

Wind Tunnel Experiments

Replicas of the wind tunnel used by Wilbur and Orville in their wind tunnel research in 1901-3 have been built and are on display in the Air Force Museum, Dayton; Carillon Park Museum, Dayton; Henry Ford Museum, Greenfield Village, Dearborn, Michigan; National Air and Space Museum, Washington, D.C.; and the National Memorial Museum and Visitor Center, Kitty Hawk, North Carolina. The original metal airfoils used by the Wrights in their research were willed to the Franklin Institute, Philadelphia.

Three-quarter left front view of replica of Wright brothers' wind tunnel located in workroom behind restored Wright brothers' bicycle shop, Henry Ford Museum, Greenfield Village, Dearborn, Mich. The Wright exhibit was dedicated April 16, 1938.

MCFWP 116; Am Legion Magazine, v. 86, Feb. 1969: 17; ANDWF 608; ASHWB 34; Bee-Hive, v. 28, Jan. 1953: 11; EWBNM 24; YPHA 33. Similar: front view, Aviation, v. 38, Aug. 1939: 21

Left side view of wind tunnel replica in Henry Ford Museum showing metal-bladed fan in front which was used to force a current of air through the wind tunnel.

Greenfield Village photo A1319. Similar: right side view, Aviation, v. 38, Aug. 1939: 20

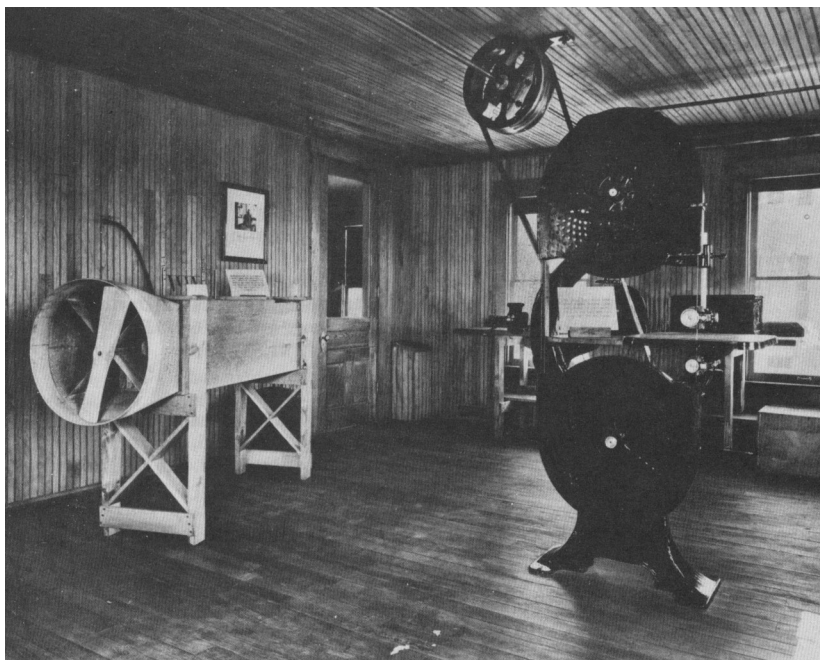
Side view of replica of Wrights' 1901 wind tunnel as exhibited in the National Air and Space Museum.

Air Force, v. 36, Dec. 1953: 36; GANAC 34; SMIN 41,020

Three-quarter front view of replica of Wrights' 1901 wind tunnel constructed under the supervision of Orville prior to World War II as displayed in the Air Force Museum, Dayton.

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The 1901 wind tunnel was located in a workroom behind the Wright bicycle shop, as shown here in the Greenfield Village restoration, Dearborn, Michigan.



Side view of replica of Wrights' 1901 wind tunnel with a section of the wall cut away, showing the lift balance in position for a test, Carillon Park Museum, Dayton.

MCFWP 115; Carillon Park (Dayton) photo; KELWB b. 238-239; SAE Q Trans, v. 5, Jan. 1951: 4; SMIN A52,718; TAPHF 23; WODKH b. 100-101. Similar: SMIN A41,899-D

Three-quarter front view of replica of Wrights' wind tunnel on exhibit in Franklin Institute's Hall of Aviation.

J Franklin In, v. 252, Aug. 1951: 179

Three-quarter front view of replica of Wrights' wind tunnel in Wright Brothers National Memorial Museum and Visitors Center, Kitty Hawk, N.C.

