

THE WRIGHT BROTHERS

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The Wright Brothers both inherited and used their mechanical abilities when they were young. In their later years, Orville and Wilbur began experimenting with various flight concepts as they worked towards being the first people to fly. In 1903, they did succeed at flying. The two brothers continued to develop more superior planes after that time. This historical event created wealth and opportunity for them as well as others. Flying has now become simple for people to get to faraway places.

BACKGROUND OF THE WRIGHT BROTHERS LIVES

The Wright Brothers got their mechanical abilities from their mother, Susan Koerner Wright. She was the handy one in the family and inherited this mechanical aptitude from her father, John G. Koerner, a German immigrant. Their father was Milton Wright who couldn't even hammer in a nail straight. (Old, Enslow Publishers 2000, p. 14). Milton was a pastor for the Church of the United Brethren in Christ. (Slader, Roaring Brook Press 2018, p. 29). Even though Orville and Wilbur were born four years apart, they were best friends. Orville and Wilbur each had different skills that they inherited.

Orville was born in 1871. While Orville was artistic and creative, he was also mischievous in some ways. When he started Kindergarten, Orville had not attended class since the first day of school. He had gone to his best friend's house. His mother did not know this until she visited the school a month later to see how he was

doing. (Old, Enslow Publishers 2000, pgs. 17 and 18). Even though Orville started off his schooling on a bad note, he still had success in mind. When he was just seven years old, he started a successful business selling kites to other children in order to earn spending money. (Old, Enslow Publishers 2000, p. 18). Before he built kites, he would play with pieces of wood during school and tell his teachers that he was going to make a flying machine with his brother, Wilbur.

Wilbur Wright was born on April 16, 1867. Wilbur was a bright and studious child, and excelled in school. His personality was outgoing and robust, and he made plans to attend Yale University after high school, but never did go to college. In the winter of 1885-86, an accident changed the course of Wilbur's life. He was badly injured in an ice hockey game, when another player's stick hit him in the face. (<https://www.nps.gov/wrbr/index.htm>, 2019).

It was this bad experience that started his interest in flying. He could not do much being in pain from the hockey stick, so "he started to read about flight and decided that he wanted to solve the problem of flight." He wrote to the Smithsonian Institute and said, 'I want to know everything you know about flight.' And he's the one who contacted the weather bureau to find a place where there would be constant wind. (<http://failuremag.com/article/wright-brothers-wrong-story>)

While their childhood was full of normal kid stuff, the boys were also encouraged to exercise their creativity. The Wright children were educated in public schools and grew up, as Orville later explained, in a home where "there was always much encouragement to children to pursue intellectual interests; to investigate whatever

aroused curiosity.” In a less-nourishing environment, Orville believed, “our curiosity might have been nipped long before it could have borne fruit.”

<https://www.britannica.com/biography/Wright-brothers>.

The Wright brother’s father helped to foster their eventual passion for flying early on in their lives. Milton Wright’s preaching took him on the road frequently, and he often brought back small toys for his children. In 1878, he brought back a small model helicopter for his boys. Made of cork, bamboo and paper, and powered by a rubber band to twirl its blades, the model was based on a design by the French aeronautical pioneer Alphonse Pénau. Fascinated by the toy and its mechanics, Wilbur and Orville would develop a lifelong love of aeronautics and flying.

<https://www.history.com/topics/inventions/wright-brothers>

Wilbur and Orville, best known for their historical first flight, also did business in areas other than aviation. Unlike the rest of their siblings, including their beloved sister, Katharine, the brothers never attended college. In 1889, while still in high school, Orville started a printing press. Wilbur soon joined him in the venture, and in 1893 the boys opened a bicycle shop they would name the Wright Cycle Company in Dayton, Ohio. Cycling was all the rage, and the brothers were soon designing and fabricating their own bikes. (<https://www.biography.com/news/orville-wilbur-wright-brothers-first-flight>)

It wasn’t until many years later that they began working on their flying projects.

BUILD UP OF THE WRIGHT BROTHERS SUCCESS TO FLYING

In 1899, the brothers started quite a bit of research on flying. The Wright Brothers designed their first aircraft. It was a small, biplane glider flown as a kite to test their solution for controlling the craft by wing warping. Wing warping is a method of arching the wingtips slightly to control the aircraft's rolling motion and balance. (<https://www.thoughtco.com/history-of-flight-the-wright-brothers-1992681>). To get a better understanding of flight, they also bird watched.

