

MARVELOUS MUSTANG

The iconic P-51 still inspires and thrills air show crowds, but it almost wasn't built

By Erik Simonsen

Grace and power—just two of the many words that could be used to describe the legendary P-51 Mustang, one of the most popular and recognized aircraft ever built.

But the Mustang's path into aviation folklore was not a conventional one. It easily could not have been produced at all.

The story of the P-51 begins

PHOTO: Wide-angle view of a restored classic P-51D Mustang at the Oshkosh, Wis., air show. ERIK SIMONSEN/BOEING

shortly before World War II, when North American Aviation was mass-producing AT-6 Harvard trainers for the British Ministry of Defence, but also contemplating several new fighter designs. Although the Royal Air Force, or RAF, was impressed with the Harvard and wanted fighters, the Ministry of Defence felt that North American Aviation lacked fighter experience. So the British asked the Los Angeles-based company in February 1940 about producing the Curtiss P-40.

Dutch Kindelberger, president of North American Aviation, had reservations about the P-40's performance, and after conferring with his vice president, Lee Atwood, both were convinced their company could produce a superior fighter using the same Allison engine as the P-40, without increasing unit cost.

Chief designer Edgar Schmued was

asked to come up with a preliminary configuration.

Designated NA-73X, the prototype would utilize a laminar-flow wing that had been developed by the National Advisory Committee for Aeronautics—now NASA—which significantly reduced drag. The new design also featured a unique air scoop on the underside of the fuselage just aft of the cockpit. Based on research into what was known as the “Meredith effect,” it would provide engine cooling but also recover energy from the radiator, with the heated air providing added thrust for improved performance.

Kindelberger and Atwood made several presentations to the British in early 1940 about the new fighter concept. Finally, Atwood convinced Sir Henry Self, director of the British Purchasing Commission, to take a chance on the new design. But there

was a stipulation: North American Aviation would obtain the P-40 blueprints and wind-tunnel and flight-test data from Curtiss to use as a resource. Atwood purchased the documents for approximately \$56,000. (In a July 1998 interview with this writer, Atwood quipped: “We considered the Curtiss data somewhat obsolete and continued with our fresh-start design.”)

In April 1940, British confidence in North American Aviation arrived in the form of a contract for 320 fighters, with a unit price not to exceed \$40,000. The Allison engines and guns would be provided by the British government. A pivotal clause in the contract directed that two fighters be delivered to the U.S. government for evaluation.

The NA-73X prototype was produced in only 102 days and first flew on Oct. 26, 1940. By July of the following year,

70 years ago, the first P-51s began rolling off the North American Assembly line in Los Angeles. Both the RAF and Army Air Corps quickly recognized the potential of the new multi-role fighter and eventually ordered thousands.

The Rolls-Royce Merlin engine, which was incorporated on the P-51 starting in 1942, greatly increased its performance. A series of improved models followed, with the most well known being the P-51D featuring the 360-degree “bubble” canopy.

Initially, the British called the P-51 the “Mustang” and the U.S. Army Air Corps designated its fighter the “Apache.” In a telegraph to Army brass in July 1942, Kindelberger asked that the fighter be officially known as the Mustang.

A true game-changer during World War II, the P-51 Mustang will be forever remembered as the fighter that escorted Allied

heavy bombers deep into Germany and fended off attacking Luftwaffe interceptors—long-range missions made possible by drop tanks and an extra internal fuel tank behind the cockpit. Later deployed in the Pacific theater, the P-51 also escorted long-range B-29 bombers.

In the European theater, the P-51 was credited with downing more enemy aircraft than any other Allied fighter. A total of 15,686 P-51s were built by North American Aviation and under license from 1940 to 1947.

Worldwide, about 150 P-51s are still airworthy, performing at air shows and air races—an inspiring testament to that initial spark of innovation at North American Aviation in 1940 that brought about such a remarkable aircraft. ■

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A TRUE GAME-CHANGER DURING WORLD WAR II.

PHOTO ILLUSTRATION: During World War II, the P-51 Mustang was able to escort allied bombers to Berlin and back from their Royal Air Force bases, and still had 20 minutes' fuel for aerial engagement over the target. Innovation made the difference. Modern jet fighters are designed to be inherently unstable, allowing for increased maneuverability; advanced computer technology beyond the capability of a human pilot provides in-flight stability. In 1942, altering an airplane's center of gravity was unheard of, yet North American Aviation chief engineer Raymond Rice proposed doing just that. The goal was to extend the range of the P-51 by installing an internal 85-gallon (320-liter) self-sealing fuel tank aft of the cockpit. Although every other aerodynamicist involved tried to veto the idea, the U.S. Army Air Corps customer agreed with Rice. BRANDON LUONG/BOEING; LEFT PHOTO: SHUTTERSTOCK; INSET PHOTO: ERIK SIMONSEN; BOEING