



## Trinity - Birth of the Atomic Age

At 5:30 AM on the morning of July 16, 1945, the pre-dawn stillness of the New Mexico desert was shattered by the most momentous, man-made explosion of all time. At a site called Trinity, a plutonium bomb was assembled and atop a 100 foot steel tower.

The bomb was detonated, producing an intense flash and a fireball that expanded to 600 meters in two seconds. The explosive power was equivalent to 18.6 kilotons of TNT. It grew to a height of more than 12 kilometers, boiling up in the shape of a mushroom. Forty seconds later, the blast of air from the bomb reached the observation bunkers, along with a long and deafening roar of sound. And so began the ATOMIC AGE...

The uranium gun weapon, "Little Boy Bomb", was a simple design and scientists were confident it would work without testing. The "Fat Man", or implosion bomb, was a more efficient design, using plutonium instead of uranium. Inside the very center of the bomb was an initiator, surrounded by a sphere of plutonium.

This sphere was encased within a set of symmetrically located, high explosive lenses, creating an implosion which forced the plutonium into itself, attaining critical mass. The blast instantly raised temperatures to ten million degrees, releasing a force of a million pounds of pressure, vaporizing the tower and desert life within half a mile.

The intensity of light was sufficient to cause temporary blindness to an observer half a mile away. Development and construction of the atomic bomb was the most closely guarded secret in scientific history. This was a culmination of centuries of step-by-step advances in the scientific quest to learn about the inner workings of the atom.

Finally, in July 16, 1945, a practical atomic bomb was completed. The first test, code named "Trinity" was exploded at Alamogordo, New Mexico. The "Trinity" test confirmed the implosion design used for the Fat Man bomb exploded over Nagasaki. Long before the Japanese attacked Pearl Harbor, the United States in late 1941 established a secret program, which came to be known as the Manhattan Project, to develop an atomic bomb, a powerful explosive nuclear weapon.

The aim of the project, directed by physicist J. Robert Oppenheimer, was to build an atom bomb before Germany did. After Roosevelt's death in April 1945, Harry S. Truman became president and inherited the bomb-development program. At this point, the new weapon had two purposes. First, it could be used to force Japan to surrender.

Second, possession of the bomb would enable the United States, and not the USSR, to control postwar policy. On August 29, 1949, the Russians detonated their first atomic bomb. This event, coming five years earlier than anyone in the West had predicted, was largely the result of one man, Klaus Fuchs.

Fuchs, a Los Alamos physicist, had passed detailed blue prints of the original Trinity design to the Russians. With the emergence of the USSR as a nuclear rival, the United States believed it had strong motivation for intensifying its program of nuclear testing.

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