

TEG:010-L1  
Bomber silhouettes

**U.S. WORLD WAR II BOMBERS**

Large numbers of U.S. bombers were flown by Allied crews against enemy forces in Europe and the Pacific during World War II. The high-flying, long-distance B-29 Superfortress took the war to Japan.

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TEG:010-L2-IL2  
Bomber silhouette IDs

B-10

B-17

B-18

B-24

B-25

B-26

B-29

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TEG:010-L3-IL3  
B-17/B-29 range-to-target  
comparison graphic

The B-17 Flying Fortress and B-24 Liberator were nearly ideal for bombing enemy targets in Europe, where missions seldom exceeded 1,760 kilometers (1,100 miles) round trip. But the distances to targets in the Pacific theater were much greater. B-29s there routinely flew missions nearly three times farther--4,800 kilometers (3,000 miles) round trip. B-17s and B-24s also served in the Pacific theater, but the B-29, with its longer range, was the primary heavy bomber used against Japanese home targets.

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TEG:100-L1  
Main title

**THE BOEING B-29 SUPERFORTRESS**

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TEG:100-L2  
Main text

As Hitler's armies threatened Europe, U.S. military planners called for the development of a fast, long-range, high-altitude bomber. The answer to that need would be the Boeing B-29 Superfortress, an aircraft that could carry a large bomb load higher, farther, and faster than any previous bomber.

The B-29 was the most technologically complex mass-production aircraft of World War II. It also required the largest commitment of resources to a single military aircraft up to that time. Rushed through development and production, the bombers were quickly sent overseas without service testing to be used against the Japanese.

Fifteen B-29s were specially modified and assigned to the 509th Composite Group for the top-secret mission of dropping atomic bombs. One of them, the Enola Gay, would drop the first atomic bomb on Hiroshima, Japan.

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TEG:110-L1

**DEVELOPING AND PRODUCING THE B-29**

In February 1940, the U.S. Army Air Corps opened a design competition for a new heavy bomber. Boeing, Lockheed, Douglas, and Consolidated were asked to submit entries, and Boeing's design for the B-29 won.

Development proceeded so quickly that the design team was conducting structural tests of the component parts even as the experimental aircraft was still being built. The XB-29, the first of some 4,000 Superfortresses, flew on September 21, 1942. A technological marvel, the B-29 had aerodynamically efficient wings, flush-riveted skin, and tight-fitting engine cowlings to reduce air resistance; remotely controlled machine gun turrets; and heated, pressurized crew compartments for high-altitude flight.

Production had to be widely dispersed to meet the urgent demand for the giant bombers. The first production models rolled off the assembly lines between July and September 1943.

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TEG:110-L2-P2  
photograph 1A-11849  
(NASM)

Boeing built the first production B-29s in Wichita, Kansas. Others were manufactured by Boeing in Seattle and Renton, Washington, as well as by Bell Aircraft in Marietta, Georgia, and Glenn L. Martin in Omaha, Nebraska. The Enola Gay was one of the 536 B-29s built by Martin.

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TEG:110-L3

**STANDARD B-29 SPECIFICATIONS**

Wingspan: 43 m (141 ft, 2 in)  
Length: 30 m (99 ft)  
Height: 8.5 m (27 ft, 9 in)  
Weight, empty: 31,816 kg (70,140 lb)  
Weight, gross: 61,463 kg (135,500 lb) with  
5,443 kg (12,000 lb) bomb  
load  
Top speed: 603 km/h (375 mph) at 7,620  
m (25,000 ft)  
Engines: 4 Wright R-3350 "Cyclone"  
18-cylinder radials of  
2,200 hp (at takeoff)  
Manufacturer: Boeing Aircraft Company

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TEG:110-L4-P4  
photograph 1A-11878  
(NASM)

Recruiting workers to build B-29s was a major challenge, since the worker pool had already been drained by other war-related industries and the military. At the Boeing plant in Wichita, 39 percent of the workers were women. Here, a crew of men and women performs the tedious work of checking every rivet and seam in the forward pressurized crew area of a B-29.

