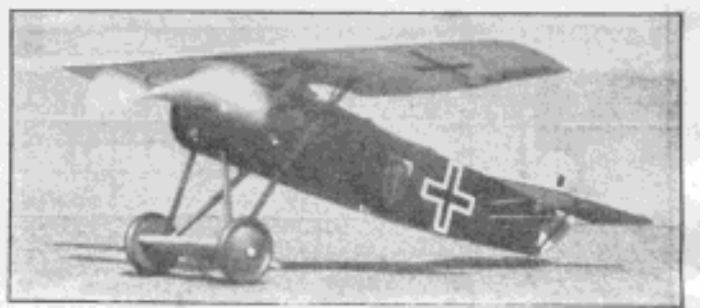


Details are carefully carried out. Note movable controls



The high wing gives it unusual stability

# Build and Fly the Fokker D- 8

## Complete Data From Which You Can Build a Successful Model of a Famous German World War Fighter

By HARRY SHAFFER

WHEN a flying scale model is to be built, it is wise to select a type of ship which lends itself to stability. As a rule, the type which fulfills this requirement to the highest degree is a high-wing monoplane or parasol. In such ships the center of gravity is low and the wing area smaller in proportion to the tail surfaces. Then again, the monoplane type is usually superior in flying qualities to the biplane.

In looking through our list of planes and giving consideration at the same time to these factors in order to make a wise selection, we could not help being impressed with the general design of the Fokker D-8. Examining the design of this plane more carefully, we found that it had the necessary factors to the fullest degree. It is a monoplane, the wing is parasol, the center of gravity is low and the tail surfaces are quite large in proportion to the wing area. Only one drawback is apparent; the wing is located quite near the nose. This fact might make it difficult to balance the model actively for flight. However this fault may easily be corrected by adding a little weight to the forward end of the ship. This selection was well justified after I had made the first flying model for it proved to be an excellent flyer.

Another factor which makes this ship interesting to build is the history that it made for itself during the World War. It made its appearance in the fall of 1918, though very few of these fighters actually saw combat. The planes that actually reached the front were outstanding in their ability to cope with Allied machines. It was powered with a 110 h.p. Oberursel rotary motor which gave the ship a speed of approximately 115 m.p.h. Like many German ships, this plane was ahead of its time as regards its general design. The wings were cantilever without any brace wires.

Since the World War the trend of development has progressed continuously toward this type of plane. The Douglas Transport, Boeing model 247 and other similar ships are good examples.

Before trying to construct the model, it is wise to look over the plans carefully and familiarize yourself with the details of construction. Do not start until you have a clear picture in your mind of the entire ship. A great deal of material has been wasted by such procedure. After you feel that you understand the plans thoroughly, gather all the necessary material together and commence your work.

## Fuselage

Plates No. 1 and 2, giving the side view, are used to construct the sides of this model. By placing the drawing over a board and using pins, the longerons are thus held in place. Both sides of the fuselage are made at one time, thus assuring them of being the same.

The vertical braces are now cut and placed in by gluing the bottom one first and then putting the top ones in and gluing them. When the two sides are completely dry, separate and begin to glue the cross braces starting at the front of the model. This makes the frame of the fuselage.

We must next cut the bulkheads which are found on plate 1. These are made from 1/16" flat balsa and glued in their proper places. The cowling must now be made. This will have to be carved or made on a lathe, the latter being the best way. The drawing on plate 3 shows the exact shape.

Take the best of care in making the cowling, the point where the nose button joins the cowling is rather thin, thus requiring much care in turning. After it is completely shaped, sand smooth with very fine sandpaper and give about three coats of banana oil. This when doped will dry with a bright luster.

The inside of the cowling is painted black and then the cylinders are made, painted and glued in place. This completes the cowling. Now that the cowling is made, glue to front of fuselage and the stringers are now glued in place. The motor stick is glued in place; (Note the 1/16" x 1/8" support); the rear hook being placed on the motor stick before being glued in the fuselage. The cockpit is built up from 1/16" flat balsa. Give the fuselage a light sanding so as to secure a smooth covering job.

Cover all of the straight surfaces first, using banana oil as adhesive, taking a small strip at a time. The curved parts of the fuselage are covered now taking them in small sections also. After the fuselage is covered, spray lightly with water. An insect spray works very well, and let it dry. As soon as it is dry, give it two coats of dope. Any of the leading model airplane supply houses handle a good grade of dopes. In the model pictured it is colored red fuselage with cream wings and Black details. The dark fuselage and light wing color combination seems to be as attractive as any two color combination.

