The residential nature of Spaso House limited access by Soviet technicians and thwarted attempts to install concealed surveillance devices. The house and garden were surrounded on three sides by high brick walls, and an iron fence guarded by plainclothes Russian officers blocked the fourth side. But Beria was determined. An engineer-magician would be required.

In one of his first dragnets in early '39—just after the ouster of Yezhov—Beria had sanctioned the arrest of an engineer, Lev Sergeyevich Termen. Nine months later, the same Termen had been delivered from Kolyma to the sanctuary of the Radio Street design bureau. Beria knew that—after all, the institution of the sharashka was his creation. After Sverdlovsk, Lev Sergeyevich had been reassigned to a sharashka at Kuchino, near Moscow, a facility for radio electronics and measuring devices. There he had designed a "radio beacon whose signals helped locate missing submarines, aircraft, or secret cargo smuggled into the enemy's rear."[8] In the spring of '45, the Spaso House puzzle would be his next assignment.

Beria's demands were intimidating: there could be no wires, no traditional microphones, and the system had to be encased in something that would not call attention to itself. For Lev Sergeyevich, the stakes were higher than ever. Beria was no one to disappoint. He always had his way, and failure for the inventor could mean a return to Kolyma, or worse. But Lev Sergeyevich forged a working system. The only remaining quandary was how to penetrate the ambassador's residence. With his trademark sleight-of-hand, he soon found his answer in the archetype of the Trojan horse.

July 4, 1945. The annual Independence Day reception at Spaso House was the one event of the year when Averell Harriman threw open the doors to his Russian hosts. A delegation of Soviet boy scouts (Pioneers) presented the ambassador with a large wooden wall plaque—the carved relief of the Great Seal of the United States. It was offered as "a gesture of friendship" and a token of fine Russian woodcarving. Harriman thanked the scouts and hung the eagle emblem on the wall over his desk. Lodged inside was the latest incarnation of Lev Sergeyevich's wizardry—a miniature apparatus bearing the hallmarks of his capacitive work from the space-control instrument to the burglar and fire alarm systems.

Set into a long, trenchlike cavity gouged through an inner surface of the hollow plaque was a small metal cylinder, eleven-sixteenths of an inch deep and roughly the diameter of a quarter. Attached to the cylinder was a nine-inch-long protruding antenna tail. The device was passive—it had no batteries or current, and its lifespan was indefinite. Its presence went undetected by the routine X-ray screening of all objects entering Spaso House. The device became active only when an external microwave beam of 330 MHz was directed at its antenna from a neighboring building, causing a metal plate in-

side the cylinder to resonate as a miniature tuned circuit. The wood just behind the eagle's beak was thin enough to allow sound waves from human speech in the ambassador's office to filter through to a diaphragm that moved in response to the sounds. The pattern of the diaphragm's vibrations caused fluctuations in the capacitance between the diaphragm itself and the plate of the tuned circuit that faced it, causing it to act as a microphone. This produced corresponding modulations that were registered in the antenna— much like a broadcast transmitter—and reflected out to be picked up as words on a remote receiver. Lev Sergeyevich was careful to select a bandwidth he knew was not under the control of American security. With his experience in tuned circuits from his space-control instrument, and devices like the keyboard harmonium, he was the ideal specialist for the job.

Averell Harriman went about his business, ignorant of the new ear on his wall. In the aftermath of the Hiroshima and Nagasaki bombings, Spaso House was churning with activity and speculation in August, hosting a hero's welcome for General Eisenhower, the visit of a dozen American congressmen, and a White House staff member. In October, Harriman received George Andreychin, a Bulgarian expelled from the Communist Party, who was associated with Trotsky and had spent time in Soviet jails. Andreychin explained that Spaso House had been bugged during the earliest American ambassador's tenure there, and he felt it would be risky to discuss sensitive issues openly. In spite of Harriman's assurances that the building had been exhaustively checked for listening devices, Andreychin insisted on speaking in the washroom, veiling his voice with rushing tap water.

Soviet intelligence was cautious, tuning in the eagle only periodically to avoid detection. Nonetheless, it proved invaluable. Vadim Goncharov, who worked with the team that intercepted the eagle's communications in the monitoring post, later revealed, "for a long time, our country was able to get specific and very important information which gave us certain advantages in the prediction and performance of world politics in the difficult period of the cold war."[9]

With the eagle happily performing its clandestine duties undetected, Beria enlisted Lev Sergeyevich for a second eavesdropping operation in 1947. Again, the charge was to achieve wireless surveillance, but this time there could be no detecting device of any sort planted at the target site. The project would be code-named *Buran* ("snowstorm"). Lev Sergeyevich approached this nearly impossible mandate by studying the natural resonators already in the structural components of buildings. Because sound waves created by the human voice cause window panes in a room to vibrate slightly, he reasoned, a method could be developed to detect and read these vibrations from a distance,

reinterpreting them into discernible speech patterns. Considering the complex properties of resonating glass, with many harmonics sounding simultaneously, the trick would be to pinpoint a surface spot of least distortion for maximum clarity of the voice signal. By directing an infrared beam at the window glass and focusing it on a zone of optimum resonance, Lev Sergeyevich was able to reflect the ray back to an interferometer and a photo element, accurately detecting conversations in the room. This technology easily resisted interception (a monitoring unit would have to disrupt the light beam itself) or attempts at jamming (optical overpowering of the signal would be required and was unlikely). The low power radiated by the beam also made it hard to detect. The Buran system was reliable at distances up to sixteen hundred feet from the designated window, but it was not effective in rain, fog, or smog. "In a back parallel street I was given a room where I installed the device," Lev Sergeyevich remembered.[10] At the listening post, part of his job was to reduce the noise element of the received signal.

Using Buran, Beria successfully monitored discussions in the business office of the American embassy (the Chancery), located on the north side of Red Square on Mokhovaya Ulitsa, facing Lenin's tomb. The seven-story building was shallow in depth and easily vulnerable to the infrared system. The new surveillance method was nearly impossible to detect and certainly couldn't be disabled by dismantling anything. Delighted, Beria turned it on the British and French embassies in Moscow as well.

Beria, like other intimates of Stalin, began to observe the leader's growing paranoia over the loyalty of his minions, and his ferocious distaste for the idea of a successor—attitudes that spread an ominous undercurrent of suspicion and fear at sessions of the inner circle. Knowing how seriously to weigh the leader's erratic behavior—his quips, sudden rebukes, or his own Socratic method of diabolical leading questions—became a dangerous survival game. "Stalin was a very distrustful man, sickly suspicious," Nikita Khrushchev recalled. "He could look at a man and say: 'Why are your eyes so shifty today,' or 'Why are you turning so much today and avoiding to look me directly in the eyes?' The sickly suspicion created in him a general distrust even toward eminent party workers whom he had known for years. Everywhere and in everything he saw 'enemies,' 'two-facers' and 'spies.'"[11] Trusted members of his coterie were often forced to tolerate the imprisonment or labor camp exile of their wives or close relatives. Molotov, who remained in the highest plateau of power with Beria and Malenkov, looked the other way as his wife went to jail in 1948 in an anti-Semitic campaign. Late-night dinners at Stalin's dacha turned into vulgar revelries where his subordinates were compelled to drink themselves into a stupor and humiliate themselves, sometimes carried off by