

TIMES PAST
1945

The Atom Bomb

On the 70th anniversary of Hiroshima and Nagasaki, a look at the long shadow of nuclear war

BY VERONICA MAJEROL

A mushroom cloud towers above Hiroshima, following the atomic bombing on Aug. 6, 1945.

On Aug. 6, 1945, 8-year-old Shigeaki Mori was walking across a bridge on his way to summer classes when “suddenly, I felt a massive shock wave and a blast from above,” he recalled recently. That blast, which obliterated Mori’s hometown of Hiroshima, Japan, was caused by the world’s first-ever nuclear attack.

Mori was blown off the bridge and into a shallow river. When he regained consciousness, nearly everything around him was enveloped in thick black smoke, and the few things Mori could see, like a woman walking

toward him, were horrifying.

“She was swaying . . . and holding something white,” he said. “I realized she was holding the contents of her stomach.”


The United States dropped an atomic bomb on Hiroshima—and three days later on the Japanese city of Nagasaki—70 years ago to force Japan to surrender and end World War II (1939-45). The bombings killed as many as 250,000 and led to Japan’s official surrender three weeks later, which arguably saved many thousands of American lives.


But dropping those bombs also had long-lasting consequences for the U.S. and the world that plague us today. In

the years since, more nations have developed their own nuclear arsenals. Today, the threat of an attack by rogue nations like North Korea or Iran—or from a terrorist group that gets its hands on a bomb—remains a terrifying security problem for the U.S. and the world, with no easy solution.

Einstein’s Letter

How did the U.S. come to possess the most destructive weapon the world had ever known? It started with a letter that physicist Albert Einstein wrote to President Franklin D. Roosevelt on Aug. 2, 1939—a month before Nazi Germany invaded Poland and started the Second World War. Einstein, a Jew who had fled Germany in 1933, warned Roosevelt about the potential

 Watch a video on the Manhattan Project at www.upfrontmagazine.com

 Download nuclear scientists’ 1945 petition to President Harry S. Truman at www.upfrontmagazine.com

Devastation in Hiroshima following the atomic bomb blast; a boy carrying his badly burned brother (inset).



bearing on our present foreign relations . . . that I think you ought to know about it without much further delay.” (Truman had become vice president in January 1945, but Roosevelt had never told him about the Manhattan Project.)

The first test to see whether the bomb worked took place on July 16, 1945, with scientists and military experts gathering at Alamogordo, New Mexico. Just before dawn, a giant fireball exploded into a mass of dust and gaseous iron, soaring a mile a minute and forming a mushroom cloud. The blast carved a 1,200-foot crater in the desert floor. The blinding light and enormous roar traveled hundreds of miles.

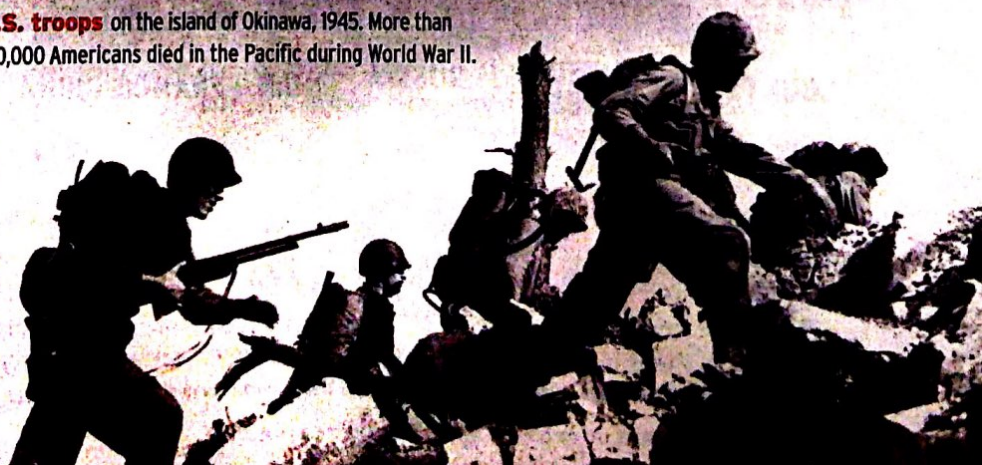
The atom bomb came too late to affect the war in Europe, where more than 300,000 American soldiers had died; Germany had already surrendered in May. But fighting still raged in the Pacific, and Japan—which drew the U.S. into World War II by attacking Pearl Harbor in Hawaii on Dec. 7, 1941—showed no signs



