Royal Aircraft Factory SE-5 47” or 70” Plan.

The **Royal Aircraft Factory S.E.5** was a British biplane fighter aircraft of the First World War. Although the first examples reached the Western Front before the Sopwith Camel and it had a much better overall performance, problems with its Hispano-Suiza engine, particularly the geared-output H-S 8B-powered versions, meant that there was a chronic shortage of S.E.5s until well into 1918 and fewer squadrons were equipped with the type than with the Sopwith fighter. Together with the Camel, the S.E.5 was instrumental in regaining allied air superiority in mid-1917 and maintaining this for the rest of the war, ensuring there was no repetition of "Bloody April" 1917 when losses in the Royal Flying Corps were much heavier than in the Luftstreitkräfte.

The S.E.5 (**S**cout **E**xperimental **5**) was designed by Henry P. Folland, John Kenworthy and Major Frank Goodden of the Royal Aircraft Factory in Farnborough. It was built around the new 150 hp (112 kW) Hispano-Suiza 8a V8 engine that, while providing excellent performance, was initially under-developed and unreliable. The first of three prototypes flew on 22 November 1916. The first two prototypes were lost in crashes (the first killing the chief test pilot at the Royal Aircraft Factory, Major F. W. Goodden on 28 January 1917) due to a weakness in their wing design. The third prototype underwent modification before production commenced; the S.E.5 was known in service as an exceptionally strong aircraft which could be dived at very high speed - the squarer wings also gave much improved lateral control at low airspeeds.

Like the other significant Royal Aircraft Factory aircraft of the war (B.E.2, F.E.2 and R.E.8) the S.E.5 was inherently stable, making it an excellent gunnery platform, but it was also quite manoeverable. It was one of the fastest aircraft of the war at 138 mph (222 km/h), equal at least in speed to the SPAD S.XIII and faster than any standard German type of the period.

