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Stalin & the Bomb
The View from Inside the Kremlin

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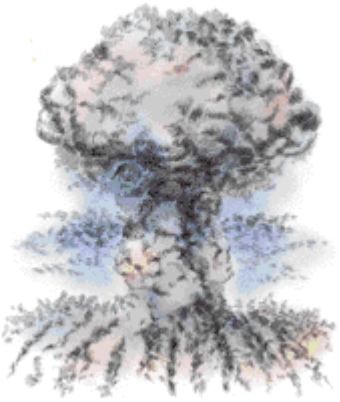
In the half-decade since the fall of the Berlin Wall, the West has learned some of the darker secrets of the East: that East Germans routinely spied on their neighbors; that Soviets bankrupted themselves in their efforts to match the West missile to missile; and that the dictator of Romania created an infernal child care system that abused those unlucky enough to be placed in its hands.



Another Soviet secret is now in the open, but this time it reveals an accomplishment that the people of the former Soviet republics look to with guarded pride. In *Stalin & the Bomb: The Soviet Union and Atomic Energy, 1939-1956* (New Haven: Yale University Press, 464 pp., $30.00), David Holloway, codirector of the Center for International Security and Arms Control at Stanford University, tells the story of how a handful of Russian scientists were able to catch up to American and British atomic bomb programs (the use of stolen secrets helped) and eventually explode their own thermonuclear device. To research the story, Holloway used his access to the archives of many Soviet scientific institutions and interviews with many of the principals in the Soviet bomb program as well as documents that have recently become available.

Providing a view from inside both the Kremlin and the nation's laboratories, he explores three broad themes: how Soviet scientists overcame their late start in building the bomb; the oftentimes distrustful relationship between Soviet rulers, especially secret police chief Lavrentii Beria, and Soviet scientists and engineers; and the impact of nuclear weapons on the Cold War.

He poses many "what if" questions, answers to which might have altered the course of history. For example, what if Beria and Soviet premier Joseph Stalin had listened to the warnings of their own spies (one ensconced in the heart of the Manhattan Project) about the seriousness of the United States and British bomb development projects, instead of waiting until after the U.S. destroyed Hiroshima and Nagasaki to start their full-scale bomb program? After World War II, would Stalin's hard negotiating line on the geographical boundaries of Europe, when the U.S. had a monopoly on the bomb, have been softened if the Americans had kept him better informed of their plans to develop and use the bomb?

The Role of Espionage

Incredibly, it was not until a 1940 article entitled "Vast Power Source in Atomic Energy Opened by Science" appeared in the *New York Times* that Soviet researchers learned of the steadily advancing nuclear programs of the United States and Germany. By the following year, Soviet intelligence had shifted from reading the newspaper to espionage.

A spy in London for the People's Commissariat of Internal Affairs, a forerunner of the Committee of State Security (KGB), was the first to verify to the Soviet Union in September 1941 that Britain had decided to build a bomb. Even more valuable information began to flow from Klaus Fuchs, a spy on the British bomb team who also worked on the Manhattan Project at Los Alamos in 1944. According to Holloway, it was Fuchs who gave the Soviets key information on the "implosion" method of detonating a bomb, which is the process of using conventional explosives to compress nuclear material until it reaches "criticality" and detonates, as well as a sketch of the U.S. bomb, its components, and important dimensions.

The main beneficiary of this espionage was Igor Kurchatov, scientific director of the Soviet nuclear program from 1942 until his death in 1960. Holloway believes that stolen secrets helped the Soviets cut months or even years off their own bomb program. Wrote Kurchatov to Communist party member Mikhail Pervukhin, "[Espionage] has made it possible to obtain very important guidelines for our research, to bypass

"There is a temptation to treat the history of the Soviet Union merely as the history of a system that was bound to fail, and to indict all those who were associated with the Soviet side of the Cold War. But the collapse of the system did not seem inevitable after World War II, and the history of the Cold War is far too complex to be captured by an indictment of one side."
David Holloway

many very labor-intensive phases of working out the problem, and to learn about new scientific and technical ways of solving it."

Kurchatov was unable to tell his scientific colleagues about his nation's espionage and had to find a way to spur nuclear research without revealing his sources. Notes Holloway, "This he did by proposing promising lines of research, and by suggesting ideas in meetings and seminars." Soviet physicists would then take that information and conduct their own independent research.

