



P.32 bomber.

BOBOLINK TO DELTA . . .

bomb load was increased to about 1,500 lb. Full day and night flying equipment was installed. The Jupiter engines were changed for Pegasus IIM3s, which gave a top speed of 153 m.p.h. at 6,500ft, 144 m.p.h. at 15,000ft, and a take-off run, at full load, of 200 yd.

In service with 101 Squadron the nose turret was an immediate success. Gunnery trials with flag targets showed that it increased the average number of hits from something of the order of 15 per cent to about 85 per cent, and it was this success which led the company to go ahead with new developments in this direction. The Overstrand nose turret was a cylindrical structure with hemispherical ends. An air compressor was mounted on one of the engines and the compressed air supply was taken through a rotating joint at the base of the turret to feed an air motor, by means of which the turret was rotated. Direction of rotation was controlled by two plunger valves operated by the barrel of the single Lewis gun, when the gun was pointed slightly to one side or the other, so that the gunner had only to follow the target with his sights to bring about the desired rotation. A vertical slot in the turret wall enabled the gun to be moved vertically, and its supporting arm was connected hydraulically to a plunger carrying the gunner's seat, so that the weight of the gunner counterbalanced that of the gun.

P.32. Generally following Sidstrand lines, but much larger and having a third engine mounted on the top plane, the P.32 was a four-seater night bomber, built in 1931. The engines were medium-supercharged Bristol Pegasus, with combined Townend ring and exhaust-collector cowlings, and the main undercarriage was four-wheeled. In addition to the nose gun, on a Scarff ring, and a dorsal gun, similarly mounted, there was a third gun position in the extreme rear end of the fuselage, aft of the twin-finned tailplane. The wings spanned 100ft, but could be folded to a width of 47ft 6in; length was 69ft, and gross weight 22,700 lb. By mounting the third engine on the top wing the nose was left clear for bomb-aiming and gunnery. The Sidstrand system of construction was generally followed, and the elevators and rudder

were servo-operated. The P.32 made its first public appearance in the R.A.F. Display of 1932.

TRAINERS

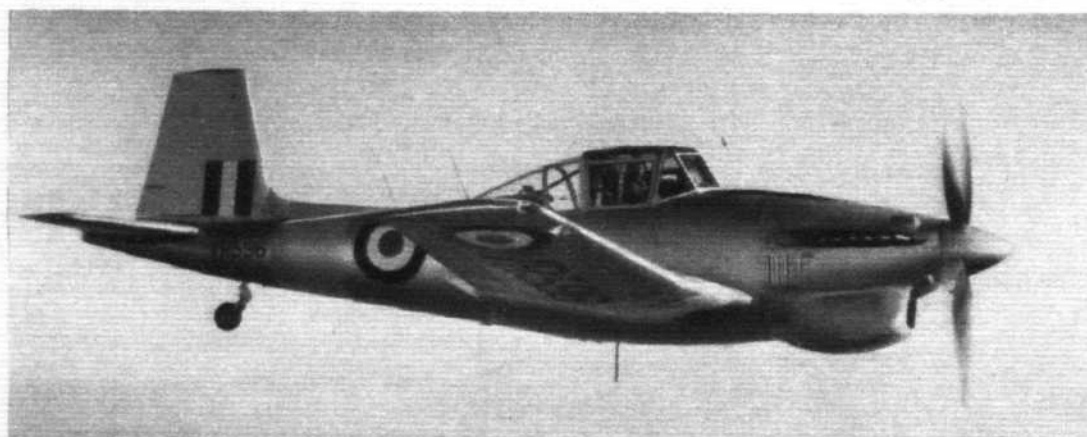
P.108 (Bristol Mercury) Specification T.7/45 called for an advanced trainer for the R.A.F., to be fitted with an Armstrong Siddeley Mamba or Rolls-Royce Dart turboprop. The Boulton Paul project P.108 was prepared to this specification and was accepted, but development difficulties with the new powerplants necessitated installing a Bristol Mercury 25 piston engine to obtain flying experience. Thus powered, the P.108 first flew on May 30th, 1947. A two/three-seater (the third seat at the rear was for an observer or navigator), the P.108 was of all-metal construction, had a span of 39ft 4in, a normal loaded weight of 7,595 lb, and achieved a top speed of about 280 m.p.h. at 10,000ft.

The original P.108—VL892—was subsequently re-engined with an Armstrong Siddeley Mamba turboprop and otherwise converted up to Balliol Mk 1 standard (see below). In its new form it served with the Armstrong Siddeley company as a development aircraft.

P.108 Balliol T.1 The foregoing was the official name conferred on the turboprop version of the P.108. The jet efflux was led through a pipe below the cockpit floor and out through the lower starboard side of the fuselage. An advantage of this location was that the jet tended to counteract the effect of airscrew torque. The airscrew was a constant-speed, fully feathering, three-blade de Havilland. Powered with a Mamba of 1,010 shaft h.p. plus 320 lb jet thrust, the Balliol T.1 weighed 7,845 lb all-up, and had a maximum speed of slightly over 200 m.p.h. at 20,000ft.

P.108 Balliol T.2 A change in official policy led to the installation, in this mark of Balliol, of a Rolls-Royce Merlin 35 liquid-cooled piston engine rated at 1,245 h.p. at 11,500ft. At the same time, the third seat was deleted and various other modifications incorporated. The following description applies to the Balliol T.2 as now used by the R.A.F.

Construction is all-metal. The inner wings are attached to the fuselage by four pin bolts, and the outer wings are similarly attached to the inner sections with a latch gear to withdraw the



P.108 Balliol T.2.



Above, P.108 (Bristol Mercury); below, P.108 Balliol T.1.



Above, P.108 Balliol T.1. (converted from Mercury prototype); below, P.108 Sea Balliol T.1.

