

THIS WEEK'S AEROVERSARIES

THE FIRST OFFICIAL FLIGHT

Although Ader claimed to have made the first flight on a Heavier-than-Air Machine, the credit belongs to the Wrights

HISTORY records that on October 14, 1897, Clement Ader flew 325 yards in a monoplane of his own construction, and history books credit him with having made the first power-driven flight. It is still, however, open to doubt as to whether he actually flew or whether he only "hopped," for the military reports on the trial of his machine used the word which has been quoted.

In America, Langley, profiting by the work of Lilienthal, had worked for years to build a full-size machine. He had built several successful power-driven models. He abandoned his experiments for lack of money. On the test flights of his machine in every case it fouled the launching gear and was wrecked.

In the year of Langley's last failure Wilbur and Orville Wright achieved the conquest of the air, for it was on Dec. 17, 1903, that the Wright brothers flew 248 yards at Dayton on a biplane of their own construction. It was not carried out under official observation. The Wright Brothers were the sons of Milton Wright, whose ancestors had originally emigrated from England and settled near Dayton in the American state of Ohio. Wilbur was born near Newcastle, Indiana, on April 16, 1867, his brother Orville being born at Dayton, Ohio, on August 19, 1871.

Throughout their career they were inseparable companions. During the early part of their lives they had tried their hands at more than one occupation; one had been a journalist and reporter, the other had actually run a newspaper of his own.

In 1896 the brothers were joint proprietors of a small bicycle-making business in Dayton. They had formed a small company for the purpose, and were making headway. In the autumn of that year they read of Lilienthal's accidental death, and this aroused in them a desire to search for the solution to the problem of mechanical flight which had led up to Lilienthal's death. They studied the work of Octave Chanute and Professor Samuel Pierpont Langley.

The practical experiments of the Wright Brothers began in 1900, at a remote place known as Kittyhawk, on the sandy coast of North Carolina. They chose it partly because of its remoteness and partly because the American weather bureau at Washington had advised them that thereabouts they might expect to find the gentle winds of constant force which they needed for their gliding experiments. Their first glider was of the biplane type originated by Lilienthal. It had a total wing surface of 165 sq. ft.

They improved upon Lilienthal's method of control by body movement by pulling wires which operated movable elevators fixed at the front and the sides of the glider. They conducted several glides on it from the summit of a big sandhill near Kittyhawk bearing the somewhat ominous name of Kill Devil. Over 100 glides were made, and in



The Wright brothers—Orville (left) and Wilbur.

the summer of 1900 the Wright brothers returned to their Dayton home to analyse the results of their experiments. They returned next year with a larger glider.

During the following year they made a number of experiments in a wind-tunnel, and in the summer of 1902 they built their glider with warping wings. After making over 700 successful glides in it they felt that they had solved the problem of stability, and their next move was to build a power-driven machine. Funds were running short; their father and their sister, a school teacher, had financed them. One or two influential friends came to the rescue, and the experiments continued. They wanted an engine to power their glider; but there was no one that they knew who could make it, so they designed and constructed it themselves. It took them more than a year to do so.

The engine took the form of a 30-h.p. internal-combustion unit weighing 210 lbs. When fixed in the plane it drove, by means of chains, two propellers revolving in opposite directions at a speed of 350 revolutions a minute. The complete machine made its appearance at Kittyhawk in 1903. Since the machine did not possess an undercarriage it was launched by the combined aid of a number of mechanics who towed it along a monorail track. The machine was tried out on December 17, 1903, and as already noticed it flew for 325 yards after a run of 40 ft. along the monorail track.

It rose to a height of 10 ft. only, and flew at a speed of 10 miles an hour. Succeeding flights were longer, and at the fourth trial the machine, which had been christened "The Flyer," remained in the air for 59 seconds and ascended to 852 ft., travelling more than half a mile. Only five people were present.

A new aeroplane was built by them during 1904 and this was tried out at Simms Station, 8 miles east of Dayton, in the spring of 1904. The Wright brothers performed 100 engine-driven flights during this year. Strangely enough, the Wrights attracted little attention. They endeavoured to commercialise their aeroplanes and to sell manufacturing licences. On three occasions they offered it to the British Government, only to be refused. The French Government exhibited similar lack of interest, but the United States Government showed a mild interest, and announced that its military experts would consider the machine when it could be proved that it would remain in the air for an hour or more, and could be manoeuvred easily in any direction and made to land at its starting point.

During 1905, therefore, the Wright brothers exercised extreme care in seeing that all of their flights were witnessed, and with a Government order in view they made, on September 26, 1905, what has been regarded as the first officially recorded flight. This was at Dayton, when Wilbur or Orville (there is some doubt as to which) flew 11.125 miles in 18 minutes 9 seconds. This enormously impressed the American Government representatives.

They finally accomplished the requirements of the American Government on September 9, 1908, when Orville Wright succeeded at Fort Myer, Virginia, in remaining aloft for more than an hour. Three days afterwards, however, whilst flying with an American army expert, Lieut. Selfridge, as passenger, the plane crashed badly. Orville was severely injured and his passenger was killed outright.

Meanwhile Wilbur continued the trials in France and made the acquaintance of Leon Bollée, the noted motor car manufacturer, who collaborated with him in producing an improved engine.

