AIRCRAFT CIRCULARS

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

No. 28

COMBAT AND BOMBING AIRPLANE, AMIOT 130 B 3

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COMBAT AND BOMBING AIRPLANE, AMIOT 120 B 3.*

After three years of systematic study of metal construction and two years of practical tests before the various French official committees and after the various changes following the practical tests, this airplane is now offered in its final form as the best medium-sized airplane for combat and bombing expeditions (Figs. 2-3).

Its attacking ability is assured by a bomb capacity of 590-1150 kg (1300-2535 lb.) and a high cruising speed of 190 km (118 mi.) per hour at 0.7 of its power. Its fighting ability is the result of considerable firing power combined with great manageability at all altitudes.

The one-engine airplane 120 B 3 can be equipped with any 650-1000 HP. engine, and in particular, with the French engines, Farman 700 HP., Lorraine 650 HP., and Renault 700 HP.; also with the foreign engines Rolls-Royce 700 HP., F.I.A.T. 700 HP., and B.M.W. 600 HP.

The Amiot 120 B 3 (Fig. 1) has the manageability required for combat, and happily solves the problems of visibility for navigation and for bomb dropping.

The bomb sighting is done in the cockpit with protection from the wind, which is a necessary condition for the convenient

*From a circular published by the S.E.C.M. (Société d'Etudes et de Constructions Mécaniques).

manipulation of the sighting instruments and consequent precision of fire. The bomber is located behind the gunner and occupies a lower seat in the same bay. A trap door 3.6 m (11.8 ft.) long gives a forward field of vision extending to within about 12° of the horizontal, which enables the bomber to see the objective well in advance of the instant for releasing the bombs. He can then assure the directional aim by means of an auxiliary rudder bar (but without ever being able to neutralize the action of the pilot).

In addition to his regular seat inside the cockpit, the bomber has an upper seat in the open air, which enables him to assist during the trip in watching for enemy airplanes, and which assures his safety in forced landings on rough ground. Lateral openings protected by wind shields are provided on each side of the cabin, to enable the bomber to see conveniently, without leaving his seat, all the ground below and in front of the airplane.

The bomber also has a drift meter just below and behind the sight and can thus make corrections at the last moment for the bombing altitude and the direction of attack, elements which are generally not the same as during the trip. These devices assure great precision in the bombing, the probable error, as determined by practical tests, being of the order of 25 m (82 ft.) for a flight altitude of 3000 m (nearly 10,000 ft.).

For combat.- Two machine guns, firing through the propeller and operated by the pilot, provide for the forward attack and defense; Lewis twin machine guns in gunner's cockpit commanding the whole region above the airplane; two machine guns in bomber's cockpit, one firing forward and the other aft in the dead angles under the airplane not covered by the upper machine guns.

The Amiot 120 B 3 is metal and has all the improvements which have been invented and perfected during recent years on the S.E.C.M. airplane types 22, 23, and 24.

The use of tubing has been standardized and the assemblages of stamped sheet metal can be readily disassembled, so that local repairs can be quickly made without taking the assemblies entirely apart (Figs. 4 and 5).

These special features have been tested in service on the training types 22, 23, and 24, and also on the 120 B 3 during its official tests before the various committees. The structural elements were calculated with a high safety factor, so they can withstand excessive loading and the airplane can be used for long-distance tasks.

Its radius of action is about 1000 km (620 miles) with 590 kg (1300 lb.) of bombs and 500 km (310 miles) with 1150 kg (2535 lb.) of bombs. The addition of supplementary fuel tanks, for which attachments are provided, enables the execution of bombardments with 590 kg (1300 lb.) of bombs at a distance of

about 1700 km (1056 miles) from the starting point.

From the piloting viewpoint, the Amiot 120 B 3 is characterized by an exceptional smoothness of the controls and excellent general maneuverability. Long flights in very rough weather can therefore be made without overfatiguing the crew and combat maneuvering is rapid and precise.

The tail surfaces are large and enable the control of the airplane even below the sustentation speed limit. This fact affords complete security against stalling and enables very short landings.

The engine hood contains six removable panels providing quick access to the engine (Fig. 5). In practical tests on the field, two mechanics required only nine minutes to exchange all the spark plugs, including the removal and replacement of the panels.

The engine is accessible during flight through a door in the fire wall, thus enabling the general surveillance of the water, gasoline and oil pipes and the making of slight repairs, such as the temporary stopping of a leak or the restoring of a detached spark-plug wire.

The controls can be easily followed throughout their entire length. In the fuselage they are within reach of the hand and in the wings there are inspection ports opposite the pulleys.

The set of the wheels is adjustable and any deformations resulting from hard and numerous landings can be easily compen-

sated (Fig. 6). Stronger wheels can be substituted when it is necessary to take off from very soft ground with a heavy load.

