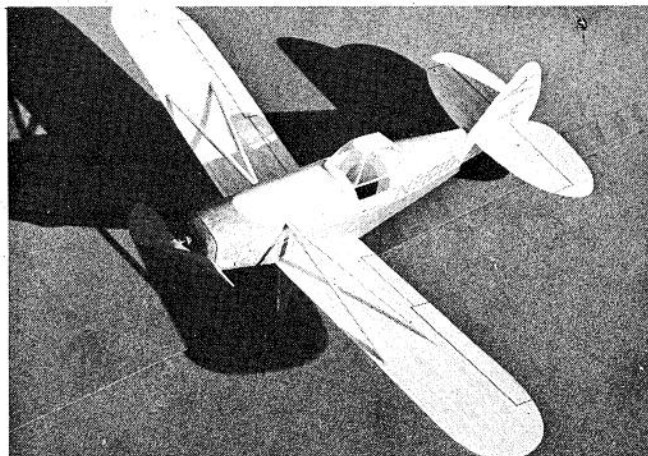
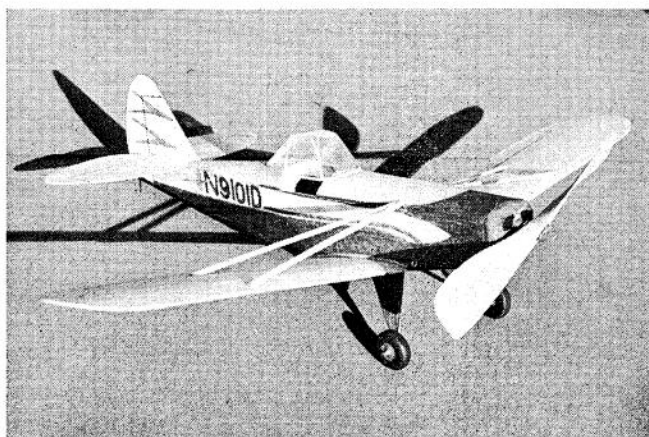


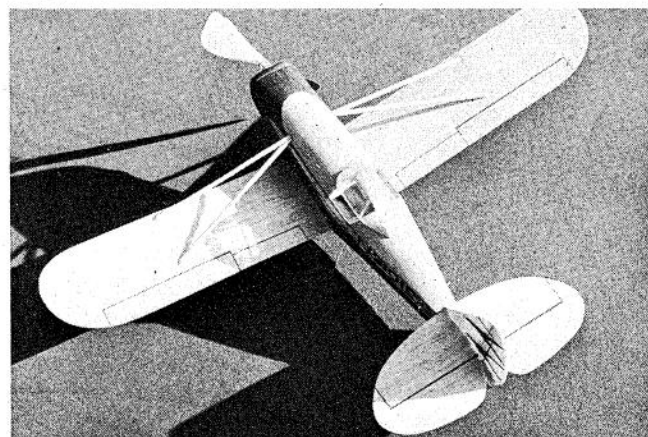
All balsa, lightly doped with tissue and felt pen trim for good detail.



Typical Piper wing, stabilizer and rudder shape apparent in this view.



Balsa doughnut wheels help to keep weight down and give good traction.



Free wheeling, carved balsa propeller also add to flight performance.

PIPER PA 25 PAWNEE

By WALTER MOONEY . . . PIPER'S CROP DUSTING PAWNEE IS AN IDEAL SUBJECT FOR INDOOR/OUTDOOR FREE FLIGHT SCALE. ALL-BALSA, LIGHTWEIGHT CONSTRUCTION BY THE OLD PROFESSOR, MAKES IT A SIMPLE PROJECT ABLE TO FLY WITH THE BEST.

► Although Piper Aircraft Corporation had been building the Supercub for several years and it had been used as a crop duster in several variations, their PA 25 Pawnee is the first production airplane designed primarily for the agricultural role. This low winged aircraft was designed with the crop dusting pilot's requirements in mind, and from the number that have been sold it is obvious that the designers succeeded in getting what was needed. The shape of the wing tips and the tail surfaces make it obviously a Piper product, but the low wing is a big change from the old cubs.

Our model is a simple all-sheet balsa version of the Pawnee. Except for the fact that it has single surface wings, the dihedral has been increased slightly and the horizontal tail has been increased in area, the model is a faithful reproduction. None of these changes makes a significant effect on the overall appear-

ance of the model, which is easily recognized as Piper's contribution to agricultural flying. A new idea, which worked out very well on the model, was the use of a red felt pen to apply the color trim and registration numbers. Thin strips of masking tape were used to simulate the canopy framing and this also seems to work well.

