

AIRCRAFT CIRCULARS
NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

No. 9

WIBAULT TWO-SEAT MONOPLANE 8C2
An All-Metal Pursuit and Observation Airplane
By J. Serryer

From "Les Ailes," May 13, 1926
and
"The Aeroplane," April 14, 1926

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WIBAULT TWO-SEAT MONOPLANE 802.*

An All-Metal Pursuit and Observation Airplane.

By J. Serryer.

The fine expectations warranted by Michel Wibault's preliminary tests have subsequently been fully realized. His pursuit airplane 901, so successful in all points, seemed to constitute the final formula of a method of manufacture which is now practically standardized.

Mr. Wibault's new airplane, type 802, a two-seat pursuit and observation monoplane, possesses the same characteristics of form and structure, ease of care and repair during use, etc., as the parasol pursuit monoplane which preceded it. In this airplane we therefore find the same qualities, namely rigidity of structure, indeformability of the surfaces, facility of assembling and dismantling without adjustment, simplicity of construction, ease of upkeep and repairs during service, etc.

Also like the 901, the 802 has no perishable part and retains its flight qualities indefinitely. In all climates, it can dispense with shelters and camp in the open, like the Junkers, without disadvantage. It can be stored, without special precautions, for an indefinite period, while still remaining available within a few hours, due to its facility of assembling.

The Michel Wibault airplane 802 is a parasol thick-winged

* From "Les Ailes," May 13, 1926; and "The Aeroplane," April 14, 1926.

monoplane with a pair of oblique struts on each side of the fuselage. Its wing is practically rectangular, with the leading edge rounded and a large cut-out in the trailing edge over the pilot's seat.

The wing section is uniform from the cabane nearly to the points of attachment of the bracing struts. It is made thinner in the middle, so as to increase the field of vision of the occupants. Its profile is an M. Wibault, series III, No. 2, already adopted on the airplane 7C1. This profile can stand a high load per square meter and assures a perfect behavior in flight at all altitudes and revolution speeds, with a wide range of flight speeds.

The wing framework consists of two box-girder spars rigidly assembled by a triangulation of tubes. The sheet-steel ribs are open-worked and reinforced by small fittings. They are secured to the flanges of the spars by angle irons.

The wing covering consists of strips of light sheet metal, each strip having, in line with each rib, a fold perpendicular to the sheet. This fold engages the edge of the rib. The whole is assembled by rivets on the outside. These rivets are therefore easily "controllable." There are also corrugations between the folds. The sheet metal is stiffened by fittings in line with each junction of the strips. Narrow ailerons run the whole length of the wings. They are not balanced.

The fuselage is all metal, the same as the wings and tail

planes. It has four L-shaped light-metal longerons, which are joined by U and T-shaped uprights and cross pieces. The whole is assembled by sheet-steel gussets riveted and stiffened by T-diagonals. The first two front frames have iron fittings on top for attaching the cabane and underneath for attaching the landing gear.

The fuselage covering is also composed of thin metal sheets stiffened by longitudinal corrugations and small fittings at the junctions of the strips. The top part is attached by screws and can be quickly removed for the complete inspection of the fuselage throughout its entire length.

The pilot's cockpit is under the cut-out portion of the wing, the visibility being excellent in all directions. It is provided with an adjustable seat and can contain a movable shield and a dorsal parachute.

The passenger's cockpit is immediately behind the pilot's. The view is very clear. It contains the complete outfit of an observation plane: radio sending and receiving instruments; photograph or motion-picture camera; signalling devices; inhaler; and parachute. The armament may consist of six or seven machine guns divided between the two cockpits.

The airplane can also be equipped for night flying, for which it is particularly adapted by its relatively low landing speed and good visibility for the pilot.

The tail planes have a structure similar to that of the wing. They comprise: a horizontal stabilizer adjustable during

flight by means of a wheel operated by the pilot; an elevator in two sections, not balanced; a triangular vertical stabilizer (or fin); and a rudder, which is likewise not balanced.

