



## Overview

Section 1 [www.AtomicBombMuseum.org/1\\_overview.shtml](http://www.AtomicBombMuseum.org/1_overview.shtml)

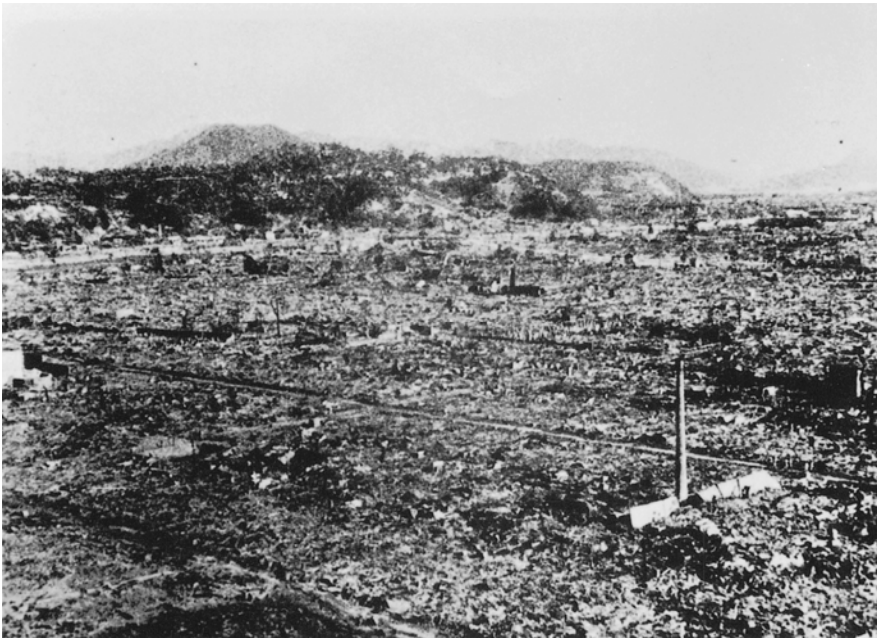
### Overview

In just one second on August 6, 1945, the world was changed forever. Since 1942, a secret U.S. weapons program, called the Manhattan Project, had been at work on two revolutionary bombs of such intense heat and explosive force that they would reduce the two target cities—Hiroshima and Nagasaki—to vast scorched wastelands. But it was the bombs' radioactivity, which remained deadly long after the debris settled and the smoke cleared, that changed our world forever.

The Hiroshima bomb was exploded at a height of 580 meters (1,870 ft.) for maximum effect. The bomb's explosive force immediately impacted the earth directly below (ground zero), spread swiftly out to surrounding hills, and then rebounded back into the city. A housetop weathervane later found pointing toward the city center testified starkly to the rebounding force.

*I don't believe anyone ever expected to see a sight quite like that. Where we had seen a clear city two minutes before, we could no longer see the city at all.*—Enola Gay co-pilot Bob Lewis, postwar interview.

The energy release of the Hiroshima bomb was the equivalent of 12.5 kilotons of TNT. At burst point, the temperature reached several million degrees Centigrade. This heat was 35% of the bomb's total energy release. Hiroshima's resident-plus-temporarily present population at that time, is estimated at 340,000–350,000.



\*Panorama view of bombed-out Hiroshima, August 6, 1945 (HIMAT)

*Then a tremendous flash of light cut across the sky. It seemed like a massive sheet of sunlight.*— Rev. Kiyoshi Tanimoto, in John Hersey's *Hiroshima*.

The Nagasaki bomb was exploded at a height of 503 meters (1,540 ft.) above a densely populated valley just north of the city's center. Here, too, the explosive force and heat instantly impacted ground zero, swept out to the hills and back. Its destructive heat and force exceeded that of Hiroshima. The combined resident-plus-temporarily present population total for Nagasaki on the bombing date is estimated at 260,000–270,000.



\*Scene of bombed-out Nagasaki, August 9, 1945 (HIMAT)

*There was a blinding white flash of light, and the next moment—BOOM! CRACK!  
A huge impact like a gigantic blow smote down our bodies, our heads, our hospitals.*  
—Dr. Tatsuichiro Akizuki, Franciscan Tuberculosis Hospital, Nagasaki

The initial burst of both bombs took only “an unspeakable second,” and their explosive energy was fully spent in about 10 seconds, though the destructive effects were overpowering for days and weeks, and lingering damages to human bodies persisted for years.

Especially serious was the radioactive fallout that ranged over each city and many miles beyond. Radioactive elements (isotopes), besides direct damage to external tissues, were taken into human bodies by inhalation. The radioactivity also contaminated food and water supplies, thus affecting the people's blood and vital organs, as well as compounding injuries caused by burns, blast, and falling structures.

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