World War II
Primary Sources

Barbara C. Bigelow
Edited by Christine Slovey

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In the late 1930s Austrian and German physicists (scientists who study matter and forces) made major breakthroughs in the field of nuclear energy, the energy released during nuclear reactions. The term “nuclear” refers to the nucleus, or core, of an atom. Atoms, the building blocks of all elements, are held together by incredibly powerful forces.

Nuclear energy research in the early World War II era centered on experiments with uranium atoms. Firing just one neutron (an uncharged particle found within the nucleus of most atoms) at the nucleus of a uranium atom caused the release of three new neutrons and a large amount of energy. Physicists believed that bombarding a larger sample of uranium with neutrons would trigger a powerful chain reaction: an enormous release of energy would accompany the splitting of the uranium atoms. It wasn’t long before scientists in Germany and the United States were thinking about how they could harness this overwhelming burst of energy in a military weapon.

Serious research on atomic weapon development began in the United States in late 1941, around the time of Japan’s

“The final decision of where and when to use the atomic bomb was up to me. Let there be no mistake about it. I regarded the bomb as a military weapon and never had any doubt that it should be used.”
surprise attack on American naval bases at Pearl Harbor. In 1942 Italian-born physicist Enrico Fermi, a professor at New York's Columbia University, created the first nuclear reactor in the United States. The device provided controlled environment for the energy released from splitting atoms. Fermi settled in the United States during World War II (1939-45) because his wife, who was Jewish, and Jews in Europe were facing severe persecution. (See Ruth Misky Sender entry for background on Nazi treatment of Jews.) Fermi played a leading role in the burgeoning field of atomic weaponry.

Background work on the development of the atomic bomb took place in New York City. For this reason the venture became known as the Manhattan Project. U.S. Army general Leslie Groves supervised the project, and he chose Dr. J. Robert Oppenheimer, a brilliant young nuclear physicist, to direct the team of scientists working first in New York, and later in a remote desert region of Los Alamos, New Mexico.

Uranium and another key ingredient, called plutonium — the two key ingredients in bomb research — were being processed in plants in Tennessee and Washington State, respectively. Or a special type of uranium known as uranium-235 would split easily enough to fuel a nuclear chain reaction. Scientists had found that for every one thousand atoms in a sample of uranium, only about seven of them turned out to be uranium 235. Special production plants were built to separate a gather uranium-235 atoms.

Final assembly of the first nuclear bombs occurred at the Los Alamos headquarters. The uranium bomb was known as “Little Boy.” The plutonium-powered bomb, which weighed about 9,000 pounds, was nicknamed “Fat Man.” The first atomic bomb ever tested — a “Fat Man” — was set off at Alamogordo, New Mexico, on July 16, 1945. The explosion roc
the test site with a force equal to the power of 20,000 tons (40 million pounds) of TNT, scorching the earth for miles around.

The war in Europe had ended a few months earlier with Germany's surrender on May 8, 1945, but fighting in the Pacific against the Japanese raged on. In July 1945 President Harry S. Truman set out for Potsdam, a Soviet-occupied city in Germany, where he and other Allied leaders (Prime Minister Winston Churchill of Great Britain and the Soviet leader, Joseph Stalin) would discuss the structure of Germany's new government. On the first day of the Potsdam Conference, Truman received word that the first atomic bomb had been tested at Alamogordo, New Mexico. The Manhattan Project had reached its goal. The test was a success.

All told, the project cost $2 billion, took nearly three years to complete, and required the combined efforts of a one-hundred-thousand-person workforce.

