



Going the distance

Boeing's legacy of air refueling began with a biplane known as the *Hornet Shuttle*—and a long flight into history **by Mike Lombardi**

Boeing has long been a pioneer in the development of in-flight refueling. Its leadership in the field began during the early days of the Cold War, when Boeing invented the “flying” refueling boom and built the first-production aerial-refueling tankers. But the company’s experience with aerial refueling goes back much further, to the days of open-cockpit biplanes—when the focus of aviation was delivering mail.

In 1929, The Boeing Airplane Company partnered with the U.S. Army Air Corps to conduct a transcontinental aerial-refueling experiment to prove the practicality of in-flight refueling—and make nonstop transcontinental travel a reality.

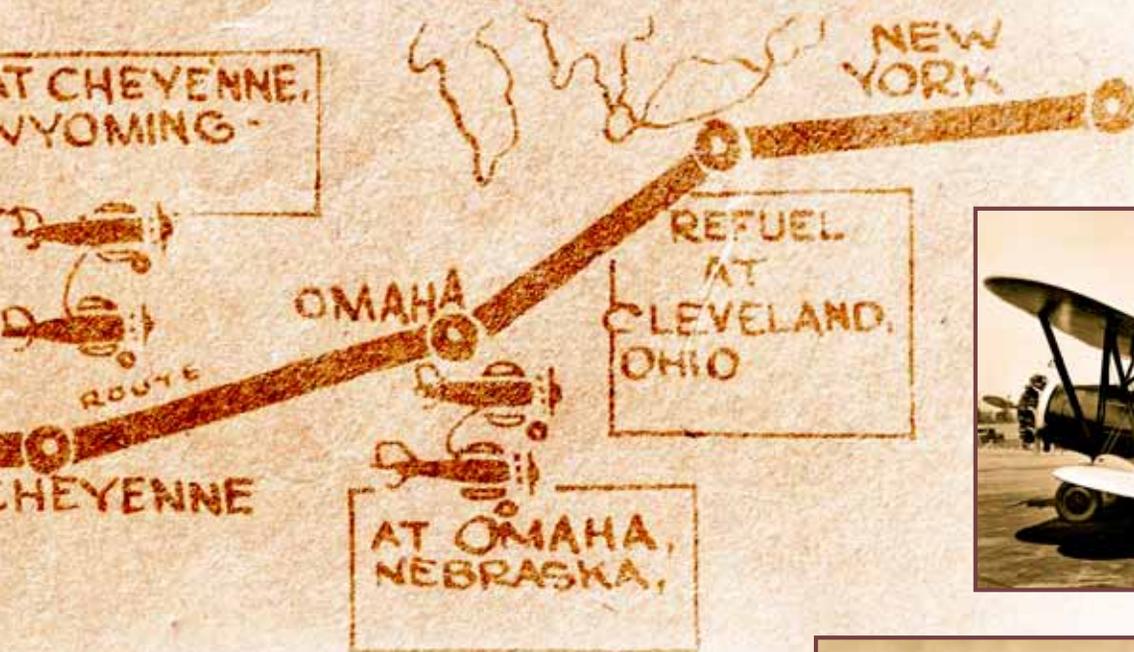
The experiment followed a historic endurance flight in January 1929 by five Army Air Corps pilots in a Fokker C-2 called the *Question Mark*. That flight set an endurance record by staying aloft for 150 hours while flying a circuit over Southern California. Although the flight was made solely for the purpose of setting a record, William Boeing saw a practical application for aerial refueling in speeding the delivery of air mail.

The *Question Mark*'s chief pilot, Capt. Ira Eaker, who would

later become a four-star general, also saw the military potential of aerial refueling but believed the concept needed to be proved on an actual mission.

For this demonstration, Boeing provided two modified Model 40s and the Air Corps provided two Douglas C-1 transports as refueling planes. Boeing also provided one of its newest mail-plane designs, a Boeing Model 95 nicknamed *Boeing Hornet Shuttle*, as the endurance airplane. The pilots for the *Boeing Hornet Shuttle* were Eaker and Army Air Corps Lt. Bernard Thompson.

The Model 95 was a single-seat biplane designed by Boeing in 1928 to carry mail and cargo. For the demonstration flight, an extra seat was added for a second pilot, as well as extra fuel tanks and an in-flight fuel-receiving unit. The *Hornet Shuttle* was to follow the regular transcontinental air-mail route—the longest in the world, stretching from Oakland, Calif., to New York City. The plane would be refueled by Boeing flight crews over Elko, Nev., and Cheyenne, Wyo., and by Army Air Corps flight crews over Omaha, Neb., and Cleveland.



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– Capt. Ira Eaker, Question Mark’s chief pilot

At 8:35 on the morning of Aug. 27, 1929, the *Hornet Shuttle* lifted off from the Oakland airport, circled San Francisco and headed east. The four refueling rendezvous were conducted successfully despite fog and storms that forced the refueling at Cheyenne to be performed at a mere 500 feet (150 meters) altitude. After 28 hours and 25 minutes in the air, the *Hornet Shuttle* reached Mitchell Field in New York. A bag of mail from San Francisco was dropped over the field, and after circling New York City Eaker and Thompson headed back toward Cleveland to continue the flight.

During refueling over Cleveland, one of four 5-gallon (19-liter) cans of oil that were being transferred along with the fuel dislodged from the refueling plane and plunged through the wing of the *Hornet Shuttle*, puncturing the oil tank and just missing the center spar. Eaker landed the plane immediately.

After repairs, the *Hornet Shuttle* returned to Mitchell Field to continue the westward leg of the transcontinental flight and on Sept. 2 headed for Oakland. The flight was uneventful but, due to head winds, took 33 hours. After circling Oakland, the *Hornet Shuttle* headed east once again, but just outside of Salt Lake City, clogged fuel lines led to a forced landing—and an end to the endurance flight.

Based on the flight, Eaker concluded that “the principle of transferring fuel in flight will prove very important in certain military operations in the future.” And in a commemorative letter that was carried on the *Hornet Shuttle*, Bill Boeing proclaimed the flight as a “forerunner of the day when larger airplanes ... will fly great

distances without stopping, thus still further reducing the time required for transportation and communication between the Atlantic and the Pacific.”

Eaker and Boeing both proved prophetic. Only 20 years later, Boeing provided the U.S. Air Force with the planes and technology for the first nonstop circumnavigation of the world. The plane was a Boeing B-50A Superfortress, called *Lucky Lady II*, which was refueled four times in air by Boeing KB-29M tankers. In perfecting the technology and proficiency to conduct regular aerial refueling worldwide, Boeing and the Air Force had delivered results—coming a long way to making the once-risky and uncertain task of aerial refueling a routine operation. ■

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PHOTOS: (Left) U.S. Army Air Corps Capt. Ira Eaker, an early proponent of aerial refueling and pilot-in-command of a cross-U.S. demonstration flight. **(Middle)** A Boeing poster promoting the *Boeing Hornet Shuttle*’s transcontinental aerial-refueling achievement. **(Top)** The modified Model 95 mail plane, shown with U.S. Army Air Corps pilot Lt. Bernard Thompson, who served as co-pilot of the *Boeing Hornet Shuttle*. **(Above)** The *Lucky Lady II*, a Boeing B-50A Superfortress, was the first to fly nonstop around the world—in 94 hours, 1 minute. **BOEING ARCHIVES**