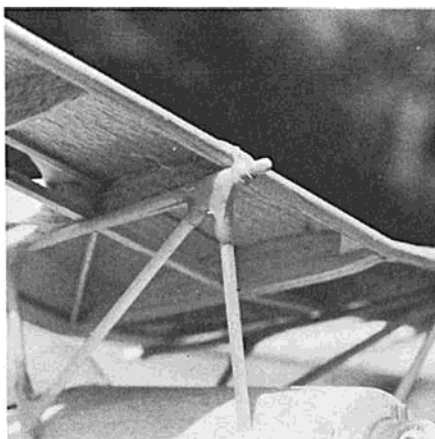
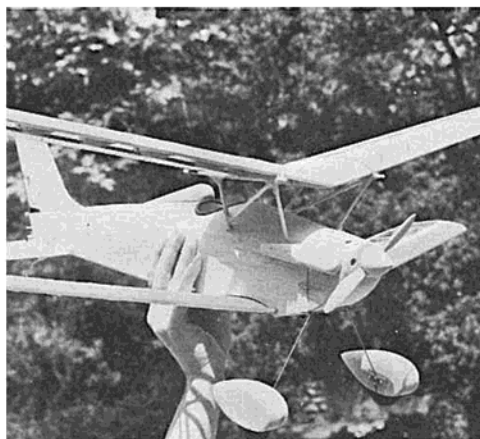


LI'L BIPE

Reminiscent of the early biplane era, Li'l Bipe is for the sport single channel flyer. Easy to fly? The author's daughter, Laurie, soloed on Li'l Bipe at the age of 10!





BY ARTHUR E. SCHULTZ

ASK any kid.

If one set of wings is good, he'll tell you that two sets are twice as good. I guess I've never really outgrown this childhood logic because I still prefer biplanes. My first airplane ride was in the front cockpit of a crummy old biplane that operated from a small midwestern field until the cash customers gave out. The ride didn't last long, and I'm sure I was more thrilled than scared, but since that day, an airplane to me has meant a craft with two sets of wings. Perhaps this will explain why I think a biplane model always looks more like a true airplane in flight—which is the only way the appearance of a model should be evaluated.

I call this design **LITTLE BIPE**. If you're an experienced modeler, the construction should be a breeze; if you're a beginner, it's simple enough for you, too. To any modeler, this challenge: doesn't **LITTLE BIPE** look like and fly like a real, honest airplane? That's because it is a distillation of free flight features and ideas from home-built planes.

CONSTRUCTION

Fuselage

Trace the sides on a sheet of $\frac{1}{16}$ " medium balsa and cut them out. Mark the location of all the formers on the inside of the fuselage halves. Be sure you have the **strut** areas marked on formers F2 and F3 before you glue them in place. Drill the holes for the engine and landing gear in the $\frac{1}{8}$ " plywood firewall. After the formers and firewall are glued and dry, add the $\frac{1}{8}$ " square stringer on the top. Cover the top of the fuselage only with $\frac{1}{32}$ " soft sheet. Start from the center of the $\frac{1}{8}$ " stringer and work out to the edge. This is an excellent time to cover the wing mount area with your favorite material, before installing the

wing struts. Epoxy glue is good insurance for the wing mount and firewall joints as indicated on the plans. The .020 and gear can be installed at this time. Don't cover the bottom of the fuselage until all of the radio gear and torque rod has been installed and checked.

Cowl

Soft $\frac{1}{4}$ ", $\frac{1}{8}$ " and $\frac{1}{32}$ " sheet balsa is used in the cowl construction. The side and bottom pieces are $\frac{1}{4}$ " sheet—double $\frac{1}{4}$ " sheet is used on the bottom to form the curve of the cowl. The cutout area in the inside bottom piece is where the ballast is to be located. The cylinder cover on the right side is made from $\frac{1}{64}$ " aluminum. Cut out a hole on the top to admit the battery clip. If you wish you may mount the engine upright and make the necessary changes in the cowl. Hold the cowl against the firewall with small rubber bands attached with one hook on the fuselage and one on the cowl. It will stay firmly in place eliminating dowel alignment pins.

Wheel Pants

After you have cut, glued and sanded the covers to desired shape, glue the $\frac{1}{16}$ " plywood mounting plate in place. The finished covers are then slipped over the wheels and bolted to the $\frac{1}{32}$ " brass mounting bracket. The nuts are secured onto the inside of the wheel covers with epoxy glue. Check the wheels to see they do not drag.

Tail Surfaces

Tail surfaces are made of $\frac{3}{32}$ " medium sheet. Any excess weight in the tail surfaces will have to be accounted for in balancing out the model.

Wings

The top wing construction is begun by pinning down the $\frac{1}{8}$ " square spar and trailing edge. Glue all the ribs in place except for the first $\frac{1}{8}$ " rib. Add the leading edge and top spar. When dry,

remove the plan and build the other half by turning over the drawing. After both sections are ready, prop them up on a flat surface with the correct dihedral under each wing tip and glue the $\frac{1}{8}$ " rib in place. Each section is still separate. Now plank the top of the wing with $\frac{1}{32}$ " sheet and add the tips. Shape the tips and sand each wing carefully. This is the time to join the two sections together. Glue the two $\frac{1}{8}$ " ribs well and butt them together, making sure there is no twist or misalignment in the wing. The lower wing is constructed in the same manner, except the center section is included.

Covering the Frame

The entire model is covered with orange silk except for the tail surfaces. These are covered with orange Japanese tissue. Two light coats of butyrate dope were applied. Any color scheme can be adapted to this model. One final coat over the whole model should be sufficient. For the expert who wants a better finish, go right ahead and add more coats, but watch the weight of the tail.

Adjustment and Flying

Test glide the model to achieve a flat glide. If you have checked the c.g. carefully, very little ballast should be necessary. Now try some powered flights using only **one** eye dropper of fuel in the tank. This saves a lot of gray hairs. (When the new model desperately needs finer adjustments, one prays for the motor to quit before complete control is lost.) Nice short flights prevent the model from gaining too much altitude and gives the flyer a chance to make some fancy spot landings. After you have gained confidence and can control the "**LITTLE BIPE**," fill the tank and try for some real maneuvers.

May all your flights be happy ones!