

Dubbed 'The Phoenix Flyer', this Boxkite replica appeared in the film 'Those Magnificent Men in their Flying Machines'

Back in 1912, nobody flew through clouds. Balloonists had returned to earth with frightening stories of raging gales, hail, thunder and lightning encountered when they strayed accidentally into storm clouds. Clearly, the stick-and-string aeroplanes of more than half a century ago would not have lasted long in such conditions. Furthermore, they carried no instruments. Once out of sight of the ground, the pilot would have been on his own, with nothing but instinct and a sense of balance to tell him whether or not he was flying straight and level.

It created quite a stir, therefore, when young Warren Merriam, an instructor at the Bristol flying school at Brooklands, said one day that he was tired of sitting on the ground under a lot of low clouds and intended to find out what it was like above them. A few of the braver characters asked if they could accompany him, but he was alone when his 50 h.p. Boxkite biplane trundled into the air at about 25 m.p.h. and began to climb.

Almost immediately, Merriam became completely enveloped in cold clammy mist. A leather jacket protected the top half of his body, but the 'cockpit' of a Boxkite consisted simply of a seat mounted on the leading-edge of the bottom wing and within seconds his trousers were saturated. The ground faded from

view and even the sun could not penetrate the murk that surrounded him. Never had he felt more lonely.

Before his confidence had time to wane, he noticed that the cloud above him seemed to be getting lighter. Suddenly, he broke free of the last curling wisps of vapour and found himself in wonderland. Above, the sun shone warmly from the bluest of blue skies. Beneath his wheels a soft, dazzling white carpet spread out as far as the eye could see—a familiar sight to those who fly in this jet age, but at that time a scene of unimagined grandeur and beauty.

Merriam became known eventually as the 'Boxkite King'. From a draughty perch on the lower wing of his biplane he taught dozens of pupils to fly, including men like the late Air Chief Marshal Sir Philip Joubert, who became leaders of the Royal Flying Corps and Royal Air Force in two World Wars.

His success stemmed in part from a new technique that he used. Previously, pupils had had to sit behind the instructor and watch what he did, by leaning over his shoulder while hanging on tightly to the nearest wing struts, as there were no such things as safety belts. If the weather was calm and the instructor sufficiently trusting, the pupil might be allowed to reach forward and rest

his hand on the joystick. This, and a little taxiing practice with the instructor in the back seat, was all the 'dual' he could expect before being turned loose for his first solo.

Merriam changed all this. He let his pupils sit in the front seat, in complete control of the rudder bar but with only partial control of the joystick until he felt they had mastered it. He worked out a system of signals which involved, for example, squeezing the pupil's left shoulder when he wanted the rudder bar moved with the left foot, and pushing forward on both shoulders when the joystick had to be moved forward. Commenting on this later, he said: 'This was horse sense. In fact, it often seemed to me that the use of bits and reins would have been quite a sound idea. My pupils were so keen that they would probably have accepted even such an arrangement had I suggested it.'

Thanks to the makers of the film, *Those Magnificent Men in their Flying Machines* we can now see a Bristol Boxkite in the air once more—something that I for one never expected to see. That the replicas built for the film fly so beautifully is a tremendous tribute to the men who produced the original design back in 1910, as no major detail was changed, apart from fitting a modern 90 h.p. Rolls-Royce/Continental engine and an additional fin between

