

### The Wright Brothers and their First Flight

Wilbur and Orville Wright were the sons of Milton Wright, a church bishop, from Dayton, Ohio, USA. Wilbur, the elder brother, was born near Milville, Indiana on April 16, 1867 and Orville was born on August 19, 1871 in Dayton. They had two older brothers and a younger sister. Their mother Susan Wright was gifted with a flair for mechanical things; she built simple household appliances and toys for children. Wilbur and Orville seem to have inherited this gift from their mother. Their early interest in aeronautics seems to have been aroused when their father presented them with a rubberband powered helicopter.

Neither Wilbur nor Orville had a high school diploma. They operated a printing press and a bicycle shop in succession in Dayton. They were bicycle enthusiasts who eventually started building their own bicycles. And soon they were looking for new challenges. The parallels between the challenges of bicycling and flying had been highlighted by several people. One of them, J H Means, wrote in his journal *The Aeronautical Annual* in 1896, "It is not uncommon for the cyclist, in the first flash of enthusiasm which quickly follows the unpleasantness of taming the steel steed, to remark: 'Wheeling is just like flying!'"

Influenced perhaps by such thinking prevalent at that time, the Wright brothers turned their attention to aeronautics. This interest took a concrete shape after their correspondences with the Smithsonian Institute and American aeronautical pioneer Octave Chanute in the years 1899-1900. (Around the same time they built their first glider). The following excerpt from a letter Wilbur wrote to Chanute gives a very revealing insight into his thinking.

*For some years I have been afflicted with the belief that flight is possible to man. My disease has increased in severity and I feel that it will soon cost me an increased amount of money if not my life. I have been trying to arrange my affairs in such a way that I can devote my entire time for a few months to experiment in this field. My general ideas of the subject are similar to those held by most practical experimenters, to wit: that what is chiefly needed is skill rather than machinery. The flight of the buzzard and similar sailors is a convincing demonstration of the value of skill, and the partial needlessness of motors. It is possible to fly without motors, but not without knowledge & skill. This I conceive to be fortunate, for man, by reason of his greater intellect, can more reasonably hope to equal birds in knowledge, than to equal nature in the perfection of her machinery. Assuming then that Lilienthal was correct in his ideas of the principles on which man should proceed, I conceive that his failure was due chiefly to the inadequacy of his method, and of his apparatus. As to his method, the fact that in five years' time he spent only about five hours, altogether, in actual flight is sufficient to show that his method was inadequate. Even the simplest intellectual or acrobatic feats could never be learned with so short practice, and even Methuselah could never have become an expert stenographer with one hour per year for practice. I also conceive Lilienthal's apparatus to be inadequate not only from the fact that he failed, but my observations of the flight of birds convince me that birds use more positive and energetic methods of regaining equilibrium than that of shifting the center of gravity.*

The first few lines of the letter indicate the consum-



ing passion that the brothers had for flying, which would see them through all the vicissitudes of their flying career in the following eventful years. It is also amply evident from this letter that the Wright brothers were extremely practical-minded men who did not have much use for arm-chair philosophies or theories about flight but were intent on practice in the field. This is clear from their critique of the German engineer Lilienthal's (mis) adventures with gliders, which eventually led to his tragic death in a glider accident.

The Wright brothers had started performing their own wind tunnel tests for building gliders in their bicycle shop. By 1902, they had completed 1000 flights with their third glider, remaining airborne for about 26 seconds and covering distances of 622.5 feet. Equipped with the experience learnt from building and flying gliders, they were ready to build a piloted, powered flight; they designed and built their aircraft and an internal combustion engine with the assistance of their machinist Charles Taylor.

Wilbur reckoned that they needed a steady wind of about 15 mph for a smooth flight. The Wrights explored various locations for their experiments and they were supplied a list of windy places by the US weather bureau. Sixth on the list (far from the Wrights' home in Ohio) was Kitty Hawk, a place in North Carolina with vast stretches of sand and water (ideal to cushion the impact in case of a crash), few trees, and reasonably good weather. Hence it came about that an otherwise non-descript village played host to one of the most momentous occasions in the history of science and aviation.

On that historic day of December 17, 1903 the

weather had become very nasty at Kitty Hawk with gusty winds of 30 mph and a high chill factor. The Wright brothers, who were cautious otherwise, were getting impatient and restless. They wanted to fly their machine immediately no matter what the weather was, as they desperately wanted to get back home to Dayton for Christmas. Orville Wright made the first flight at about 10:35 AM for a duration of 12 seconds. This was followed by three more flights, with the brothers alternately piloting the machine. The fourth flight was the longest when the Wright flyer was airborne for 59 seconds and flew 852 feet.

After their first flights, the Wright brothers went on to make longer flights in the following years. They received acclaim and fame in due course. In 1908, they made a trip to Europe where they dazzled spectators with their display of flying skills. Their firm, Wright Company, sold the world's first military plane, to the US Army in 1909.

Wilbur Wright died in the year 1912 from typhoid fever. Orville continued to fly till 1918. He lived, through both the world wars, up to 1948 – long enough to see the field of aeronautics, which he along with his brother had given a kickstart to and nurtured, come of age.

#### Suggested Reading

- [1] *Celebrating a century of flight*, NASA publication SP-2002-09-511-HQ
- [2] <http://www.first-to-fly.com/History/>

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