



P.8 Atlantic.



P.12 Bodmin.



P.64 Mail Carrier.



P.71A feeder-line aircraft.

BOBOLINK TO DELTA . . .

"runabout." Measuring 25ft in span and 19ft in length, the P.6 achieved 103 m.p.h. at 1,000ft and landed at 45 m.p.h. Gross loaded weight was 1,725 lb.

P.9 This machine followed the P.6, in 1919, and was generally similar, except that the span was increased to 27ft 6in and the length to 24ft 8in. Two P.9s were entered in the 1922 King's Cup Race round Britain. Both acquitted themselves well. On a later page S/L. Rea tells of his successes in a P.9 at the 1927 Bournemouth meeting. Construction was orthodox (wood), but the excellence of the aerodynamic design was reflected in a performance which compared well with that of the de Havilland Moth of later years. The full load speed at 1,000ft was 104 m.p.h. and the climb to 5,000ft took 8½ minutes. Ceiling was 14,000ft and range, at full throttle, 3 hours. Empty and gross weights were, respectively, 1,244 lb and 1,770 lb. Several P.9s were sold (at £300 apiece) and a number of them were used in Australia and elsewhere. The original machine made the first air crossing of the Bass Strait to Tasmania. At least two examples were flying as late as 1929.

P.10 Though following the P.9 in layout, the P.10 was completely unorthodox in construction. It first appeared at the Paris Show of 1919, and *Flight's* technical editor then wrote of it: "... the Boulton and Paul all-metal machine, P.10, is the machine of the show, from a constructional point of view. Mr. J. D. North, aided by a very able staff of assistants, has here produced something which marks a very real step forward in aeroplane construction. Personally we have always been believers in metal construction for aircraft, but we admit that until now we had scarcely thought the time ripe yet for its introduction. After seeing the P.10 and discussing it with Mr. North, we are inclined

to think that the time is already here when metal construction, if scientifically carried out, is not only possible as a substitute for wood, but is even superior in many respects. For instance, the weight of the P.10 actually comes out lighter than the same machine built in wood in the ordinary way, while its strength is, if anything, superior to that of the wood machine. This, however, is not the chief point of the design, although it incidentally proves to what state of perfection Boulton and Paul have carried metal construction. The chief advantage will probably be found in the longer life of the steel structure."

Even more remarkable than the Boulton and Paul metal work was the use of plastics (this in 1919), the rear fuselage of the P.10 being a monocoque built up of Bakelite Dilecto-sheets held between high-tensile steel formers and stringers. Yet another novelty was the swinging mounting—the first of its kind—which gave ready access to the rear of the Cosmos Lucifer three-cylinder radial engine without disturbing the control runs.

The span of the P.10 was 30ft and all-up weight 1,750 lb.

P.41 Phoenix The first experimental version of this two-seat light monoplane was shown at Olympia in 1929. Powered with a 40 h.p. A.B.C. Scorpion engine, it was, in reality, what would now be called an aerodynamic test vehicle, and differed very much in structure from the second edition, which was intended as a production model, and was powered with a 40 h.p. Salmons nine-cylinder radial. The all-steel system of construction developed for the Phoenix (wherein the normal riveting was replaced throughout by spot welding, resulting in a very effective and cheap method of manufacture) was later widely used on the Blackburn B.2 trainer. A point of unusual interest was that the rudder was identical, and interchangeable, with each half of the elevator. The span was 30ft and the normal all-up weight 1,000 lb.

TRANSPORTS

P.8 Atlantic For the great transatlantic contest of 1919 Boulton and Paul prepared a long-range civil version of the Bourges under the foregoing designation, and of this *Flight* wrote in May of that year: "One of the most important features of the Boulton and Paul machine is that after a short time in the air (about two hours for the amount of fuel carried for the transatlantic flight) the machine is able to keep aloft on one engine only. The importance of this can scarcely be exaggerated. It will mean, looking at it in another way, that after two hours the two Napier engines need only be run at half their power. This should mean an enormous increase in their chance to 'stick it' for the whole journey. It is further to be noted that the 'cruising speed' of the machine is as high as 116 m.p.h. This is probably the highest cruising speed of any machine entered so far for the race. When flying at the cruising speed the range of the Boulton and Paul machine has been calculated to be about 3,850 miles, so that there is an ample margin in hand for the transatlantic journey."

Fuel was carried in six tanks, each fitted with jettison valves operated by a lock control in the cockpit. These valves could discharge the whole of the fuel in 1½ minutes, and the tanks were so situated that when empty they would keep the machine afloat and right-way-up. A crew of three was intended for the Atlantic crossing, a first pilot (Major K. S. Savory), second pilot and wireless operator (Capt. A. L. Howarth), and navigator (Capt. J. H. Woolner). *Flight* added: "Two independent wireless sets will be fitted, a 'spark' wireless for sending and receiving messages, and a 'directional' for navigation purposes. A small hydrogen bottle and a balloon will be carried so as to make it possible to send up an 'aerial' for sending wireless 'S.O.S.' even after the machine is on the sea..."

After several months had been spent in studying meteorological conditions over the North Atlantic and in perfecting navigational arrangements, an advance party, headed by Major Guy Fiske, visited Newfoundland to select a suitable site for take-off. Alas, all these preparations were nullified by an accident on the first flight. The P.8 had just left the ground when one of the Napier Lion engines cut out and the aircraft slewed round side-to-wind. A wing-tip touched the ground, and the aircraft was wrecked. A duplicate was under construction but before this could be prepared for the Atlantic crossing Sir John Alcock and Sir Arthur Whitten Brown had conquered the Atlantic in the Vickers Vimy, and further arrangements were abandoned. The second machine was completed and used for a considerable period on full-scale aerodynamic research work. Span was 61ft, length 40ft, and loaded weight about 7,000 lb. Estimated top speed at 10,000ft was 149 m.p.h.

P.12 Bodmin The Bodmin was described by the Air Ministry as