They noticed that birds soared into the wind and that the air flowing over the curved surface of their wings created lift. Birds change the shape of their wings to turn and maneuver. They believed that they could use this technique to obtain roll control by warping or changing the shape of a portion of the wing. Orville and Wilbur conducted a series of flying experiments with different types of aircraft for several years to test their findings so far. The brothers then designed their first aircraft. They tested various gliders under really bad conditions. At the Outer Banks there were many mosquitos, ticks, snakes and bed bugs as well as sandstorms, heat, cold and bad weather. But they continued to try. (Collins, National Geographic Society, p, 22)

In 1901, at Kill Devil Hills, North Carolina, the Wright Brothers flew the largest glider ever flown. It had a 22-foot wingspan, a weight of nearly 100 pounds and skids for landing. In the year 1900, the Wright brothers successfully tested their new 50-pound biplane glider with its 17-foot wingspan and wing-warping mechanism at Kitty Hawk in both unmanned and piloted flights. (<https://www.thoughtco.com/history-of-flight-the-wright-brothers-1992681>). Although they were successful with this plane design, the brothers still had difficulties with controlling and maneuvering the plane, like turning and pitching.

They decided to build a wind tunnel to test a variety of wing shapes and their effect on lift. Based upon these tests, the inventors had a greater understanding of how an airfoil (wing) works and could calculate with greater accuracy how well a particular wing design would fly. They planned to design a new glider with a 32-foot wingspan and a tail to help stabilize it. (<https://www.thoughtco.com/history-of-flight-the-wright-brothers-1992681>)

With this particular glider, they conducted many experiments over the course of two years. During that time, they studied propelling and figured out how to make the new glider sturdy enough to fly. Orville and Wilbur now felt they were ready to successfully be the first people to fly.

THE MAIN EVENT: READY TO FLY

In the fall of 1903, their double-winged, motor propelled contraption named the Flyer was ready to be tested with a man aboard. In the end, the Wrights calculated its weight to be 675 pounds. (Old, Enslow Publishers 2000, pages 5 and 6). Even though the plane weighed this much, Orville and Wilbur still had a chance at succeeding with flying.

The brothers' first attempt at flying would use a nine-degree slope down the dune to get a gravity-assisted start. They tossed a coin to decide who will go in the Flyer. It was Wilbur who went in. On their first attempt the Flyer nosed up fifteen feet in the air. The left wingtip was caught in the sand then crashed.

(<https://www.nps.gov/wrbr/index.htm>. 12 Oct. 2019). The brothers then had to fix the airplane and it took two days to repair it.

On December 17, during a cold, windy day with twenty-four-mile-per-hour wind, they were successful as the Flyer lifted off the guide rail on its historic flight on December 17, 1903.

IMPACT OF THE TEST FLIGHTS

After that historic day, the Wright Brothers continued with more successful flying. Within ten months, Orville and Wilbur were taking twenty-four-mile flights lasting almost forty minutes. (Day, Simon and Schuster 2000, p. 41). The two brothers continued making new planes successfully. Now they wanted to sell their airplanes, but had trouble convincing people that the machines were practical for flying. (Jenner, Munich and Melbourne 2003).

To be more convincing, the Wright Brothers thought a patent would be best. They were able to get the patent on May 22nd, but it is important to know that it was for “new and useful improvement in Flying Machines.” The drawings that appeared in the patent are of a glider, not a powered airplane.

(<https://airandspace.si.edu/exhibitions/wright-brothers/online/fly/1903/patenting.cfm>) On May 23, 1906, the United States Government recognized their achievement and awarded Orville and Wilber a patent for

their flying machine. So, the brothers offered their machine for sale plus the patent rights for \$200,000. (Old, Enslow Publishers 2000, p. 64)

Also, the United States Army and a French company showed interest in the Wright Brothers planes. The United States Army asked Orville and Wilbur to add space for a passenger. Orville and Wilbur then built and sold two planes for them. (Day, Simon and Schuster 2000, p. 42). This was in 1908. Unfortunately, Wilbur then died a few years later, in 1912. He died from typhoid fever. Orville lived until 1948, but he had been retired for many years. (Day, Simon and Schuster 2000, p. 43). Orville sold his share of the Wright Company a few years later, but he continued to invent small toys. (Day, Simon and Schuster 2000, p. 46).

LEGACY OF THE WRIGHT BROTHERS HISTORICAL INVENTION

Many people after that time were encouraged to invent and build their own airplanes. In 1927, Charles Lindbergh flew across the Atlantic Ocean alone in his airplane called the Spirit of St. Louis. Later, in 1921 Amelia Earhart also flew across the Atlantic Ocean alone. She was the first woman to do this. (McCormick, Scholastic 2005, p. 20).

Flying has advanced greatly since the Wright Brothers historical invention. Orville and Wilbur's first flight was only 12 seconds long. Now there are planes that can go for hours without stopping. The flight from Dallas to Sydney is 8578

miles long and takes 17 hours. (Brown, Simon Spotlight 2016, p. 44). Also, planes are much bigger than the ones that The Wright Brothers invented.

The Airbus A380-900 is a passenger plane from France and fits 850 people. It is the largest airplane in the world. It is very fast at 676 miles per hour. (Brown, Simon Spotlight 2016, p. 45).

