The Atomic Bomb

"My God, what have we done?" - Robert Lewis, the co-pilot of the Enola Gay, the B-29 that dropped the first atomic bomb.
Einstein vs. Hitler?

• On August 2, 1939, just before the beginning of World War II, Albert Einstein wrote to then President Franklin D. Roosevelt. Einstein and several other scientists told Roosevelt of efforts in Nazi Germany to purify uranium-235, which could be used to build an atomic bomb.
Einstein’s Letter to Prez Roosevelt

Albert Einstein  
Old Grove Rd.  
Hassau Point  
Pocockie, Long Island  

August 2nd, 1939

F.D. Roosevelt,  
President of the United States,  
White House  
Washington, D.C.

Sir:

Some recent work by E. Fermi and L. Szilard, which has been communicated to me in manuscript, leads me to expect that the element uranium may be turned into a new and important source of energy in the immediate future. Certain aspects of the situation which has arisen seem to call for watchfulness and, if necessary, quick action on the part of the Administration. I believe therefore that it is my duty to bring to your attention the following facts and recommendations:

In the course of the last four months it has been made probable - through the work of Joliot in France as well as Fermi and Szilard in America - that it may become possible to set up a nuclear chain reaction in a large mass of uranium, by which vast amounts of power and large quantities of new radium-like elements would be generated. Now it appears almost certain that this could be achieved in the immediate future.

This new phenomenon would also lead to the construction of bombs, and it is conceivable - though much less certain - that extremely powerful bombs of a new type may thus be constructed. A single bomb of this type, carried by boat and exploded in a port, might very well destroy the whole port together with some of the surrounding territory. However, such bombs might very well prove to be too heavy for transportation by air.

The United States has only very poor ores of uranium in moderate quantities. There is some good ore in Canada and the former Czechoslovakia, while the most important source of uranium is Belgian Congo.

In view of this situation you may think it desirable to have some permanent contact maintained between the Administration and the group of physicists working on chain reactions in America. One possible way of achieving this might be for you to entrust with this task a person who has your confidence and who could perhaps serve in an unofficial capacity. His task might comprise the following:

a) to approach Government Departments, keep them informed of the farther development, and put forward recommendations for government action, giving particular attention to the problem of securing a supply of uranium ore for the United States;

b) to speed up the experimental work, which is at present being carried on within the limits of the budgets of University Laboratories, by providing funds, if such funds be required, through his contacts with private persons who are willing to make contributions for this cause, and perhaps also by obtaining the cooperation of industrial laboratories which have the necessary equipment.

I understand that Germany has actually stopped the sale of uranium from the Czechoslovakian mines which she has taken over. That war should have taken such early action might perhaps be understood on the ground that the son of the German Under-Secretary of State, von Neumark, is attached to the Kaiser-Wilhelm-Institut in Berlin where some of the American work on uranium is now being repeated.

Yours very truly,

(Albert Einstein)
Shortly thereafter that the United States Government began the serious undertaking known then only as "The Manhattan Project." Simply put, the Manhattan Project was committed to expediting research that would produce a viable atomic bomb.
Manhattan Project

Over the course of six years, from 1939 to 1945, more than $2 billion was spent during the history of the Manhattan Project. The formulas for refining uranium and putting together a working atomic bomb were created and seen to their logical ends by some of the greatest minds of our time. Chief among the people who unleashed the power of the atom was J. Robert Oppenheimer, who oversaw the project from conception to completion.
Finally, the day came when all at Los Alamos would find out if "The Gadget" (code-name) was going to be the colossal dud of the century or perhaps an end to the war. It all came down to a fateful morning in midsummer, 1945.