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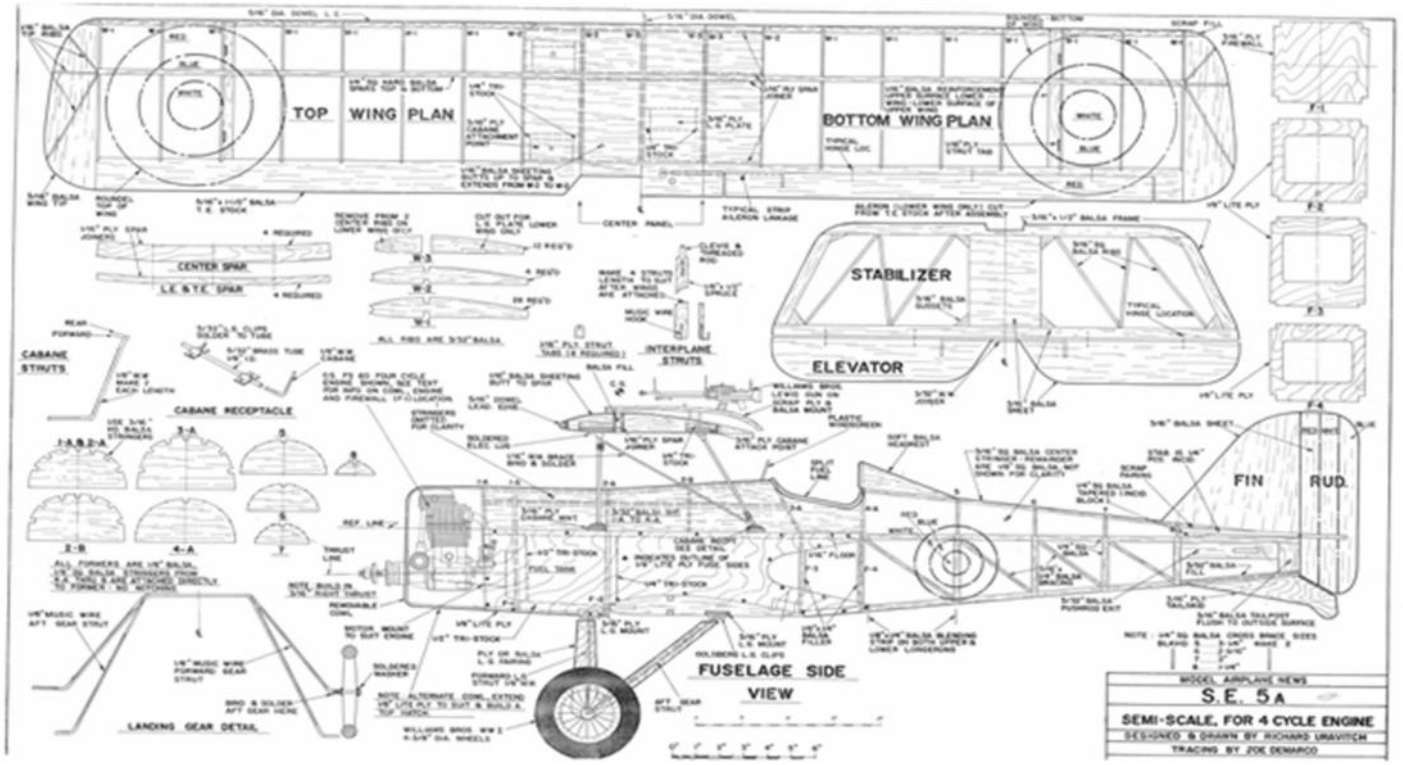
While the S.E.5 was not as agile and effective in a tight dog fight as the Camel it was much easier and safer to fly, particularly for novice pilots. The S.E.5 had one synchronised .303-in Vickers machine gun to the Camel's two, but it also had a wing-mounted Lewis gun on a Foster mounting, which enabled the pilot to fire at an enemy aircraft from below as well as providing two guns firing forward. This was much appreciated by the pilots of the first S.E.5 squadrons as the new hydraulic-link "C.C." synchronising gear for the Vickers was unreliable at first. The Vickers gun was mounted on the forward left dorsal surface of the fuselage with the breech inside the cockpit. The cockpit was set amidships, making it difficult to see over the long front fuselage, but otherwise visibility was good. Perhaps its greatest advantage over the Camel was its superior performance at altitude – so that it was a much better match for the Fokker D.VII when that fighter arrived at the front.

60 Inches Plan



SE-5A

Only 77 original S.E.5 aircraft were built before production settled on the improved **S.E.5a**. The S.E.5a differed from late production examples of the S.E.5 only in the type of engine installed - a geared 200 hp Hispano-Suiza 8b, often turning a large clockwise-rotation four-bladed propeller, replacing the 150 hp model. In total 5,265 S.E.5s were built by six manufacturers: Austin Motors (1,650), Air Navigation and Engineering Company (560), Curtiss (1), Martinsyde (258), the Royal Aircraft Factory (200), Vickers (2,164) and Wolseley Motors Limited (431).[2] A few were converted as two-seat trainers and there were plans for Curtiss to build 1,000 S.E.5s in the United States but only one was completed before the

Royal Aircraft Factory SE-5 47” or 70” Plan.

end of the war. At first, airframe construction outstripped the very limited supply of French-built Hispano-Suiza engines and squadrons earmarked to receive the new fighter had to soldier on with Airco DH 5s and Nieuport 24s until early 1918. The troublesome geared "-8b" model was prone to have serious gear reduction system problems, sometimes with the propeller (and even the entire gearbox on a very few occasions) separating from the engine and airframe in flight, a problem shared with the similarly-powered Sopwith Dolphin.

The introduction of the 200 hp (149 kW) Wolseley Viper, a high-compression, direct drive version of the Hispano-Suiza 8a made under licence by Wolseley Motors Limited, solved the S.E.5a's engine problems and was adopted as the standard powerplant.

About 38 of the Austin-built S.E.5as were assigned to the American Expeditionary Force with the 25th Aero Squadron getting its aircraft (mostly armed only with the fuselage-mounted Vickers gun) at the very end of the war.

47” Plan