The engine-propeller group forms a movable block, completely independent of the fuselage. It is attached to the front transverse frame of the fuselage by four bolts. This block contains the engine and all its accessories: propeller, engine bed (cradle), pumps, starter, water radiator, oil tank and radiator.

The same airplane is equipped with a 500 HP. Hispano-Suiza engine. The two-bladed tractor propeller is mounted directly on the engine shaft. The propeller hub is streamlined by means of a spinner.

The Wibault 802 can receive, however, without change, an engine-propeller block, on which is mounted any 400-600 HP. Lorraine-Dietrich, Hispano, Renault or other engine of similar characteristics. One block can be replaced by another in a few minutes, without disturbing the engine controls.

The fuel tank is located in the fuselage, between the engine block and the pilot's cockpit, at about the center of gravity of the airplane. This tank is protected. There is also a gravity tank in the central part of the wing.

The landing gear has no axle, thus eliminating one of the chief causes of upsetting. It is entirely jointed. The shock absorbers, attached to the front struts, are "oil-pneumatic."

They are very durable, easily adjustable and are not affected by temperature variations or splashes of oil and mud.

The tail skid is located under the stern post and consists of superposed spring-steel plates. Its mounting is flexible, thus protecting the fuselage from torsional stresses when turning on the ground.

General Characteristics

Span	12.70 m	41.67 ft.
Length	8.95 "	29.36 "
Height	3.20 "	10.50 "
Chord	2.45 "	8.04 "
Wing area	31 m ²	333.68 sq.ft.
Dead load, with water	1210 kg	2668 lb.
Fuel "	269 "	593 "
Useful "	842 "	1856 "
Full "	2052 "	4524 "
Wing loading	66.3 kg/m ²	13.58 lb./sq.ft.
Wing loading HP. (metric)	4.1 kg	9.04 lb.
Factor of safety	10	10

Performances

Landing speed	98 km/h	61 mi./hr.
Speed at sea-level	240 "	149 "
" " 2000 m (6562 ft.)	238 "	148 "
" " 4000 m (13123 ")	239 "	142 "
" " 6000 m (19635 ")	210 "	130 "
Climb to 2000 m (6562 ")	7 min. 10 sec.	
" " 4000 m (13123 ")	18 " 50 "	
" " 6000 m (19635 ")	36 "	
Ceiling	7000 m (22966 ft.)	

Translation by Dwight M. Miner,
National Advisory Committee
for Aeronautics.

