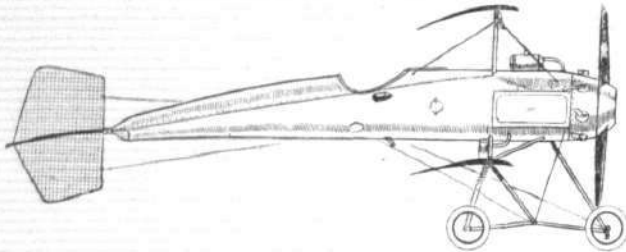


BREGUET AEROPLANES, LTD.

Breguet Aeroplanes, Ltd., who since July of last year have been constructing military biplanes under licence from the French Breguet firm, have on exhibition an

85-h.p. Breguet Warplane, the seventh machine they have built since their works at Willesden were put in operation. The outstanding feature of the machine is that it is built throughout of steel, wood being only employed for the manufacture of its ribs. Since he first turned his mind to aeroplane construction, Louis Breguet has favoured steel as the medium of construction of his machines, and to him must be given the credit of having "set the fashion," as it were, for this system of manufacture. He, also,



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The 85-h.p. Breguet biplane.

was one of the first to construct a tractor biplane, a type of machine which he has helped, in no small manner, to popularise. At first he was laughed at for his pains; his biplane was jokingly spoken of as a "coffee pot." But since, he has earned the recognition that he so well deserved.

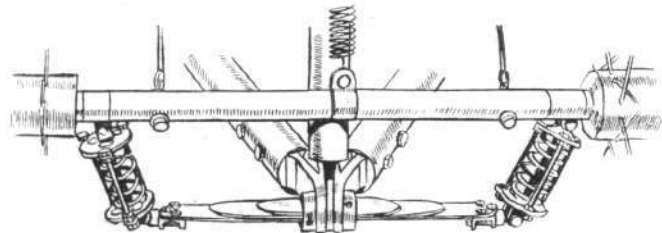
Next in order of importance of the features of his machine is the peculiarity that the supporting and directional surfaces are flexible. The controls, even, are not directly connected to the planes that they operate; steel tension springs are inserted in the control wires, so that, however harsh may be the pilot's movements of his controlling lever, the directional planes change their attitude gently. It is claimed for the Breguet machine that it has been designed as one harmonious whole, not merely as a series of separate units, such as body, chassis and planes, afterwards assembled together.

The body is of two distinct parts, that forward of the pilot's seat, and the portion that extends away behind it. The latter section is formed by a single steel tube, some three inches in diameter, which is braced by numerous steel wires to a four-armed steel fitting welded over the tube just behind the pilot's seat. By the application of sheet aluminium over these wires a very good streamline covering is obtained. The aluminium covering is further supported by longitudinal wood stringers. To the rear end of the large diameter central tube is attached the tail, universally jointed. In front of the pilot's seat, the foundation of the fuselage is formed by two U-section steel girders, wood filled. At right-angles to them, in front of the passenger seat, are fitted the two uprights to which the top planes are attached. Still further in front they

converge to form a substantial base to which the motor is bolted. From a casual glance at the machine, no one would think that the body is built in two sections, so gracefully is it streamlined from end to end. At the forward end the motor, an 85-h.p. 7-cylinder Canton Unné, is fitted, driving direct a propeller, the boss of which is covered by a semi-spherical cowl which effectively preserves the excellent lines of the body. Seated in a comfortably upholstered seat, the pilot controls the machine in its three dimensions of altitude, balance, and direction, by a hand-wheel, mounted on a pivoted column, and by foot pedals. On French built Breguets the warping of the planes is operated by rocking the vertical column laterally. On this point it is evident that the designers of the British Breguets have different ideas, for the plane warping on the biplane exhibited at Olympia is effected by means of the foot pedals. The hand-wheel rotates laterally, and is used to steer the biplane in a manner exactly similar to that of a car. The machine is made to rise or descend by rocking the column to and fro.

The landing gear is of a type by itself, since no other aeroplanes are, to our knowledge, fitted with an undercarriage that resembles it in the least. At rest the main weight of the machine is supported by two large diameter tyred-wheels, which are connected to the body by a pair of tubular oleo-pneumatic springs. Some part of the main weight is further taken by another pair of wheels in front of a much less track, which are jointed to a laminated cross spring bolted laterally across a tubular strut which extends downwards from the extreme nose of the body. These two front wheels are so designed that they pivot in conjunction with the rudder, and in this manner the machine may be effectively steered over the ground at slow speeds.

The planes are built about single tubular steel spars, which are universally jointed to the body. Over them fit the wooden



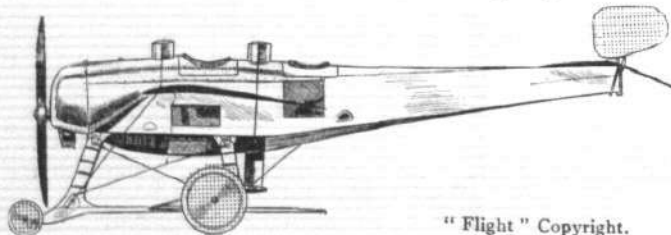
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Flexible suspension of the front pair of steerable wheels of the Breguet biplane.

I-section ribs, and they would be free to revolve around the spars were they not kept in position by steel leaf springs. These springs are so arranged that the faster the machine is driven through the air the less incident the ribs, and consequently the planes, become to the direction of the air flow. Owing to this system of plane construction, which is fully patented, by the way, the machine is rendered unusually stable and at the same time is given a remarkably wide speed range.

THE BRITISH AND COLONIAL AEROPLANE CO., LTD.

As the manufacturers of Bristol machines have an organisation far and away larger than any similar firm in England, or, we might say, with perhaps one or two exceptions, in the whole world, it is only natural to expect that their exhibit is one of the main centres of interest at Olympia. Both their machines—the monoplane which made its debut in the Military Trials, and the biplane, which has

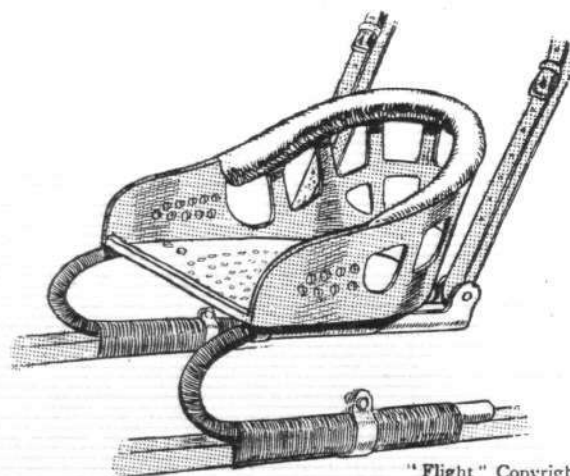


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The 80-h.p. Bristol monoplane.

just been evolved from their Filton works—are of distinctive design and, as samples of workmanship stand, bracketed with one other machine shown, unrivalled, among all the various aeroplanes exhibited there. They both have been constructed to the designs of M. Henri Coanda, their clever engineer, of Roumanian birth. Since 1908 has M. Coanda been connected with the study and practice of aeronautics. He first began his experiments with the late Capt. Ferber in France.

It will be remembered that—was it three years ago or four?—Coanda exhibited at the Paris Show a particularly neatly designed



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The original method of cane suspension of the seats of the Bristol machine.