Museums hold some of the airplanes the Wright Brothers made. Referred to as “the first pilot’s last project,” preserving the 1905 Wright Flyer III for Carillon Historical Park was Orville Wright’s last major project before he died on January 30, 1948. And while Orville died before Carillon Park was opened in 1950, he had a hand in designing Wright Hall—the building that houses the 1905 Wright Flyer

III. (<https://www.daytonhistory.org/visit/things-to-see-do/wright-brothers-national-museum/>)

The Wright Brothers story was a fun and interesting topic to learn about. Orville and Wilbur went through so much in order to complete their invention. Now, there are so many types of planes, probably inspired by them. From paper airplanes, to fighter jets, the Wright Brothers helped the world take flight.

Works Cited

Berry, John W., Sr. "Wright Brothers National Museum." Carillon Historical Park,
www.daytonhistory.org/visit/things-to-see-do/wright-brothers-national-museum/.

Accessed 10 Feb. 2020.

Brown, Jordan D. How Airplanes Get From Here to There. New York, Simon Spotlight,
2016.

Collins, Mary. Airborne: A Photobiography of Wilbur and Orville Wright. National
Geographic Society, 2003.

Crouch, Tom D. "<https://www.britannica.com/biography/Wright-brothers>." Accessed 26
Jan. 2020.

Day, Larry. Taking Flight: The Story of The Wright Brothers. New York, Simon &
Schuster, 2000.

Jenner, Caryn. First Flight: The Story of the Wright Brothers. First American ed.,
London, New York, Delhi, Munich and Melbourne, 2003.

McCormick, Lisa Wade. Wright Brothers. New York, Toronto, and London, Scholastic,
Inc, 2005.

Meares, Hadley. "The Brothers Who Changed Aviation."

<https://www.biography.com/news/orville-wilbur-wright-brothers-first-flight>. Accessed

26 Jan. 2020.

Old, Wendie C. To Fly The Wright Brothers: Inventors of the Airplane. Enslow

Publishers, New York, 2000.

Slader, Erik and Thompson, Beth. Epic Fails: The Wright Brothers Nose-Diving Into

History. New York, Roaring Brook Press, 2018

The Wright Brothers and the First Airplane Flight.

www.thoughtco.com/history-of-flight-the-wright-brothers-1992681 Accessed 6

Dec. 2019.

"The Wright Brothers: The Invention of the Aerial Age." Smithsonian National Air

and Space Museum,

<https://airandspace.si.edu/exhibitions/wrightbrothers/online/index.cfm>. Accessed

10 Feb. 2020.

They Taught the World to Fly. 12 Oct. 2019, www.nps.gov/wrbr/index.htm. Accessed 19

Nov. 2019.

Wright Brothers. History.com Editors.

<https://www.history.com/topics/inventions/wright-brothers>. 6 June

2019. Accessed 19 Nov. 2019.

Zasky, John. "Wright Brothers, Wrong Story How Wilbur Wright Solved The Problem

Of Manned Flight." Failure Mag, 21 Jan. 2019, failuremag.com/article/wright-

[brothers-wrong-story](http://failuremag.com/article/wright-brothers-wrong-story). Accessed 10 Jan. 2020

In 1908, the Wright Brothers began testing what would become the first U.S. Army airplane. Many people who witnessed these tests had never seen a man take flight. Within ten years, entire battles would be fought in the sky. HAPPY HOLIDAYS FROM THE WRIGHT BROTHERS® BRAND The Wright brothers walked to the Kitty Hawk Weather Bureau to send a telegram home to their father in Dayton, Ohio, with the exciting news of their successful first flight on December 17, 1903. The Wright family was thrilled to learn about that first flight, but they were happier yet to know that meant the boys, great cooks, would be home in time for Wilbur to stuff the Christmas turkey and for Orville to make his cranberry bun...ny, served at holiday meals. The Wright brothers, American brothers, inventors, and aviation pioneers who achieved the first powered, sustained, and controlled airplane flight (1903). Orville made the first successful flight, covering 120 feet (36 meters) through the air in 12 seconds. Orville and Wilbur Wright made the first successful self-propelled sustained flight on December 17, 1903. The flight lasted 12 seconds, and the aircraft flew approximately 20 feet (6 metres) above the ground for 120 feet (36 metres). The Wright brothers Orville (August 19, 1871 – January 30, 1948) and Wilbur (April 16, 1867 – May 30, 1912) were two American aviation pioneers generally credited with inventing, building, and flying the world's first successful motor-operated airplane. They made the first controlled, sustained flight of a powered, heavier-than-air aircraft with the Wright Flyer on December 17, 1903, 4 mi (6 km) south of Kitty Hawk, North Carolina. In 1904–05, the brothers developed their flying machine to make longer... In 2003, the world will celebrate the 100th anniversary of the first flight of an airplane by the Wright brothers. While much attention will be paid to the events of December 17, 1903, at Kitty Hawk, North Carolina, it is important to note that the four flights of that day were only one small step in the development of the airplane. On this page, we show scaled computer drawings of the six aircraft which the brothers designed and built leading up to the first practical airplane. The process which lead to...