

# Station One: Creating the bomb

- After considering what Einstein recommended, Roosevelt was persuaded that if the bomb could be built, the United States should be the first nation to build it. The development of the atomic bomb started in May 1942, six months after U.S. entrance into the war, and was code-named The Manhattan project. It cost over \$2.5 billion and required the construction of the biggest industrial complex ever built. It employed over 590,000 people.
- Plants were built to produce the elements needed for the bomb. A giant laboratory was created at Los Alamos, New Mexico. The town became a secret city – the people who worked there could not tell their relatives where they were or what they were working on. And top scientists constructed the first nuclear reactor under the football stadium at the University of Chicago. Since time was so important, all this work was done under tremendous anxiety and tension.

# Key locations for developing the bomb





# Station Two: Nuclear Test

- The first nuclear chain reaction was achieved on December 2, 1942. This proved that the theory behind the project was correct. 32 months later, on July 16, 1945, the first atomic bomb was exploded in a remote desert in New Mexico. Scientists and others who watched from five miles away were staggered at its devastating effects.
- So secret was the Manhattan Project that when Truman took over the presidency after Roosevelt's death, even he did not know about it. Later Truman said, "I regarded the bomb as a military weapon and never had any doubt that it should be used. The atomic bomb was no great decision, not any decision you had to worry about."



Manhattan Project. Aerial view of 'Ground Zero' at the Los Alamos site, New Mexico USA, photographed 28 hours after the detonation of the world's first atomic bomb. The dark zone in the centre of the picture is an area of glass made by the effect of intense heat from the bomb on the sand of the desert floor. The bomb, code name Trinity, was detonated at 5.29 am local time on 16 July 1945, and had an explosive power equivalent to 21,000 tons of TNT. The flash from the explosion was seen 250 miles away. In an attempt to keep the project secret, the Army reported the blast as "...an accident at an ammunition dump."

# Station Three: Okinawa

- April 1, 1945-June 21, 1945 (Okinawa was only 340 miles away from Japan, less than the distance from Reno to Las Vegas). To some, this battle was to be a preview of what a land invasion of mainland Japan would be like.
- Last and biggest of the Pacific island battles of World War II, the Okinawa campaign involved the 287,000 troops of the U.S. Tenth Army against **130,000 soldiers of the Japanese** Thirty-second Army. At stake were air bases vital to the projected invasion of Japan.
- The attack on Okinawa had taken a heavy toll on both sides. The Americans lost 7,373 men killed and 32,056 wounded on land. At sea, the Americans lost 5,000 killed and 4,600 wounded. **The Japanese lost 107,000 killed and 7,400 men taken prisoner.** It is possible that the Japanese lost another 20,000 dead as a result of American tactics whereby Japanese troops were incinerated where they fought.
- The Americans also lost 36 ships. 368 ships were also damaged. 763 aircraft were destroyed. The Japanese lost 16 ships sunk and over 4,000 aircraft were lost.

**The invasion of Okinawa, like the majority of battles in the Pacific campaign, was amphibious.**





# Station Four: Firebombing

- Many in the Roosevelt and Truman administrations felt that the prospect of using the atomic bomb was no more inhumane than the massive fire bombing raids that had taken place over Germany and over Tokyo. In fact, the firebombing raid on Tokyo in March of 1945 did more damage and caused more casualties than the atom bomb in Hiroshima.



Firebombing went from 17 November 1944 and lasted until 15 August 1945, The *Operation Meetinghouse* air raid of 9–10 March 1945 was later estimated to be the single most destructive bombing raid in history. with 279 B-29's dropping around 1,700 tons of bombs  
Fire bombing killed an estimated 100,000 people, mostly civilians in Tokyo.

# Station Five: Where to bomb?

- The Target Committee at Los Alamos on May 10-11, 1945, recommended Kyoto, Hiroshima, Yokohama, and the arsenal at Kokura as possible targets. The committee rejected the use of the weapon against a strictly military objective because of the chance of missing a small target not surrounded by a larger urban area. The psychological effects on Japan were of great importance to the committee members.
- They also agreed that the initial use of the weapon should be sufficiently spectacular for its importance to be internationally recognized. The committee felt Kyoto, as an intellectual center of Japan, had a population "better able to appreciate the significance of the weapon." Hiroshima was chosen because of its large size, its being "an important army depot" and the potential that the bomb would cause greater destruction because the city was surrounded by hills which would have a "focusing effect".



