Wright 1903 *Flyer* Replica | *2001*

General History

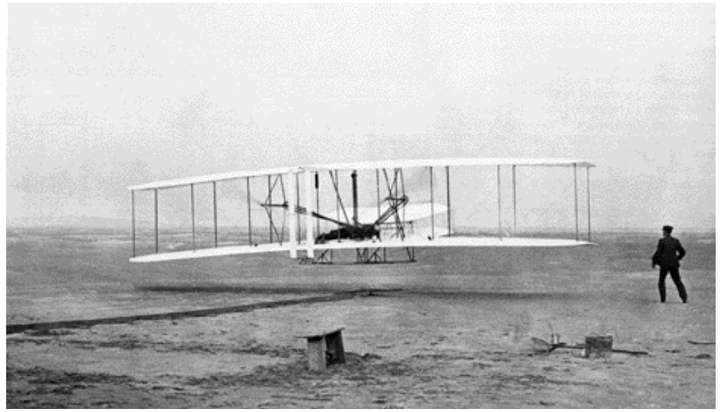
Pioneer of the Air

"I could not help but think of a scared goose running away from berserk hunters. But all of a sudden, the thing flew!" said Hugo Cook, who claimed to have witnessed the Wright brothers' famous flights over Kitty Hawk, North Carolina.

Contrary to the opinion that Orville and Wilbur Wright were simple Dayton, Ohio bicycle mechanics who stumbled upon a successful design, the 1903 *Flyer's* brief hops into the sky were the product of more than four years of study and careful calculations. The brothers constructed a wind tunnel, and designed and flew many full-size gliders. The Wright brothers'methodical minds pondered every problem and questioned theories that had been accepted for years.

On December 17, 1903, the *Flyer* struggled into the air from its launching rail, with Orville at the controls. The twelve-second hop of 120 feet, into a 27-mile per hour headwind, went down in history as the world's first powered, controlled and sustained airplane flight.

The *Flyer* didn't last long. Piloted alternately by both brothers, three more flights were made that day. The longest flight was made by Wilbur, at 59 seconds and a distance of 852 feet. The *Flyer* logged a total of approximately 98 seconds in the air, and never flew anything more than a lazy straight line. As it sat parked in the sand while the flights were being discussed, a gust of wind tumbled the craft. It was smashed beyond practical repair, and never flown again.



How Does it Work?

One of the most challenging problems facing the Wright brothers was not how to fly, but how to control an airborne craft. With the pilot laying stomach down and head forward, the *Flyer* had to be manageable in three different directions: pitch, yaw, and roll.

Two flat "wings" in front of the *Flyer*, called elevators or front rudders, controlled pitch, which is the nose up or nose down of the craft. Behind the wings were two vertical rudders that controlled yaw, the plane's turning from side to side.

The third direction of control is roll, in which the craft's wingtips bank up or down. Roll was achieved by gently bending and twisting the wings. This is called "wing warping."

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About This Aircraft

The 1903 Wright *Flyer* replica was built by Century Aviation in Wenatchee, Washington from July 2000 to April 2001. Accurate in almost every way, this replica was built from copies of plans made in 1985 by the National Air and Space Museum, where the original aircraft is on display. The Wright brothers destroyed the original plans for fear their design might be copied by their rivals.

Unbleached muslin fabric covers the spruce and ash framework. This framework "floats" within pockets sewn in the fabric, making the aircraft strong, flexible and lightweight.

It is surprising to some to see how large a craft the *Flyer* is in real-life. With a wingspan of more than 40 feet, the plane was able to lift a man of 140 pounds, plus the aircraft's weight of 605 pounds, with an engine that generated relatively little horsepower. The engine on this craft is a non-functioning, detailed replica of the original Wright and Taylor 12-horsepower machine flown on December 17, 1903.

Specifications

Type:	**First Aircraft**
First Flight:	**December 17,1903**
Wingspan:	**40 feet 4 inches**
Length:	**21 feet 1 inch**
Wing Area:	**510 square feet**
Weight:	**605 pounds**
Power:	**One Wright and Taylor, 12 horsepower engine**
Capacity:	**One**