After the two coats of dope are applied, start on the details of the fuselage. The steps and handles are made of No. 12 music wire and glued in place. The breather pipe, which is made from 1/16" square balsa, is colored black and glued in place and the shell ejector chute, also made of 1/16" square balsa, is colored Black and glued in place. The cockpit padding is cut from 1/16" flat balsa, colored black and glued in place. In gluing this, be careful not to drop any glue on the paper covering or it will draw it, thus forming wrinkles. The tail skid is made from 1/8" flat balsa colored black and glued in place. Make the wind shield from thin celluloid and glue in place, thus completing the fuselage.

## Landing Gear

The landing gear is made from 1/8" x 3/16" hard balsa, or bamboo strips (preferred). Make the struts as shown and streamline. They are now painted black and glued in their proper places.

### Lift Bar

The lift bar is made the same as if it were a wing. Five ribs are cut from 1/16" flat balsa and notched. The main spar (1/16" x 3/16") is pinned to the drawing and the ribs glued in their place to it. The trailing edge (1/16" x 1/8") and the leading edge (1/8" x 3/16") are now glued in place. The axle is one solid piece of No. 12 music wire. Glue it to the side of the main spar. When it is dry, give a light sanding and cover. Spray it with water and let it dry.

When dry, give two coats of cream dope and attach to the landing gear struts now on the fuselage. The wheels are 1-7/8" in diameter, turned on a lathe like the cowling and are colored with black and red discs and placed on axles. They are held on by small clots of glue. This completes the landing gear.



The finished model in full flight provides a real thrill

## Tail Surfaces

The rudder is built completely of 1/16" square and 1/16" flat balsa. Cut the curved piece, or trailing edge of the rudder from 1/16" flat balsa. Start by pinning the 1/16" square pieces to the drawing and gluing them together. The copper wire hinges are now glued in place, making the rudder movable with the fin. Sand the whole framework lightly, cover, water dope it and then give two coats of cream dope to the fin and two coats of red dope to rudder.

The stabilizer is also built completely of 1/16" square and 1/16" flat balsa. The 1/16" flat curved parts are now cut and pinned to the drawings. The 1/16" square is now cut to fit and glued in place. The copper wire hinges are now glued in place, thus making the elevators movable with the stabilizer. Sand the completed frameworks lightly, cover, water dope and give two coats of cream dope to the stabilizer and two coats of red dope to the elevators, the tail surfaces being done and glued to the fuselage in their proper places. The elevator and rudder horns, with the thread cables are now glued in place. The horns are colored black. This completes the tail surfaces or rear part of the plane.

## Wing Struts

The wing struts are made from 1/8" x 3/16" hard balsa sanded to a streamline section. The full size of these struts will be found on plate 4. After they are cut to size and streamlined, they are painted black. When they are dry, pin to the fuselage in their proper places and glue. They are now ready to receive the wing.

## Wing

Make all ribs from 1/16" flat balsa. The size and number of each is shown on plate 5. One must always remember that the flying properties of a plane lie almost completely in accurate airfoil section. Therefore, cut them to the exact size shown on the drawings. The two sub-spars are pinned on the drawing and the ribs are glued in their proper places on the sub-spars. The leading edge (3/16" x 1/8") is now pinned to the drawing and glued to the center section ribs. The trailing edge (1/16" x 1/8") is done in the same manner. The main spar is now glued to the section ribs. This makes the center section with the main spar, leading and trailing edges extending from it. Crack the leading and trailing edges at the center section and pin to their places on the drawing. The solid wing tips are now made and are glued to the leading and trailing edges in the proper place.

Now, put No. 2 to No. 4 ribs in their places and then crack the main spar at the center section and glue to the notches in the ribs just added. Cut and fit main spar snug with wing tip and glue to it. The aileron spar is glued to the aileron ribs which are cut to allow it to pass through. The small sub-ribs must now be glued in place. The copper wire hinges are now added, making the ailerons movable with the wing. A slight dihedral is best for best flying results, although it is not to scale. Give the wing a light sanding, cover, water dope and give two coats of cream dope. The ailerons are given two coats of red dope. Add the aileron horns and control thread wires. The horns are colored black. The wing is pinned down over waxed paper after dopping. The wing is now

glued to the wing struts now on the fuselage. You can now put on the aileron control wire tubes number C-C on drawings.

