Grenadier Guards
The ending of the 2nd World War, in South East Asia

Manhattan Project

Following the discovery of Nuclear fission by German chemists Otto Hahn & Fritz Strassmann in 1938 and the subsequent theoretical explanations by Lise Meitner & Otto Frisch, the development of an Atomic bomb was now a possibility.
As a consequence, fears grew of a German Atomic bomb project and these fears were greatest amongst scientists who were refugees from Nazi Germany and other fascist countries.
During August 1939 the Hungarian physicist's Leo Szilard & Eugene Wigner drafted the Einstein-Szilard letter, which warned of the possible development of a "new type of extremely powerful weapon".
The letter urged the United States to take steps to acquire and stockpile Uranium ore and accelerate the research of Enrico Fermi and others, into Nuclear chain reactions. They had Albert Einstein co-sign the letter which was then delivered to President Franklin Roosevelt.
President Roosevelt immediately called on Lyman Briggs of the National Bureau of Standards, to head an Advisory Committee on Uranium to investigate the issues raised by the letter.
Briggs held a meeting on 21st October 1939, which was attended by Edward Teller, Szilard & Wigner. The committee reported back to President Roosevelt in November that Uranium "could provide a possible source of bombs with a far greater destructive power, than anything else known".

This then became the backdrop for the creation of the **Manhattan Project** which was an undertaking to research, develop and produce the first nuclear weapon. The project was led by the United States with the support and knowledge of the United Kingdom, and Canada. The project ran under the guidance of Major General Leslie Groves, and the Nuclear physicist Robert Oppenheimer who directed the Los Alamos Laboratory on the design of the weapons.

Th Manhattan Project in its initial stages was quite small but grew to involve over 130,000 people, ultimately costing over $2 billion dollars (more than $25 billion in 2020 dollars). The vast majority of the cost went on the production of fissile material, buildings and the infrastructure required to undertake the work, with approximately 10% of the overall cost attributed to producing the weapons. The research and production took place in over 30 sites spread across the United States, United Kingdom and Canada.

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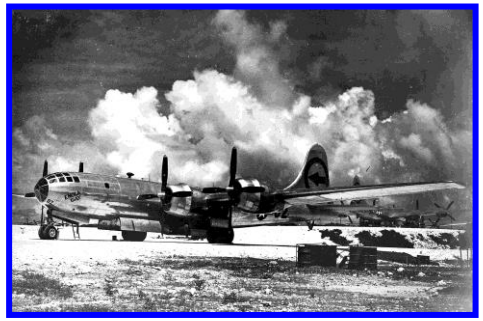
The culmination of all of this effort took the world into the Nuclear age when on the on 6th August 1945 a modified Boeing B-29 Superfortress called ‘Enola Gay’ took off from North Field military base on the island of Tinian, in the Mariana Islands.



The aircraft was piloted by Colonel Paul Tibbetts of the 393rd Squadron, the aircraft was named after his mother and was carrying a ‘Little Boy’ Nuclear weapon in its Bomb Bay.

Hiroshima was the designated primary target which was the headquarters of the Japanese 2nd General army and the 5th Army division, with Kokura and Nagasaki as alternative targets.

The bomb was dropped and detonated 1750 feet (530 m) above the ground and created a blast estimated as equivalent to 13 kilotons of TNT. Approximately 4 ½ square miles was destroyed and it was estimated that almost 70% of Hiroshima's buildings were destroyed and 75 - 80,000 combatants and civilians killed instantly, with another 65 - 70,000 injured.

Then on the 9th August 1945 a second B-29 called ‘Bockscar’ piloted by Major Charles Sweeny took off, with a second Fat Man nuclear weapon on board. The Bockscar B29 was normally piloted by Captain Frederick Bock but he had been chosen to pilot ‘The Great Artiste’, which was the plane normally flown by Captain Sweeney.

The swopping of crews and planes relates to the purposes of each plane, Sweeney had flown 10 or more training flights using Bockscar, and the ‘The Great Artiste’ B29 was configured to provided instrumentation and observation support for the mission. Also, time did not allow for swopping the complex equipment involved, as weather condition had brought the mission forward by two days.

This time Kokura was the primary target but they found cloud cover obscuring the city, prohibiting the visual attack required by mission orders. After three aborted runs over the city and with fuel running low, they changed course for headed Nagasaki the secondary target.

The weapon was dropped over the city's industrial area at a midpoint between the Mitsubishi Steel & Arms Works to the South, and the Mitsubishi-Urakami Ordnance Works to the North. The resulting explosion yielded a blast equivalent to 21 kilotons of TNT and although the blast was constrained by the Urakami Valley and its surrounding hills, approximately 45% of the city was destroyed.
It crippled the city's industrial production killing approximately 24 –28,000 Japanese industrial workers and an estimated 35 – 40,000 people killed, with another 60,000 injured.

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