AIRCRAFT CIRCULARS

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

No. 48

THE GLOSTER "GAMBET" AIRPLANE

A Deck-Landing Ship's Fighter

Fitted with a 420 HP. Bristol Jupiter VI Engine

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The Gloster "Gambet" is a new single-seat fighter designed and built by the Gloster Aircraft Company of Cheltenham, for use from aircraft carriers. In general appearance, it closely resembles the well-known "Gamecock" so widely used by the R.A.F., but it is in fact a somewhat larger airplane, carrying a distinctly heavier load, and has a lower landing speed and a rather more rapid climb than the "Gamecock."

Wing Structure

The "Gambet" is a single-bay biplane with the characteristic Gloster wing arrangement of a large upper wing of a thick section combined with a smaller and thinner section lower wing which has in effect a less angle of attack.

This wing structure is of the normal timber constructiom with spruce spars, ribs, and struts, swaged steel rod internal bracing and streamline wire external bracing.

Fuselage

The fuselage is built with four ash longerons, spruce struts, and swaged rod bracing. The engine, a Bristol Jupiter,

*From The Aeroplane, June 1, 1927.

Series VI, is carried on a light but extremely rigid mounting of steel, and the body of the fuselage is faired out by fabric-covered formers to carry on the lines of the engine cowling.

The pilot's cockpit is just below the line of the trailing edge of the upper wings which are recessed forward above the cockpit to facilitate entry and to give a good upward view. The seat is well up in the fuselage and the pilot has accordingly an excellent view downwards over the leading edge of the lower wing at an angle of 51° to the horizontal, and at as much as 12½° downwards straight ahead over the engine cowl.

Power Plant

The Jupiter engine is very fully cowled by a large conical front cowling to which are attached nine partial cylinder helmets which leave only the cylinder heads and exhaust ports unconcealed. The lines of the main cowling are carried on by a large conical airscrew spinner, giving the body an extremely clean entry.

The fuel, 72 gallons in all, is carried in two gravity tanks fitted, one in each half of the upper wings. An oil tank of 5½ gallons capacity is carried in the coaming above the fuselage rails ahead of the cockpit.

Landing Gear

The landing gear is of the Vee type with telescopic front

legs to each Vee. These telescopic legs are fitted with a combination of compression rubber springing and oleo shock absorbers of the well-tried Gloster type.

The tail skid consists of a deformable triangular frame of steel tube hinged to the sternpost of the body, and coupled up to the rudder bar and fitted with a substantial renewable steel shoe.

The main landing gear is equipped with special streamlined deck-landing hooks.

Controls

The airplane is fitted with control surfaces of ample area, and is exceedingly maneuverable at all speeds. Ailerons are fitted to both top and bottom wings. These are connected to the control stick through a push-and-pull rod system on the under surface of the lower wing, and the upper ailerons are coupled to the lower ailerons by one strut on each side.

The stabilizer is adjustable in the air by the usual type of screw gear. Except the rudder none of the control surfaces is balanced.

Armament

A pair of synchronized Vickers guns are fitted, one on each side of the seat, firing out through grooved recesses in the side of the body. In this position the guns are very readily accessible for the clearing of jams, etc.

In addition to the two Vickers guns the "Gambet" carries below the lower wings bomb racks for four 20-pound bombs.

As may be seen from the appended specification, the "Gambet" has a remarkably fine all-round performance for an aircraft of the deck-landing type.

The airplane is built to the standard of strength for single-seat fighters required by the British Air Ministry and accepted by many foreign Governments. The load factor on the front wing truss is $7\frac{1}{2}$, on the rear truss $5\frac{1}{2}$, and the factor for landing loads on body and landing gear and tail skid is 6.

Specification

Span (top)	31 ft. 10 in.	(9.70 m)
Span (bottom)	26 " 0 "	(7.92 ")
Chord (top)	5 " $6\frac{1}{2}$ "	(1.69 ")
Chord (bottom)	5 " $2\frac{1}{2}$ "	(1.59 ")
Total wing area	284 sq.ft.	(26.49 m^2)
Engine, Bristol Jupiter VI	420 HP.	
Weight fully loaded	3075 lb.	(1397 kg)
Wing loading	10.83 lb./sq.ft.	(52.9 kg/m^2)
Power "	7.32 lb./HP.	(3.28 kg/HP)
Maximum speed at 5000 ft. (1525 m)	152 M.P.H.	(245 k.p.h.)
Maximum speed at 10000 ft. (3050 m)	145 "	(233 ")
Landing speed	49 "	(79 ")

Climb to 5000 ft. (1525 m)	3 min.
Climb to 10000 ft. (3050 m)	7 "
Climb to 15000 ft. (4574 m)	11 "
Ceiling 23000 ft. (7000 m).	

