

Daniel Guggenheim Medal

MEDALIST FOR 1929

For the design and construction, with his brother now deceased, of the first successful engine-propelled airplane.



ORVILLE WRIGHT

The age of manned flight in heavier-than-air craft began on December 17, 1903, when Orville Wright, born August 19, 1871, at Dayton, Ohio, and his brother Wilbur (1867-1912) flew a propeller-driven airplane near Kitty Hawk, North Carolina.

Interested in Lilienthal's gliding experiments in Germany, the Wrights, in about 1896, began to study the available literature on flight, and concluded that the out-standing problem was equilibrium. By 1899 they had conceived the idea of warp-ing the wings to produce a differential in lift at the opposing tips (aileron control) and tested the principle successfully with a large biplane kite. In 1900 and 1901, on the dunes near Kitty Hawk, they flew man-carrying gliders similar in form to Chanute's biplane and with wing curvatures adapted from Lilienthal and others, but found the lift much below expectation.

Convinced that existing data were unreliable, they then measured the character-istics of some 200 model airfoils, employing a small wind tunnel and balances of their own design. From these new data, a third glider was constructed and success-fully tested in 1902. To this machine they also added a vertical rudder, rigged to operate cooperatively with the wing-tip controls. By October 1902 the Wrights had thus achieved an airplane controllable about all three axes at the will of the pilot.

The brothers now undertook the development of a suitable power plant, and within a year produced a satisfactory 4-cylinder 16-horsepower engine and remark-ably efficient propellers, designed from their wind tunnel data on airfoils. It was with this powerplant, installed in a large version of the 1902 glider, that the first powered flights in history were accomplished in 1903. Improvements were tested in new powered airplanes in more than 150 flights near Dayton in 1904-05.

Believing the first use of the now practical airplane would be in war, the Wrights offered their patent and scientific data to the U.S. War Department, which rejected their overtures. Rebuffed at home, they sought a market in Europe. At last, in 1908, purchase offers were received from a French syndicate and the U.S. Government, and demonstration trials took place concurrently in the two countries. Orville made the famous Army acceptance tests at Ft. Myer, Virginia; Wilbur flew in France.

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Under the strain of bitter litigation in defense of their pioneer patent, Wilbur Wright died suddenly in 1912. In 1915 Orville sold the Wright Company and, after service as a consulting engineer in World War I, confined his public aviation activities to membership in the National Advisory Committee for Aeronautics. He also took a leading part in developing the automatic stabilizer and pilotless aircraft and held a patent on the split wing-flap. He died on January 30, 1948, the only man ever to see a U.S. national monument—the Wright Brothers Memorial at Kill Devil Hills—erected in his honor during his lifetime.