardness testing, the others being electrical engineers, heat-treating engineers, mechanics, and GPU agents.

The mechanics in this instance had been assigned the task of finding out how to turn the differential spider pins so as to keep them straight and of proper size after heat treating. The heat treating experts and electricians were interested in a close-up of the TOCCO process by which crankshafts and camshafts were heat treated without scaling or warping, at a rate of four seconds per shaft as against seventeen to twenty-one hours by the old packing method. Others were instructed to study the electroplating process in the Packard plant. The three companies suggested so offhandedly had in fact been carefully selected in advance, and the role of the hardness-testing machine was simply to open doors for us.

Visits to the Ohio Crankshaft and Timken Axle factories were easily arranged. The Packard door didn't open so readily, but our hardness-testing friend, eager to please prospective customers, managed even that. He happened to know the Packard electroplating superintendent personally.

At the premises of Ohio Crankshaft, while on their way to the hardness-testing room, the Soviet delegation "accidentally" stumbled

over a curious contraption, the TOCCO machine. The chief electrical engineer of the Moscow ZIS plant, N. Lialin, asked innocently, "What's this?" Mr. Denneen, the inventor of the machine, proudly explained while his guests listened with bated breath.

"May we make a sketch, just out of curiosity?" Lialin asked. "We might consider buying it, and would like to explain the invention to our people."

"No need for sketches," Mr. Denneen replied, "we'll give you drawings and descriptive literature."

The Russians walked out of the plant around closing time with a glorious feeling of success. "Americans must be awfully stupid, giving away such secrets," one of them commented.

They were no less successful at the Timken factory in Detroit. The mechanics departed with their pockets bulging with drawings and operation charts of the axle spider. Of course, they had promised to order a lot of rear axles.

**T**HIS PROCESS of snooping and stockpiling information went on for many months and took the ZIS people through scores of plants all over the United States. Endless quotations were received, and each manufacturer took the Russians to new places, bought their meals, paid their transportation, for all of which the Communists charged their

government full-scale expenses. Every quotation produced suitcases stuffed with blueprints, operation data, catalogues, sketches, and often photographs. In addition, the Russians struck up acquaintance with factory workers, invited them to hotels and squeezed out additional information.

All this loot was duly sorted, numbered, and filed; the notes and operation charts were bound together. By the time a member of the commission was ready to go home, he had a report on his special assignment prepared. A number of copies of all reports were made, one being left with the Soviet Embassy.

The TOCCO story is worth telling in more detail. The drawings handed the visitors turned out to be merely commercial, not working drawings; and the literature did not reveal many secrets, just sales talk. So visits to the Cleveland plant became epidemic, on all sorts of excuses. Again and again, dangling the promise of a big order, the Soviet electrical engineers inspected the machine. An entire office for study and research on the TOCCO process was set aside in Amtorg, where every scrap of information was studied.

"Now we shall build it ourselves!" Lialin boasted.

A year passed. The TOCCO machine was perfected and installed in all leading American automobile plants. Meantime, in Moscow, two university professors, Kantorovitch

and Livshitz, worked on the data submitted by Lialin and his associate, Rubanov. Finally the Soviet-made machine was ready. According to all calculations it should have been as good as the original, and Stalin himself, we were informed, came to witness the first test.

The stolen TOCCO machine did not work. It hissed and sputtered, hummed and opened the circuit breakers, but the crankshaft journals either remained soft or melted, freezing up the terminal nests. Thousands of additional tests were conducted and mountains of new formulas were provided by the university professors. But six months later the Amtorg again came to Mr. Denneen. Only this time the intentions were honorable.

A CABLE IN CODE was received one day from Moscow and, as usual, was sent to the Consulate for deciphering. The big bosses at Amtorg were nervous, and their fears were caught by the whole establishment. A coded message might mean grief to someone in political hot water. But the message turned out harmless enough. Late that afternoon the head of the ZIS group called me in.

"We need the White truck!" he announced.

This meant that Moscow had instructed Amtorg to obtain the working drawings, operational charts and specifications of materials for manufacture of the White truck. All the

data that had been collected, studied, and perfected by an American company through years of trial and error and at heavy cost the Russians were to obtain free, wrapped up in a neat package.

I wrote to the White Company in Cleveland, asking permission for a group of Russians to visit their plant "preliminary to placing a substantial order for trucks." I made it clear, of course, that the Russians would investigate every other make of American trucks and that it was to the company's interest therefore to take us into confidence on all the vital points about their product. The answer was swift and favorable.

Four days and five banquets after we arrived in Cleveland, eighteen Russian engineers with happy, smiling faces were discharged from shiny Buicks and Cadillacs at the railroad station by White Company chauffeurs. Each of our engineers carried a briefcase fat with copies of blueprints, charts, specifications. By order of the firm's president, the factory and its offices had been thrown wide open to us; engineers had been assigned to help us collate the information. Yes, the Soviets placed an order — for *one* truck. This was taken apart by Amtorg, and every part checked against the drawings: "Who knows, those American crooks might have cheated us!"