The characteristics and performances of the 130 B 3 are as follows:

Wing area,	95 m²	(1023 sq.ft.)
Power,	700 HP.	
Weight empty,	2110 kg	(4652 lb.)
" equipped (electricity and armament),	2330 "	(5137 ")
" of fuel, for 700 km (435 miles),	640 "	(1411 ")
" available for baggage and guns,	400 "	(882 ")
" available for bombs,	590 "	(1300 ")
Total	3960 "	(8730 ")
Speed at sea level,	220 km/h	(136.7 mi./hr)
" " 2000 m (6562 ft.),	215 "	(133.6 ")
" " 4000 " (13123 ft.),	205 "	(127.4 ")
Landing speed,	62 "	(38.5 ")
with run of	98 m	(322 ft.)
Climb to 2000 m (6562 ft.) in	11 min.	
" " 4000 " (13123 ft.) in	28 min. 30 sec.	
Practical ceiling,	5500 m	(18045 ft.)

Translation by Dwight M. Miner,
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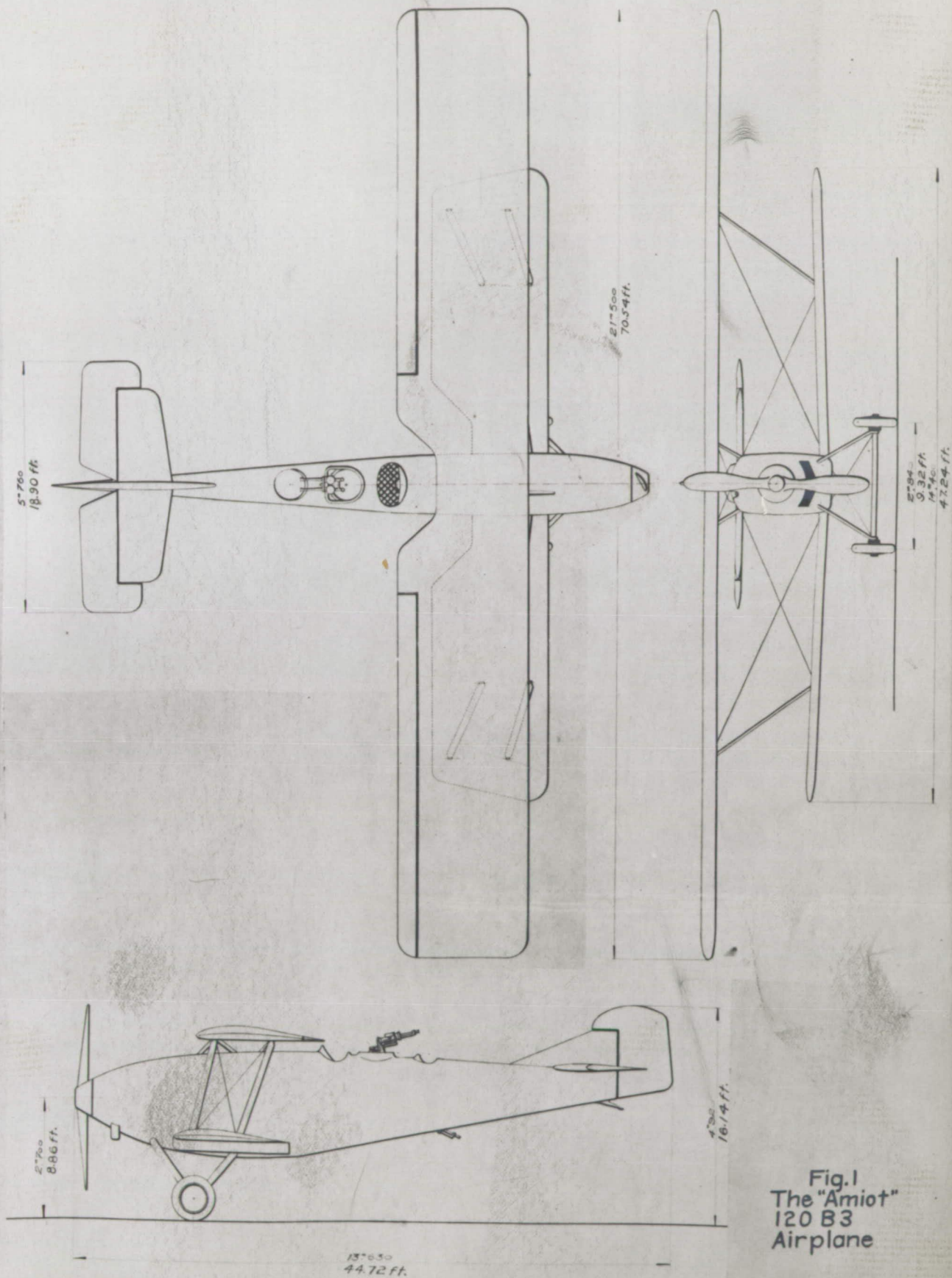