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TEG:110-L5-P5  
photograph 1A-11929  
(NASM)

More than 8,000 engineering drawings were needed to mate the thousands of component parts of the B-29. The major assemblies and parts came from factories in nearly every state. This staged photo was taken to show component manufacturers where their contributions fit into the overall structure.

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TEG:110-L6-P6  
photograph 1A-11836  
(NASM) (NASM) [will  
require cropping]

Designed for high-altitude flight, the B-29 had pressurized crew compartments, the first successful large-scale use of this technology. The control cabin and gunners' compartment were connected by a tunnel over the bomb bays. The tail gunner's tiny, isolated turret was also pressurized.

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TEG:110-L7-P7  
photograph 3A-1086 (USAF)

The B-29's narrow wings allowed it to fly at high speeds and high altitudes, but required landing speeds that were too fast. Boeing solved this problem by adapting the Fowler wing flap to the B-29. Extending the flaps from the rear edges of the wings, as on this China-based B-29, enabled the airplane to land at a slower speed. In the foreground is a typical bomb load.

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TEG:120-L1

### THE SUPERFORTRESS ENTERS SERVICE

The United States initially deployed B-29s to the China-Burma-India theater for operations against Japanese targets in Indochina, China, and eventually Japan. In April 1944, the Twentieth Air Force was activated to fly the B-29s.

As Allied victories in the Pacific mounted in 1944 and early 1945, the Army Air Forces moved the B-29 fleet from China to newly captured Guam, Tinian, and Saipan in the Marianas, and Iwo Jima, sites of some of the fiercest battles of the war.

From the Marianas the bombers could strike at Japan. Iwo Jima, between the Marianas and Japan, served as a haven for damaged bombers flying the long, 4,800-kilometer (3,000-mile) round-trip missions over enemy-held waters.

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TEG:120-L2-P2  
photograph 1A-12008  
(NASM)

Members of the 44th Mobile Training Unit (B-29) prepare to conduct training at Sioux City Army Air Field, Iowa. Such "Specialized Mobile Training Teams," each with its own trailer and B-29, helped train new Superfortress crews at bases in the United States.

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TEG:120-L3-P3  
photograph 3A-970 (USAF)

This is the first photo released to the public that showed the sophisticated defensive gun turrets on the B-29.

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TEG:120-L4-P4  
photograph 3A-976 (USAF)

It didn't take long for crews to personalize their planes. This China-based B-29 was named Eddie Allen, after the Boeing test pilot who died in the crash of the second XB-29 test aircraft on February 18, 1943.

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TEG:120-L5-P5  
photograph 3A-978 (USAF)

Appropriately named Rush Order, this 768th Bomb Squadron B-29 took part in a mission over Japan only 15 days after coming off the Seattle production line.

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TEG:120-L6-P6  
photograph 3A-38478  
(USAF)

Bomber bases on the small Marianas Islands soon became crowded with aircraft. This view is from the cockpit of a B-29 on Saipan.

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TEG:120-L7-P7  
photo 3A-38403 (USAF)

Crews came to respect the B-29 for its rugged construction. This 881st Bomb Squadron, 500th Bomb Group crew survived the harrowing return flight of a 17-hour mission, flying through thunderstorms and darkness with two engines out on the same side. The aircraft was cut through by a runaway propeller during the crash landing.

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TEG:130-L1

**THE "ENOLA GAY," A SPECIAL B-29**

As the bombing raids against Japan intensified through the winter of 1944, a new bombardment unit, the 509th Composite Group, began assembling at a remote air field at Wendover, Utah.

The 15 Martin-built B-29s assigned to the 509th were specially tailored to the unique group's highly secret mission: to drop atomic bombs on Japan. The airplanes had only tail gun positions; the other four remotely controlled gun turrets were removed to save weight and improve airspeed. They also had new engine fuel-injection systems, Curtiss-Electric reversible-pitch propellers, and faster-acting pneumatic bomb bay doors. One of these modified B-29s, serial number 44-86292, would be named Enola Gay.

