

Official Photograph of RAE SE5b 1919

Or 'if it ain't broke don't try to fix it.'

The artifact

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The stories behind the artifact

The area known as Farnham Common has been integral to the history of British military aviation since 1904, when the British Army's Balloon Factory moved there from Aldershot. It was also the site of what is generally acknowledged the first powered flight in Great Britain, when the American showman Samuel F. Cody moved from kite-flying to powered flight, flying his own design British Army Aeroplane No.1 around 1,390 feet on 16th October 1908.

Cody continued working for the Balloon Factory, which in 1912 was renamed the Royal Aircraft Factory. Initially it was a repair facility for frequently crashed or damaged aircraft which had been obtained from foreign manufacturers, however some skill and ingenuity was used to create new types and variants, as in the early days the majority of aviation development was due to trial and error.

By the beginning of the Great War the Factory was firmly established, and was producing its own-designed aircraft and balloons for the army, under various contracts, for the now separate air arm known as the Royal Flying Corps. The naval equivalent, the Royal Naval Air Service, in part so as not to compete for orders, went down a private manufacturer purchase route.

The standardisation of types produced was in part due to the appointment of Mervyn O'Gorman as Superintendent of the Factory. In civilian life he had been a consulting engineer, and he brought a new scientific approach to design and manufacturing. On 8th March 1911 he presented to the Institute of Automobile Engineers (which turned out to be prophetic, as during the war a great many automobile factories were turned over to the production of aeroplanes) 'Problems Related to Aircraft' which defined three class requirements for future aircraft. These were:

Class B. Those of which the main wings are preceded by the propeller and followed by a smaller plane which is more lightly loaded (e.g. the Antoinette, Avro, Bleriot and Breguet models of the period). These were alternatively known as tractor types.

Class F. Those which have the main wings followed by a smaller plane more lightly loaded but with the propeller between the main wings and the tail -plane (e.g. Bristol Boxkite, Farman designs and de Havilland types of the period). These were alternatively known as pusher types.

Class S. Those of which the main wings are preceded by a small plane which is more intensely loaded and succeeded by the propeller (e.g. Santos-Dumont or Valkyrie designs of the period).

The first S type was a reconstructed Bleriot XII; the first F type was one of Geoffrey de Havilland's pusher designs he had brought to the Factory and sold to them for the princely sum of £400; and the first B type was a reconstructed, damaged pusher Voisin machine donated by the Duke of Westminster.

By 1918 the Factory had produced a range of military models with varying degrees of success, the B.E.1, B.E.2 series, B.E.12, F.E.1 & 2, The F.E.8, and the S.E.5 and S.E.5a. Of these the S.E.5 and S.E.5a had developed into amongst the best fighting aeroplanes, 'scouts' or 'fighters' as they were variously known, on the Western Front. Designer Henry Folland was given a brief in 1916 to produce an aeroplane to meet Trenchards specification for a fighting aircraft that could reach 10,000 feet in 15 minutes, fly at a minimum of 100 mph at 10,000 feet, with a minimum flying time of 3 hours, although 4 would be preferable. After much design and alteration, A4845, the first Royal Aircraft Factory production S.E.5, was finished before March 1917. It had a 150hp Hispano-Suiza engine which generated a top speed of 114 mph at 10,000 feet, could climb to 10,000 in a little over 14 minutes and could remain airborne just over 2 and a half hours. Top speed at sea level was 128 mph and service ceiling was circa 17,000 feet.

Further developments and improvements, such as replacing the 'greenhouse' screen with a smaller Triplex type found in Avro 504's, alterations to the undercarriage and alternative powerplants, the 200HP Wolsey Viper engine, resulted in the S.E.5a. The S.E.5a along with the Sopwith Camel became the mainstay of the British fighter offensive on the Western Front from 1917 until the Armistice in November 1918.

Despite this, back at the Royal Aircraft Factory, they tinkered with an S.E.5a in an attempt to compete with the new German frontline fighters, the Albatros D.V and formidable Fokker D.VII. They took an existing S.E.5a, serial number A8947, and although the original 200hp Hispano Suiza was retained, redesigned the nose to give it an Albatros- looking front end with a streamlined nose and large spinner. It was given an entirely new top wing based on the Fokker D.VII that was larger in both span and chord. To replace the radiator grill and prevent overheating a 'chin' type radiator was fitted, this could be retracted when gliding to reduce drag by a cable and pulley system. The fuselage and tail remained the same but a larger, curvier headrest was fitted.

Anticipation was huge for increased performance, the redesignated S.E.5b looking sleek and aerodynamic. However it was found that the more aerodynamic nose was countered by more drag from the enlarged wing, so that performance was on a par with the standard S.E.5a. The war came to an end in November 1918, however further testing was done. By 9th January 1919 a standard pair of S.E.5a wings had been re-fitted, and on or before 9th April 1919 a set of official photographs were taken.

When the RFC and RNAS joined together on 1st April 1918 to form the RAF, to avoid confusing an already confused and frantic transition, The Royal Aircraft Factory was renamed the Royal Aircraft Establishment. Which brings the reader to my artifact, the official RAE photograph of S.E.5b A8947.

Although originally one of a series, it is my understanding after a great deal of research this is the only official photograph known to be in existence. Measuring 7 and a half inches by 9 and a half inches, it is embossed top right corner and attached to an original A4 sized card with a typed T.1505. in the top right corner. On the reverse it is clear the embossing mark has gone through both card and photo so was deliberate. There is a standard Royal Aircraft Establishment Photographic Dept. Form on the reverse, with the reference no. 3894 and the date 9th April 1919.

The photograph itself is of excellent quality and in excellent condition, being in portrait which was unusual at the time, and showing not only the serial number on the tail fin, but also the streamlining of the nose.

Sadly A8947, the sole S.E.5b, crashed at Hendon in the early 1920's.