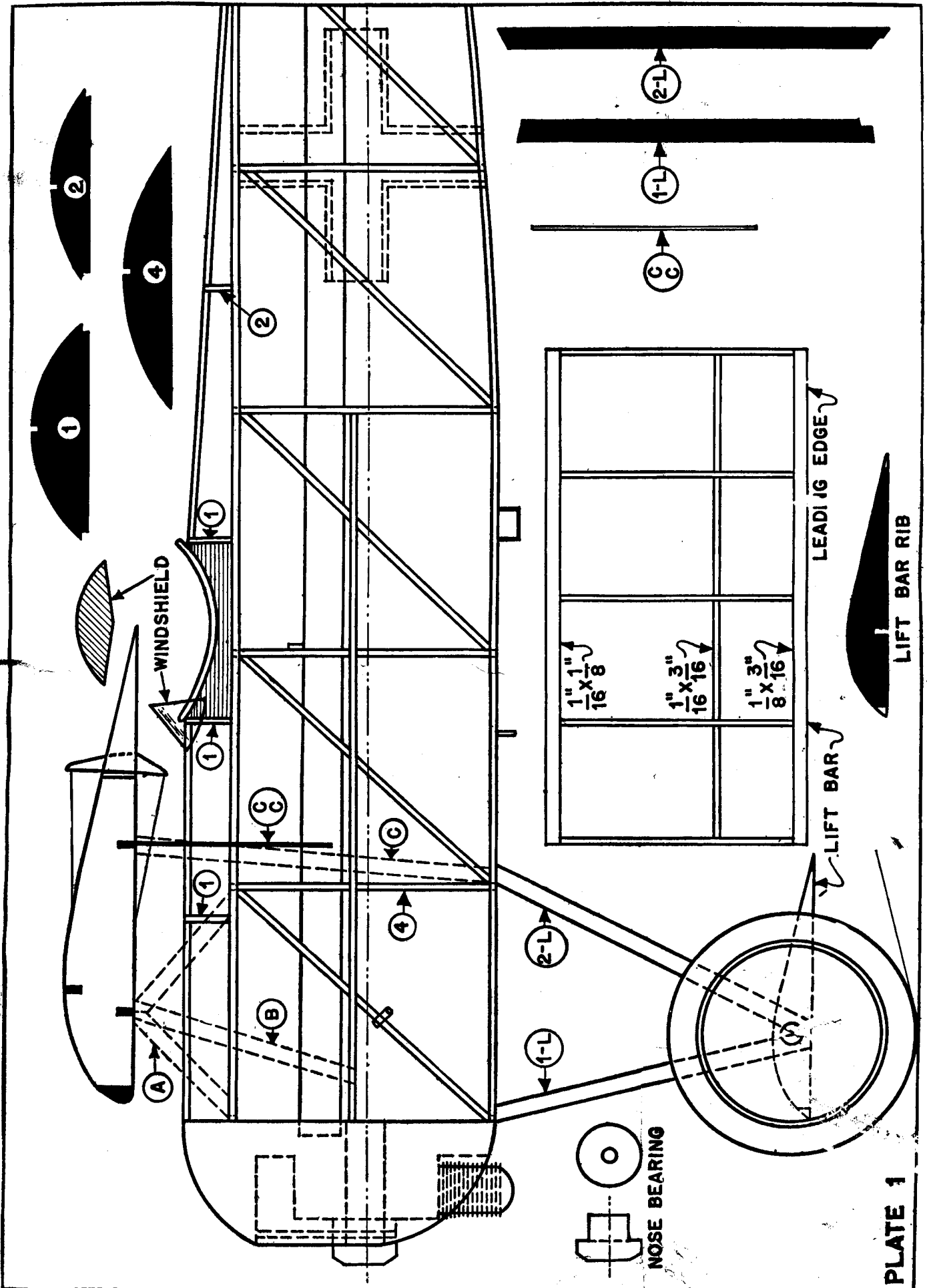
### **General Assembly**

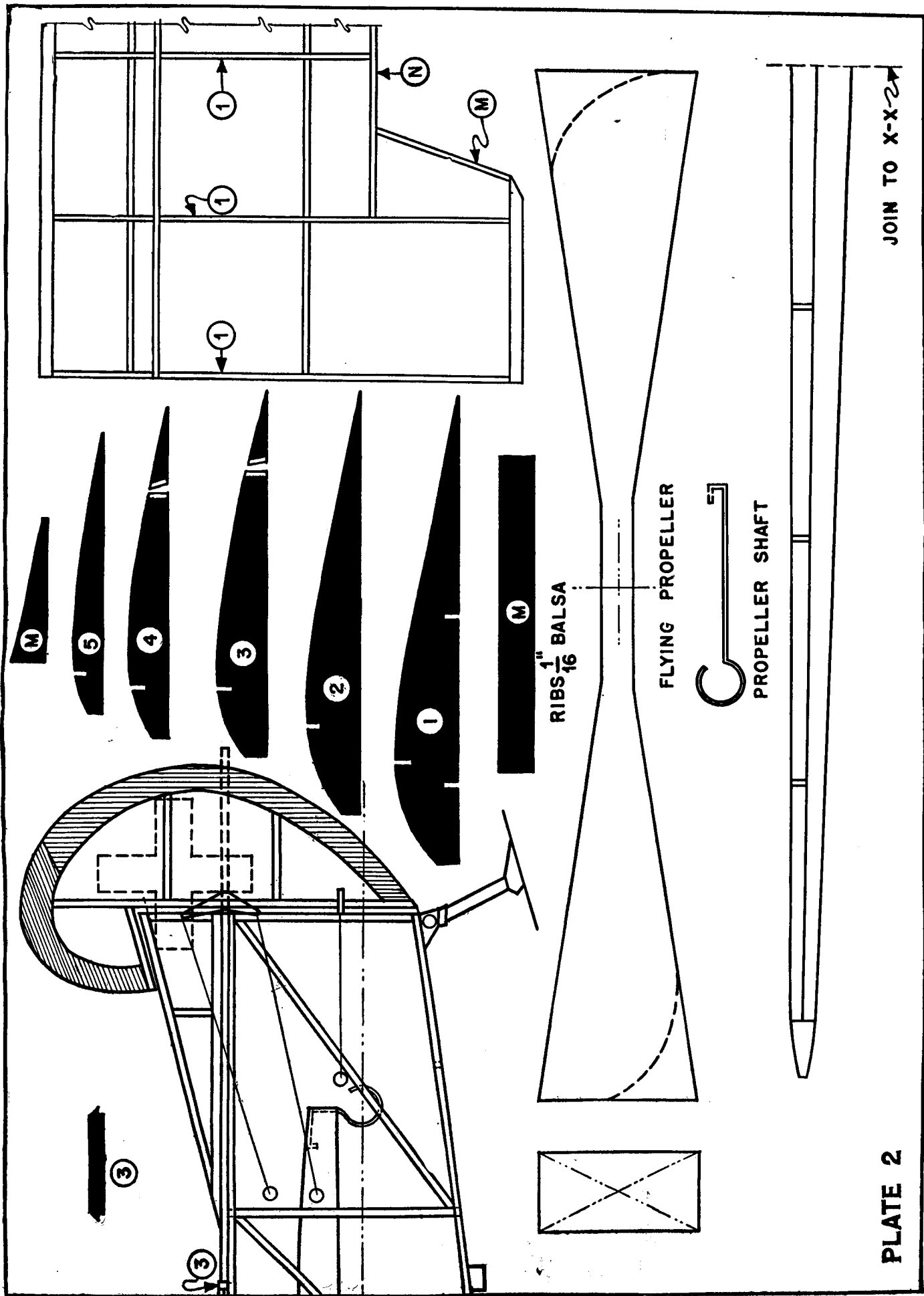
The propeller is carved from a hard balsa block 1-1/4" x 5/8" x 8" and is laid out as shown on plate 2. After it is carved, sand smooth and balance. Give two coats of banana oil and two coats of cream dope. After it is dry, assemble with three washers to the nose bearing, one washer glued to the propeller, the other to the nose button and the other being free. This plane is powered with six strands of 1/8" flat rubber which is now put in the fuselage and connected to the propeller. The iron crosses are made from black and white tissue paper and glued in their places. They are shown by dotted line on the drawings.