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The Enola Gay returning from its mission of August 6, 1945, on which it dropped an atomic bomb on Hiroshima, Japan.

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TEG:130-L2-P2  
photograph 3A-38595  
(USAF)

TEG:130-L3

"ENOLA GAY" CHRONOLOGY

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TEG:130-L3a

May 18, 1945. Aircraft 44-86292 delivered to U.S. Army Air Forces at Glenn L. Martin Aircraft Factory, Omaha, Nebraska.

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TEG:130-L3b

June 14, 1945. Aircraft ferried to Wendover Army Air Field, Utah, by pilot-in-command Capt. Robert A. Lewis.

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TEG:130-L3c

June 27, 1945. Aircraft and 11-man crew depart Wendover for South Pacific.

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TEG:130-L3d

July 6, 1945. Aircraft arrives at Guam, where additional modifications to the bomb bay are made, then flies on to Tinian, where it is reunited with other elements of the 509th Composite Group.

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TEG:130-L3e

July 12, 1945. Aircraft and crew resume training.

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TEG:130-L3f

August 5, 1945. Aircraft 44-86292 formally named Enola Gay after Col. Paul Tibbets' mother. Ground crew works feverishly to prepare it for the next day's mission.

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TEG:130-L3g

August 6, 1945. Enola Gay departs at 2:45 a.m. for Hiroshima, Japan. The atomic bomb is released over Hiroshima at 8:15 a.m., local time. The aircraft returns to Tinian at 2:58 p.m., 12 hours and 13 minutes after takeoff.

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TEG:130-L3ga

August 9, 1945. Flight report and operations order indicate that Enola Gay flies as weather plane on the Nagasaki atomic mission.

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TEG:130-L3h

September 2, 1945. Japan formally surrenders aboard the battleship U.S.S. Missouri in Tokyo Bay.

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TEG:130-L3i

November 6, 1945. Enola Gay departs Tinian for Roswell Army Air Field, New Mexico, via Mather Army Air Field, California, where most of the 509th is based after the Japanese surrender.

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TEG:130-L3j

April 29, 1946. Enola Gay is flown to Kwajalein Island by Colonel Tibbets for "Operation Crossroads" nuclear tests.

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TEG:130-L3k

July 24, 1946. Enola Gay, bearing "Operation Crossroads" special insignia, is flown to Davis-Monthan Army Air Field, Arizona, for storage.

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TEG:130-L3l

July 3, 1949. Enola Gay is retrieved from storage and flown to Orchard Place Army Air Field (now O'Hare International Airport) near Chicago by Colonel Tibbets.

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TEG:130-L3m

July 3, 1949. Enola Gay is formally accepted by the Smithsonian Institution for the National Air Museum.

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TEG:130-L3n

January 12, 1952. Enola Gay is flown to Pyote Air Force Base, Texas, for temporary storage.

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TEG:130-L3o

December 2, 1953. Enola Gay is flown from Pyote Air Force Base, Texas, to Andrews Air Force Base, Maryland, via Maxwell Air Force Base, Alabama, and placed in storage.

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TEG:130-L3p

August 10, 1960. Workers begin disassembling Enola Gay.

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TEG:130-L3q

July 21, 1961. Enola Gay is moved overland to National Air Museum's storage facility in Suitland, Maryland, near Washington, D.C.

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TEG:130-L3r

December 5, 1984. National Air and Space Museum crews begin restoring Enola Gay.

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TEG:130-L4-P4  
photo (original in  
Curatorial Files)

The Enola Gay shortly after entering storage at the National Air Museum's facility in Suitland, Maryland. It still bears markings from the "Operation Crossroads" nuclear tests of 1946.

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TEG:130-L5-P5  
photo

Restoration specialists at the National Air and Space Museum's Paul E. Garber Preservation, Restoration, and Storage Facility in Suitland, Maryland, apply their highly specialized skills in restoring the Enola Gay's forward fuselage.

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