The pioneer efforts of the Wrights
(Continued on page 24)



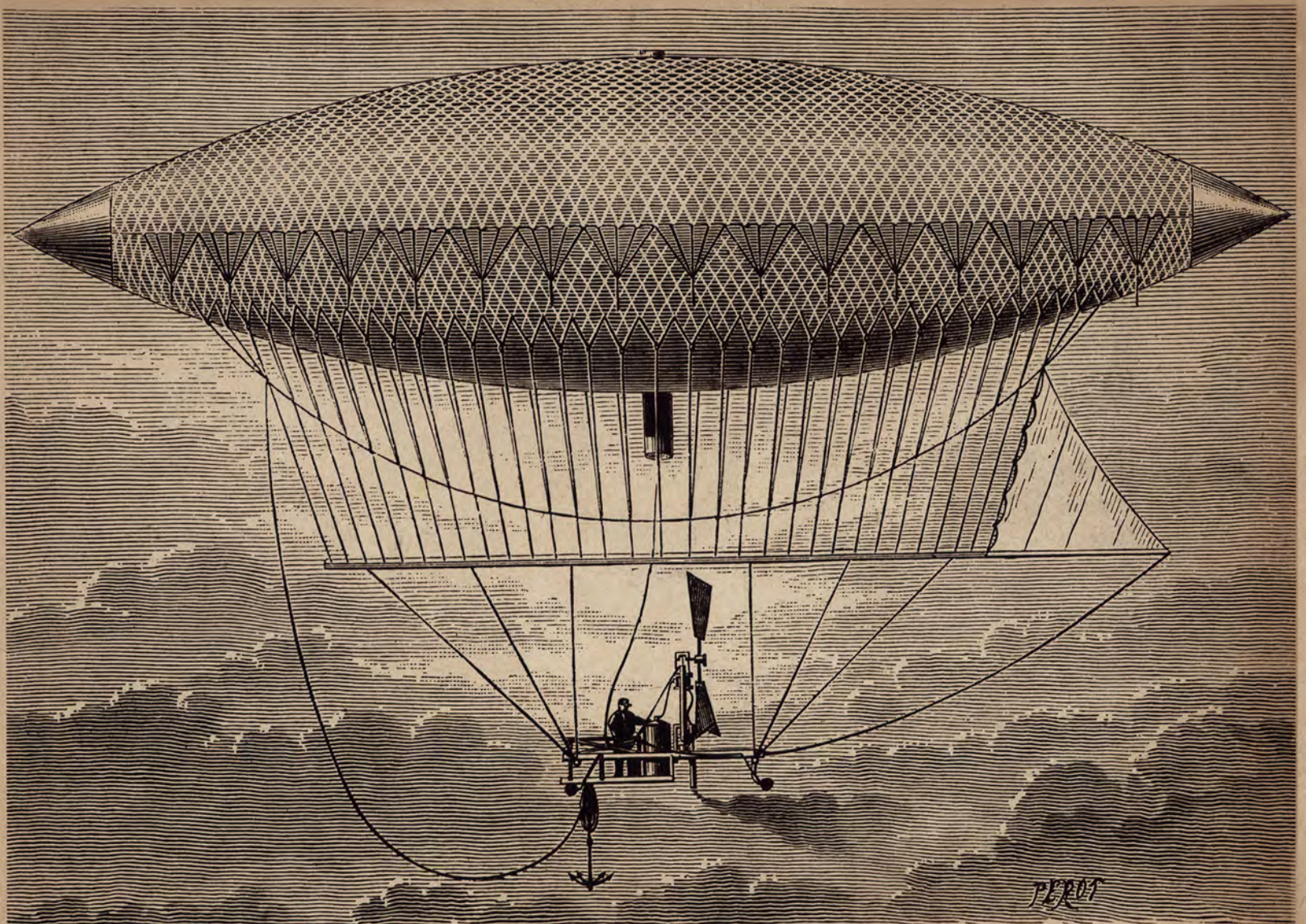
The Wright biplane on which the first authenticated flight was made on September 26, 1905, at Dayton.

THE FIRST OFFICIAL FLIGHT

(Continued from page 6)

were responsible for the awakening of interest in aviation in every country in the world. The Wright patents were freely infringed, and in 1911 there was wholesale litigation by the Wright Co. against manufacturers and aviators. They sued Paulhan, Curtiss and Graham White, who were flying Farman and Blériot machines. They succeeded. This litigation took place in all of the important countries, and a special committee was appointed to search for any anticipation of the Wright patent, but finally their validity was acknowledged. Wilbur Wright died of typhoid fever on May 20, 1912.

ON September 24, 1852, Giffard, the Frenchman, made the first successful flight in a navigable vessel. It was of the lighter-than-air type, of elongated shape and steered by a rudder. It was propelled by a steam engine driving an airscrew and was thus the first successful dirigible balloon. Giffard ascended from the Hippodrome in Paris and landed safely in the Traps, a distance of 17 miles. He accomplished the journey at a speed of from 4 to 5 miles an hour. Giffard's airship was filled with coal gas, and was propelled by an 11-ft. diameter airscrew driven by a 3-h.p. steam engine of his own design. This weighed, complete with a sufficient supply of water to run for an hour, and complete with boilers, 455 lbs. The airship's capacity was 88,000 cubic feet; it was 144 ft. long, and 39 ft. in diameter. The car carrying the pilot was slung from a wooden pole secured to the airship by rigging. *Picture on page 31*



THE FIRST SUCCESSFUL DIRIGIBLE.—September 24, 1852, is a notable date in aviation by reason of the fact that Henry Giffard then ascended from Paris in his dirigible balloon, and landed 17 miles away. The balloon was 143 ft. long, greatest diameter 39 ft., capacity 88,000 cu. ft. The lifting agent

was coal gas. The steam engine and boiler weighed 350 lbs., and drove a propeller 11 ft. in diameter at 110 revolutions per minute. The car, containing the engine, was suspended 20 ft. below the gasbag, and the stovehole of the boiler was screened with wire gauze as a precaution against fire. See page 6.