

OPINION

Science and the Stasi

The acquisition of scientific and technological secrets was at the heart of East Germany's foreign espionage operations before the fall of the Berlin Wall, reveals **Kristie Macrakis**.

In 1992, three years after the fall of the Berlin Wall, a spy walked into the US embassy in Warsaw and offered to sell the CIA the real and code names of all intelligence agents from the HVA (*Hauptverwaltung Aufklärung*) — the foreign department of the Stasi, the East German Ministry for State Security. The CIA bought the highly sensitive information for a mere US\$75,000.

The spoils — released to the Berlin Stasi archive and made available to me in 2005 — have the potential to alter popular perceptions of the activities of the East German intelligence agency and secret police. An analysis of the CIA material reveals that about 40% of all HVA sources planted in West German companies, research institutions and universities were stealing scientific and technical secrets.

It is not uncommon for nations seeking to catch up in technology to spy — they are often seduced by the possibility of turning secrets into products. History abounds with examples of countries that copied and then improved on foreign technology. In the eighteenth century, France spied on, and stole, Britain's textile technology. The Soviet Union stunned the world with its theft of American atomic-bomb secrets in the twentieth century. Since the end of the cold war there has been an increase in state-sponsored and orchestrated industrial, economic and scientific espionage. Recent cases and convictions of Chinese technological espionage against US and UK high-tech industries illustrate the persistence of this quest.

Boosting scientific, technical and economic prowess through espionage is a protracted process. Ultimately, success lies in a country integrating stolen ideas or products into its research and development system. But even with a highly perfected espionage operation such as that of East Germany, pilfering nations often forget that a scientific establishment based on pirated and cloned technology is rarely a leader, especially in fast-moving fields such as computing. In fact, every smuggled document weakens true scientific innovation by maintaining dependence on espionage and the state security regime.

The Sector for Science and Technology was the largest and most important unit in the Ministry for State Security for acquiring technical blueprints, plans and hardware. It was also considered the most successful because



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it saved East Germany millions of marks in research and development costs through its efficient acquisition pipeline of secrets from the West. Modelled on the KGB's science and technology directorate, the sector was founded in 1971 from three operational units for biology and physics, computers and military technology and the economy, plus an evaluation unit for grading stolen material. Major General Horst Vogel, an unassuming bear of a man and a working-class patriot from Saxony, headed the unit from 1975 to 1989.

Technology on demand

The sector was almost like a secret mail-order operation. Scientists could place orders to acquire goods from the West. The goods were then evaluated and graded by Stasi-approved scientists and passed on to a research institute. Typical was the case of Wolfgang Biermann, general director of Carl Zeiss Jena, a manufacturer of optical systems, placing an order for documents on, and a sample of, a one-megabit chip.

During the cold war, the HVA managed to penetrate West Germany's most important institutions including prestigious scientific and technical establishments, as well as managing to recruit important American sources on German soil (the HVA had agents all over the

world, but only the CIA material on German citizens was returned to Germany). By 1989, the sector had planted agents at internationally competitive companies such as IBM, Siemens, AEG/Telefunken, Standard Elektrik Lorenz, Texas Instruments and Digital Equipment Corporation. The aerospace defence contractor Messerschmitt-Bölkow-Blohm was particularly hard hit throughout the cold war (see 'All in the family'). Its sensitive military secrets were quickly passed on to the Soviet Union.

Contrary to expectations, the sector ran only a sprinkling of agents at centres of research such as the Max Planck Institutes, Fraunhofer and universities or technical colleges such as TH-Aachen and TH-Berlin. University agents tended to be students who were groomed as future sources in industry. As a result there were only a handful of agents who were university professors. The HVA targeted industry rather than basic research at universities, particularly after the spectacular 1979 defection to West Germany of Werner Stiller. An officer from the sector's basic-research unit, Stiller unmasked more than a dozen scientists working on basic and applied nuclear research. Several agents worked at smaller, often independently owned businesses and there was a large contingent of self-employed businessmen.

Thousands of Western scientists, engineers

and businessmen betrayed their country to work for Eastern bloc intelligence. Unexpectedly, the agents were not well-known leaders in their fields, rather they were anonymous male, salaried company employees, the majority working in electronics. Many were also secretaries, students, production workers and repairmen with access to secret material. Only ten agents working in West German institutions were women, five secretaries and five salaried employees, including one with a PhD.

HVA secretary spies seduced by male 'Romeo' agents made headline news during the cold war, but the science sector does not seem to have used this strategy much. Many West Germans spied for money; but an equal number spied for ideological reasons, and some for love or for adventure.

