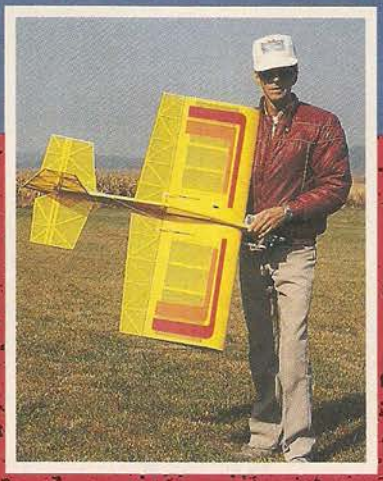
MODEL AIRPLANE CONSTRUCTION NEWS MAGAZINE

WHEN MY FIRST Hots™ appeared in the April 1984 issue of *Model Airplane News*, it was an immediate success. The plans were so popular that they remained top sellers for four consecutive years. Why is this? Simplicity of design and great flight characteristics. Those two elements not only made the original almost a household word, but they also have contributed to the success of its successors as well. In terms of flying and building, I've never heard a bad word about the Hots. Some clubs have even held fun-flys restricted to Hots only! The Hots™ and Super Hots are kitted by Midwest Products and remain good-selling kits to this day. The Ultra Hots, which I produce a giant-scale kit for, has sold in record-breaking quantities.

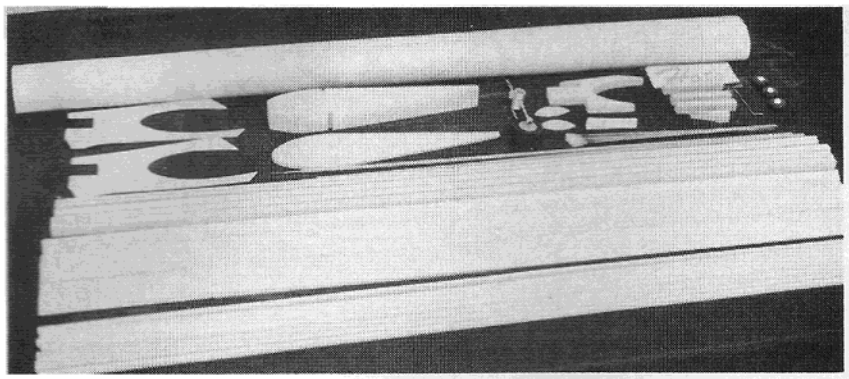
THE NEXT GENERATION



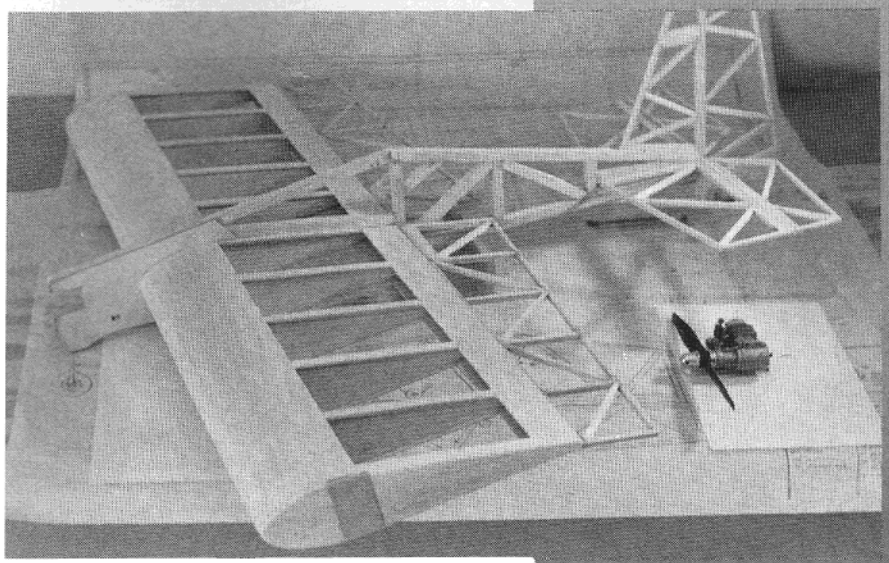
FUN FLY Hots

by DAN SANTICH

So what does all this mean? Modelers want something that will challenge their flying skills yet won't put them in bankruptcy during the process. They also want something that they can assemble quickly. The Hots series of designs has filled a need. Enter the Fun Fly Hots.