Korea

Tokyo ●

Hiroshima ●

Nagasaki ●

Japan

# Station six: The bombs

## Little Boy

- "Little Boy" is the nick name given to the atomic bomb dropped on Hiroshima on ***August 6, 1945***. It was Monday morning.
- Weight: 9700 pounds, 120 inches long, 28 inches in diameter
- Little Boy was dropped from the Enola Gay, one of the B-29 bombers that flew over Hiroshima on that day.

## "Fat Man."

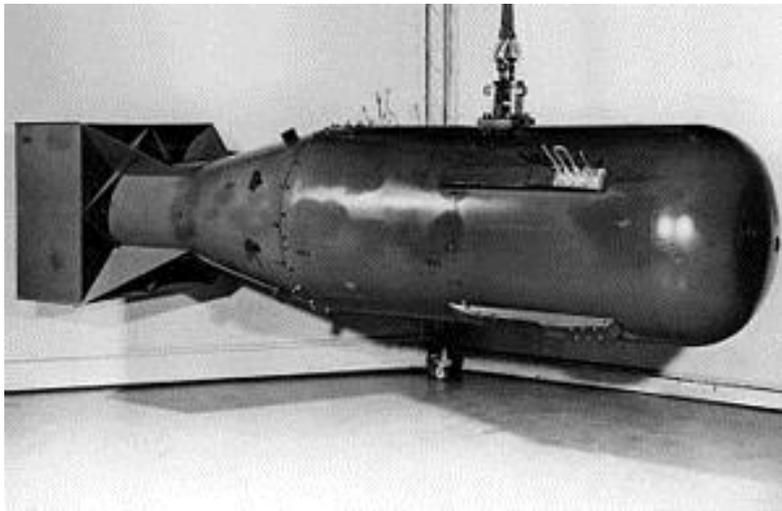
- **The Nagasaki Bomb**
- It was 128 inches (3,300 mm) long, 5 feet (1.5 m) in diameter, and weighed 10,200 pounds (4,600 kg).
- Compared to one used on Hiroshima, the Nagasaki bomb was rounder and fatter, so it was called "Fat Man."
- The bomb was supposed to be dropped on Kokura, but the weather was too cloudy and Nagasaki was chosen instead