Open secret

Good espionage does not necessarily lead to good science or technology. Take the case of the computer industry. In the 1960s, and again in the 1980s, East German spies and smugglers successfully bypassed the Western embargo prohibiting Eastern bloc countries from importing sensitive dual-use technologies. The Eastern bloc countries stole plans, copied technologies and reverse-engineered machines through agents planted at key institutions.

This was no secret in the West. Not only did Western scientists write messages on micro-

chips such as "When are you going to stop stealing?", but they sometimes altered embargoed goods to fail on arrival. When Werner Scheele, a West German businessman code-named 'Rhein', smuggled a US high-current ion implanter into East Germany through Indonesia, Western intelligence agencies doctored the machine with self-destructive parts. Delivered to East Germany in December 1989, it exploded around the same time as the country imploded.

Computer technology was alluring, but the state overestimated the power of secrets to propel its computer industry forwards. The effort to copy the IBM 360 was a deemed a success during the 1960s because the Robotron Company created a clunky clone, called the RYAD series. But East Germany's quest to latch on to the 1980s computer revolution through espionage and illegal technology transfer failed miserably. They just couldn't catch up with powerhouse competitors from Japan and the United States in such a fast-moving industry.

Despite the vaunted reputation of East German intelligence, peeling away at its layers of mystery as new material has become available over the past ten years has revealed an incredibly bloated human intelligence-gathering operation. The Stasi maintained an enormous back-up staff, much larger than those of

Western spy agencies, to recruit, run and handle agents. And, unlike other spy agencies that do much of their business through diplomatic channels and the embassies, East Germany did not have embassies in Western countries until 1972 when it was recognized as a separate German state. The Berlin Wall also hindered meetings with Western agents in East

Germany. Much human effort was expended to run operations with a small return.

Ultimately, the stopgap measures offered by spies did not provide long-term solutions for East Germany's

economic ills during the cold war. After the fall of the Berlin Wall only about a dozen science spies were convicted, and with very light sentences, despite thousands of investigations — West German prosecutors considered the damage to their industry minimal. As a former intelligence officer once told me, the sector was no "magic shop".

After 1989 there was a large-scale takeover of East German science and industry by the West. Despite pockets of innovation, the rotting East German infrastructure needed a massive infusion of modernity to be internationally competitive. Notable is the success of Silicon Saxony, one of Europe's leading microelectronics locations with hundreds of firms and tens of thousands of employees, built on the ashes of East Germany's computer-industry efforts.

This does not mean that science through espionage always fails. During the cold war, Japan proved itself far more adept at turning secrets into products in the electronics industry. But it had a much stronger economy.

Despite the HVA's lack of long-term success, one thing should be remembered: East German intelligence did not act alone. Science and technology had been at the top of the KGB's shopping list since the beginning of the cold war and it continues to be a priority for the KGB's successor foreign intelligence service, the SVR. Although the Eastern bloc countries did not always successfully integrate stolen secrets into their industrial bases, military secrets, such as plans from the Tornado fighter jet, could have been used against the West had the cold war turned hot. ■

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All in the family

One of the Stasi's most prized agents was Dieter Feuerstein (pictured), a West German national born in 1955. During the 1970s he became a leftist, but his father cryptically told him there were "other ways to achieve political goals". When Feuerstein's father died shortly before he graduated from high school, he contacted his parent's 'friends' in Berlin who confessed their real jobs as Stasi officers.

He was recruited in 1974, given the code-name 'Petermann' and carried on the family tradition of spying. His wife also worked for the Stasi. Although Feuerstein had excelled in the humanities and social sciences, his case officers steered him towards natural sciences. They suggested he enrol in a machine-building course at the Technical University of



Berlin and then switch to air and space technology. It took him eight years to complete his undergraduate degree because he found the subject so difficult.

In 1984 he got a job at aerospace company Messerschmitt, Bölkow-Blohm in Munich. Even though he worked for a weapons manufacturer, his case officer at the time frequently reminded him that he was working for peace. "When the enemy is not there anymore,

they can't disturb the peace," the case officer told him. Feuerstein worked on the high-speed anti-radiation missile project and the Tornado fighter jet. Because East Germany couldn't use the military material he stole, it was passed on to the Soviet Union.

According to West German counter-intelligence, in 1990 the Soviet Union wanted to take over the HVA's best agents, including Feuerstein. In a scene reminiscent of a cold war spy novel, a KGB-driven black limousine pulled up beside him on a Berlin street but he never got in. Instead, his case officer defected to the West and turned him in. Feuerstein was convicted of espionage and spent four years of an eight-year sentence in prison. He now works as a patent researcher.

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