All the wood you need to build the Fun Fly Hots is available in the "scratch-builder's kit."



The complete airframe should weigh no more than one pound.

It wasn't too long ago that you could fly a Hots or an Ugly Stik in a competition fun-fly and stand a good chance of winning. Those days are gone! The competition fun-fly models that seem to be the rage today are little more than a wing and a tail with a powerful engine up front—no question about their flying capabilities. Some of them are absolutely awesome. I recently attended a competition fun-fly and was amazed by the performance displayed by this relatively new breed of design. The one thing that stuck in my mind was that you couldn't tell one from another—no character at all. Of course, it's a little difficult to dress up a model that has no fuselage other than a fiberglass shaft! That was when I decided to design a fun-fly model with an identity. The design would also have to stand on its own against these flying pool cues. This was a tall order!

The development process for the Fun Fly Hots took me nearly a year. My workshop is littered with the remains of 10 or so prototypes that, for one reason or another, didn't work out. (Interpret that as "crashed.") I wanted a highly maneuverable model, yet one that would fly at a walk-pace under full control. It had to have the roll rate of a blinking eye and be able to loop inside its own length. The Fun Fly Hots presented here has those capabilities and more. It's an absolute pussycat! Because of the very thick airfoil, the elevator and aileron response are very numb around neutral, but the control rate is proportional to your stick movement. Move it a little, and that's what you get from the model. Go full tilt and it will respond accordingly. Also, again owing to the thick airfoil, you have a built-in air brake. This makes it very easy to do quick touch-and-go's, either by wing-over or by looping. The wing-over method works best for me. I've managed 10 touch-and-go's in 18 seconds. That was the best flight; the average is 25 seconds.

The key elements to a good flying model are weight, balance and alignment. Pick only contest-grade balsa and make sure that the wing, stab and fuselage are on a zero-degree center line and that your balance point is as shown on the plans. Use light servos and a 225mAh battery. Try to keep the flying weight under 3 pounds. I use the O.S.* FSR ABC .32 engine with good results.

To get as many flights as you want at the field, check out the Ace* FFC—fast field charger. Simply connect it to your 12V starter battery and it will keep your receiver and transmitter batteries fully charged.

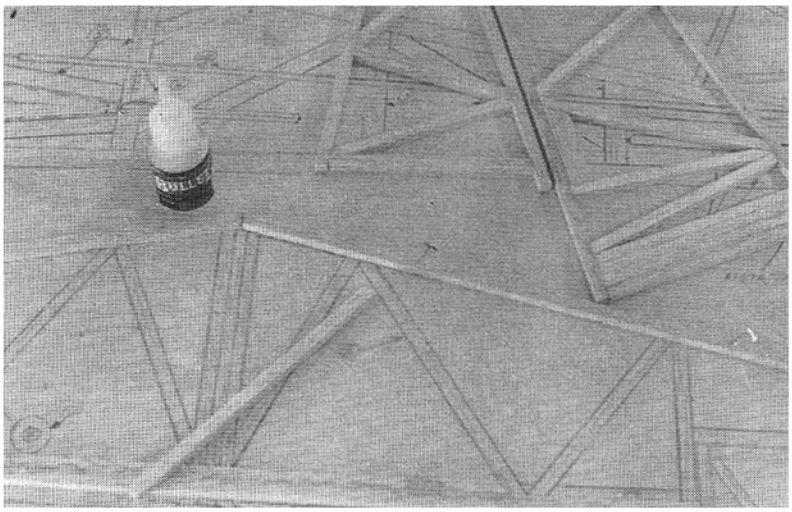
Scratch-building is a lot of fun and it's cheaper than kit-building if you buy balsa in bulk. Since it may be some time until the Fun Fly Hots makes it into kit form, order your plans from *Model Airplane News* and then write to me. I'm beginning, with this model, what I call a "scratch-builders' kit." It contains all the wood necessary to build the model for only $25, plus shipping. My address is at the end of this article.

