

George Cayley Biography

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Biography

Cayley was an individual of varied interests. He liked mechanical things, he kept a notebook full of sketches of plants and animals, and he had a journal with a wide range of entries.

Due to the success of the balloon ascents by brothers Jacques-Étienne Montgolfier and Joseph-Michel Montgolfier in the 1780s, Cayley was interested in human flight. Instead of concentrating on balloons like so many did, he concentrated on heavier-than-air flight. In 1796, he built a helicopter model with feather propellers, applying the idea of using an airscrew for mechanical flight.

In 1799 he envisioned a fixed-wing aircraft. It was a fixed-wing glider whose wings were stretched cloth. There was a boat-shaped fuselage for the pilot and a modern tail unit for control. His sketch looks very modern because he understood the major concerns of lift, propulsion, and control. However, his power source--a paddle--would prove useless.

In 1804, he designed and built the world's first flyable model aircraft. It used a paper kite for a wing resting on a slender wooden pole. At the back, he attached a tail assembly like today's planes have: a cruciform assembly for horizontal and vertical control.

Between 1809 and 1810, Cayley published his important article "On Aerial Navigation," in which he outlined his carefully thought-out views on flying. These theories would later become the principles and practical applications of aeronautics. The article also points to the possibility that Cayley had at that time constructed a full-size glider capable of carrying a man briefly into the air. However, no other evidence pointing to its existence has been found.

Unfortunately, readers greeted this remarkable paper with little enthusiasm, but Cayley remained undaunted. He adopted the use of two and three wings placed one above the other, a forerunner of the designs conceived by Orville and Wilbur Wright and other twentieth-century aviators. In 1849 he designed a triplane glider, which was the first inherently stable, full-size heavier-than-aircraft. However, this machine could only carry the weight of a child, leading Cayley to construct another, more powerful one. In 1853, this glider carried Cayley's unwilling coachman 900 ft (274.5 m) before crashing. Although emerging unhurt, the shaken coachman quit his job and Cayley stopped building gliders. While he died in 1857 without receiving acclaim for his feats, Cayley is today hailed as the founder of the science of aeronautics.