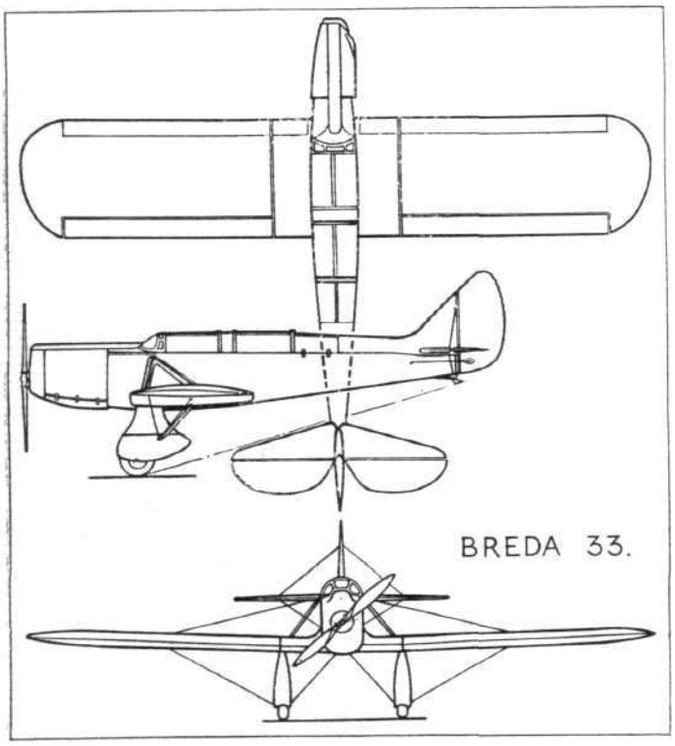
The "Breda 33"

AS the type piloted by Miss Winifred Spooner in the International Touring Competition, particular interest attaches to the "Breda 33." The machine, designed by Signor Pallavicini, is a development of the original "33" which did so well in the 1931 Circuit of Italy.

The "Breda 33" produced for the 1932 International Touring Competition is, like its prototype, a low-wing monoplane cabin two-seater. The wing is of bi-convex section with small travel of the centre of pressure. The particular section used is not deep enough to allow of economical cantilever construction, and external bracing has, therefore, been employed. This takes the form of a pair of struts to the spars, on the upper surface, to brace the wing against landing shock loads, and for the rest the bracing is by streamline wire. The wing covering is plywood, and Handley Page automatic slots are fitted. These slots, incidentally, extend over the whole wing span, and the slats are of larger area than usual, so that not only do they preserve lateral stability at the stall, but they are



THE "BREDA 33."

Length o.a., 24 ft. 6 in.; wing span, 32 ft. 2 in.; wing area, 180 sq. ft.; weight empty, 1,058 lb.; disposable load, 662 lb.; gross weight, 1,720 lb.; maximum speed, 137 m.p.h.; cruising speed, 125 m.p.h.; landing speed, 30 m.p.h.; climb to 13,200 ft. in 17 minutes; service ceiling, 22,000 ft. (with Colombo S.63 engine).

MISS SPOONER'S "BREDA 33": The wheels are carefully faired in, and have a travel of nearly one foot (including the deflection on the tyres). The slots extend over the whole wing span. The engine is a de Havilland "Gipsy III."

reported to increase the speed range of the machine considerably by reducing the landing speed. Indeed, for a wing loading of 9.55 lb./sq. ft. the landing speed is claimed to be as low as 30 m.p.h. This would require a maximum lift coefficient of about 2 in British "absolute" units! Even Mr. Handley Page does not claim that his slots will increase lift to that extent. No bi-convex wing section has a very high $k_{L_{max}}$, and thus the minimum speed of the "Breda" must be a good deal higher than 30 m.p.h. It may, however, be possible to "touch down" at roughly 35 m.p.h. However that may be, we believe that the "33" does have a very low landing speed and that it hangs in the air with its tail well down without showing signs of loss of control.

The fuselage is of welded steel tube construction, and the undercarriage, of the spat-faired type, has a travel of nearly 1 ft. Wheel brakes are fitted.

The cabin normally has seating accommodation for two, but an occasional third seat can be fitted. The sliding windows give any desired degree of ventilation.

Dual controls are fitted, the passenger's controls being detachable. Normally the pilot occupies the front seat. An interesting feature is that control stick, rudder bar and seat are adjustable, so that pilots of different heights can be accommodated. The seats, by the way, are adjustable fore and aft as well as in height.

The following instruments are fitted: Airspeed indicator; revs. indicator; altimeter; oil pressure gauge; petrol gauge; oil thermometer; turn and bank indicator; watch and compass.

The "Breda 33" is fitted as standard with the 130-h.p. "Colombo S.63" engine, but Miss Spooner's machine has the "Gipsy III."