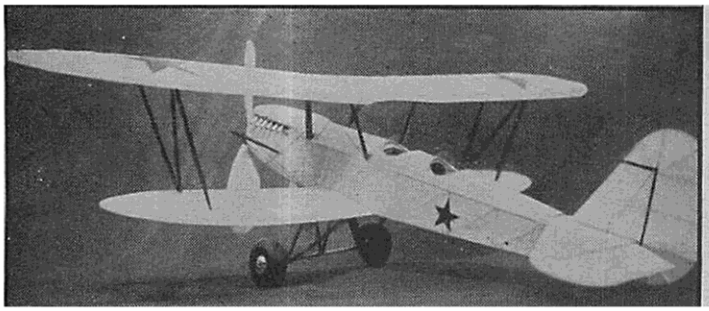
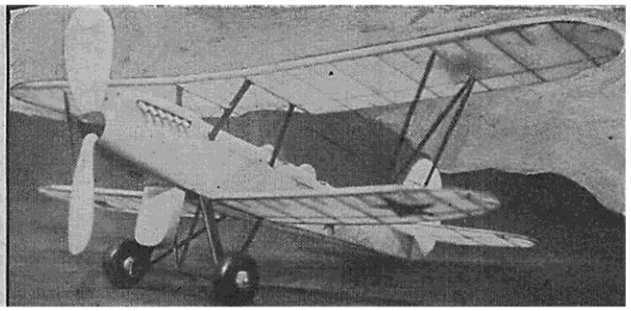


Though built in detail, it is a fine flier



Compare this model with the full scale ship, page No. 4

How to Build a Russian Fighter

The First Complete Description and Plans of a Flying Scale Model of a Russian Airplane to be published in America. The Two-Place Fighter D-1

By ELMER PILZER

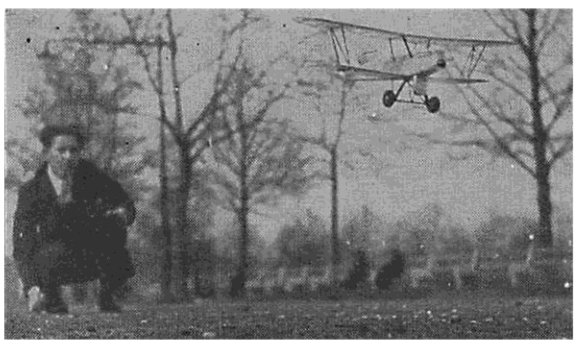
THE great progress made by the Russians in their development of efficient airplanes, is well exemplified by the general purpose D-1 type of plane. The Soviets have clearly designed this plane to serve many purposes efficiently. It may be used as a two-seater fighter, a light bomber, an attack plane, and as a reconnaissance or observation ship. The same type of ship was used in rescuing many of the stranded Russians exploring the Polar regions.

The D-1 is powered with a twelve cylinder Vee, Russian built, water-cooled engine of 650 h.p., type M.17.

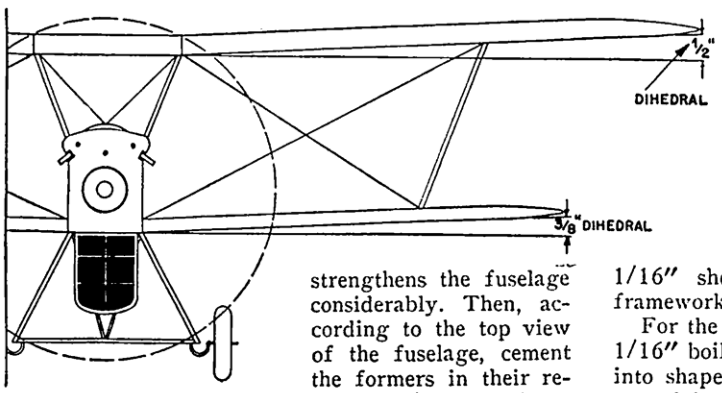
The rectangular fuselage is made of welded chrome molybdenum steel tubing and is covered with fabric. Its armament consists of two sets of twin machine-guns, one set synchronized to fire through the propeller and the other set mounted over the rear cockpit. This plane is capable of carrying a load of bombs or a torpedo.

Russia can proudly put her faith in such a dependable ship as the Russian Fighter D-1.

By carefully following the instructions and working over the full-sized plans, you will not only produce a biplane of unusual strength and lightness, but also a model which will give you continuously long and steady flights.



The model gets away for a long steady flight



Fuselage

We are going to assemble this model somewhat on the same style as the real airplanes that are made in the factories.