Things to remember while reading the excerpt from Truman's Memoirs:

- At the time of the Potsdam Conference, the U.S. military was focusing all its strength on defeating Japan. The battle for Iwo Jima in February 1945 had proved very costly to both the Japanese and Americans. (See Emile Pyle entry in chapter three for more information about the war in the Pacific). By the time the U.S. Marine invasion of the island was over, more than twenty thousand Japanese soldiers had been killed; nearly seven thousand Americans died and another twenty thousand were wounded. Even more intensive fighting began on the island of Okinawa in April. (See Eugene B. Sledge entry in chapter four for more information about the battle at Okinawa). The three-month-long air and land battle was marked by streams of kamikaze (pronounced "kahm-ih-KAH-zee"; translated as "divine wind") attacks on American warships. (Kamikazes were suicide bombers—Japanese pilots who purposely crashed their planes into Allied ships, knowing that the planes would explode in the attack.) About 130,000 Japanese died defending Okinawa; 16,000 Americans were killed and 60,000 were injured.
In the summer of 1945, preparations were under way for an invasion of the Japanese home islands. After fighting the long and bloody battles for Iwo Jima and Okinawa, U.S. forces dreaded the prospect of the home island invasion, thinking it would mean another year of fighting and hundreds of thousands more American lives lost. (Military experts estimated that five hundred thousand American soldiers would be wounded or killed in an attack on Japan.)

As long as they were alive, Japanese soldiers would keep on fighting. Their commitment to honor in battle drove many of them to choose death over surrender. Even after B-29 bombing raids had destroyed half of Tokyo, the Japanese military would not give in.

Excerpt from Memoirs by Harry S. Truman

The historic message of the first explosion of an atomic bomb was flashed to me in a message from Secretary of War [Henry] Stimson on the morning of July 16 [1945]. The most secret and the most daring enterprise of the war had succeeded. We were now in possession of a weapon that would not only revolutionize war but could alter the course of history and civilization. This news reached me at Potsdam [Germany] the day after I had arrived for the conference with the Big Three.

Preparations were being rushed for the test atomic explosion at Alamogordo, New Mexico, at the time I had to leave for Europe, and on the voyage over I had been anxiously awaiting word on the result. I had been told of many predictions by the scientists, but no one was certain of the outcome of this full-scale atomic explosion. As I read the message from Stimson, I realized that the test not only met the most optimistic expectation of the scientists but that the United States had in its possession an explosive force of unparalleled power.

Stimson flew... to Potsdam the next day to see me and bring with him the full details of the test.... We did not know as yet what effect the new weapon might have, physically or psychologically.
when used against the enemy. For that reason the military advised that we go ahead with the existing military plans for the invasion of the Japanese home islands....

"If the test of the bomb was successful, I wanted to afford Japan a clear chance to end the fighting before we made use of this newly gained power. If the test should fail, then it would be even more important to us to bring about a surrender before we had to make a physical conquest of Japan. [Chief of staff of the army] General [George C.] Marshall told me that it might cost half a million American lives to force the enemy’s surrender on his home grounds.

But the test was now successful. The entire development of the atomic bomb had been dictated by military considerations. The idea of the atomic bomb had been suggested to President [Franklin D.] Roosevelt by the famous and brilliant Dr. Albert Einstein, and its development turned out to be a vast undertaking. It was the achievement of the combined efforts of science, industry, labor, and the military, and it had no parallel in history....
Harry S. Truman

Harry S. Truman (1884-1972), the eldest of three children, was born in Lamar, Missouri, on May 8, 1884. The "S" in "Harry S. Truman" doesn't stand for a particular middle name. Rather, it was added to Harry's name as a tribute to his grandfathers: Anderson Shippe Truman and Solomon Young.

When he was eight years old, Truman contracted a serious case of diphtheria (pronounced "dip-THIR-i-uh"), a once-common bacterial infection that restricts breathing, damages nerves, and often leads to heart damage and nearly died. He also had very poor eyesight. Because of his expensive eyeglasses, Truman wasn't allowed to play sports and spent a lot of time reading.

After graduating from high school, Truman was unable to afford college tuition and went to work as an accountant and a bank clerk in Kansas City. Then in 1906, Truman took over the Young family farm. (Up to this point, it had been run by Truman's aging grandmother and his Uncle Harrison.) Over the next ten years, Harry successfully managed the large farm, doing much of the farm work himself.

