

Atlas deutscher und ausländischer Seeflugzeuge.

THE FOKKER-JUNKERS SEAPLANES

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THERE IS JUST ONE Fokker-Junkers seaplane listed in the 'Atlas' and while this type only reached the German navy in limited numbers – three aircraft at an absolute maximum – it was significant because it was the world's first 'all metal' seaplane. Although listed in the Atlas as being Fokker-Junkers it was, in fact, entirely a product of the Junkers Aircraft Factory (*Junkers Flugzeug-Werke Allgemeine Gesellschaft*). The partnership of Hugo Junkers and Anthony Fokker was forced on both of them by *Idflieg* who felt that the Junkers factory lacked practical experience of the quantity production of aircraft, so Junkers-Fokker AG came into being during 1916. Neither was happy with the arrangement and in practice only Fokker gained anything from it – the knowledge that Junkers had accumulated on thick wings and their advantages. The two men were of course of totally different backgrounds and experience. Hugo Junkers by training a scientist and engineer who worked carefully to sound well thought out practice, Anthony Fokker an intuitive skilled pilot with no theoretical training who experimented first and fell back on mathematics only as a last resort. Their partnership struggled along and, by the time that the war ended and Fokker had fled back to the Netherlands, was all but over – only financial ties remained and these were finally acrimoniously severed in the 1940s long after the deaths of both men (see 'An Unhappy Marriage: the Junkers-Fokker Merger' by Richard Byers in the *Journal of Historical Biography* 3 published in the Spring of 2008).

Hugo Junkers was born on 3 February 1859 in Rheydt near Monchengladbach in North Rhine Westphalia, Germany. He graduated in mechanical and electrical engineering and heat technology from the Technical University of Berlin in 1887. After initial employment with an engineering company in Dessau he founded his own company to design and manufacture domestic steam boilers. Between 1897 and 1912 he was appointed Professor of Thermodynamics at the Aachen Technical Institute. During this time he became interested in flight and in 1908, together with Hans Jacob Reissner, another Aachen professor, he designed and built a canard (tail-first design) monoplane. This successfully made a number of limited flights. In 1910 he patented a 'flying wing' concept but took it no further. In 1913 he founded another company, this time for the design and manufacture of large diesel engines intended for marine use. But wishing to concentrate on

aeronautical products he started a third engineering business that was aimed at the design and manufacture of aircraft. At this time, the convention was that aircraft were constructed from a combination of wooden and tubular steel components and covered in fabric that was 'doped' to make it airtight. However Hugo Junkers original designs were of all metal (steel) construction covered with thin (2mm) steel sheet.

From a slow start, the Junkers Company built a number of aeroplanes before their final wartime product, the Junkers J.11 seaplane. Briefly, using the Junkers' designs, these were:

J.1 – A mid-winged experimental monoplane with two seats. The pilot sat in the rear one and a 'flight recorder' sat in front. This aircraft was completed and flew in 1915. In addition to Junkers' own trials at Dessau, it was taken to Doberitz for official assessment. It proved to be slow in the climb but fast when flying straight and level. Because of its high overall weight and sluggish performance, it was not liked by those who flew it and its all-steel welded construction made it unpopular with maintenance crews.

J.2 – A low winged single seat monoplane fighter. It was smaller than J.1 and of considerably cleaner appearance. It was again of all steel construction and proved to be heavier than J.1. Junkers built five machines of this design and they were allocated military designations E.250/16 to E.256/16. E.251/16 was the first to be completed and flown and was given to the army for type testing. Its performance proven to be inferior to that of the earlier J.1 and the later aircraft were all subject to considerable modification. E.252/16 crashed during tests, on 20 September 1916, and no further work on the type was carried out. No production orders were given.

J.3 – another low wing monoplane that was to have been available in both single and two seat versions. Its design was completed and a start was made on construction but, with the crash of E.252/16, all further work was discontinued.

J.4 – Differed from all previous designs in that it was a large two-seat sesquiplane designed to meet a requirement for an armoured close support and tactical reconnaissance aircraft for the army. Of largely duralumin construction, its crew area was of armour quality steel. Although its flight characteristics were somewhat cumbersome it proved to be successful and an order for 283 aircraft was placed. About 184 were delivered and saw service as the Junkers J.I with the army.

J.5 – Was a design study aimed at meeting a requirement for

The Junkers J.1, with its mid-winged configuration clearly shown and probably photographed at Dessau. :CCI Archive



Junkers J.2 E.252/16, a development of the J.1, slightly smaller and of cleaner appearance. This was the third of five (total) of the type built. It was fitted with a 160hp Mercedes D.III engine. :CCI Archive