However, the progress of the project was too slow for Kurchatov. Though the Soviet leaders -- Stalin, Beria, and Minister of Foreign Affairs Viacheslav Molotov -- were by now well informed about the Manhattan Project, they felt no urgency to speed up the research program, even with the U.S. on the verge of testing its first atomic bomb in the desert at Alamogordo, New Mexico. The reason, stated one officer of the KGB, was that Beria doubted his own intelligence reports. The officer wrote a fellow KGB agent, Anatolii Iatskov, "From the beginning, Beria suspected disinformation in these reports, thinking that the enemy was trying to draw us in this way into huge expenditures of resources and effort on work which had no future."

Whatever the reasons, it is clear that -- in spite of Fuchs's report that the United States was planning to test the bomb on July 10, 1945, and to use it against Japan if the test was successful -- neither Stalin nor Beria nor Molotov understood the role that the atomic bomb would soon play in international relations.

After Nagasaki

That misunderstanding changed dramatically after President Truman used the bomb to bring Japan to its knees in mid-1945. Now Stalin could not push his physicists fast enough. Money and resources that were scarce in the first half of the decade were suddenly made available to Kurchatov. "Ask for whatever you like," Stalin told him. "You won't be refused."

With the United States in sole possession of a nuclear weapon, Holloway reveals Stalin was concerned that "the atomic bomb had altered the state of power and would enable the United States to shape the postwar settlement to its own advantage." Though there were discussions in the West about using the bomb as a "master card" in negotiations with the Soviets concerning the future of Eastern Europe, "no clear strategy was devised for using the bomb to win concessions from the Soviet Union."

Even so, Stalin expected to be threatened with the bomb and acted accordingly. Rather than kowtow to U.S. interests, Soviet negotiators took a hard line on the future of Berlin and Eastern Europe. Thanks to Fuchs, the Soviets also knew that the United States had only a handful of nuclear weapons after the war -- nine in 1946, thirteen in 1947, and fifty-six in 1948 -- far too few to seriously threaten the massive Soviet Union. The goals of the Soviet negotiating tactic, according to Holloway, were "to break the American monopoly [on the bomb] and in the meantime to ensure that the United States did not derive political benefit from that monopoly."

Meetings between the Western allies and the Soviets after World War II took an adversarial turn, with the West trying to put the bomb and international control of atomic energy at the top of the agenda and the Soviets placing it at the bottom to emphasize their supposed lack of concern. "Atomic diplomacy -- the hope on the one side, the fear on the other, that the bomb would prove to be a powerful political instrument -- contributed . . . to the deterioration of U.S.-Soviet relations."

One of the low points in postwar relations came in mid-1948 with the Soviet blockade of Berlin. The crisis was resolved, but the fissures between East and West grew. "The tactic [Soviet leaders] devised for dealing with [the bomb] was to show that the Soviet Union would not be intimidated. This tactic, however, appears to have led to a quicker breakdown of cooperation than Stalin might have envisaged. In that sense the bomb contributed to the collapse of the wartime alliance and the origins of the Cold War."

A Different Outcome?

It is here that Holloway asks one of the key questions of his study, which received partial support from the Corporation. Would the Soviet Union have agreed to international control of nuclear weapons and nuclear research if Stalin had been kept up to date on the bomb before it was used against Japan? The answer, according to the author, is probably not. "Even if Stalin had been informed, he would still have wanted a bomb. . . . To Stalin and Molotov it was clear that the United States wanted to use the bomb as an instrument of political pressure. "Even if the Truman administration eschewed all thought of atomic diplomacy, the bomb would have existed, and would have been seen by Stalin and Molotov as a factor in the balance of power. . . . For Stalin the danger was not the atomic bomb as such, but the American monopoly of the bomb. The obvious solution to this problem, in Stalin's mind, was a Soviet atomic bomb."

The development of an industrial base to build an atomic bomb was something the Soviet Union was perfectly equipped to handle -- particularly with top scientists, engineers, and managers to do the thinking and an unlimited supply of prisoners from the labor camps to do the manual labor. The U.S. Central Intelligence Agency estimated in 1950 that as many as 460,000 people were working on refinement of the Soviet bomb, which was first tested in August 1949.