of giving up. Dropping the atomic bomb as opposed to committing U.S. troops to an invasion of mainland Japan would save half a million lives, Truman said. America’s use of the atom bomb—to this day, the only time it was ever used—is still controversial (see *Debate*, p. 22).

“The Americans had concluded that the Japanese, [with] their kamikaze

U.S. troops on the island of Okinawa, 1945. More than 100,000 Americans died in the Pacific during World War II.



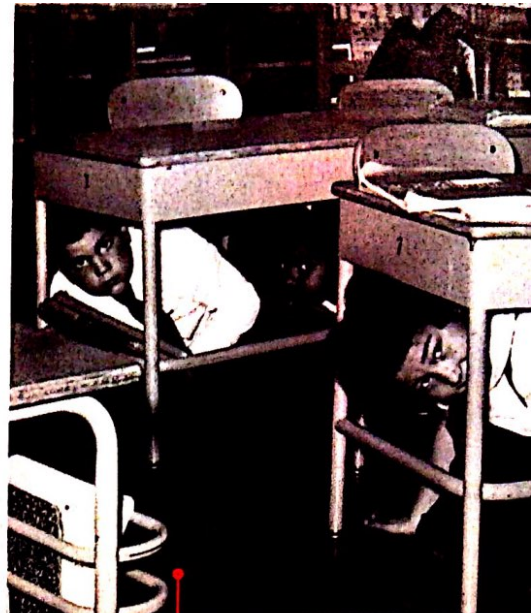
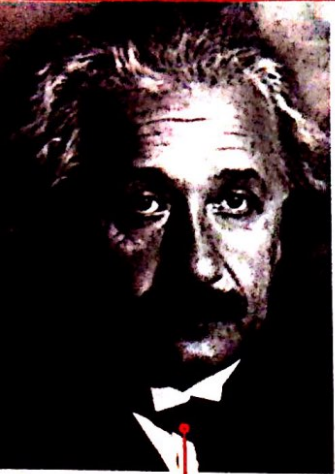
OPPOSITE: SUPERSTOCK/CORBIS; PEACE MEMORIAL MUSEUM/EPA/CORBIS (HIROSHIMA); AP/GETTY IMAGES (BOYS); PHOTO 12/UG/GETTY IMAGES (U.S. TROOPS)

destructive power of a nuclear weapon. He urged the president to fund a project to develop an atomic bomb—and quickly, before Germany’s dictator Adolf Hitler beat him to it.

Roosevelt heeded Einstein’s warning and partnered with Britain and Canada to recruit thousands of scientists to collaborate on the Manhattan Project (so named because it began in an obscure office in New York City). Stationed at isolated sites in Tennessee, Washington State, and New Mexico beginning in 1942, the scientists worked feverishly to figure out how to unleash the enormous amounts of energy contained in atoms. Einstein had first theorized the relation between matter and energy in his 1905 equation $E = mc^2$ (see *Timeline*, p. 20). Because other countries, like the Soviet Union, Germany, and Japan, were also racing to develop an atomic weapon, the Manhattan Project was kept top secret.

Roosevelt never got to see the project’s completion. He died on April 12, 1945. Shortly after, Secretary of War Henry Stimson sent President Harry S. Truman a brief memo referring to “a highly secret matter” that “has such a

Timeline THE ATOMIC AGE



The first atomic bomb is tested in the New Mexico desert, July 16, 1945.

