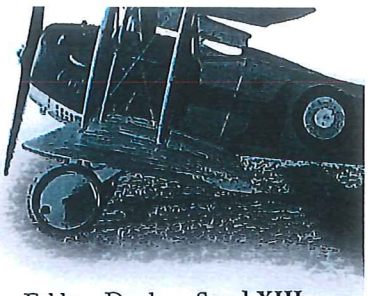
Fighter Planes

ADVANCES IN AIRCRAFT DESIGN were rapid: the fighters of 1918 were quite different from those of 1915. Air superiority changed sides often in the course of the war. The German Fokker Eindekker *(see page 189)* was superseded by French Nieuports and Spad VIIs over Verdun in 1916. Then the Albatros D series, with their in-line Mercedes and Daimler engines and twin machine-guns, regained fighter superiority for the Germans towards the end of 1916.

By 1917 the British aircraft industry was finally getting into its stride. The Royal Aircraft Factory's SE5 and SE5A were equipped with the outstanding Hispano-Suiza V8 engine, which also powered the French Spad XIII. The Sopwith Camel – in total "kills" the most successful fighter of the war – was operational from June 1917. The Sopwith Triplane (1916) proved marvellously manoeuvrable, but it was made for the RNAS (Royal Naval Air Service), not the RFC (Royal Flying Corps), and production was relatively small. The Germans reproduced its virtues in the Fokker Dr 1 triplane (late summer 1917), Richthofen's favourite. Right up to the end of the war both sides continued to come up with improved designs. In the end, however, superior performance was not enough; the advantage passed to the side with the greater industrial resources and greater number of planes.



Spad XIII
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Albatros DIII
This powerful biplane, armed with twin Spandau machine-guns, served from January 1917 until the armistice. Its maximum speed at sea level was 175 kph (109 mph).

Magazine held 97 rounds with a counter indicating cartridges remaining

Back sight

Aircraft Lewis gun had no cooling system

Fore sight

Spade grip

Lewis gun used on Allied fighters
The Lewis gun was quickly adapted for use on fighters, either fixed above the upper wing of a biplane or mounted in the rear of a two-seater.

ALTIMET

French pilot's kit
A pilot's clothing and equipment usually reflected his individual style. Essential elements were goggles and a fur-lined leather jacket, helmet and gloves to combat the intense cold.

GOGGLES

Sopwith Camel
The Camel's idiosyncracies, notably a vicously sharp right-hand turn, which could cause a spin, were an advantage in the hands of experienced pilots.

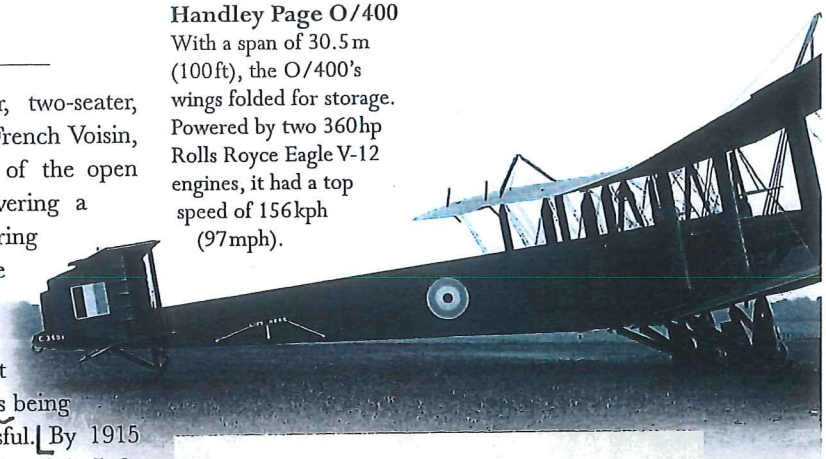
Main armament was synchronized Vickers machine-gun fired through propeller

130 hp Clerget rotary engine gave maximum speed at sea level of 190 kph (118 mph)

SE5A
This fast, reliable British plane could reach 221 kph (137.5 mph) at sea level. It had a nose-mounted Vickers plus a wing-mounted Lewis gun.

Heavy Bombers

The first bombers were adaptations of the heavier, two-seater, reconnaissance planes such as the Austrian Aviatik and the French Voisin, and the first bombs were artillery shells tossed hopefully out of the open cockpit. None of the early bombers were capable of delivering a significant bomb load and, although great progress was made during the next four years, the bomber remained a minor weapon, more valuable for its psychological impact than for the destruction it caused. The Royal Naval Air Service, operating from Belgian bases, mounted bombing raids on the Zeppelin base at Friedrichshafen as early as October–November 1914. The targets being large and inflammable, even 9-kg (20-lb) bombs were successful. By 1915 genuine bombers (all biplanes) were operational in Russia (Sikorskis), Italy (Capronis, the earliest and among the best bombers of the war) and Germany (twin-engined Gothas). The first British bomber, the Handley-Page O/100, first flew in December 1915. Bombing, however, remained a fringe operation until more specialized, more powerful and more numerous aircraft appeared in 1917. These included the R (Riesenflugzeug) planes, in particular the Zeppelin-Staaken series, which had two pilots sharing the cockpit, each holding a marine-type wheel (as used in airships), and engine pods containing compartments for in-flight mechanics. Strategic bombing of industrial targets was adopted in 1918 by the new Royal Air Force and advocated in France by Pétain. By that time bombers such as the Handley-Page O/400 could carry a bombload of around 900kg (2,000lb). Targets were industrial sites and railway stations. Air Marshal Trenchard told his pilots they need not be too careful of civilian lives, though in practice he concentrated on tactical rather than strategic bombing.



