

F.E. GETS A GUN

The Royal Aircraft Factory's first F.E.2

by Paul R. Hare

In the early days, when it lacked official permission to construct new prototype aeroplanes without special permission, the Royal Aircraft Factory and its forebears frequently by passed this restriction by explaining away their new designs as the 'reconstruction' of an existing machine. Thus, it was alleged that the FE2 which emerged in the summer of 1911 was a reconstruction of its predecessor, the de Havilland-built FE1.

However, the FE1's last recorded flight was made on 15 August 1911 when piloted by T.J. Ridge, then the Factory's assistant superintendent, the failure of an engine bolt necessitated a forced landing during which the machine suffered some damage, at which time the FE2 was already completed and ready for testing, waiting for Geoffrey de Havilland, who was the Factory's test pilot as well as its designer, to return from his summer holiday the following day.

In this instance, the 'reconstruction' subterfuge was made more credible by the fact that the wings, tail and undercarriage of the FE2, although wholly new, were not dissimilar to those of the earlier machine, which had recently been flown with its forward elevator removed, so increasing the superficial similarity between the two machines.

Like its predecessor the new machine was a fairly compact pusher biplane with a span of 33 feet (10m) and with a small cut-out in the upper centre section and ailerons on all four

wings. The tall, scalloped edge rudder appears to have been disproportionately large, perhaps in response to a perceived need to balance the forward keel area of the simple nacelle which gave the crew some protection from the elements. Power was provided by a 50-hp Gnome Omega rotary engine but unfortunately this would prove to be a constant source of problems.

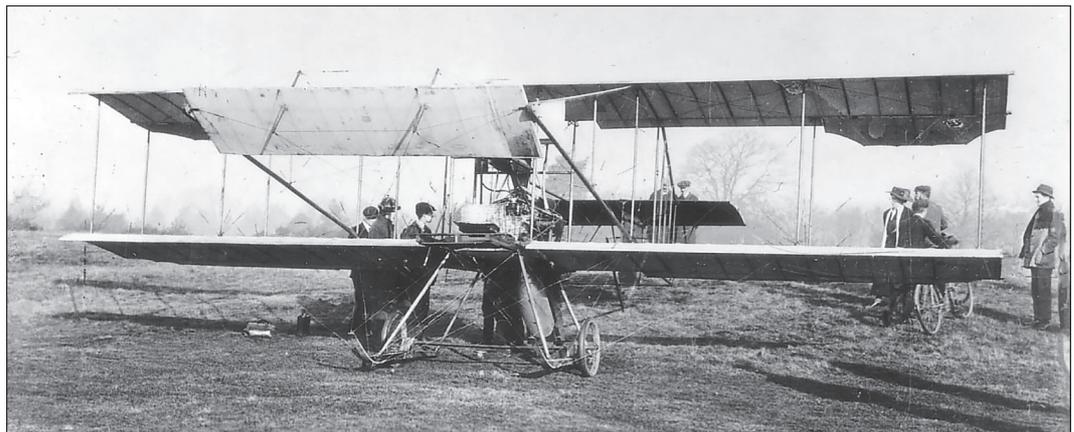
The first take-off, at 16.30 on Wednesday 16 August, had to be aborted after a run of only fifty yards when a piston crown broke up, the pieces exiting the cylinder via the exhaust valve.

With the engine repaired, another attempt was made two days later when, despite constant misfiring, four circuits of Laffan's Plain were made. De Havilland, who was responsible for the machine's testing as well as for its design, reported that its lateral control was good but that it was tail heavy, and that, as a consequence, gliding was particularly difficult. Two further circuits were made on the evening of the same day with fifty pounds of lead tied to the nose, but the centre of gravity was still too far back.

This problem was resolved by the end of the month, possibly by modifying the nacelle to place the crew's weight further forward, and on 30 August de Havilland reported that the machine was *flying well* after making three circuits at about 800 feet despite the engine being *not quite A1*. The following day he flew another circuit before deciding that, although the

The de Havilland built pusher bought by the Factory and designated FE1. Its superficial similarity to the FE2 added weight to the allegation that it had been 'reconstructed' to produce the later machine, although FE2 was already complete when FE1 made its last recorded flight.

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The newly completed FE2 with its nacelle uncovered photographed on Farnborough common, the lower portion of the biplane tail was later removed, with no adverse effect on either balance or control.

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