Truman was a soldier in the Army during the last two years of World War I (1914-18). After returning home at war's end, he married Bess Wallace, childhood playmate, school companion, and longtime sweetheart. In the early 1920s, Truman embarked on a career in politics, beginning as a Missouri court judge in 1922, and becoming a Democratic senator from Missouri in 1934.

Throughout his ten years in the Senate, he gained a sterling reputation as a plainspoken, honest, and efficient representative.

Despite every effort to avoid it, Truman reluctantly accepted Franklin Roosevelt's invitation to be his running mate in the 1944 presidential election. (Truman liked his job in Senate and wanted to stay there, but he was hard to say no to Roosevelt.) They won the election. President Roosevelt had been in office less than three months later and Truman was sworn into the nation's highest office of the presidency on April 13, 1945.

President Truman found himself the most challenging role of his life. A German's surrender on May 8, 1945...
was left with the monumental task of reorganizing postwar Europe, Truman met with British prime minister Winston Churchill and Soviet leader Joseph Stalin in Potsdam, Germany, to discuss bringing an end to the long years of fighting.

America's first successful atomic bomb test took place in July 1945, while Truman was in Potsdam. On Truman's orders, U.S. forces dropped an atomic bomb on the Japanese city of Hiroshima on August 6; Nagasaki was bombed three days later. Japan surrendered to the Allies on September 2, 1945.

Foreign policy problems continued throughout the post-WWII years in America. Truman was committed to involving the United States in world affairs. He was especially concerned with controlling the spread of communism. Communism is a system of government in which the state controls most means of production and the distribution of goods. It contrasts with the American ideal of capitalism, which is based on private ownership and a free market system. The Soviet Union was a strong Communist country that sought to expand its influence throughout Eastern Europe and farther south into Greece and Turkey after World War II. Truman's opposition to communism was probably best reflected in the Truman Doctrine, a policy that provided military and financial aid to countries being threatened by the Communist Soviet Union in the late 1940s.

After winning a surprise victory over Republican candidate Thomas Dewey in the 1948 presidential election, Truman embarked on another term marked by international turmoil. In 1950 the Korean War (1950-1953) erupted. Forces from the Communist North invaded South Korea on June 25, 1950. Within hours Truman sent American troops to South Korea to put down the invasion. The United Nations backed his decision and sent forces to the war-ravaged nation, but the bloody conflict would not end until 1953, the year after Truman left office.

At the end of his second term, Truman retired to his home in Independence with Bess and wrote his memoirs. He died December 26, 1972, in Kansas City.

possible to release energy from the atom. In 1940 we had begun to pool with Great Britain all scientific knowledge useful to war, although Britain was at war at that time and we were not... We learned that the Germans were at work on a method to harness atomic energy for use as a weapon of war. This, we understood, was to be added to the
V-1 and V-2 rockets with which they hoped to conquer the world. They failed, of course, and for this we can thank Providence, now a race was on to make the atomic bomb—a race that became "the battle at the laboratories."...

We could hope for a miracle, but daily tragedy of a bitter war crowded in on us. We labored to construct a weapon of such overpowering force that the enemy could be forced to yield swiftly once we could resort to it. This was the primary of our secret and vast effort...

The task of creating the atomic bomb had been entrusted to a special unit of the Army Corps of Engineers, the so-called Manhattan District, headed by Major General Leslie R. Groves. The primary effort, however, had come from British and American scientists working in laboratories scattered throughout the nation.

Dr. J. Robert Oppenheimer, the distinguished physicist from the University of California, had set up the key establishment, the whole process at Los Alamos, New Mexico. More than any one man, Oppenheimer is to be credited with the achievement of a completed bomb.

My own knowledge of these developments had come about after I became President, when Secretary Stimson had given me full story. He had told me at that time that the project was near completion and that a bomb could be expected within another months. It was at his suggestion, too, that I had then set up a committee of top men and had asked them to study with great care the implications of the new weapon we might have for us...

This committee was assisted by a group of scientists... [included] Dr. Oppenheimer, Dr. Arthur H. Compton, Dr. E. Lawrence, and the Italian-born Dr. Enrico Fermi...

