

carry the middle portion of the top plane, quite independently of the engine mounting, and there is but one pair of inter-plane struts on each side.

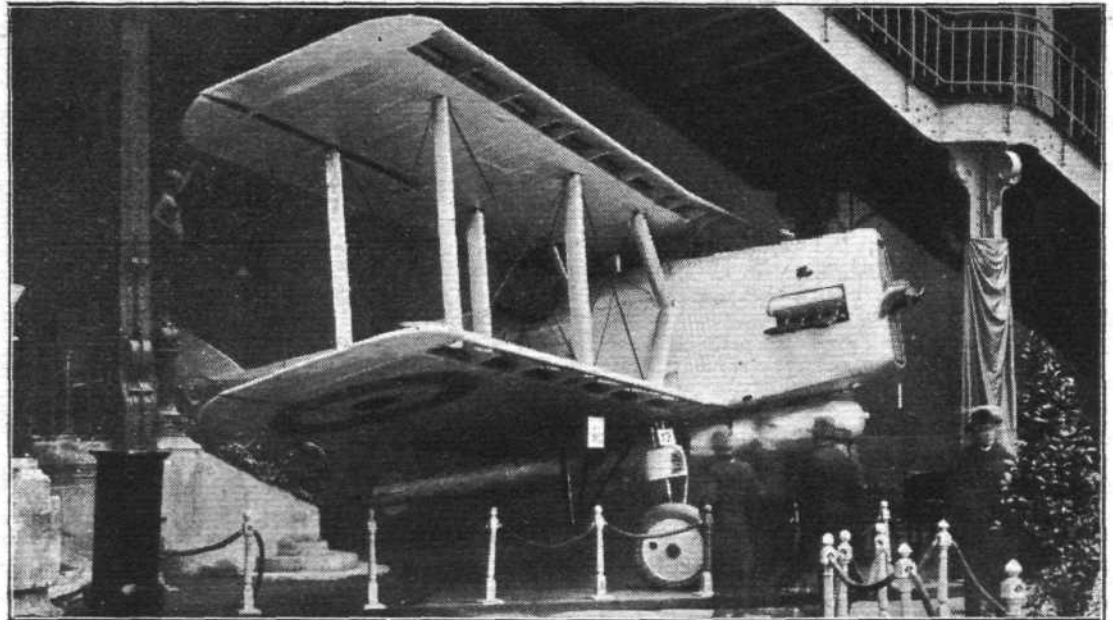
The 140 h.p. Hispano-Suiza engine is enclosed in a wooden "power egg" of good streamline shape, the engine being carried on a pair of "trouser" struts from the deck of the boat. A radiator of curious shape straddles the engine housing, as shown in our sketch. The main characteristics of the F.B.A. "16 H.E.-2" are as follows:—Length over all, 9.2 ms. (30 ft. 2 ins.); span, upper plane, 11 ms. (36 ft. 1 in.); span, lower, 10.4 ms. (34 ft. 1 in.); wing area, 34 sq. ms. (366 sq. ft.); weight, empty, 1,020 kgs. (2,240 lbs.); useful load, 270 kgs. (595 lbs.); total loaded weight, 1,290 kgs. (2,835 lbs.); speed, at 200 ms. 140 kms. (87 miles) per hour; landing speed, 53 m.p.h.; climb to 6,000 ft. in 26 mins.

which the instructor can, at any moment, disconnect the pupil's controls should this be required in case of a serious mistake on the part of the latter. The machine is mainly similar to previous Hanriot school machines, of which several have been exhibited at previous Paris Shows, and does not therefore call for any comment. It is, however, of interest to recall that it was on a similar machine that Thoret recently "glided" for over 7 hrs. at Biskra, with his engine stopped. In view of this fact, the main characteristics of the machine are given below, from which it will be seen that if such a machine can glide for 7 hrs. on the upward currents, ordinary gliders, lightly loaded, should have no difficulty in reaching considerable heights and in remaining up for a whole day should the pilot desire to do so.