CONSTRUCTION

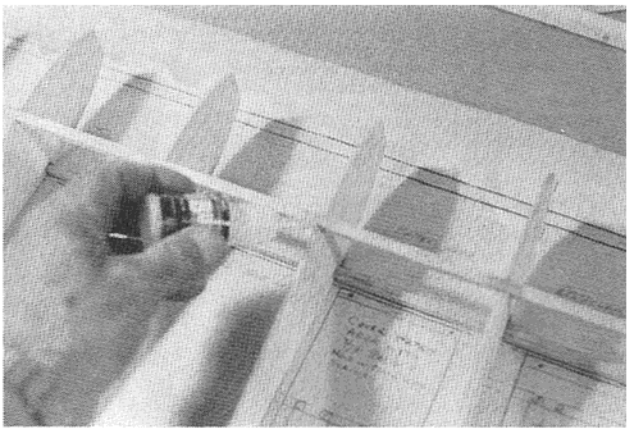
When you get your plans, the first thing you should do is check the wing from the center to each tip for equal measurements. Blueprint images

SPECIFICATIONS

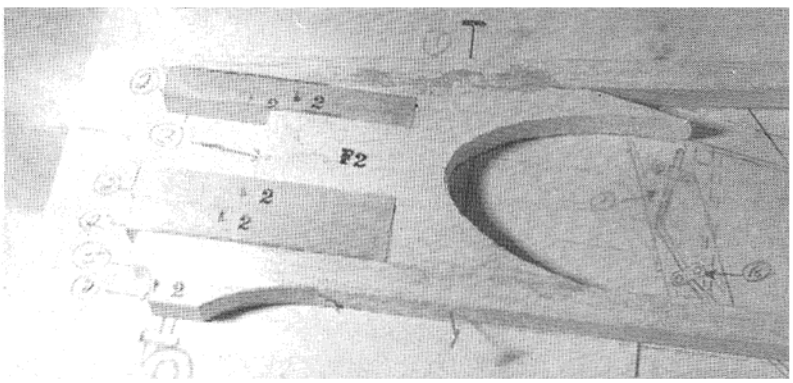
Type: Fun Fly competition
Wingspan: 40 inches
Length: 39 inches
Weight: 2½ to 3½ pounds
Wing area: 660 square inches
Wing loading: 8.7 to 12.2 ounces/square foot
No. of channels req'd: 4 (aileron, rudder, throttle, elevator)
Airfoil: fully symmetrical
Engine: .25 to .40 2-stroke



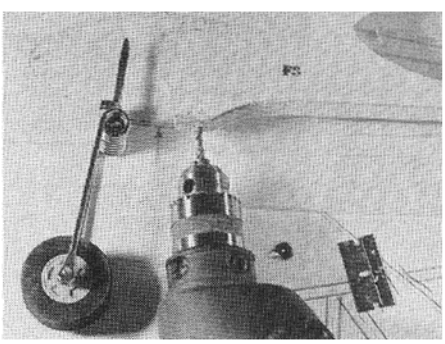
The tail assembly is made entirely of 1/4-inch balsa strips.



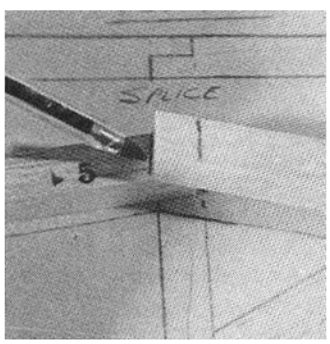
The wing assembly is very simple and built directly over the protected plans.



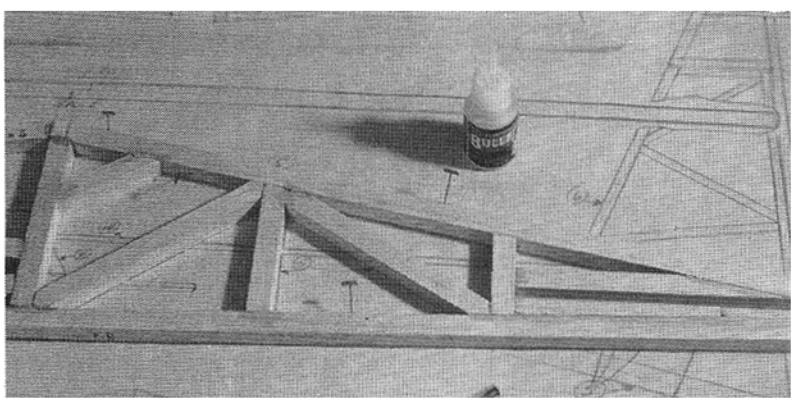
The nose assembly with the hardwood engine mounts in place. Note the hardwood support for the nose gear.