### **Flying instructions**

The best place to fly your model is in a large field with tall grass. Give about fifty turns and hand-launch it. If it dives, raise the elevators a bit. If it climbs, lower the elevators. Do this until you get it perfectly balanced. To make it circle, bend the rudder in the way you want it to go. If these plans have been followed closely, you will have a beautiful model and a wonderful flyer. (*If the model proves to be tail heavy, weight the nose to create the proper balance*).

***Scanned from January 1935  
Universal Model Airplane News***





JOIN TO X-X-2

PLATE 2

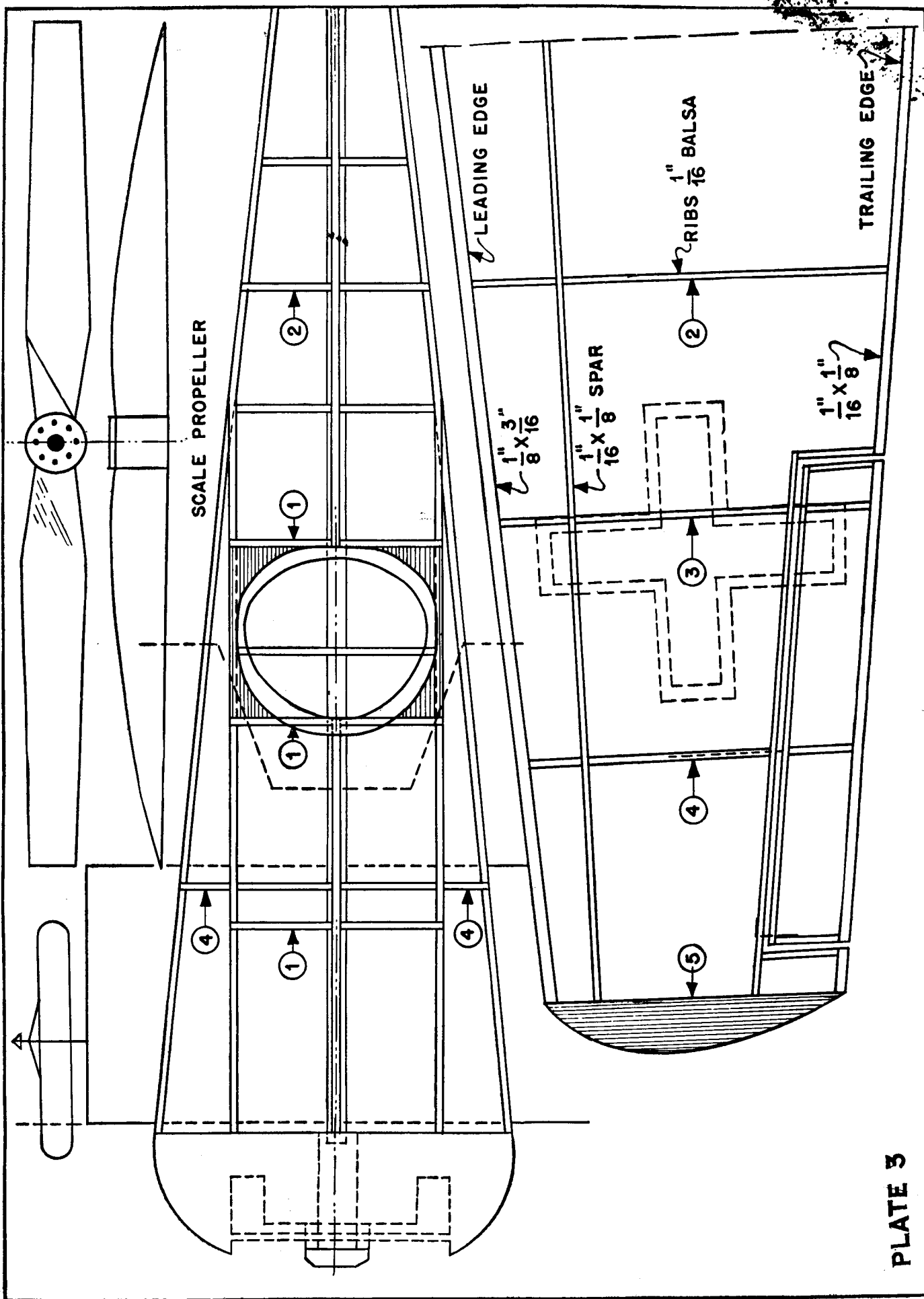


PLATE 3

