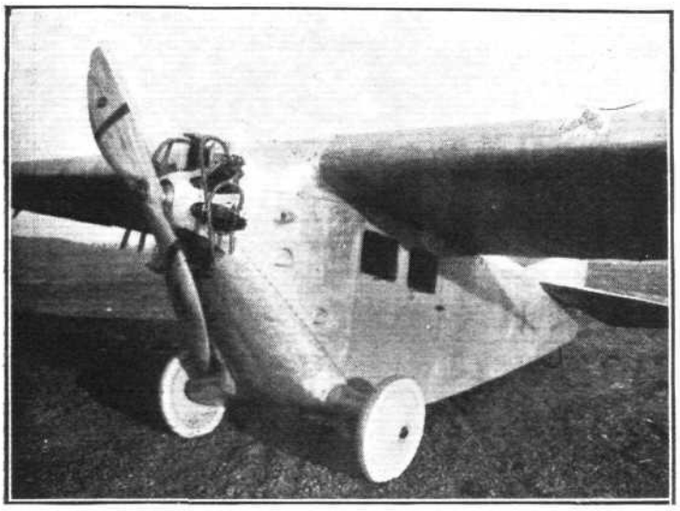


The Focke-Wulf A.16 is, perhaps, one of the most efficient German commercial aeroplanes. It is fitted with a Siemens 75 h.p. engine.

taken to refer to both machines. The fuselage, which is of rectangular section, is built entirely of wood, and is exceptionally deep so as to give sufficient headroom in the cabin. Owing to the small height of the bottom of the fuselage above the ground it is possible for passengers to step right into the cabin without having to use steps. As the wing is placed on the top of the fuselage, the view from the cabin windows is particularly unrestricted in a downward direction. The pilot's seat is above and in front of the cabin, the coaming around his cockpit being, in fact, in the leading edge of the wing.

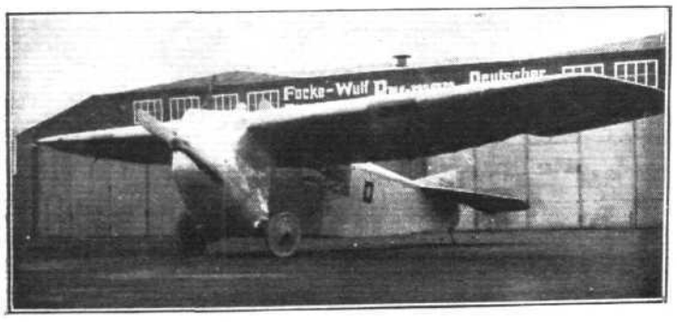
The monoplane wing itself is built as a pure cantilever in order to reduce head resistance, and the wing section used is one of the well-known Göttingen sections. The wing is of tapered thickness as well as plan form. On top it is faired into the top of the fuselage so as to cause as little disturbance in the air flow as possible. The ailerons are not of exceptionally large size, but are stated to be very effective.

The under-carriage is of very simple form, and consists of two wheels mounted on axles which are housed inside the streamline wing roots growing out of the fuselage near the bottom. Every endeavour has been made to suppress all parts which could increase head resistance, and, doubtless, this accounts in a great measure for the efficiency of the Focke-Wulf machines.

The A.16A differs from the earlier type partly in dimensions and partly in seating accommodation, etc. In the latest model, the pilot sits at the side of and behind the engine. The increase in the cabin width can, if desired, be made use of by fitting an extra seat for a fourth passenger. In the A16A there are two petrol tanks carried in the centre section of the wing, so that there is no fuel carried in the fuselage itself, a fact which should greatly reduce fire risk.

The main particulars of the Focke-Wulf A.16 are as follows :—Length, o.a., 8·5 m. (27 ft. 11 ins.) ; span, 13·9 m. (45 ft. 6 ins.) ; wing area, 27 sq. m. (290 sq. ft.). Weight of machine empty, 570 kg. (1,250 lb.) ; useful load, 400 kg. (880 lb.) ; total loaded weight, 970 kg. (2,130 lb.). The speed and climb have already been given, but it may be added that the tank capacity is sufficient for about four hours, and that the range of the machine is approximately 550 km. (345 miles).

