

Science of Destruction: Two Bombs

The Why War: Causes of Conflict exhibit has replicas of the bombs dropped over Hiroshima and Nagasaki on display. These are the only nuclear weapons used in war. The following details are also provided and may be helpful background prior to a visit to the museum.

Name of bomb #1: Little Boy

Dropped over Hiroshima August 6, 1945
Length: 10 ft.
Diameter: 2 ft. 4 in.
Weight: 9,700 lbs.
Type: Fission, Gun-type
Death Toll: An estimated 140,000 people
Explosive Power: 3 million sticks of TNT

Name of bomb #2: Fat Man

Dropped over Nagasaki August 9, 1945
Length: 10 ft. 8 in.
Diameter: 5 ft.
Weight: 10,300 lbs.
Type: Fission, Implosion
Death Toll: An estimated 80,000 people
Explosive Power: 42 million sticks TNT

Two Ways to Split the Atom:

Why were the atomic bombs dropped on Japan so different from one another?

When research and development of nuclear weaponry began in 1942, two designs were selected for further exploration: the gun-type bomb, and as an alternative, the implosion bomb.

Little Boy was a gun-type bomb, meaning the weapon created a critical mass by shooting one piece of uranium into another. An earlier design, called Thin Man, used plutonium which is more powerful than uranium, but is both harder to produce and more volatile. Development of the gun-type proceeded utilizing uranium and resulted in Little Boy.

Fat Man was an implosion bomb, consisting of a plutonium core within a massive sphere of explosives. Upon detonation, the explosives crushed the softball-sized core to the size of a tennis ball, achieving critical mass. Though it was originally dismissed as overly complex, the implosion type proved to be the more successful design.