Fig.1
The "Amiot"
120 B3
Airplane

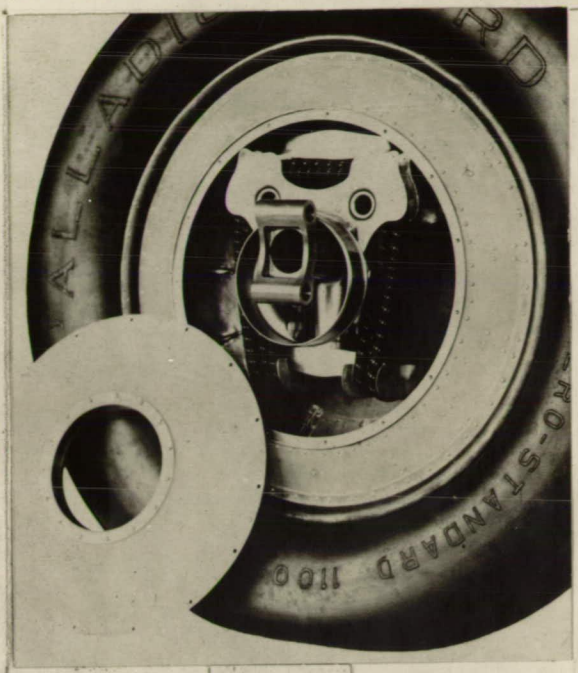

Fig.6

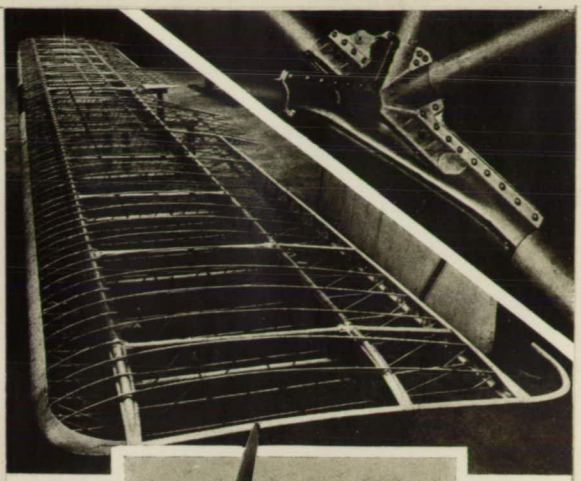

Fig.5

Fig.2

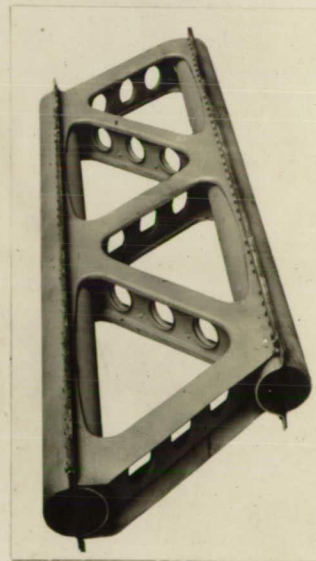

Fig.4

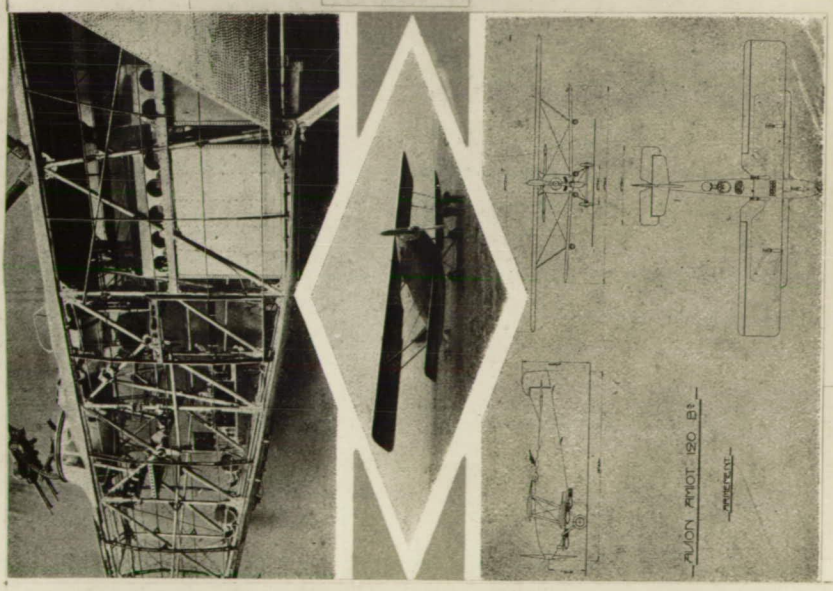

Fig.3 Views and details of "Amiot" airplane