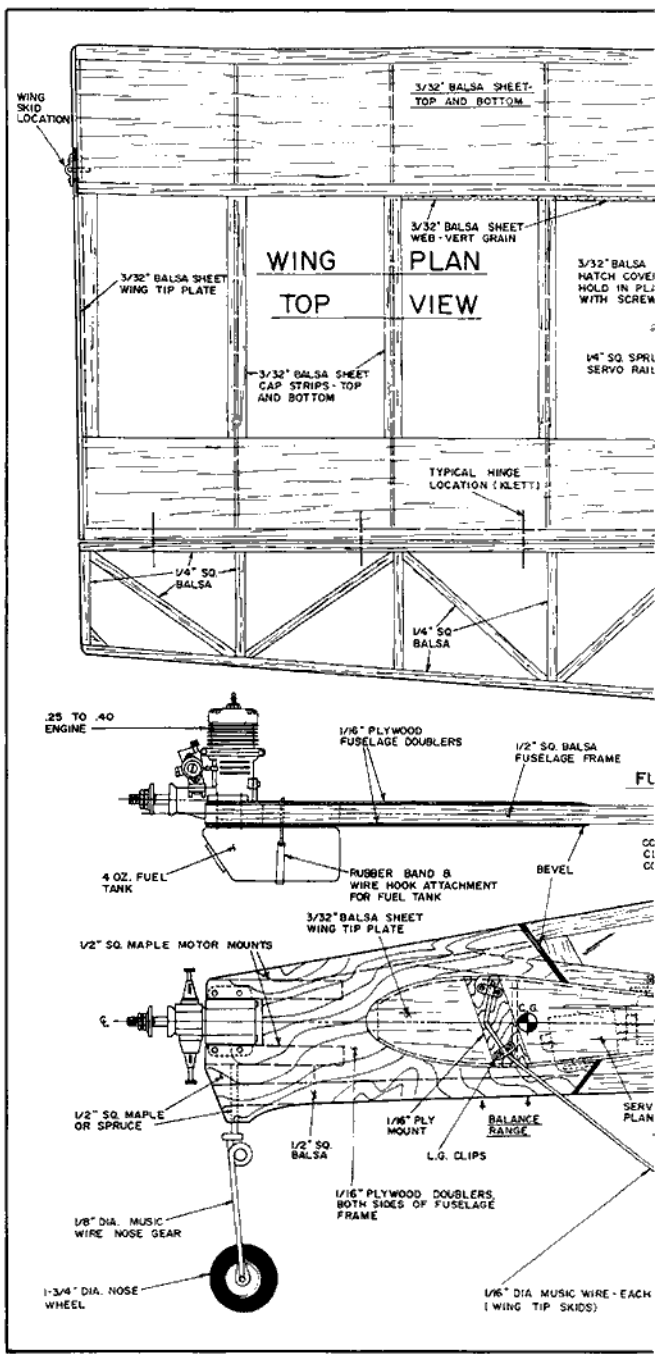
To prevent the Fults nose gear from turning, file it before you insert it in hole.

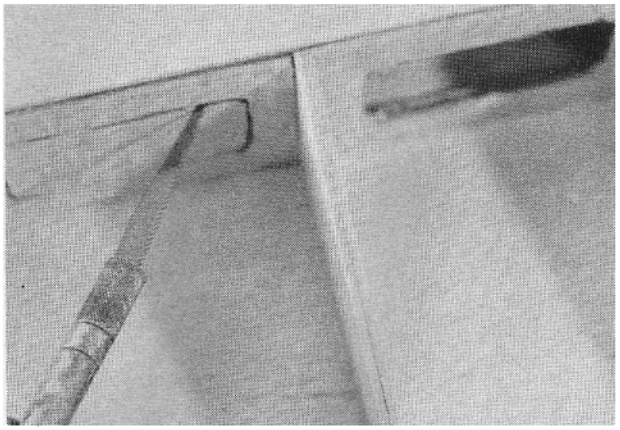


This joint in the fuselage structure is a lapped-joint and provides extra strength.