The main characteristics of the Hanriot "H.D.14" are

□ □ □ □ □ □ □ □ □ □
 □
 □
 □
 □
 □
 □
 □
 □
 □
 □
 □
 □
 □
 □ □ □ □ □ □ □ □ □ □

The Handley Page
 "Hanley."



HANDLEY PAGE, LTD., CRICKLEWOOD

As already mentioned, the only British machine exhibited at the Paris Aero Show—the Handley Page "Hanley" Torpedo plane, with slotted wings—was greatly handicapped, owing to being placed in an unfavourable position under the gallery. Nevertheless, most of the general public, and certainly all the representatives of foreign Governments who visited the Show, ultimately found their way to the Handley Page stand, and were greatly interested in the unusual design. Incidentally an interesting comparison was afforded by the Pierre Levasseur Torpedo plane, which is somewhat similar to the Blackburn "Swift." Although considerably smaller than the P. Levasseur machine, the "Hanley" lands much slower, and, as a matter of fact, we believe that it is intended further to reduce the wing area, as the landing speed is lower than it need be. The "Hanley" will then be an extraordinarily small machine for the load it carries—an important consideration for a machine to be housed on board a ship.

As regards details of the "Hanley," a very full description, illustrated by scale drawings, sketches and photographs, was published in our issue of November 30, 1922, and consequently there is little need to repeat the description here. Suffice it to place on record that the machine was exhibited, and that the slotted wings and ailerons attracted a great deal of attention from those who follow closely the latest developments in aeronautics. It is now generally realised that sooner or later the slotted wing is bound to play an important part in aviation developments, although at the present time it must be considered to be mainly in the experimental stage. Future progress will be mainly a matter of full-scale research and experiment, which cost a great deal of money, and it may be some time yet before the full advantage of the slotted wing discovery is realised. In the meantime, it may be stated that, in addition to the "Hanley," several other types are now being produced at Cricklewood, although no detailed reference to them is permissible at the moment.

HANRIOT ET CIE., NEULLY-SUR-SEINE

Of the two machines exhibited on the Hanriot stand, the "H.D.14," type 1923, is a school biplane with dual controls of the "type debrayable," patented by Hanriot, and in

as follows:—Length, 23 ft. 10 ins.; span, 31 ft. 11 ins.; wing area, 340 sq. ft.; total loaded weight, 1,780 lbs.; wing loading, 5.25 lb./sq. ft.; engine, 80 h.p. le Rhône; power loading, 22.3 lb. h.p.

The second machine shown on the Hanriot stand is an all-metal chaser, single-seater, with 260 h.p. Salmson engine, type Cu. Z. 9. The machine is shown in skeleton, so that the detail construction can be thoroughly inspected.

With the exception of a few fittings of steel, the Hanriot "H.26" is built entirely of Duralumin, this metal being used mostly in the form of channel-sections.

The fuselage is constructed of four main channel-section Duralumin longerons, formed into a Warren girder by channel-section struts which entirely triangulate the structure. The longerons have their open sides facing towards one another, as regards the side panels. Thus, the struts of the sides fit into the channels top and bottom, while the horizontal struts are attached to the longerons by gusset plates and rivets. The main structure is of rectangular section, turned into a streamline shape by light channel-section stringers and formers, built on to the main structure as indicated in our sketches.

Also built entirely of Duralumin are the wings, of which the lower is quite small, the machine belonging to the "sesquiplan" type, now so popular in France. The wings are remarkable for the fact that they have but a single spar, although tubular leading edges and false rear spars assist materially in stiffening the structure. Light channel-section stringers and diagonal members serve to brace the wing structure, there being no internal drag bracing of the usual type. It appears probable that this form of bracing has been chosen in order to attain, at the same time as providing the drag bracing, a certain amount of stiffening against torsion, the single spars being probably somewhat inadequate in this respect.

In the case of the lower wing, the single main spar is in the form of a Duralumin tube of rectangular section, with, of course, the corners rounded-off. The tubular leading edge is attached to the long strut of the undercarriage and to the lower longerons, while the false rear spar, also a Duralumin tube, is supported from the lower longerons. All the main attachments of these spars to chassis or longerons are in the