The A.16A has the same wing span and wing area, but is slightly longer, being 9·1 m. (29 ft. 11 ins.). With the 100 h.p. Mercédès engine, the weight empty is 760 kg. (1,670 lb.), and the useful load, 441 kg. (970 lb.), giving a total loaded weight of 1,201 kg. (2,640 lb.). The top speed of this machine is in the neighbourhood of 150 km./h. (93 m.p.h.). To climb 2,000 m. occupies 13 mins., and the ceiling is 3,000 m. (9,800 (ft.). Duration, 3½ hours and range 500 km. (310 miles).



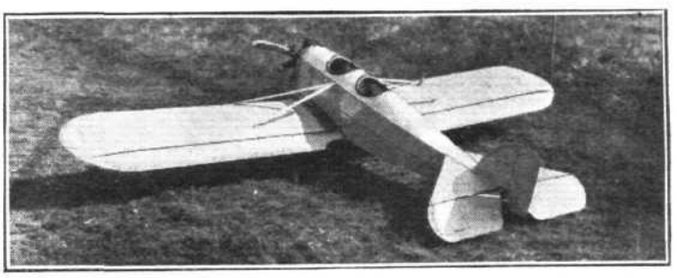
A development of the type A.16 is the Focke-Wulf A.16a, which has a 100 h.p. Mercédès engine. Yet another development is the A.16b, which is fitted with a Junkers L. 1a engine of 78 h.p.

The Heinkel Machines.

The Ernst Heinkel Flugzeugwerke of Warnemünde will be represented by no less than four different types of Heinkel machines, some entered by the Heinkel firm and some by other firms or by private individuals. One of the Heinkel types has already been described in FLIGHT, *i.e.*, the H.E.18 low-wing monoplane, an illustrated description of which appeared in our issue of March 26, 1925. For the convenience of our readers, we are reproducing a three-quarter rear view of this machine herewith, but for a detailed description we must refer readers to the issue mentioned above. It may be mentioned that the H.E.18 is produced, both as an aeroplane and as a seaplane. The length of the H.E. 18 is 7·2 m. (23 ft. 7 ins.) and the span, 11·1 m. (36 ft. 5 ins.) ; total wing area, 180 sq. ft. ; weight of machine, empty, 380 kg. (836 lb.) ; useful load, 220 kg. (484 lb.) ; total loaded weight, 600 kg. (1,320 lb.) ; top speed, 150 km./h. (93·7 m.p.h.) ; cruising speed, 140 km./h. (87 m.p.h.) ; climb to 1,000 m. in 6 mins.

The Heinkel H.D.21 is a small two-seater biplane normally fitted with 100 h.p. Mercédès engine. As this machine is shown in the accompanying photograph and scale drawings, there is little need to give a lengthy description of its general lines. Attention may, however, be called to the fact that the wing bracing has only one lift wire and one anti-lift wire on each side.

The fuselage, of the flat-sided type, is built entirely of wood, and covered with three-ply. The Mercédès engine is



The Heinkel H.E. 18 is a low-wing monoplane with strut bracing. The engine is a Siemens.

mounted on a framework of steel tubes bolted to suitable fittings on the nose of the fuselage proper. The two petrol tanks are carried in the top centre-section, so that direct gravity feed is used and no petrol pumps required. The biplane wings are of normal strength, and the stagger has been so chosen as to bring the rear-spar of the top plane vertically above the front spar of the bottom plane. It is clained that this arrangement has made the use of the single set of bracing wires possible.

The under-carriage is a very rigid structure of streamline steel tubes, the front struts forming the letter " M " in front

The Heinkel H.D. 21 : Three-quarter rear view.