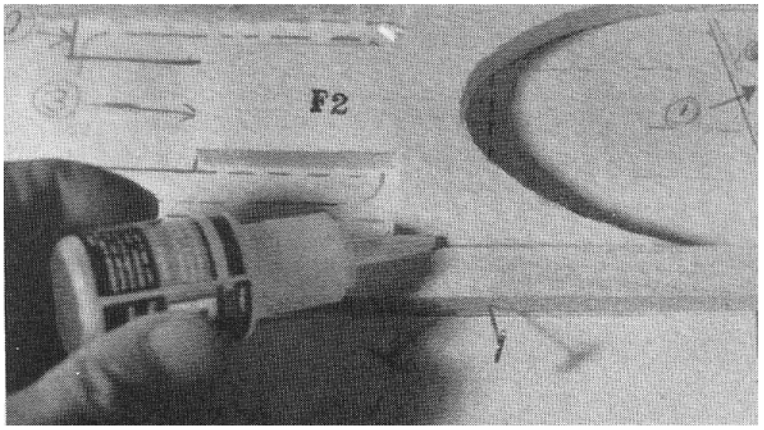


To be strong, the 1/2-inch square balsa fuselage framework should have tight joints.



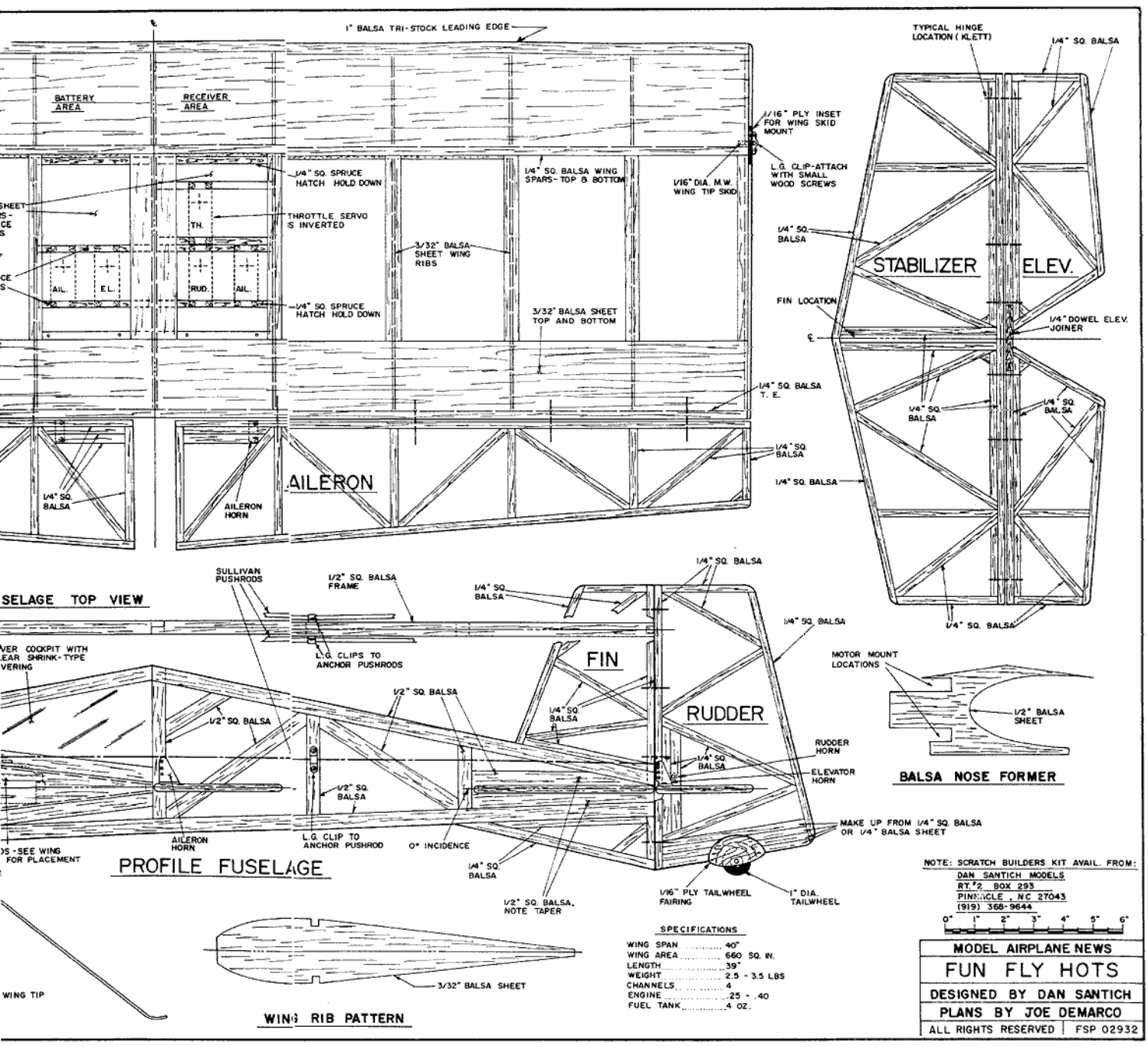


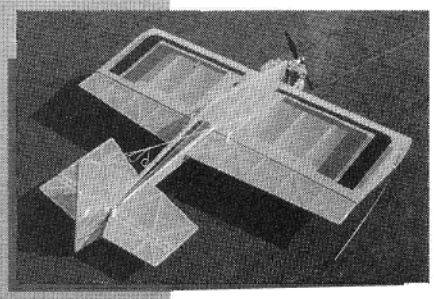
Cut access holes in the vertical webbing at the wing center section for the battery and the receiver.



