

The Extent of Damage to Hiroshima/Nagasaki

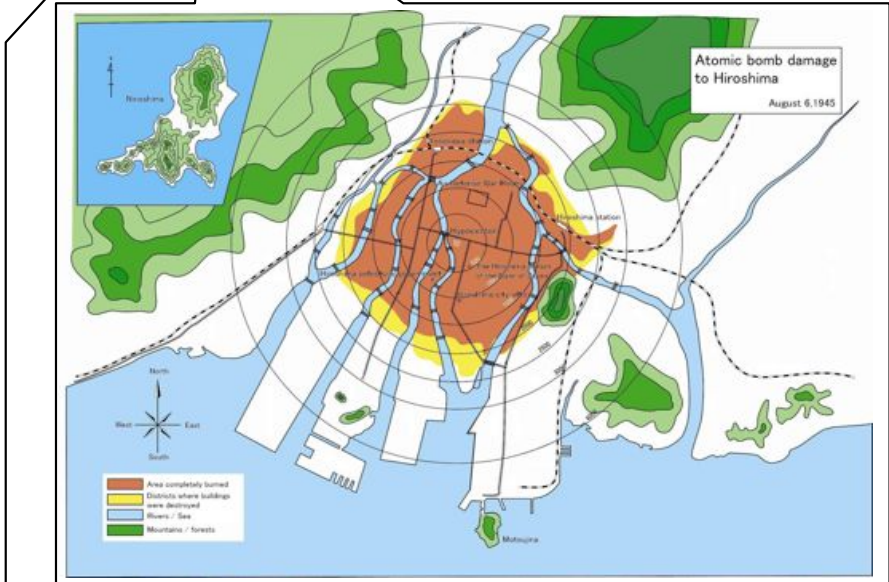
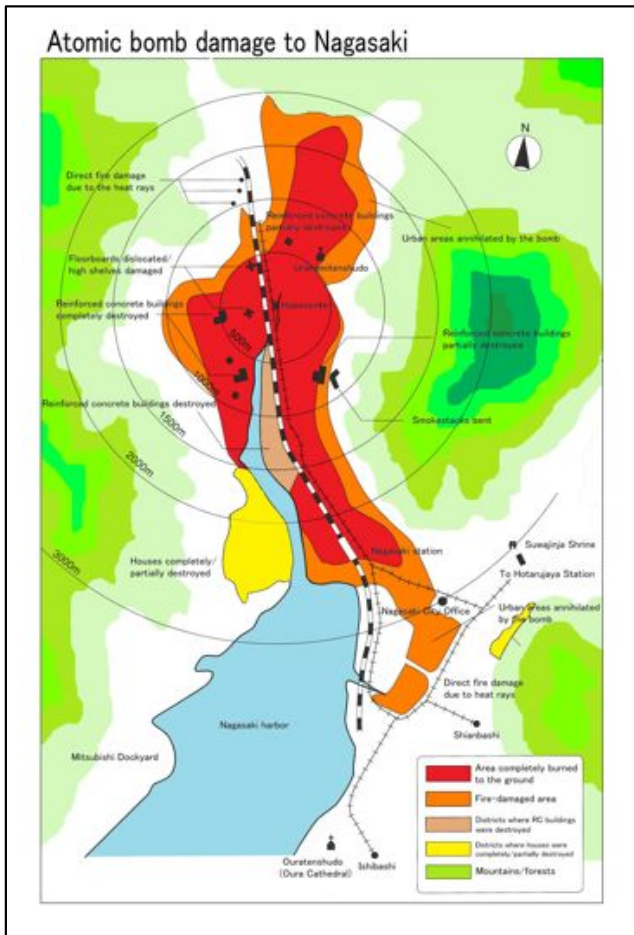
At 8:15 a.m. on 6 August 1945, the first atomic bomb in history was dropped on Hiroshima. A few days later, at 11:02 a.m. on 9 August 1945, a second one was dropped on Nagasaki.

As a result of the explosions, over 210,000 people and over 150,000 injured.

