



To the great surprise of Americans, including leaders of the U.S. government, the Soviet Union tested its first atomic bomb on August 29, 1949.

The U.S. had estimated Russia would not have the bomb before 1953. The U.K. had estimated Russia would not have the bomb before 1954.

The Soviets referred to the implosion device as RDS-1 (also known as Izdeliye 501, or device 501) and First Lightning. The U.S. dubbed it Joe-1, in reference to Joseph Stalin.

What kind of nuclear bomb was RDS-1?

Not surprisingly—since America’s atomic “secrets” were shared with Soviet scientists—the Soviet’s first bomb was a plutonium implosion-device. It was similar to “The Gadget” (as the “Trinity” test-site bomb was called) and “Fat Man” (the bomb that was dropped on Hiroshima, Japan).

The power of “First Lightning” surprised even the Soviet engineers who had developed it. Its explosion was about 50% more destructive than they had expected. Experts estimated its power at about 22 kilotons.

RDS-1 was detonated on a tower—akin to the Trinity-test tower—at the Semipalatinsk test site in the Soviet Republic of Kazakh (known today as Kazakhstan).



Who led the Soviet team’s development of the country’s first atomic bomb? Igor Kurchatov, known as the “Father of the Soviet atomic bomb.” He had another nickname—“Boroda”—which people close to him used. In English, “boroda” means “beard.”

Kurchatov earned the nickname when he grew his beard, during World War II, and vowed not to cut it until Hitler was defeated. Even though Hitler lost the war, Kurchatov kept his beard.

He, and his team, worked at a secret location known as Arzamas-16. They benefitted from information about the “Manhattan Project,” supplied to the Soviets by a spy named Klaus Fuchs.

As a result of the information which Fuchs supplied, Joe-1 was very similar to Fat Man.

With the detonation of this nuclear device, the “arms race” was on. The “Cold War” had well and truly begun. The United States was unaware of this atomic-bomb test in real time. It wasn’t until a few weeks later, when a specially-equipped American weather plane was flying off the Siberian coast, that the secret was revealed. Radioactive debris pointed to one inescapable conclusion: The Soviets had detonated an atomic bomb. President Truman was still in office when the Soviets accomplished this milestone. He, like others in his administration, was stunned that the Soviets were able to make this happen only four years after the Hiroshima bomb attack.

Another two years would pass, however, before the Soviets tested another nuclear bomb. To the end of his life—he died in 1960—Igor Kurchatov (who also worked on Sputnik) was proud of his work on the bomb:

I am glad that I was born in Russia and have dedicated my life to Soviet atomic science. I deeply believe, and am firmly convinced, that our people and our government will use the achievements of that science solely for the good of mankind.

One, as they say, can only hope.

Credits:

This image depicts the atomic-bomb test of the Soviet Union’s first nuclear device, RDS-1 (also called “First Lightning,” by the Soviets and “Joe-1,” by the Americans. It is a still shot from Peter Curan’s film "Trinity and Beyond: The Atomic Bomb Movie," as displayed on nuclearweaponsarchive.org, and used with permission of Peter Curan. [Online via the National Security Archive](http://www.nsa.gov) at George Washington University.

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Plutonium Bomb - "The Gadget"

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Site of the USSR's First Nuclear Test

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