Construction of the model is quite simple and a good job should be possible with even a fairly new beginner to the model game provided he uses a little care. All the cut out pieces can be made from a single thickness of balsa (1/32) provided the builder is willing to laminate two layers for the formers. The carved pieces should be made from block balsa. Even these can be laminated but the number of layers makes this effort tedious. The model uses a cut-down commercial propeller and commercially available wheels. The

canopy can be built up from several pieces of flat plastic sheet or pulled on a vacu-form over a carved balsa form if a vacu-form is available.

The wing and tail surfaces are made of sheet balsa using the plans as a pattern. Sand the edges smooth and round them off. At this point, using a black ball point pen or India ink, draw on the surface outlines. Cut the wing ribs and cement them in place as shown on the plans, noting that the root ribs are slanted so that when the wings are assembled to the fuselage they will have the proper dihedral angle.

Cut the two sides for the fuselage from 1/32nd sheet, locate and drill the motor peg hole. Cut the doubler plates and make a peg hole in them and cement them in place on each side of the fuselage noting that they must go inside the finished fuselage. Cut the formers A, B, C, and D. (Continued on page 75)

Piper PA 25 Pawnee

(Continued from page 25)

Cement the two fuselage sides together at the aft end and then cement the formers in place at the locations shown on the plans. Some small rubber bands will come in real handy to hold the sides together while the cement is drying. Cement the bottom block in place and then bend the landing gear wire and install it in the fuselage making sure it is cemented securely. Add the bottom skin to the fuselage starting at the bottom block and working back. The grain of this bottom skin should go crossways to the length of the fuselage. Add the top skins forward and aft of the cockpit. Since these must be curved around the formers, they must be fitted by cut and try methods and the grain must be lengthwise of the fuselage.

Fit the nose block on the fuselage. It should have two layers of 1/16th sheet rectangles cemented on its aft side. These should just fit in the rectangular hole in former A. Carve and sand noseblock and bottom block to shape. Carve and sand a carburetor inlet block to shape and cement it in place. Using a red felt pen, (get a dri-mark pen if possible, the others tend to run a little), very carefully decorate the fuselage. The original model was done this way and the photos show that it worked well.

Cut the strut parts from one sixteenths thick balsa. Sand the main struts to a streamline cross-section and the jury strut to a round section and assemble a left and a right strut assembly.

Now we can assemble the model. First cement the two wings to the fuselage, making sure that they are both at the same angle. Block the tips up so that their dihedral angle will be maintained while the cement is drying, and cement the struts in place. When these are dry you can cement the horizontal tail in place on the top of the fuselage and then the vertical tail to the top of the horizontal tail and to the aft end of the fuselage. While the parts are drying, check to see that everything is properly lined up.

Cut landing gear fairings, sand smooth, color with felt pen and cement in place. Bend a wire for the tail wheel and push it into the aft end of the fuselage and

cement it securely.

Drill a 1/16th diameter hole in the nose-block angled as shown in the plans and install the aluminum tube. Bend the front hook from thin music wire and install the propeller. For maximum duration flights, use the largest diameter propeller that will clear the ground. Make the canopy and frame. If you have a vacu-form carve a balsa block to the size and shape of the canopy, sand smooth and use it for a mold, otherwise, make the canopy of several small pieces cemented along the edges. Thin strips of common masking tape will simulate the canopy frames and will approximate the same color as the undecorated balsa.

Use monofilament fishing leader or thin thread for the tail brace wires. X's mark the spot where they go through the surfaces.

Carve a prop spinner from block balsa if desired and fit it to the propeller.

A single loop of 1/8th flat rubber 8-10" long will be ideal for your first flying attempts. Balance the model at the CG

shown on the side view. Because this is an all-sheet model you will probably find that you will have to use a little modeling clay in the nose to make it balance. The original model required it.

If you have some soft grass available try some test glides, they should be smooth and straight. If the model tends to pitch up, warp the trailing edges of the horizontal tail down, if it dives, warp them up. Now wind the motor up about fifty turns and try the model. If it does anything drastic, shim the noseblock with thin balsa shims in the direction to counteract the action. Gradually work up to the full capacity of the motor. Happy crop dusting and death to bugs.