1905 $E=mc^2$

Albert Einstein (above) publishes modern science's most famous equation: $E=mc^2$. It says that vast amounts of energy can be unleashed from tiny amounts of matter. It's the basis for the development of nuclear weapons.

1942 The Manhattan Project

Thousands of scientists are recruited to work on a top-secret effort to develop an atomic bomb for the U.S. during World War II. Three years later, they successfully test the bomb in the New Mexico desert.

1945 Hiroshima and Nagasaki

1949 Soviet Bomb

A U.S. spy plane learns that the Soviet Union has tested an atomic bomb. Schools begin conducting "duck and cover" drills (above) in case of a Soviet nuclear attack.

1951 Homegrown Spies

Americans Julius and Ethel Rosenberg are convicted of conspiring to steal designs for America's atomic bomb and deliver them to the Soviet Union. They are executed two years later.

suicide attacks and their refusal to surrender—you couldn't fight people like that with anything but full measures," says Christopher Hamner, a history professor at George Mason University in Fairfax, Virginia.

On August 6, an atomic bomb—named Little Boy by one of the nuclear physicists—was dropped on Hiroshima, a city of several hundred thousand people in southern Japan. Nearly 70 percent of the city's buildings and houses were leveled or irreparably damaged. The War Department

(today the Defense Department) said the bomb packed more explosive power than 20,000 tons of TNT.

"The force from which the sun draws its power has been loosed against those who brought war to the Far East," Truman declared.

Three days later, a second bomb, called Fat Man, was dropped on Nagasaki, about 200 miles southwest (see map, p. 19). The two bombs killed between 150,000 and 250,000 people—some immediately and some from radiation sickness later on.

On August 15, Japan accepted the

Allies' peace terms, and on September 2, it formally surrendered, finally ending World War II.

The Cold War

After the war, America found itself embroiled in a new conflict that would last five decades: the Cold War with the Communist Soviet Union, which had been an ally in the fight against Nazi Germany in World War II. The U.S. assumed it would have the upper hand in this battle because it was the only country in the world with atomic

The Nuclear Club

Who's got nukes, and when did they get them?

COUNTRY	UNITED STATES	RUSSIA (formerly the Soviet Union)	U.K.	FRANCE	CHINA	ISRAEL	INDIA	PAKISTAN	NORTH KOREA
YEAR	1945	1949	1952	1960	1964	1967	1974	1998	2006
ESTIMATED WARHEADS TODAY	7,315	8,000	225	300	250	80-100	90-110	100-120	<10

SOURCES: FEDERATION OF AMERICAN SCIENTISTS; ARMS CONTROL ASSOCIATION; DATES FOR ISRAEL, INDIA, PAKISTAN, AND NORTH KOREA ARE APPROXIMATE.

NOTE: India, Israel, and Pakistan haven't signed the Non-Proliferation Treaty. North Korea did but later withdrew. Israel has never been tested.

**9,700
pounds**

Weight of "Little Boy,"
the first of two
nuclear bombs used
on Japan

ATOMIC HERITAGE
FOUNDATION



Should the U.S. Have Dropped the Atom Bomb?

Seventy years ago, the U.S. became the first and only nation to use a nuclear weapon in war

At least nine countries now have nuclear weapons, but the United States remains the only country that actually used an atomic bomb against an enemy. On Aug. 6, 1945, the U.S. dropped an atom bomb on the Japanese city of Hiroshima; three days later, a second bomb was dropped on Nagasaki. Six days later, on August 15, Japan announced it would surrender, effectively ending World War II. But the decision to use this devastating weapon remains controversial. (For more on the development and impact of the atomic bomb, see *Times Past*, p. 18.)

Analyze the arguments, cast your vote, and see instant results at www.upfrontmagazine.com

YES Dropping the atomic bomb was necessary to end the war with Japan at the earliest possible moment. By the early summer of 1945, Japanese leaders knew they couldn't win. But they fought on in hopes of securing better surrender terms.