In order to make the side of the fuselage in one piece, it will be necessary to join drawings No. 1 and 3 together and pin them on a soft pine working board. Now pin transparent wax-paper over the drawings and start making the sides of 1/16" sq. balsa. The sides are indicated by the very heavy lines. After both sides are finished, with the aid of carbon paper, trace and carefully cut out the formers of 1/16" sheet balsa. When this is done, cement 1/16" sq. balsa under the formers. This strengthens the fuselage considerably. Then, according to the top view of the fuselage, cement the formers in their respective places, using 1/16" sq. balsa for the bottom of the body. Now cement the stringers in the notches of the formers and put on the 1/16" diam. reed cockpit coaming.

Nose Block and Propeller

Select a medium soft piece of balsa for the nose and proceed to trace and cut the side view. The same is done with the top and front view. Then cut the block in half from the top down and cut out the inside until the walls are 1/8" thick. Now cement them together and put in the wire clip for the motor stick. Be sure to put a liberal amount of cement on so as to prevent the sides from coming apart after the model is finished. Finally cement nose block in place on fuselage and give it and the fuselage a fine sandpapering.

A poorly carved and unbalanced propeller is the cause for many troublesome flights of a model. Therefore utmost care should be taken in carving the propeller. Make a template of thin cardboard, of half of the front view of the propeller. Now trace around that on both ends of the block and proceed to cut away all the waste, which is shown by the lined section on drawing No. 1. Do the same for the side view. Then carefully cut out the camber and twist of the blades. Sandpaper it and apply one coat of banana oil. Finally balance it and put on the propeller shaft and nose cone.

Tail Surfaces

The stabilizer should be made in one piece, therefore, you may either draw it up or trace one-half on a piece of transparent paper and turn the paper over so that it shows the other side of the tail. (Do likewise for the wings).

A piece of 1/16" sq. bamboo is put across the horizontal tail to increase its strength. The leading and trailing edges of the tail are of 1/16" x1/8" balsa. The tips are of 1/16" sheet balsa and the remaining framework is of 1/16" sq. balsa.

For the vertical tail, a piece of 1/32"x 1/16" boiled bamboo is carefully worked into shape with the aid of pins and the rest of the frame is also of 1/16" sq. balsa.

It is advisable to let both surfaces dry on board overnight so as to prevent warping. Before covering, sandpaper both tails to obtain a smooth covering job.

Wings

Trace and cut out all the ribs of 1/16" sheet balsa. In order to reduce unnecessary weight, lightening holes are put into the ribs. If desired, they may be omitted.

After you have traced the other side of the wings, pin down the rear spar and the leading and trailing edges. Then cement all the ribs in their respective places and bend a boiled piece of 1/32"x1/16" bam-

(Continued on page 40)

How to Build a Russian Fighter

(Continued from page 14)

boo for the wing tips. Now finally cement in place the upper spar and the 1/16" sq. braces for the wing tips. After these are left overnight to dry, cement the left and right top wings to the center section, giving them a ½" dihedral at both tips. Then sandpaper and cover the wings, using banana oil for adhesive.

Struts and Assembly

Cut out and streamline all struts according to plans, using medium hard balsa.

Having noticed how struts break loose from their connections, I have found that a tiny splinter of bamboo forced into the end of a strut will strengthen it considerably. You will also find this very convenient for assembling the model.

First cement in place the entire landing gear and the wire shock absorbing axle. Wind thread around axle to prevent it from twisting off on a heavy landing. Now cement in place both tail surfaces, being careful to line them up correctly. The center section struts are now cemented in place and when they have dried slightly, cement the other ends of the struts on to the center section of the wings, also being careful to line them up from the front, side and top views.

You are now ready to put on the bottom wings and outer bay struts, which you will do with utmost care.

Finally put on a pair of 1½" diam. wheels on the axle and cement washers at the end of same to keep the wheels from coming off.

You may now put in all the scale effects such as: flying wires, celluloid windshield, red stars for insignia; and for the nose, the small shutters, and the radiators which should be made of very light balsa. If you desire, you may cut out the front view of the radiator from the plans and cement it in front of the block.

The propeller is put on the motor stick and is powered with four strands of ⅛" flat rubber. If the model is made heavier, use four strands of 3/16" flat.

If this model is made exactly to plans, you will undoubtedly get unusually high performance in flying. If the model dives, warp up the elevators; if it stalls, either warp them down or add weight in the nose; if it banks over on one side due to propeller torque, warp the wings of that side up.

If the model still does not perform as you had expected, kindly write to the editor in care of this magazine, and explain to him the actions of the model in flight. He will gladly straighten out your flying difficulties.