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### Assignment 1- First Flight

“The desire to fly is an idea handed down to us by our ancestors who, in their grueling travels across trackless lands in prehistoric times, looked enviously on the birds soaring freely through space, at full speed, above all obstacles, on the infinite highway of the air” (Orville Wright).

Humankind has always longed to have their place in the sky. There have been hundreds of types of aircrafts conceived over the years; from the human glide in the 19<sup>th</sup> century created by George Cayley to the first passenger-carrying airship made by Henri Giffard in 1852, and the Zeppelin aircrafts by German inventor, Ferdinand von Zeppelin, built in the 20<sup>th</sup> century. However, there is much debate about who should receive the credit for the “first” practical airplane. Although everyone has their own opinions on the matter, each option has its pros and cons.

Orville (August 19, 1871 – January 30, 1948) and Wilbur (April 16, 1867 – May 30, 1912) Wright were American brothers, inventors, and aviation pioneers best known for constructing and flying the first practical aircraft in 1903. Orville and Wilbur first took an interest in flight as young boys when their father brought home a toy “helicopter”. They played with it until it fell apart, and then went on to build their own. The brothers attended high school but both dropped out; this move led them to open a repair and sales shop in 1892 during the national bicycle craze. What separated their Flyer from previous iterations was its three-axis control system. They were able to incorporate the system into their flyer from what they learned operating in their shop working with printing presses, motors, and bicycles. It was their experience with bicycles in particular, that fueled their theory that an unstable vehicle could be controlled and balanced.

The *Wright Flyer* (also known as *Flyer I* or *1903 Flyer*) was a canard biplane based on earlier models that Orville and Wilbur had concocted but that did not meet their expectations. It was arguably the most significant aircraft in history. It flew by operating a system of pulleys and cables that twisted the edges of the wings as needed to be able to control the plane; this is known as wing warping, a technique credited to the Wright’s as well. The brothers were unable to find a suitable engine for the contraption, thus they had their employee, Charlie Taylor, build a new one from scratch specifically for the 1903 Flyer to power its twin propellers. Finally, the Flyer was launched from a track of 2x4s stood on their narrow edge, dubbed the “Junction Railroad”.

The Flyer appeared ready for its assessment on December 14, 1903, but due to error on Wilbur’s part, he pulled up too sharply and stalled the engine after only 3 seconds. Because of minor damages, repairs took three days. On December 17, 1903, the Flyer successfully completed 4 short flights. Although each landing was rough and the longest flight, lasting only

59 seconds endured 852 feet (260 meters), it marked the day that man effectively flew an aircraft.

The glider achieved remarkable accomplishments, being the first sensible aircraft to pull off a flight; it could fly for dozens of miles at altitudes well above any tree or building and could stay in the air for long distances. As mentioned earlier, it was also the first to have the three-axis control system, allowing the pilot to steer the aircraft effectively and to maintain its equilibrium. The basis for this system is still used on modern fixed-wing aircraft.

However, the Wright's brothers creation was far from perfect. The one feature it lacked (until some years later, at least) was the ability to takeoff unassisted. There is much controversy on this topic, as many argue that while the Flyer I was the first to fly, Alberto Santos-Dumont's 14-bis was the first practical aircraft because it could take off without added assistance. Although this is an excellent point, the 14-bis was not able to reach high altitudes nor fly for longer than 10 minutes, rendering it not as practical as the brothers' glider.

In conclusion, I believe the Wright brothers are correctly given credit for producing a manned airplane that was capable of controlled powered flight. Many have contributed to the study of air transportation, helping to eliminate failed ideas and adding to theories that were probable, but it was the Wright brothers that ultimately took all of that information and produced something successful from it.

## References:

Kane, M. Robert. Air Transportation. 14<sup>th</sup> ed. Iowa: Kendall/Hunt, 2003. Print. 60-65.

“Early flying machines.” *Wikipedia*. 14 Sep. 2012. Web. 17 Sep. 2012

<[http://en.wikipedia.org/wiki/First\\_flying\\_machine](http://en.wikipedia.org/wiki/First_flying_machine)>.

“Wright Flyer.” *Wikipedia*. 1 Sept. 2012. Web. 17 Sep. 2012

<[http://en.wikipedia.org/wiki/Wright\\_Flyer](http://en.wikipedia.org/wiki/Wright_Flyer)>.

“Wright Brothers.” *Wikipedia*. 17 Sep. 2012. Web. 17 Sep. 2012.

<[http://en.wikipedia.org/wiki/Wright\\_brothers](http://en.wikipedia.org/wiki/Wright_brothers)>.

“Wing warping.” *Wikipedia*. 7 Aug. 2012. Web. 17 Sep. 2012.

<<http://en.wikipedia.org/wiki/Wing-warping>>.