President Harry S. Truman recognized that he had several options to convince Japan to end the war: 1) intensifying the already-heavy bombing of Japanese cities; 2) waiting for the Soviet Union, an ally in defeating Germany, to join the war against Japan; 3) telling Japan that the U.S. would allow Emperor Hirohito to remain on his throne after the war; and 4) invading Japan with ground troops.

But there was no guarantee that any of these options, or a combination of them, would force the Japanese to surrender quickly, and each one posed serious military, political, and diplomatic risks. Invading Japan may have been the least uncertain militarily, but it carried the highest price: More than 100,000 Americans had already

died fighting the Japanese in the Pacific, and an invasion was certain to be very costly in American lives. And for Truman, any number of American lives that could be saved by using the bomb would be well worth it.

When the atomic bomb became available in July 1945, it was the most promising way to end the war as soon as possible and without the drawbacks of the other options.

The attacks on Hiroshima and Nagasaki persuaded Emperor Hirohito, who had wavered for weeks, that the war must end immediately. Combined with the Soviet Union's entry into the conflict after Hiroshima, the atom bombs brought about Japan's surrender within a few days.

The bomb was necessary to accomplish Truman's primary objectives of forcing a prompt Japanese surrender and saving American lives, perhaps many thousands of them. •

—J. SAMUEL WALKER

Author, *Prompt and Utter Destruction: Truman and the Use of Atomic Bombs Against Japan*

An invasion of Japan could have cost thousands of American lives.

ENOOLA GAY



The Enola Gay, which dropped the bomb on Hiroshima, and its pilot, Colonel Paul Tibbets

BY THE NUMBERS

150,000-246,000

Estimated number of people killed in Hiroshima and Nagasaki, including those killed instantly and those who died of radiation sickness soon after

111,606

Number of U.S. troops killed or missing in the Pacific theater of World War II

137,582

Number of people killed in the 65 conventional bombing raids on Tokyo between Dec. 1944 and Aug. 1945

SOURCES: RADIATION EFFECTS RESEARCH FOUNDATION; ASIA PACIFIC JOURNAL: JAPAN FOCUS; PACIFIC WAR ONLINE ENCYCLOPEDIA

NO When General Dwight D. Eisenhower, then the Supreme Allied Commander, was informed by the U.S. Secretary of War that the atomic bomb was going to be used, he later recalled saying it was unnecessary because Japan was already largely defeated. Eisenhower said the bomb was "no longer mandatory as a measure to save American lives." After the war, as president of the United States (1953-61), he even stated publicly: "It wasn't necessary to hit them with that awful thing."

Before the bomb was used, American intelligence officials believed the war would likely end when two things happened: When the U.S. let Japan know the emperor could remain as a figurehead, and when the Soviet army attacked. The U.S. did tell Japan the emperor could remain on his throne as part of a surrender, and the Soviets declared war, as agreed, on August 8.

But American officials chose not to test whether this intelligence was correct. For logistical reasons, an invasion of Japan couldn't begin for another three months, so the

U.S. could have waited to see if Japan would surrender before dropping the atomic bombs. Instead, Hiroshima was bombed on August 6, and Nagasaki on August 9.

Hiroshima was of only marginal value as a military target, which is why it hadn't already been a target of conventional bombings, and it was full of women, children, and old people, since most of the men had left to fight in the war.

Many top World War II military leaders are on record agreeing with Eisenhower that using the atomic bomb was unnecessary.

Some felt it was deeply immoral. Even Admiral William Leahy, President Truman's chief of staff, later called the bomb a "barbarous weapon" that should not have been used. Leahy wrote, "The Japanese were already defeated and ready to surrender. . . . In being the first to use it, we . . . adopted an ethical standard common to the barbarians of the Dark Ages." •

—GAR ALPEROVITZ

Author, *The Decision to Use the Atomic Bomb*

'It wasn't necessary to hit them with that awful thing.'

—DWIGHT D. EISENHOWER