Holloway gives due credit for the Soviet achievement. While espionage assuredly played a key role in the Soviet atomic program, the best estimates are that the Soviet Union could have built a bomb by 1951 or 1952 even without intelligence about the American bomb. "Soviet nuclear research in 1939-41 had gone a long way toward establishing the conditions for an explosive chain reaction. It was because Soviet nuclear scientists were so advanced that they were able to make good use of the information they received from Britain and the United States about the atomic bomb. [Moreover,] Soviet scientists showed their ability by developing thermonuclear weapons [the hydrogen bomb] independently."

Though Soviet scientists were forced to work in the presence of informers and under the threat of repression, the scientists themselves thought their work was for the ultimate good of the Soviet Union. Concludes Holloway, "Those who took part in the project believed that the Soviet Union needed its own bomb in order to defend itself, and welcomed the challenge of proving the worth of Soviet science by building a Soviet atomic bomb as quickly as possible."

Even with the Soviets joining the nuclear club, Stalin's "war of nerves" immediately after the Second World War reinforced "the conviction of the Western powers that the Soviet Union was an aggressive expansionist power, and that they needed to defend themselves by forming nato and building up their armed forces."

The hope that relations between the West and East would thaw once the Soviet Union had its own atomic weapon never materialized. Rather than strengthening the Soviet Union's military position, the fact that it had tested an atomic weapon only served to increase world tension: ". . . the test did not remove all feelings of insecurity. The secrecy surrounding the atomic test, and the misleading claims that were made once the test had become public, tend to support Khrushchev's account [in his memoirs] because they indicate that Stalin did not believe that the atomic test had made the Soviet Union secure. On the contrary, the test heightened U.S. anxiety at a time when the Soviet Union had not yet acquired a significant atomic capability."

Nuclear Energy

With both sides now in possession of the bomb, the possibility of a nuclear arms race -- a concern that had been expressed years earlier -- was now approaching reality. Danish physicist Niels Bohr and Vannevar Bush, head of the U.S. Office for Scientific Research and Development,

"I have tried to explore, as far as I could, what people did -- and what they thought they were doing -- in the context of their own time. That time and that context are quickly becoming remote, and increasingly difficult to comprehend. Yet it is important to do so, for we still live -- and will live for a long time -- with the consequences of decisions taken and implemented in the period covered by this book."
David Holloway

felt the best way to avoid an arms race was to disclose the history of bomb development without details about manufacturing. That did not happen.

Peter Kapitsa, an important physicist in the Soviet atomic program, who won the Nobel Prize for physics in 1978, pushed for international cooperation in the development of atomic energy for peaceful uses. Paraphrasing a letter from Kapitsa to Molotov, Holloway writes, "The success in harnessing atomic energy marked the opening of a new era in human culture. Its main significance was that it gave the human race a powerful source of energy. To see atomic energy only as a means of destruction was as trivial and absurd as to regard electricity primarily as a source of energy for the electric chair."

That was dangerous thinking to Beria, however, and by mid-1946 Kapitsa had been removed from his position in the atomic project.

But even with a healthy dose of mistrust between Communist party leaders and physicists, those working on the Soviet bomb emerged relatively unscathed in the period between the late 1930s, when millions died in Stalin's purge, and the mid-1950s, with the development of the even-more-powerful hydrogen bomb. Though some scientists quit the nuclear project after Stalin's death in 1953, work to advance the nuclear program continued.

However, as Holloway points out, the bomb had begun to serve a different purpose in relations between East and West. The new Soviet leader, Nikita Khrushchev, realizing the potential destruction of an all-out nuclear war, altered Soviet foreign policy to reflect that fear. "Either peaceful coexistence or the most destructive war in history," he intoned. Even the father of the Soviet bomb, Igor Kurchatov, eventually acknowledged that the nuclear genie created by the superpowers must never be loosed on the world. Returning from a scorched and devastated test site caused by the Soviet's second explosion of a hydrogen bomb in 1955, Kurchatov told a friend, "That was such a terrible, monstrous sight! That weapon must not be allowed ever to be used."

-- Barry Rosenberg

For information:
David Holloway, Codirector, Center for International Security and Arms Control, 320 Galvez Street, Stanford University, Stanford, CA 94305.