Road to Los Alamos
At 5:29:45 (Mountain War Time) on July 16, 1945, in a white blaze that stretched from the basin of the Jemez Mountains in northern New Mexico to the still-dark skies, "The Gadget" ushered in the Atomic Age.
The light of the explosion then turned orange as the atomic fireball began shooting upwards at 360 feet per second, reddening and pulsing as it cooled. The characteristic mushroom cloud of radioactive vapor materialized at 30,000 feet. Beneath the cloud, all that remained of the soil at the blast site were fragments of jade green radioactive glass created by the heat of the reaction.
“I am death, the destroyer of worlds” – Oppenheimer

“Now we’re all sons of bitches” – Ken Bainbridge, Test Director

Humankind has become a threat to the world it inhabited
The brilliant light from the detonation pierced the early morning skies with such intensity that residents from a faraway neighboring community would swear that the sun came up twice that day. Even more astonishing is that a blind girl saw the flash 120 miles away.
Hiroshima- Little Boy

The atomic bomb has only ever been used in warfare twice

The first time was at Hiroshima on August 6, 1945

The bomb was nicknamed "little boy" despite weighing 4.5 tons
Enola Gay & Tippets

- The Aioi Bridge, one of 81 bridges connecting the seven-branched delta of the Ota River, was the target; ground zero was set at 1,980 feet.
- At 0815 hours, the bomb was dropped from the Enola Gay (plane: named after Tippets’ mother)
- It missed by only 800 feet.
Hiroshima

At 0816 hours, in an instant, 66,000 people were killed and 69,000 injured by a 10-kiloton atomic explosion.
Hiroshima – The Blast

• The area of total vaporization from the atomic bomb blast measured one half mile in diameter; total destruction one mile in diameter; severe blast damage as much as two miles in diameter.

• Within a diameter of two and a half miles, everything flammable burned.
Nagasaki

- On August 9, 1945, Nagasaki fell to the same treatment. This time a Plutonium bomb nicknamed "Fat Man" was dropped on the city. Though "Fat Man" missed its target by over a mile and a half, it still leveled nearly half the city.
- In a split second, Nagasaki's population dropped from 422,000 to 383,000. Over 25,000 people were injured.
- Japan offered to surrender on August 10, 1945.
NOTE: Physicists who have studied these two atomic explosions estimate that the bombs utilized only 1/10th of 1 percent of their respective explosive capabilities.
Aftermath

- While the explosion from an atomic bomb is deadly enough, its destructive ability doesn't stop there.
- Atomic bomb fallout creates another hazard as well.
Aftermath Continued

The rain that follows any atomic detonation is laden with radioactive particles, and many survivors of the Hiroshima and Nagasaki blasts succumbed to radiation poisoning.
The atomic bomb detonation also has the hidden lethal surprise of affecting the future generations of those who lived through it. Leukemia is among the greatest of afflictions that are passed on to the offspring of survivors.
Horror Story

The left photograph shows a 21-years-old soldier who was in a wooden house situated 1 kilometer from the hypocenter. Since he was indoors, he was saved from burns, but, as he received cuts on his back, right elbow and right belly, first-aid treatment was given to him.
Horror Story

- However, when we follow his medical record, we learn more:
- August 18 -- Hair falling out is noticed
- August 19 -- Bleeding from gum, and purplish subcutaneous hemorrhage starts to appear as in the photograph
Horror Story

- August 30 -- Is hospitalized in the Ujina Branch of the Army Hospital, on the 31st becomes feverish;
- September 1 -- Tonsillitis occurs and with a sore throat he can not eat. Bleeding from gum dose not stop, and subcutaneous hemorrhage multiplies on face and upper half of body.
Horror Story

- September 2 -- Has an indistinct consciousness and starts to talk in delirium.
- September 3 -- Died at 9:30 p.m.
IN THIS ISSUE!
SUPERMAN COVERS ATOM BOMB TEST!
SEVERAL MINUTES LATER .......

THERE SHE GOES! LOOK AT THAT TOWER OF SMOKE IT SENT UP! IT'S AT LEAST 40,000 FEET HIGH!

GOOD-BYE, JAPS! IF THEY DON'T SURRENDER AFTER THIS WE'LL WIPE THEM OFF THE EARTH!


IN THE HANDS OF THE PEACE-LOVING NATIONS OF THE EARTH, ATOMIC ENERGY WILL HELP BUILD A NEW WORLD FAR MORE WONDERFUL THAN MAN EVER DREAMED A FEW BRIEF YEARS AGO!