THE CURTISS MODEL 18-B BIPLANE*

AFTER the successful trials of the Curtiss Model 18-T Triplane (described in FLIGHT, May 29 last), the two-seater 18-B Biplane was brought out by the Curtiss Engineering Corp. This machine is built around the same *fuselage* and power plant as the triplane, but having a lesser overall height the gunner has a wider arc of fire. The housing of the engine is particularly neat, it being entirely encased by cowling with the streamlined exhaust stacks projecting upwards. The cowling around the engine is removable, giving access for adjustment and repair.

Three-quarter front view of the Curtiss 18-B biplane.

As in the triplane, all interplane bracing cables are of true streamline section, and where cables cross one another they are clamped by streamlined blocks.

A peculiarity of this machine is in the employment of *ailerons* on the lower plane only. These *ailerons* are operated by steel tubes running through the lower plane and directly connected to the control column. This arrangement eliminates entirely all outside control cables and rigging. Rudders and elevators are operated by levers enclosed in the *fuselage* termination, thereby doing away with all outside control cables. There are no external braces for the stabiliser or fin.

The main planes are rectangular in plan form, and have no dihedral or sweepback. They are built up in five sections, three for the top and two for the lower. The centre section over the body is 2 ft. 6 ins. wide, and the outer sections of both top and bottom planes are 17 ft. $5\frac{7}{8}$ ins. span. As indicated in the accompanying scale drawings, the ribs are spaced about 6 ins. apart, and instead of the usual two main spars, the Curtiss 18-B employs five—the idea being to more evenly distribute the loading on them.

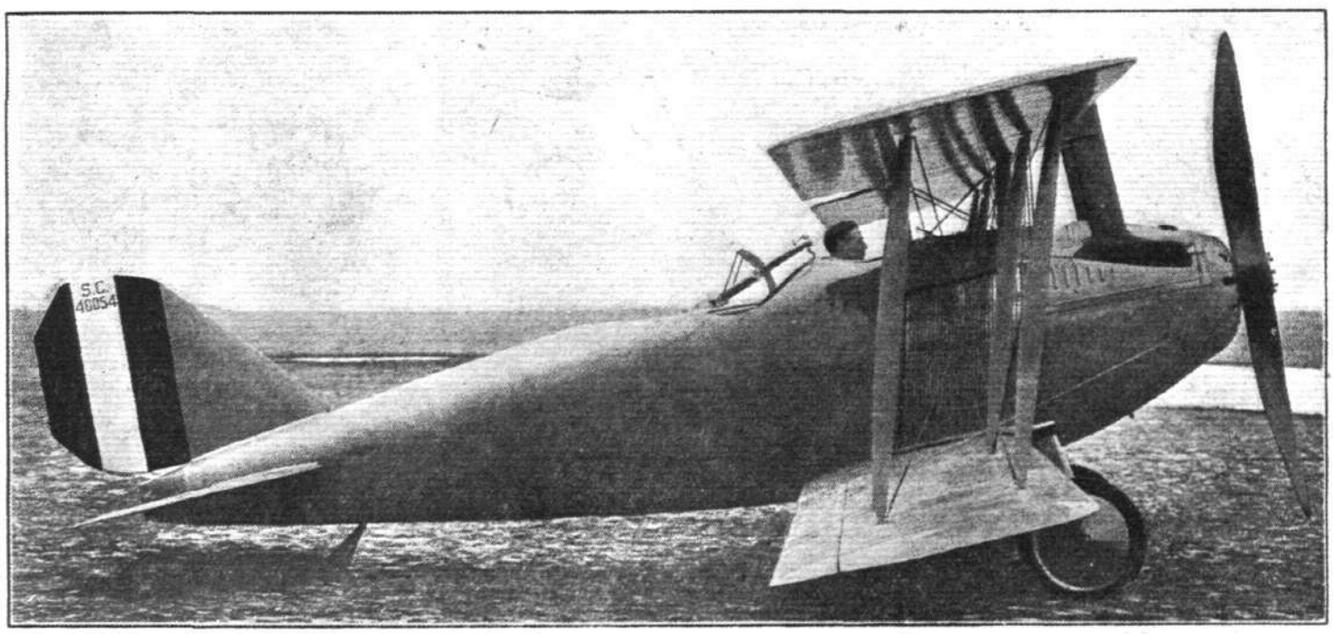
The chord of the upper plane is 4 ft. 6 ins., and the front main wing spar is located 9 ins. from the leading edge, the fourth spar, which carries the rear body and interplane struts, being 2 ft. 9 ins. from the leading edge. The chord of the lower plane is 4 ft., and its forward main spar is similarly placed 9 ins. from the leading edge, the other spars being spaced $7\frac{5}{16}$ ins. apart.

The *ailerons* on the lower plane have a very high aspect ratio, being 13 ft. $5\frac{1}{16}$ ins. in length and $10\frac{3}{4}$ ins. chord. The intermediate interplane struts are centred 6 ft. $1\frac{1}{2}$ ins. from the body struts, the outer interplane struts being 7 ft. $8\frac{1}{2}$ ins. from former, leaving an overhang of 3 ft. $7\frac{7}{8}$ ins.

The *fuselage* is of monocoque construction, finely streamlined, and 21 ft. in length. The pilot's cockpit is just below the trailing edge of the top plane, and aft of the pilot is the gunner's compartment so arranged that a wide range of fire is provided for the two Lewis machine guns, one of which is located on a rotatable scarff ring surrounding the cockpit, and the other fires through an opening in the underside of the *fuselage*.

The landing gear is of the V-type, and is similar to that on the 18-T Triplane. The track of the wheels is 4 ft. $11\frac{1}{8}$ ins., the wheels themselves being 2 ft. 2 ins. diameter. The axle is located 3 ft. $8\frac{3}{4}$ ins. from the nose of the *fuselage*, and 4 ft.

* Courtesy *Aerial Age*, U.S.A.



Side view of the Curtiss 18-B biplane.