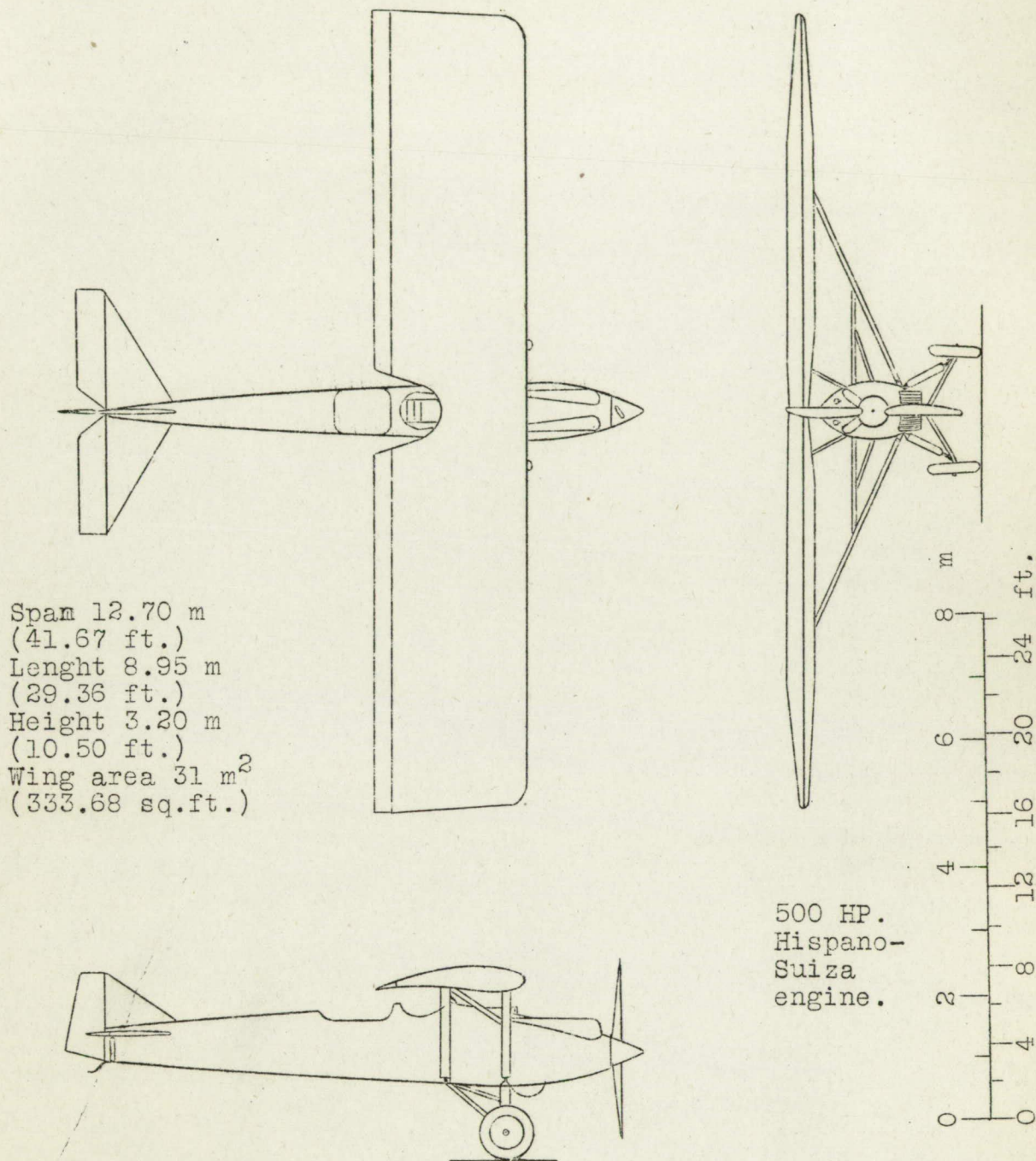
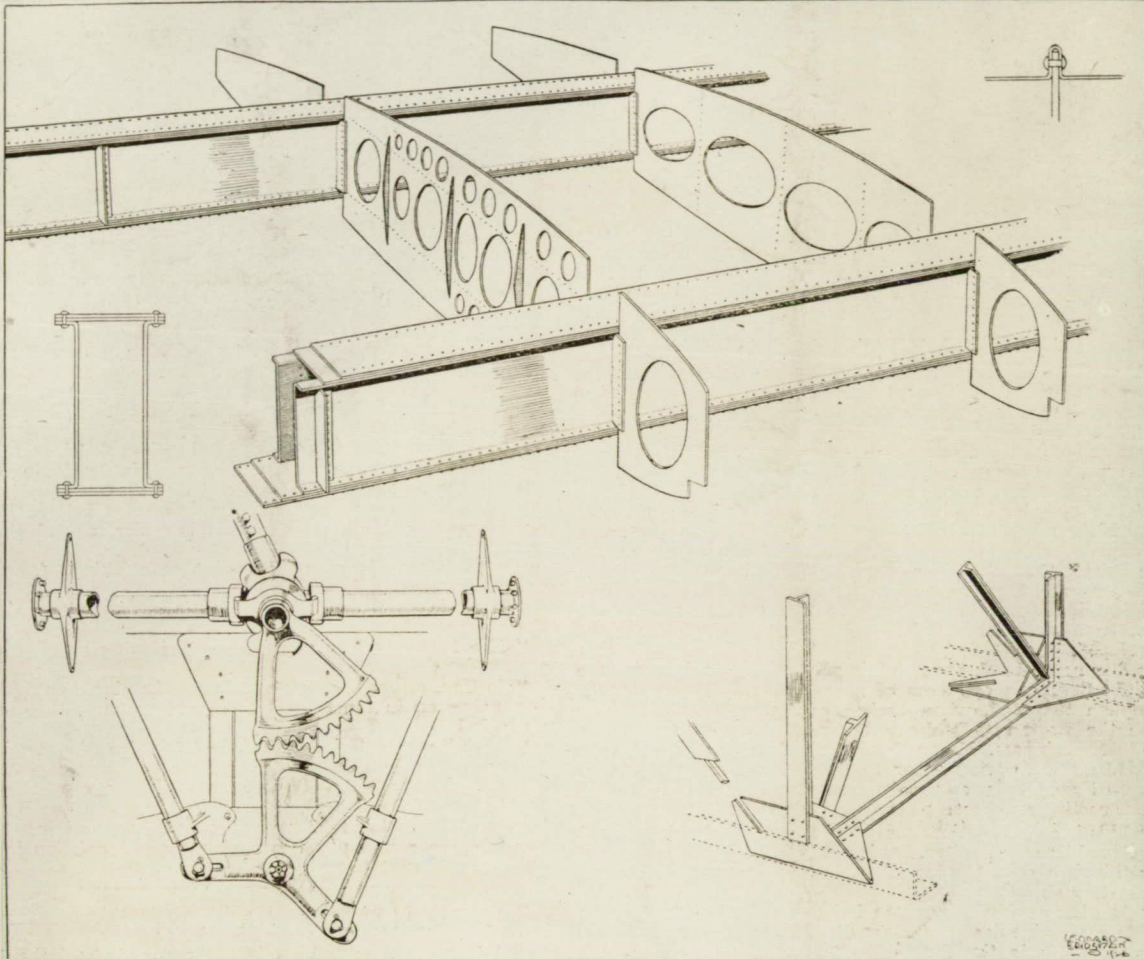
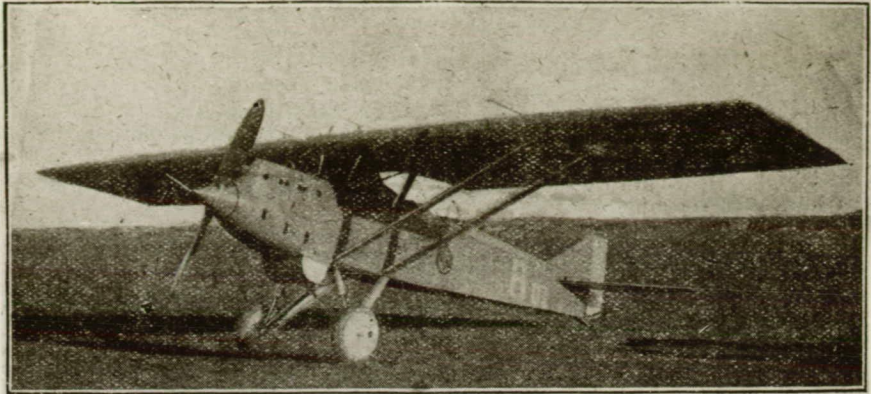


Fig.1 Wibault two-seat all metal monoplane 8C3.



WIBAULT DETAILS.—Top, general scheme of wing structure of the Wibault, with, on the left, a section of the spars, and in the right corner the method of fixing the covering to the ribs.

Bottom left, the arrangement of the control lever, showing the gear and push-rods for the ailerons. Right, the fuselage construction, of angle and tee section duralumin.

Wibault two-seat all metal monoplane with details of structure