The same trick was tried on General Motors, but didn't come off so smoothly. The Amtorg crowd tried a

novel approach — offered to buy the entire tooling and all technical data of the Buick, but naturally would first have to inspect these projected purchases. General Motors refused to bite. It took Amtorg sixteen months of straight-faced lying and cheating plus the help of small machine tool manufacturers to collect a complete set of technical information on the Buick. The machine tool people, of course, were those who sold their products to G.M. and therefore had access to its shops.

The first Buick copy rolled off a ZIS assembly line on the eve of the November 7 holiday, and Molotov himself was on hand to ride this "Soviet achievement." He never did. Despite the long and industrious Amtorg thievery, the imitation went only as far as the factory yard, then stalled. A furious Molotov was driven off in an American-made Buick. These occasional failures, however, did not halt the prodigious enterprise in industrial spying.

**W**E RECEIVED CABLES from Moscow continually, always instructions to "get" something that was plainly American property. "Find out complete method of making Textolite gears . . . Get details on construction of rear axle testing machine developed by Gleason Works of Rochester . . . Need exact method of heat-treating gears with allowance for scale . . . Find

out how to grind tappets. . . ." I remember these because they were in my division, but every other division was showered with similar orders, and together Amtorg "covered" nearly all of American industry.

The Continental-Diamond Fibre Company, makers of Textolite gears, at first received the Amtorg representatives with open arms. We were treated to a fine dinner, then met the president, the chief engineer, the sales and export managers. Our leader delivered a spiel: ZIS was making 50 cars and 350 trucks a day (truth: no cars, 76 trucks), which meant 120,000 timing gears a year, plus 40,000 spares, and the program would be doubled next year. . . . A vista of export orders to make American mouths water. But for all its cordiality, Continental-Diamond had sense enough not to let us into its factory. Moscow started a Textolite plant, and after two years' work had only a great mass of shredded canvas and a mountain of defective gear blanks to show for it.

Westinghouse Electric, to which Amtorg turned for its Micarta process, proved impossible to crack. We went to Pittsburgh by appointment and were politely received, but firmly barred from the shops.

At the Gleason Works of Rochester some of the Amtorg snoopers espied a new fixture for testing rear axle gears. Because the machine, which had several motors, was

housed in a separate room, the Russians assumed it was top-secret and so reported to Moscow. When attempts to learn the facts bogged down, the project was abandoned. But Moscow's cupidity had been aroused and soon directives came through to get the Gleason machine at any cost. In the end we obtained full explanation of the construction of the machine, together with drawings and sketches.

AND THUS IT WENT — radiators, gaskets, carburetors, propeller shafts, etc. One episode sticks in my memory because I was myself unpleasantly involved. A big problem for the Soviets was the analysis of furnace gas. Once, walking through the plant of the Electric Furnace Company, in Salem, Ohio, an Amtorg engineer spied a small contraption with which the presence or absence of oxygen in the controlled atmosphere of a furnace was determined. Alas, the device was not for sale, the company sales engineer, Mr. Bechtel, informed us, because it was not yet considered perfected.

Now, Mr. Bechtel happened to be a personal friend of mine, and the fact was known to Amtorg. I was instructed to bribe my friend if necessary, and because I refused, was promptly accused of sabotage. The next time I saw Bechtel in New York I explained my dilemma. A week later he sent me the machine,

with an invoice marked "gratis."

It was after this episode that I went on a passive resistance strike. I was fed up with acting as a catspaw for the industrial espionage outfit. We were ordered to "get" the full dope on the entire heating equipment and heat-treating methods as practiced in an alloy steel mill. I applied to four furnace companies, and sure enough, one furnace company came through with a 49-page description of the Indiana Harbor Works Alloy Steel Mill. I tucked this away in my desk and advised my immediate boss, Smirnov, that it was impossible to obtain the information.

Another standard procedure in prying out secrets was to hire American "consultants" on specific problems. They were usually employed engineers ready to put in a few free hours for a good fee. These engineers brought along sketches of the automobile or airplane parts, jigs, fixtures, machines on which they worked in their respective plants. What Amtorg couldn't keep, it had copied or photographed.

So called "Government contacts" and "Manufacturers' representatives" — the kind who own a telephone and a calling card — also served Amtorg's purposes. Many of them had free access to vital American plants, and readily cooperated in supplying information from places where Amtorg itself could not penetrate. Aroused by the prospect of

commissions, these go-betweens turned over to the Soviets secret jigs, tools, and other items which they managed to filch from Ford, General Motors, Wright Aeronautic, and other "big boys."

ONE THING ALWAYS PUZZLED many Amtorg men engaged in industrial espionage: How did Moscow know of machines and processes about which we in New York had no inkling? Where did it get the tips which promoted their instructions? Clearly there were other agents at work, outside the Amtorg set-up.