Handley Page O/400
With a span of 30.5m (100ft), the O/400's wings folded for storage. Powered by two 360hp Rolls Royce Eagle V-12 engines, it had a top speed of 156kph (97mph).

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Zeppelin-Staaken RVI
This giant bomber had a range of eight hours and was used for night raids over London. It could carry a payload of 2,000kg (4,400lb).

British bombs
The two small bombs shown are a 9-kg (20-lb) Marten Hale high-explosive bomb (above) and a carcass incendiary bomb (below). The latter, usually dropped in large numbers, had perforated casing to allow the flames to spread.

Bomb damage
Territorials search the rubble of a London house bombed by a zeppelin. Over 500 British civilians were killed in zeppelin raids in the course of the war and a further 1,000 died in raids by aircraft.

Strategic Developments

Although fighters became the dominant planes of the war, the only important roles for aircraft foreseen in 1914 were reconnaissance and bombing. Strategic bombing never became really effective in 1914–18, but its future potential became obvious.

The ineffectiveness of early bombers made the Germans' faith in Zeppelins understandable. For safety's sake they flew at night and maintained radio silence, which made navigation exceptionally difficult and bombing highly inaccurate. Secrecy was essential and, in spite of searchlights, they were frequently heard before they were seen. They carried out raids on Paris and other French cities, and – the most prestigious target – on London. However, they were becoming increasingly vulnerable and were withdrawn from a combat role after five were shot down over England in September 1916.

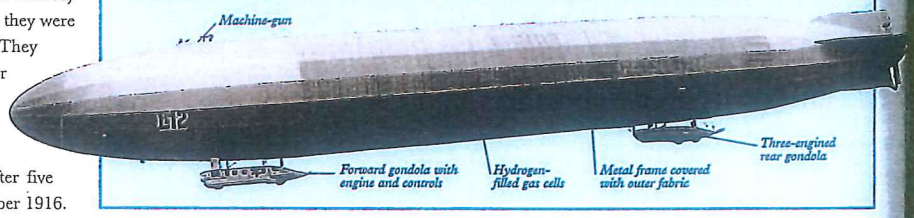
Specialized ground-attack aircraft were a late development. The Germans employed specialized two-seater aircraft in large formations called *Schlastas* (*Schlachtstaffeln*, "Battle flights"). They had a devastating effect at Cambrai (November 1917) and in the first German offensive of 1918, dropping bombs, strafing the enemy with machine-gun fire and at the same time providing information on the progress of the advance.

By 1918 air power was beginning to play an important role on the Western Front, where over 8,000 aircraft were in action. The size of units was massively increased. The French, for example, operated a division of 700 mixed aircraft. With the development of ground attack, troop movements were seriously inhibited. The Germans often despatched 30-aircraft raids against targets behind enemy lines. The war was decided by events on the ground, but in 1918 events on the ground were dramatically affected by activities in the air.

In proportion to the numbers engaged, casualty rates were high. The rate among 22,000 British pilots was over 50 per cent, and German and French rates were similar. More pilots were lost through accidents than in action. Fewer might have died if parachutes had been issued. They were provided for balloon observers but were considered impractical in aircraft, at first because they were too heavy. The Germans introduced them towards the end of the war, but the RFC command feared that parachutes would encourage aircrew to abandon their aircraft unnecessarily. The sight of an unharmed pilot jumping to his death rather than burn in his flaming aircraft was not easily forgotten.

Zeppelins – Rigid Airships

All participants had airships – essentially powered balloons – of some kind. They were normally used for surveillance and naval duties. The Germans' rigid-frame Zeppelins were the best and were considered ideal for long-range bombing. They could climb quickly to an altitude beyond most fighters and their range and bomb-carrying capacity were far greater than any aeroplane. But they were vulnerable to ground fire, totally dependent on weather conditions and, as fighters improved and tracer was introduced, the hazards of flying in a slow-moving target under a vast bag of inflammable gas became unpleasantly obvious. However, there was no doubting the endurance of Zeppelins. On a (failed) mission to carry supplies to the German forces in East Africa in 1917, the *L59* flew over 6,400km (4,000 miles) in 95 hours.



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