Based on the Snipe, which it resembled externally, the Salamander was a trench fighter with 650 lb. of armour protection for the nose section. Over 183 Salamanders were built

Herbert Smith . . .

centrating the mass of the engine, guns, fuel and pilot to give minimum inertia and to ensure that the aircraft's C.G. was well forward. A careful study of the principal Sopwith fighters will reveal how closely the design team under Smith followed this layout.

By 1916 the respective drawing office teams of Ashfield and Herbert Smith were so involved with new projects that the number of draughtsmen had to be increased. Among the newcomers at that time was W. G. Carter who was appointed chief draughtsman and made responsible for ensuring that experimental drawings were expanded and productionised so that they would be easily understood by inexperienced sub-contractors engaged on construction and assembly. When one recalls that over thirty major sub-contractors were engaged on making Sopwith aircraft, it can be appreciated that Carter's appointment was very necessary. (W. G. Carter incidentally remained with Sopwith's later company, H. G. Hawker Engineering, until 1925 when he joined the Gloster Aircraft Company).

In the same year (1916) Sopwith's decided to improve on the design of a comparatively large prototype triplane which had wings of 53 ft. span and was known as the Long Range Tractor Triplane. It was considered that a scaled-down version of this design using a 150-h.p. Hispano-Suiza engine would make an excellent fighter. Accordingly Herbert Smith took as a basis a fuselage from the 1½ Strutter's production line but because of difficulties with the supply of the engine shortly afterwards decided that an aircraft based on a Pup fuselage with a rotary engine would be preferable.

Drawings were issued of the Sopwith Triplane Single Seat Fighter powered by a 110-h.p. Clerget engine and in May the Experimental Department passed the machine for flight tests which were most satisfactory. The span of the Pup and the Triplane was identical at 26 ft. 6 in.; the effective stagger from the top leading edge to the lower trailing edge was the same but the wing chord of the Triplane was only 3 ft. 3 in. as opposed to the 5 ft. 1½ in. of the Pup.

Later in the year Hawker considered that both Pup and Triplane were somewhat too stable and a more manoeuvrable aircraft was required. He had first recommended that the Triplane's tailplane be reduced in area but then, appreciating the value of the Triplane's high aspect ratio wings and the high rate of climb they provided, the design team decided to abandon the triplane layout and Smith was authorised to produce instead a development of the Pup with higher aspect ratio wings, zero dihedral on the upper wing and two Lewis guns in what appeared to be a hump in the upper fuselage ahead of the pilot. In such a manner was the Camel designed—and the prototype appeared six weeks after the drawings were issued.

Greatest project

Herbert Smith's greatest project was the Dolphin because it constituted a completely new design using past experience but owing little in basic conception to its predecessors. Designed in 1917 and powered by a 200-h.p. Hispano-Suiza engine, the Dolphin had a pronounced rearward stagger to the wings and was armed with two Vickers guns ahead of the pilot (as in the Camel). In addition, two Lewis guns were mounted on the forward cross tube of the centre-section cabane, the four guns giving greater fire power than any Allied or enemy fighter.

Early in 1918 R. J. Ashfield left the company and joined the newly formed Gosport Aircraft Company and Herbert Smith assumed overall control of the design department, which soon afterwards produced, among other projects, the Snail with an interesting monocoque fuselage. Its A.B.C. Wasp engine proved unreliable and the aircraft did not go into production.

During the last year of W.W.I a wide variety of Sopwith aircraft were being studied. Production had stepped up and such aircraft as the Snipe and the Salamander were replacing the Camel and the earlier Pups. It is hard in a brief review like this to recreate the wide variety and great numbers of aircraft that bore the company's name, the designs for which were super-

Left: *Cockpit of the Sopwith Dolphin four-gun fighter powered by a 200-h.p. Hispano-Suiza. The most heavily armed fighter of W.W.I, the Dolphin entered service in late 1917 and nearly 1,600 were built.* Right: *Dolphins in the erecting shop at Canbury Park Road, Kingston*