How, for instance, had Comrade Serpkov become aware of an unusual development in the plant of the Hooven-Owen-Rentschler Company of Hamilton, Ohio? He called me in one day to advise me that this firm was testing a nine-cylinder submarine engine of a new kind, known as the "pancake" type. Somehow, he said, we must get the blueprints.

At that time this same Hooven-Owen-Rentschler Company was building a big press for us. That gave us the excuse to loiter on the premises. But the experimental submarine engine was not in sight, and Serpkov's assignment seemed hopeless. But just when our press was in order, and we were ready to depart, a high official of the company, out of a clear sky, suggested that we "look at a freak engine — a curious affair, you know." We did look at the engine but failed to get the blueprints.

Two weeks later Serpkov summoned me again. "You failed with the submarine engine," he said, a sardonic smile on his lips. "Yes, *you* failed, but *we* always succeed. Recognize this?" He pointed to a set of prints on his desk. It was, of course, the pancake engine.

He then turned to another subject: the Process of Low Temperature Reduction of Iron Ore. I would have to go to Detroit with the engineer Smirnov. An elaborate scheme had already been worked out for us. We would let it be known that Amtorg was hiring a lot of American specialists, and Smirnov and I ostensibly were to interview applicants in that connection. As a starter, Serpkov gave us three "contacts": Detroit names and addresses provided by the American Communist Party. "These three," he said, "will bring us the rest."

In a Detroit hotel, Smirnov called the three American Communists and instructed them to send us die-makers, tool designers, gear cutters, pattern makers, metallurgists, engineers and highly qualified factory workers from every branch of the automotive and aircraft industries. The bait would be the possibility of a well-paid job in Russia. To qualify, every candidate had to bring drawings of the parts on which he was working.

It was shocking to watch the parade of grown men, some of them holding responsible jobs, each leav-

ing with us a bundle of working drawings. Those that had to be returned were photostated. We spent a whole summer on this task. We interviewed over three hundred persons and collected nearly one thousand pounds of blueprints and operation charts from the shops of Ford, Chrysler, Packard, Michigan Tool, Excello, to mention just a few. But the jig-saw puzzle still had a lot of gaping holes.

At the end of the summer, however, one of the Communists brought us a student of metallurgy from Ann Arbor University, who was working as a diemaker in a Detroit plant. He had full access to the data on reduction of iron ore by the Madras process. Smirnov immediately promised the young man a contract as manager of a plant in Moscow where the Madras process would be developed. Three days later Smirnov left for New York, carrying a complete description of the process, photostated on seventy-five pages, including tables, graphs, curves, pictures of equipment. He even had samples of the iron in various stages of reduction.

"You stay on a few weeks and wind up the business," he said to me. "We don't want these idiots to write us about their jobs."

**T**HE THEFT of industrial know-how was not the whole of Amtorg's job. To my own knowledge, it channeled funds — American funds,

sometimes in the form of commissions — to the American Communist Party and its official paper, the *Daily Worker*, but always from the tithe that the American employees of the Amtorg pay to the party, usually about  $1\frac{1}{2}$  to 2% of each pay check. It served as a front and an operational center for spies from other segments of the Soviet government. It even dipped its hands into the sordid business of kidnapping, forcibly detaining, then spiriting out of the country Soviet Russians who, for one reason or another, had decided to remain in free America. Mostly, of course, the kidnapped persons were disillusioned Amtorg employees, or officials who had reason to fear liquidation if they returned home.

This foreign agency, making the most of the economic freedom and the urge to profit in America, is still in business, as I said at the outset. Presumably the chastened mood of the country now cramps Amtorg's style. What its ultimate fate will be remains to be seen. But already it has filched technological information that, in the aggregate, may be worth billions of dollars. For all their recent boasts, Russians are poor inventors. Their industrial progress rests on imitation of foreign achievements. Without a ready and continuous influx of American and other foreign machines and technical knowledge, Soviet industry would quickly become sterile.

a story



# A DEAD BLUE BUS

henrietta weigel

**H**IS PALE PUDGY FACE seemed to float in sunlight, as if disconnected from his body, from his soiled shirt, too, open on top, exposing his young throat and the dark hair on his chest.

He watched the two young women walking, and he wanted to talk to them, to thrust himself between them. They looked happy on the broad New York street, in spite of its brick buildings and its gutters cluttered by trucks that appeared to be each a mile long, some even longer because they were painted red. The pavements felt as if they might melt right under your feet, and the sun beat up your eyeballs.

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The dames, he thought, maybe they were rich despite their simple shirts and blue jeans. They weren't cooped up in an office, for it was not yet noon, and not out for a quick coffee, either, wearing those clothes. During the big war, what they had on would have been O.K., but not now, when girls had gone back to having shapes again. And these two had shapes all right. The tall one — she had light brown hair and green eyes — was neat on top with wide hips, twice as wide as his. She was like a bottle with a thin neck, he thought, through which wine could pour, and make a funny gurgle gurgle sound as it worked its way out. Blood could come out that way too, red as red wine, but no doubt saltier, mixed as it must be, he knew, though he was no doctor, with bone and flesh and all the things