Figs.1 & 2 The Gloster Gambet. A deck-landing ship's fighter fitted with a 420 HP.Bristol Jupiter VI engine.

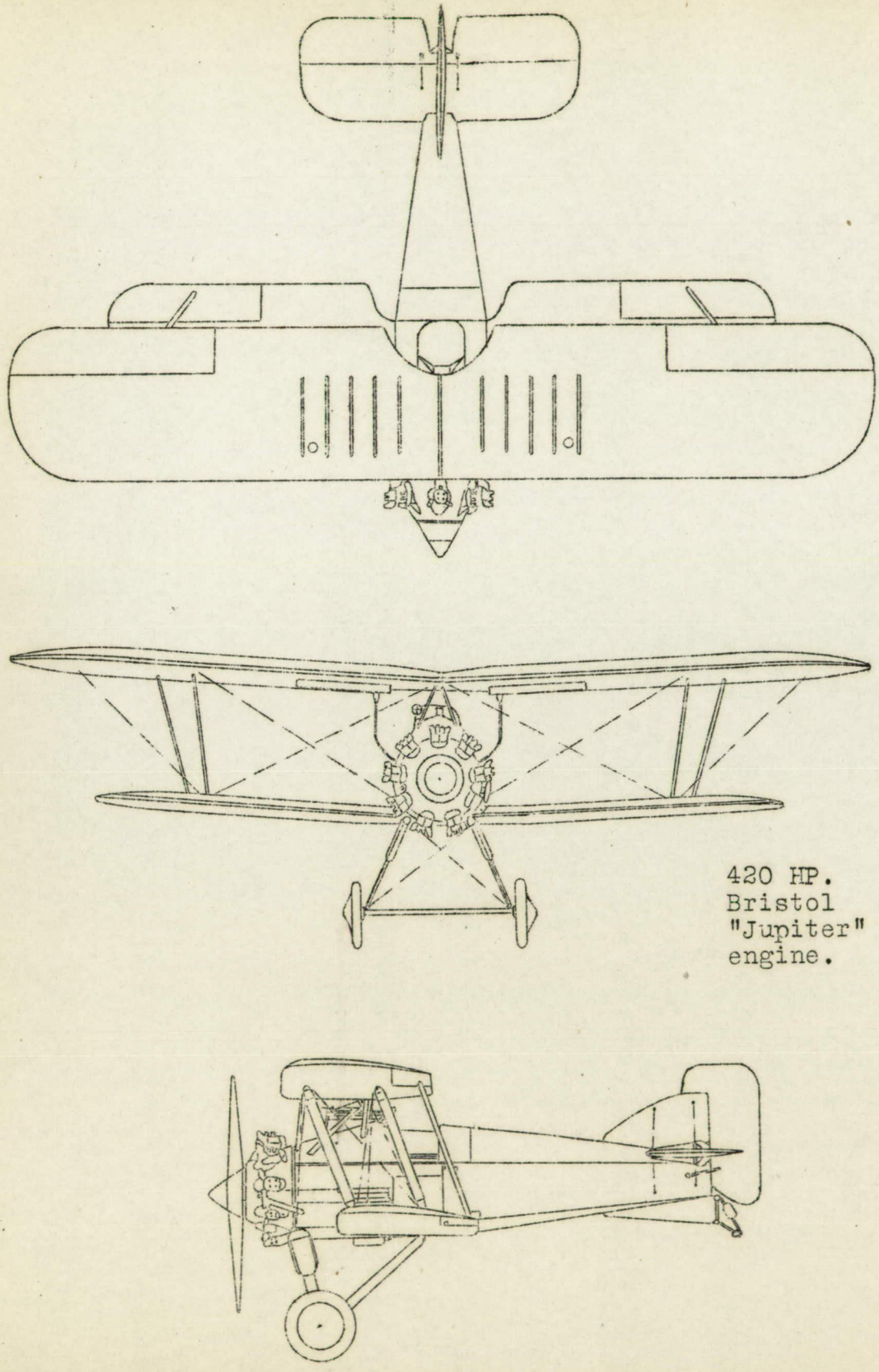

Fig.3 The Gloster Gambet airplane.