A Comparison of the Atomic Bomb Damage to Hiroshima and Nagasaki

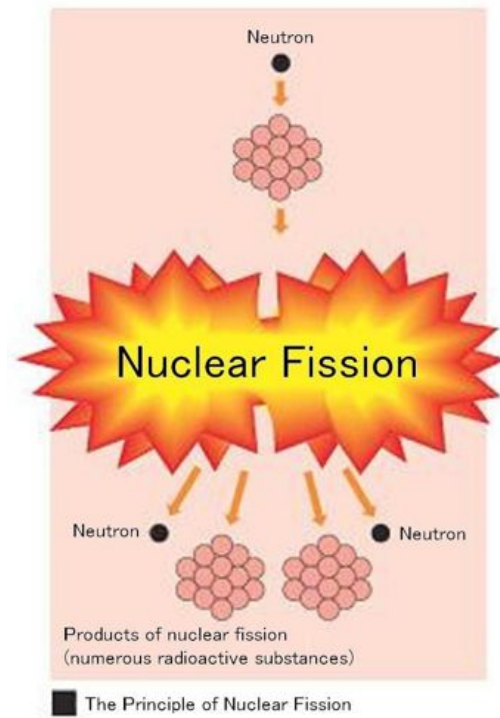
	Nagasaki	Hiroshima
Time of release	11:02 on 9 August 1945 (Thursday)	8:15 on 6 August 1945 (Monday)
Nuclear material	Plutonium-239	Uranium-235
Common name of the bomb	Fat Man	Little Boy
Explosive power (TNT = Trinitrotoluene)	Equivalent to 21kt of TNT	Equivalent to 16kt of TNT
Weight	4.5 tons	4.0 tons
Length	3.25 m	3.0 m
Diameter	1.52 m	0.7 m
Bomber	B29 Box Car	B29 Enola Gay
Height from which bomb was dropped	Dropped from approx. 9,600m above ground (exploded 500m above Matsuyama-cho in the northern part of the city)	Dropped from 9,600m above ground (exploded 600m above the Shima Hospital in the center of the city)
Population at the time	Approx. 240,000	Approx. 350,000 (the number of people present in the city at the time)
The number of dead (estimate)	73,884	140,000 (± 10,000)
The number of injured	74,909	79,130
Total number of victims	148,793	219,130 (± 10,000)
Ratio of victims to population	Approx. 62%	Approx. 63%
Number of houses that received damage	18,409	76,327
Completely burned	11,574	47,969
Completely/partially damaged	6,835	21,925
Total area of annihilation	6.7sqkm	13.2sqkm

11:02 a.m. on 9 August, 1945 Nagasaki



What is an Atomic Bomb

When an element (defined as the most fundamental substance constituting matter) such as uranium or plutonium is bombarded with a neutron, its nucleus splits into two (nuclear fission), giving out energy in the process. Only a small amount of energy is released when a single nucleus is split, but when the splitting of one nucleus releases more neutrons which, in turn, simultaneously bombard other nuclei, and the process continues in the form of a nuclear chain reaction, it results in the release of a stupendous amount of energy (heat rays, blast wave, and radiation). An atomic bomb is a weapon that uses this energy as its destructive force.

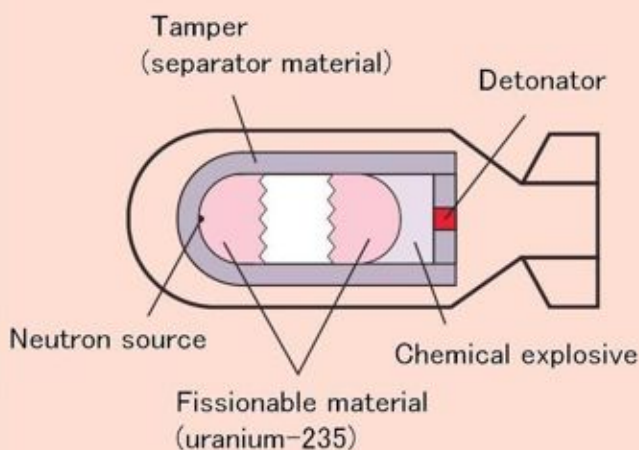


The Difference Between the Bombs Dropped on Hiroshima and Nagasaki

In order to detonate an atomic bomb, a certain minimum amount (the critical amount) of fissionable material is required. The bomb dropped on Hiroshima had two sub-critical pieces of fissionable material (uranium-235) placed one at each end of a slender metal cylinder, and combined with conventional chemical explosive to bring it to the critical amount or above. The bomb was based on what is called the "gun-barrel assembly" method.

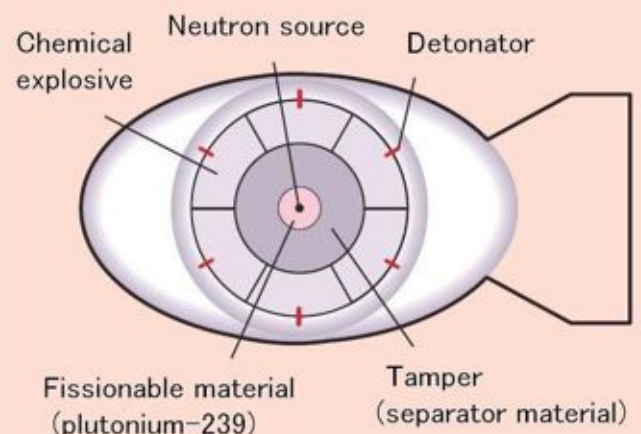
The bomb dropped on Nagasaki, meanwhile, had fissionable material (plutonium-239) surrounded and sealed in by conventional chemical explosive. It was based on what is called the "implosion assembly method," where the explosive power of the chemicals is used to compress the plutonium core and bring it to the critical amount or above.

Bomb dropped on Hiroshima



Length 3m, Diameter 0.7m, Weight 4 tons
Explosive power equivalent to 16kt of TNT
Commonly known as the "Little Boy"

Bomb dropped on Nagasaki



Length 3.25m, Diameter 1.52m, Weight 4.5 tons
Explosive power equivalent to 21kt of TNT
Commonly known as the "Fat Man"