It was their recommendation that the bomb be used against the enemy as soon as it could be done. They recommended further that it should be used without specific warning and against a target that would clearly show its devastating strength. ... It was their conclu...
that no technical demonstration they might propose, such as over a
deserted island, would be likely to bring the war to an end. . . .

The final decision of where and when to use the atomic bomb
was up to me. Let there be no mistake about it. I regarded the bomb
as a military weapon and never had any doubt that it should be used.
The top military advisors to the President recommended its use, and
when I talked to Churchill he unhesitatingly told me that he favored
the use of the atomic bomb if it might aid to end the war.

In deciding to use this bomb I wanted to make sure that it would
be used as a weapon of war in the manner prescribed by the laws of
war. That meant that I wanted it dropped on a military target. I had
told Stimson that the bomb should be dropped as nearly as possible
upon a war production center of prime military importance. . . .

Four cities were finally recommended as targets: Hiroshima,
Kokura, Niigata, and Nagasaki. They were listed in that order as tar-
ggets for the first attack. . . .

On July 28 Radio Tokyo announced that the Japanese govern-
ment would continue to fight. . . . There was no alternative now. The
bomb was scheduled to be dropped after August 3 unless Japan sur-
rendered before that day.

On August 6, the fourth day of the journey home from Potsdam,
came the historic news that shook the world. . . . (Truman, Memoirs,
pp. 415-21)

What happened next . . .

On July 26, 1945, the Allies issued the Potsdam Decla-
ration, which gave the Japanese a choice of unconditional sur-
render or “prompt and utter destruction.” (See Harry S. Tru-
man entry in chapter four for more information about the
Potsdam Declaration.) No specific mention was made of Amer-
ica’s plan to use an atomic weapon in the war against Japan.
The Japanese refused to surrender.

On August 6, 1945 at 8:16 A.M., the United States
bombed the Japanese city of Hiroshima. (See Rodney Barker
entry in chapter three for more information about the effects
Letters from Albert Einstein to Franklin Roosevelt

Back in the late 1930s, Hungarian-born physicist Leo Szilard (1898-1964) immigrated to the United States and began working with Enrico Fermi on atomic splitting research and experimentation. Szilard was particularly worried that the Germans would develop and use an atomic bomb to achieve world domination. Even before the United States entered World War II, Szilard believed that President Franklin Roosevelt should be informed about the potential uses of nuclear power. He convinced German-born physicist Albert Einstein (1879-1955) to get involved.

Einstein and Szilard met on Long Island, New York, in the summer of 1939. Einstein, the most famous scientist in the world at the time, agreed to warn Roosevelt about Germany's alleged work on the bomb. After discussing the primary points that should be included in the initial letter, Einstein dictated his thoughts. Szilard later translated Einstein's German and Einstein added his signature. (Some sources suggest that Szilard was the real author of the letters.)

The first of four letters—dated August 2, 1939—reached Roosevelt in October. It begins, “Some recent work by E. Fermi and L. Szilard . . . leads me to expect that the element uranium may be turned into a new and important source of energy in the immediate future.” The letter goes on to suggest that: (1) this energy could power a new kind of bomb for use in warfare; (2) the U.S. government should stay current on the latest developments in nuclear energy; and (3) the United States should fund nuclear experiments. America’s commitment to nuclear research did not begin in earnest, however, until December of 1942. Later in his life Einstein is said to have regretted his role in pushing for the development of nuclear weapons.

of the bombing of Hiroshima.) Two days later the Soviet Union declared war on Japan. By this time it was clear that the Japanese had lost the war, but still they refused to give up the fight. On August 9 a “Fat Man” bomb—twice as powerful as “Little Boy”—was dropped on Nagasaki. A few days later Japan surrendered, ending World War II.

In a collection of his writings titled Where the Bu Stops, Truman noted: “I gave the final order, saying I had no qualms if millions of lives could be saved. I meant both American and Japanese lives. . . . I did what I thought was right.”