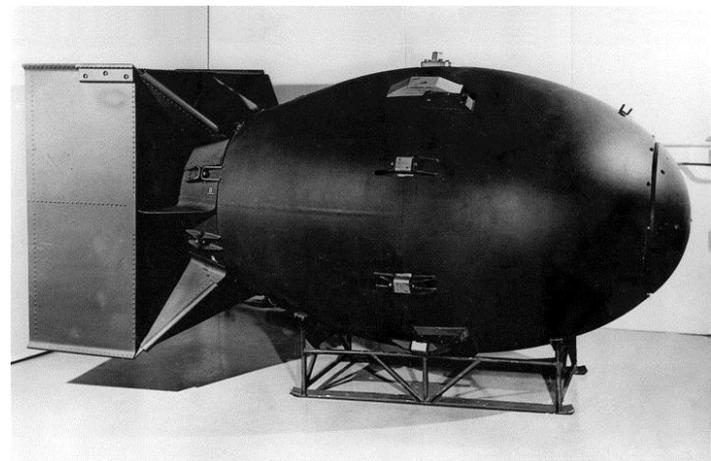
Paul Tibbets, Enola Gay Pilot



Bockcar, piloted by Frederick Bock

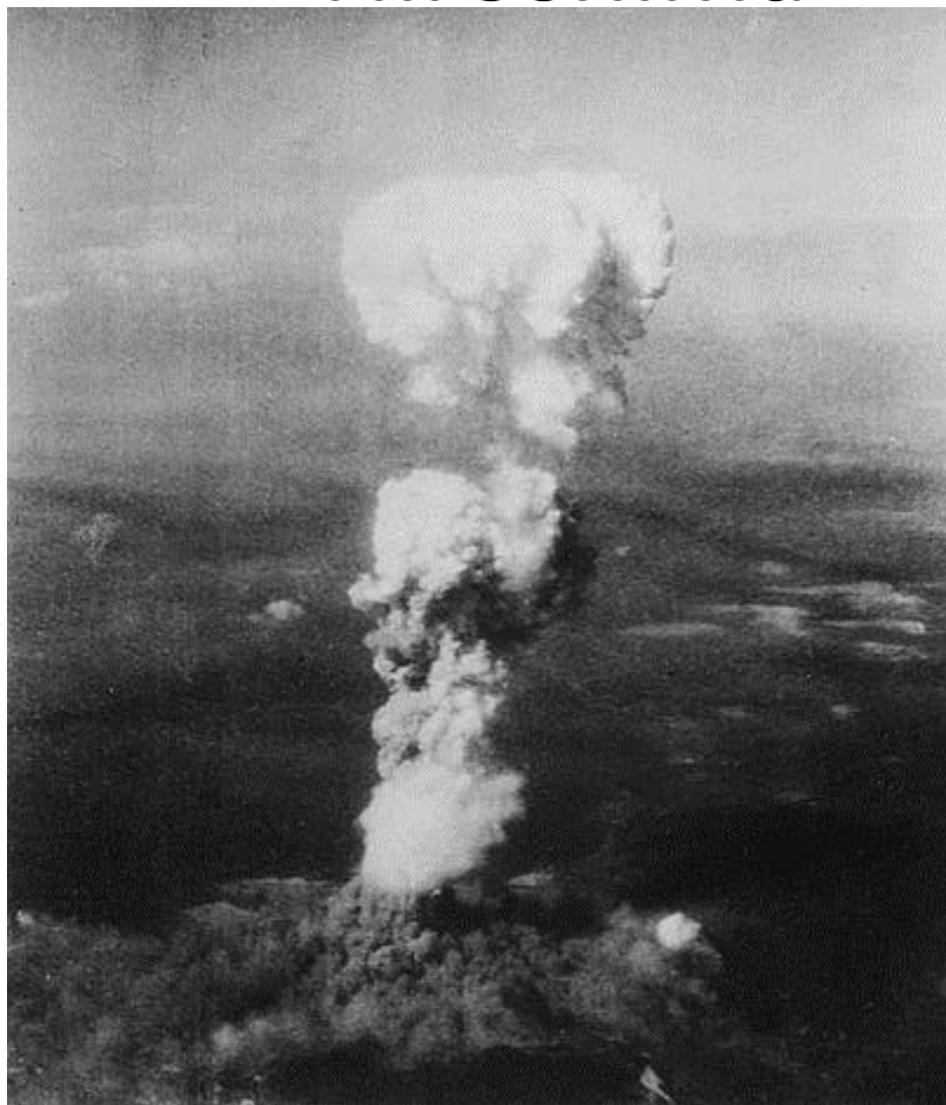


Little Boy

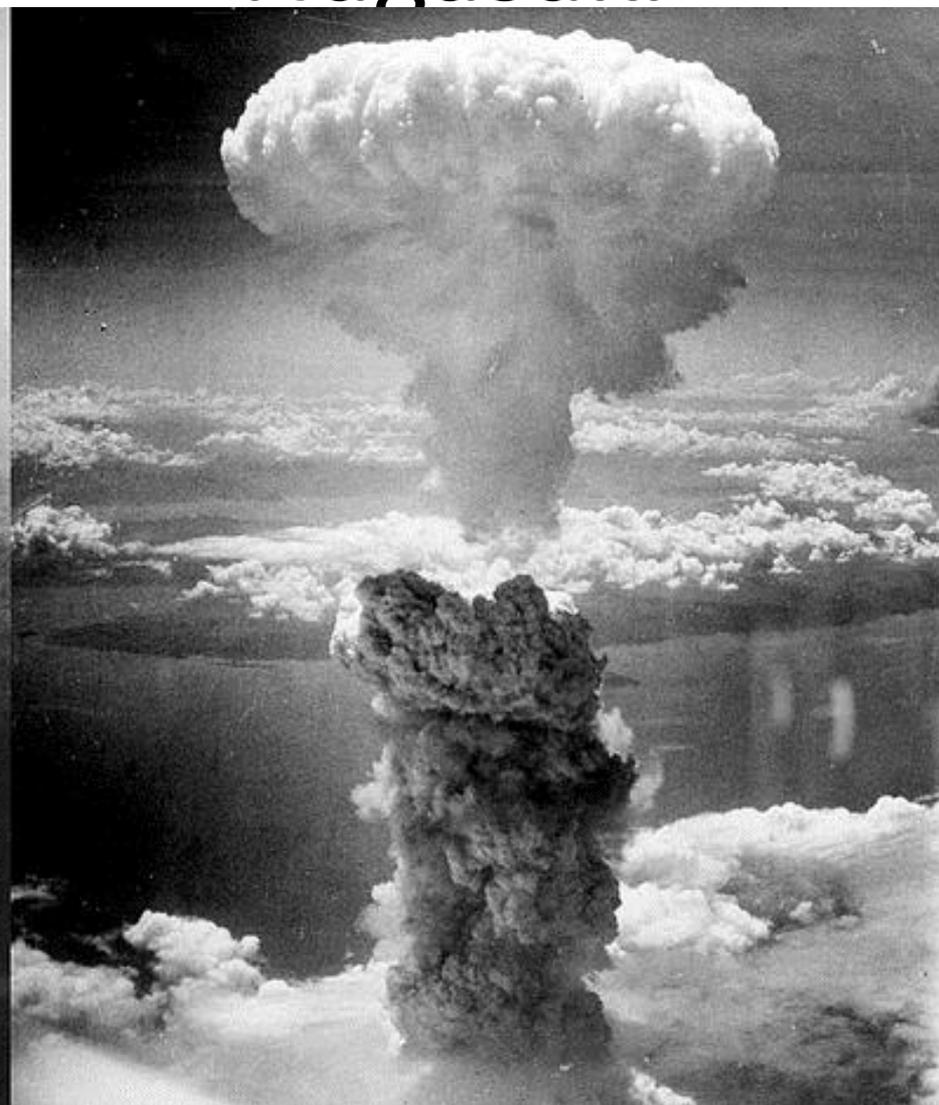


Fat Man

# Hiroshima



# Nagasaki



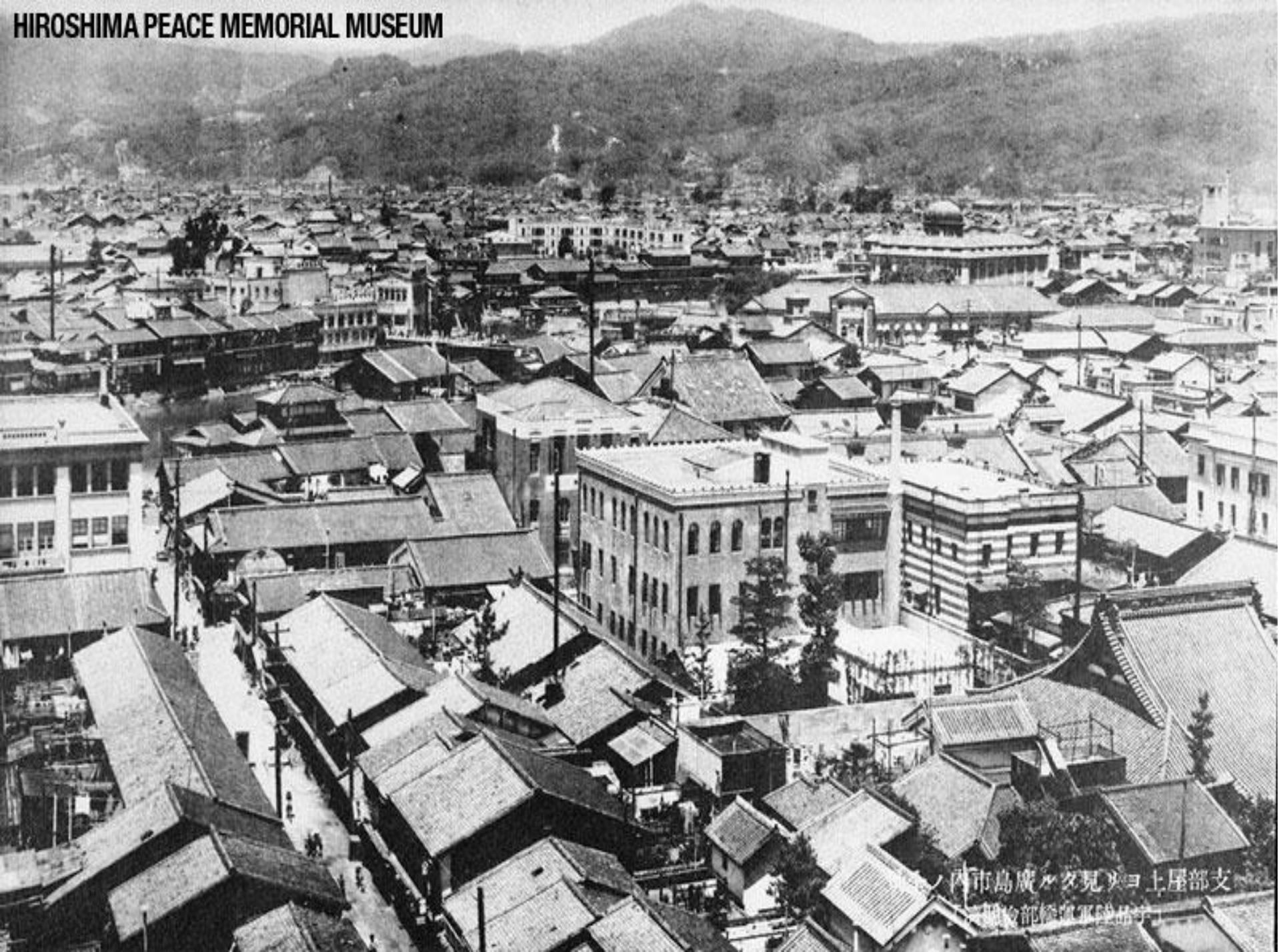
# Station Seven: The effects

- The devastating effects of the atomic bombs were shocking. Of the 320,000 civilians and soldiers in Hiroshima, some 80,000, according to American figures, were killed instantly or severely wounded. Moreover, many survivors suffered from short- and long-term radiation poisoning.