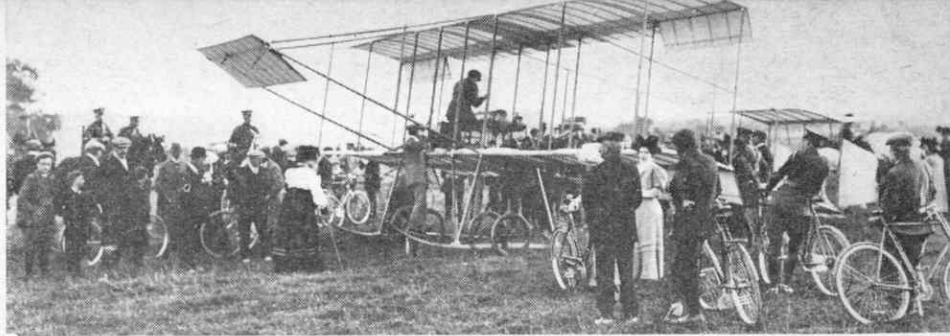
the two standard tail-fins. It was discovered, in fact, that the original structure compared well with the present British civil airworthiness requirements for the latest designs.

Who did design the Boxkite is a little vague. When the British and Colonial Aeroplane Company (known from the start as 'Bristol') set up shop in 1910, its directors intended to build under licence the French Zodiac biplane, designed by Gabriel Voisin and fitted with boxkite wings. Unfortunately, the Zodiac was overweight and underpowered; so, after completing one, Bristol switched to a somewhat blatant copy of the same machine as