National Aeronautics, v. 40, Dec. 1961: 5

Front view of balance for measuring lift of model airfoils in the 1901 wind tunnel experiments.

LCPWOW 240; MCFWP 30

Original Wright 1901 lift balance in Franklin Institute. Photograph shows balance as incorrectly assembled.

MCFWP 31; Franklin Institute photo; J Franklin In, v. 252, Aug. 1951: 176

Reproduction of lift balance used in 1901 wind tunnel with models of airfoils in testing position.

MCFWP 121; General Motors Inland Manufacturing Division (Dayton) photo; EWBNM 25; GANAC 34; HAWBHP 61; SAE Q Trans, v. 5, Jan. 1951: 5; Schweizer Aero-Revue, v. 28, Dec. 1928:420; SMIN 9576; SMIN 41,899-B; WODKH b. 100-101

Reproduction of 1901 drift balance for measuring drag/lift ratio of Wright model airfoils.

MCFWP 122; EWBNM 25; Franklin Institute photo; General Motors Inland Manufacturing Division (Dayton) photo; J Franklin In, v. 252, Aug. 1951: 176; SAE Q Trans, v. 5, Jan. 1951: 5; SMIN 41,899-C

Reconstruction of Wrights' wind-tunnel balancing vane.

MCFWP 119; General Motors Inland Manufacturing Division (Dayton) photo; SAE Q Trans, v. 5, Jan. 1951: 3; Schweizer Aero-Revue, v. 28, Dec. 1953:420; SMIN 41,899

Reconstruction of the Wrights' "recheck" vane, used to check the lifting characteristics of square planes.

MCFWP 120; General Motors Inland Manufacturing Division (Dayton) photo; SAE Q Trans, v. 5, Jan. 1951: 7; SMIN A-41,899-A

Close-up side view of reconstructed Wrights' wind tunnel with a portion of the intake cone cut away to show the large wind straightener and the smaller honeycomb straightener behind it, Carillon Park, Dayton.

MCFWP 117; Carillon Park (Dayton) photo

Reconstruction of Wrights' wind tunnel with portion of side wall cut away to show workings of wind-tunnel apparatus inside, Carillon Park, Dayton.

Carillon Park (Dayton) photo

Reconstruction of Wrights' bicycle-wheel testing device for comparing lift characteristics of model surface against flat-plate resistance.

MCFWP 118; Bee-Hive, v. 28, Spring 1953: 24; Carillon Park (Dayton) photo; HAWBHP 61; SAE Q Trans, v. 5, Jan. 1951: 3; Schweizer Aero-Revue, v. 28, Dec. 1953:419; SMIN 41,899-E

Collection of 1901 model airfoils, a comparative grouping with test specimens one-fifth actual size.

MCFWP 127; General Motors Inland Manufacturing Division (Dayton) photo; HAWBHP 62; SAE Q Trans, v. 5, Jan. 1951: 6; SMIN A41,898-D

Collection of model airfoils used in the Wrights' December 1901 wind tunnel experiments.

J Franklin In, v. 252, Aug. 1951: 178

Wind tunnel airfoils used in the wind tunnel experiments of 1901. Thirty-eight of the original airfoils are in the Franklin Institute, Philadelphia.

**LCPWOW 120; MCFWP 123; MCFWP 124;
MCFWP 125; MCFWP 126. Seven of the airfoils in
MCFWP 124 are reproduced in WODKH b. 100-101**

Wax model airfoils used in Orville's 1919-21 wind tunnel tests.

**Franklin Institute 1985; J Franklin In, v. 252, Aug.
1951: 181**

High-lift airfoils used in Orville's 1921-22 wind tunnel tests.

**Franklin Institute 1984; J Franklin In, v. 252, Aug.
1951: 181; J Franklin In, v. 256, Dec. 1953: 522**

Shaper for making wax model airfoils for Orville's 1917 wind tunnel.

**MCFWP 231; Franklin Institute 1995; J Franklin In,
v. 252, Aug. 1951: 181; J Franklin In, v. 256, Dec.
1953: 522**

Orville seated and looking at original Wrights' wind tunnel lift balance, misplaced when moved December 6, 1916, and rediscovered in attic of Orville's laboratory in Dayton, December 9, 1946.

Science News Letter, June 4, 1949: 355

Three-quarter front view of the Orville Wright wind tunnel he designed in 1916 to conduct aerodynamic experiments during World War I at wind velocities exceeding 160 miles per hour.

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