- When the Hiroshima bomb was dropped, the temperature at ground zero (the point of detonation) was several thousand degrees centigrade. At the core of the blast, the temperature was 50 million degrees centigrade. The flash heat started fires a mile away. Stone walls, steel doors, and asphalt pavement glowed red hot. The heat burned the black lettering from books and newspapers, and fused clothing to skin. More than a mile from the epicenter, men had their caps etched onto their scalps, women their kimono patterns imprinted on their bodies, and children their socks burned into their legs.
- The Hiroshima blast leveled the city. At Shima Clinic, for example, the stone columns were rammed straight down into the ground. The entire building collapsed, and the occupants were vaporized. 62,000 buildings out of a total of 90,000 were destroyed. All utilities and transportation services were wrecked.



Within the first two to four months of the bombings, the acute effects killed 90,000–166,000 people in Hiroshima and 60,000–80,000 in Nagasaki, with roughly half of the deaths in each city occurring on the first day. The Hiroshima prefecture health department estimated that, of the people who died on the day of the explosion, 60% died from flash or flame burns, 30% from falling debris and 10% from other causes.

# HIROSHIMA PEACE MEMORIAL MUSEUM



支那部屋上ヨリ見ル広島市内

宇部支隊司令部



Atomic aftermath: the destruction of Hiroshima, Japan, after the bombing in 1945.