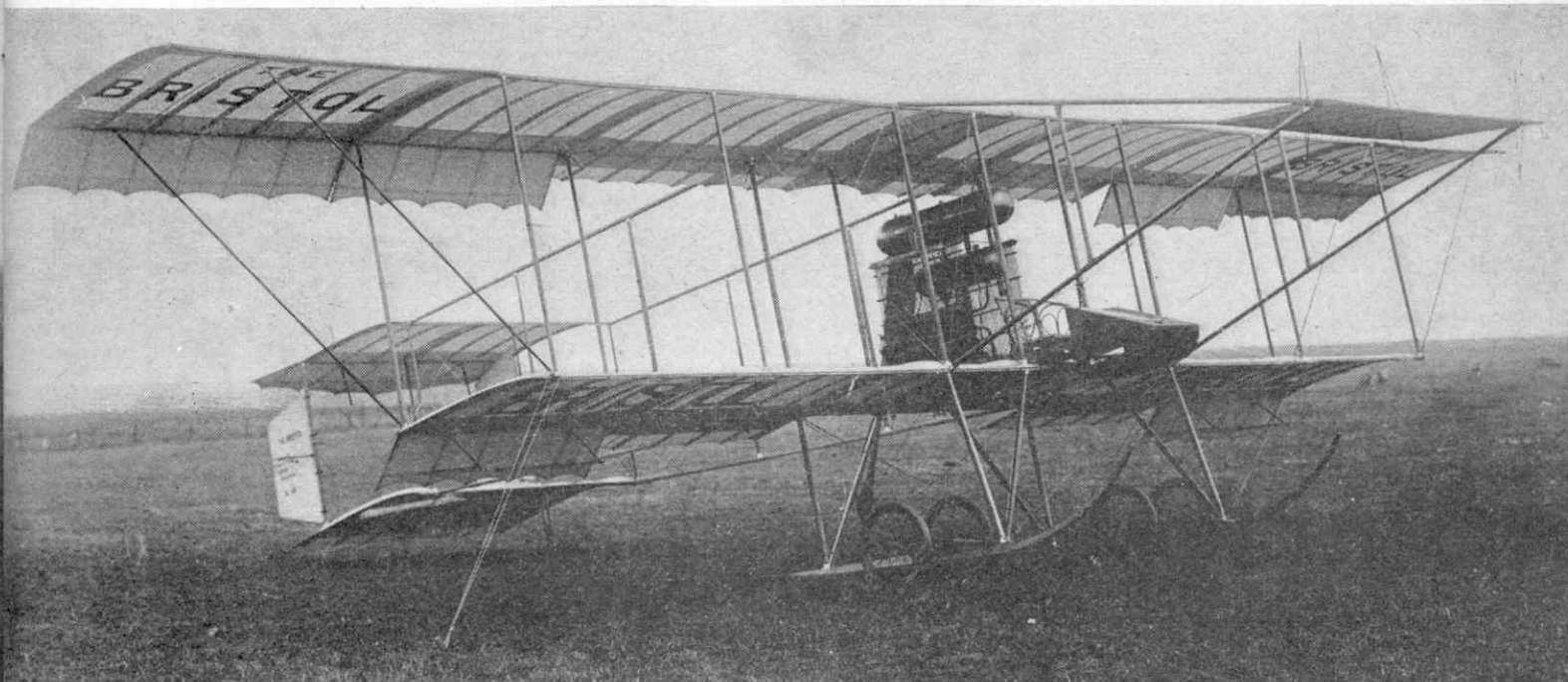
THE  
BOXKITE  
THAT  
WASN'T



In November 1910, M. Tetarel flew over the Avon Gorge in his Boxkite, quite an adventure half a century ago



First reconnaissance plane was the Military 'Boxkite', seen here on Salisbury Plain during the 1910 British Army manoeuvres



With wickerwork pilot's seat and in-line engine, this 'Boxkite' picture taken in 1910 clearly shows the extended wingtips

improved by Henri Farman. As this dispensed with the vertical canvas 'side-curtains' which extended between the wingtips of the Zodiac, it was not really a boxkite, but was never called anything else.

First Bristol Boxkites to fly were No. 7, with a 50 h.p. Grégoire engine, and No. 8 with a 50 h.p. ENV. No. 8 had double-surface wings, with top and bottom 'skins' like a modern aeroplane. No. 7 had only a single fabric top skin with the ribs enclosed in pockets underneath, and all subsequent Boxkites had this type of construction which was less efficient aerodynamically but saved a lot of weight.

This was important, as engines were so low powered and unreliable in those days that every ounce mattered. Far from flying above the clouds, the aeroplanes of 1910 usually had such a struggle to get airborne that people lay flat on the ground when prototypes made their first attempts to fly, watching excitedly for the first glimmer of daylight between the wheels and the grass. They did so when Boxkite No. 7 was ready for test after being re-engined with a 50 h.p. Gnome rotary; but it astonished everyone by climbing to a height of 150 ft. without difficulty. Such was the impact on aviation progress made by

this remarkable aero-engine.

Structurally, the Boxkite was simple. The biplane wings were built first, each made up of wooden ribs, with fabric covering. With the interplane struts in place and braced with piano wire, they formed a surprisingly rigid structure. To them were attached the forward elevator assembly, biplane tail assembly and undercarriage, consisting of two skids, each carrying a pair of wheels. In the film of *Those Magnificent Men* a landing is made with one pair of wheels missing. This was no faking. In fact it was done more than 20 times.

Back in the days before World

War I, Bristol built a total of 76 standard Boxkites, and it is interesting to note that the first military order, for eight, came from Russia. Others were exported to Australia, Bulgaria, Germany, India, Rumania, South Africa, Spain and Sweden. To the total must now be added the replicas built for *Those Magnificent Men*.

For a last word on the Boxkite, we can do no better than quote Warren Merriam. In his book, *First Through the Clouds* (Batsford), he asks: 'Will there ever be anything quite as exhilarating as those open machines, with the wind whistling round and playing weird music on the struts and wires and the shouted conversations? Quaint, "stick and string", they might have been, but I cannot help feeling that much of the joy of flying is lost to the modern pilot shut up in the cabin of his aeroplane.'

J. W. R. Taylor

**Data:** Span, 34 ft. 6 in.; length, 38 ft. 6 in.; height, 11 ft. 10 in.; wing area, 457 sq. ft.; weight empty 800 lb., loaded 1,050 lb.; max. speed, 40 m.p.h.

'Boxkite King' Warren Merriam was the first man ever to fly an aeroplane above the clouds. It must have looked something like this picture. By the way, did you guess that this photograph is actually of a MODEL? It's built from one of the new Inpact 1/48th scale plastic kits—very realistic and only 5s 6d. But it does demand careful and patient workmanship

