

The Royal Aircraft Factory BE5

by Paul R. Hare

ONCE THE ROTARY POWERED BE3 and BE4 were completed, the series of two-seat tractor biplanes returned to a stationary engine for the next machine, BE5. The initial choice was, apparently, a Renault but, on 15 May 1912, Mervyn O’Gorman noted¹ that this was not allowed, presumably because it would have meant buying one, and the necessary funding was not available, so he was obliged to use a 60hp V8 ENV that was already in the Factory’s possession instead. This was Type F, Series 1, No 13, and was the engine that had previously powered the ill-fated SE1 and, prior to that, the Bleriot XII from which the SE1 had been ostensibly ‘re-constructed’. With the confusion that typically, and occasionally deliberately, surrounds the origins of the Royal Aircraft Factory’s early experimental creations, O’Gorman once noted² that BE5 was a reconstruction of B1, the old Cammell Bleriot but, unfortunately, Lt Reginald Cammell RE had been associated with two Bleriot’s; the type XII referred to above, and his own type XXI which, after his fatal crash at Hendon in September 1911 whilst flying a Valkyrie monoplane, did eventually find its way to Farnborough for reconstruction, but which was powered by a 70hp Gnome rotary engine. However, neither ever had the serial B1.

The reason for all this subterfuge was that the Royal Aircraft Factory’s responsibilities, whilst allowing the repair and rebuilding of existing aeroplanes, and a certain amount of aeronautical research, excluded the design of any new types of aeroplane *without special order*.³ Largely due to financial restraints, such orders were frustratingly rare, restricting both the growth of the Royal Flying Corps and the experimental work of the Royal Aircraft Factory and, therefore, every crashed, worn out or obsolete aeroplane of whatever type that was handed over to the Factory was ‘reconstructed’ into an entirely new design, usually with none of the original machine, except, perhaps, the engine, included in it, thereby allowing the experimental process to continue.

However, in the case of BE5 very little in the way of new design, or of experimental work, was required as the airframe was no different from that of BE1 or BE2, the only changes being those necessary to accommodate the ENV engine and, since it was water cooled, its radiator and attendant pipe-work. This radiator installation closely resembled that of the BE1 and, since the earlier machine was, by that time, fitted

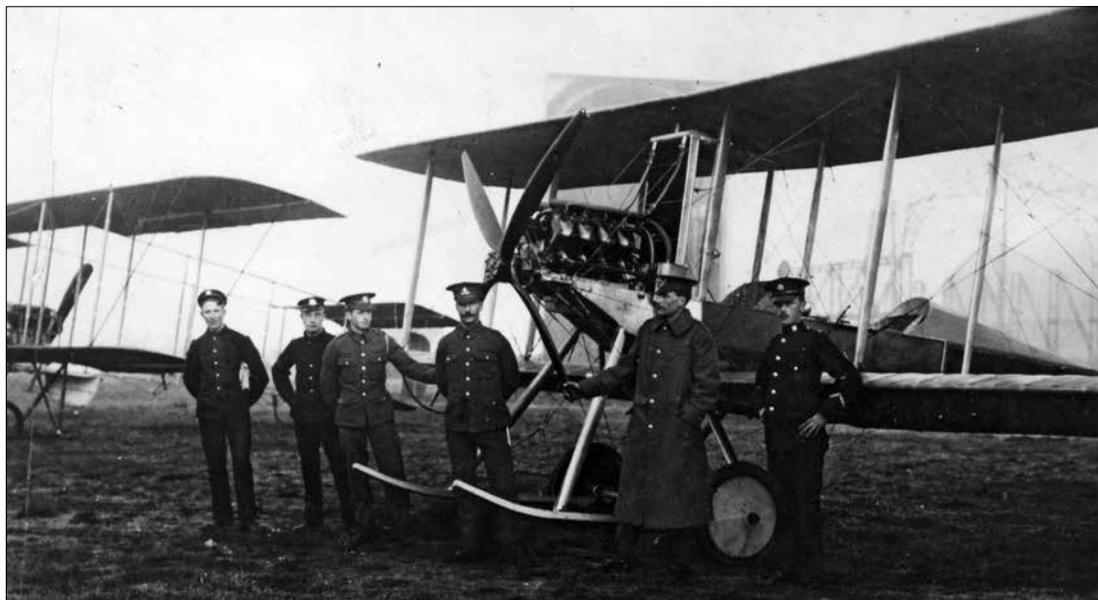
with an air-cooled Renault engine, may well have been the same component, for such re-cycling, which helped stretch a limited budget as far as possible, was common practice.

Like its predecessors BE5, as built, had no decking between the engine and the front cockpit, and the un-staggered warping wings were of equal span. The spade shaped tail was of aerofoil section, providing additional lift, in accordance with the custom of the time, and the rudder was the usual BE ear shape, mounted on an extended stern post, without a fin. The undercarriage incorporated the long skids, thought necessary to protect the propeller and help prevent the machine turning somersault in the event of a bad landing, and the tail skid was fully swivelling to aid manoeuvrability on the ground. Like most of Geoffrey de Havilland’s creations, it was a neat, attractive design.

The new machine made its first flight on 27 June 1912, proving equally as successful as previous models in the BE series, and, by mid July, although still considered, at least by the Royal Aircraft Factory, as experimental and so not yet officially handed over to the RFC, had been loaned to 2 Squadron,⁴ conveniently based at Farnborough. Lt John D. Mackworth took it up, with a passenger, for a short flight on Monday 15 July⁵ and for longer flights on both Tuesday and Wednesday of that week. The poor weather that was common that summer, and which was to plague the forthcoming Military Aeroplane Competition, prevented flying on Thursday but Mackworth managed a 15 minute flight on Friday.

On Monday 22 July, Lts Sheppard and Cockrell both made short flights in BE5 and, the following morning, Major Charles James Burke, the officer commanding 2 Squadron, whose bulky figure had earned him the nickname *Pregnant Percy* also took up BE5 for a short flight. It was then taken up by Lt Cockrell who, in landing, put the aeroplane on its nose, fortunately without personal injury, but with some damage to the machine, which was therefore returned to the Factory for repair.

Whilst there it was fitted with new wings of unequal span, the upper being slightly longer than the lower, an arrangement then considered to offer some slight aeronautical advantage. The bracing wires were also renewed, and at the same time its engine was changed for a 60hp Renault which had been previously fitted to a Breguet biplane that was no longer in



*BE5, before receiving its serial number and in its original configuration, with a water-cooled ENV engine and its large radiator, similar to that fitted to BE1.
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