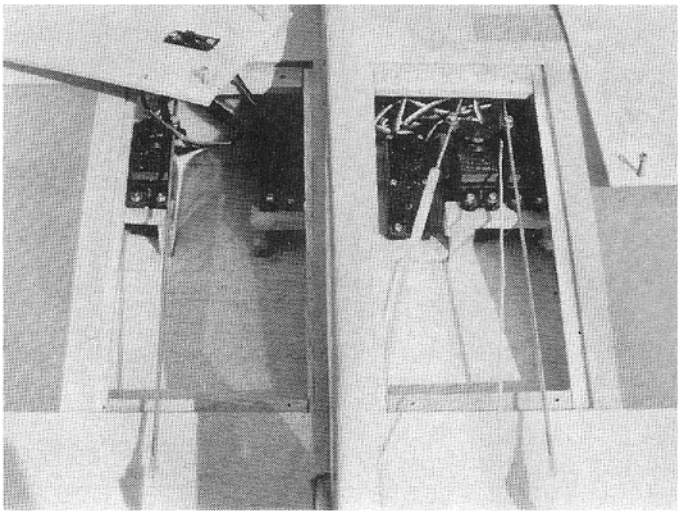
Balsa former F2 serves as a spacer for the engine mounts.

ORDER THE FULL-SIZE PLANS... PAGE 118





can be distorted during the reproduction process, and a difference of as much as 1/2 inch isn't uncommon. I use a combination of CA and Sig* Titebond adhesives. Make sure that all joints fit snugly when you glue them.



The servos are all installed in the wing, left to right: left aileron, elevator, throttle, rudder, right aileron. Note that the throttle servo is inverted.

FUSELAGE

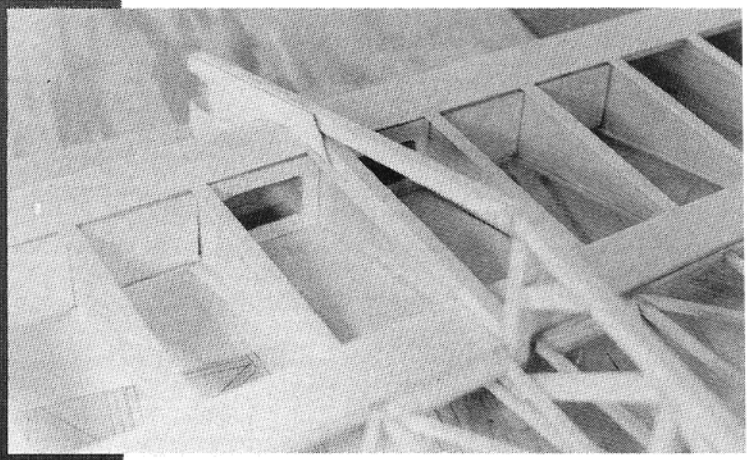
Lay wax paper over the fuselage drawing on the plans. Cut the top 1/2-inch-square crutch to length and pin it into place. Notice the notch location in the two pieces. Cut the bottom crutch to length and pin it into place. Cut the angle on the lower front of the top crutch for the engine mount, and then glue the 1/2-inch balsa F2 former into place. Glue the 1/2-inch hardwood engine mounts into place and the two 1/2-inch square hardwood supports below the lower engine mount. Glue all remaining 1/2-inch-square balsa pieces to form the fuselage side. Glue the 1/16-inch plywood formers to each side of the nose, and then sand the entire fuselage assembly.

TAIL ASSEMBLY

The entire tail assembly is made of 1/4-inch-square balsa strips. Protect plans with wax paper and simply cut, pin and glue the pieces together. Again, try to make all joints as tight as possible.

WING

Pin the 1/4-inch-square balsa spar over the plans and glue the ribs to the spar. Now glue the 1/4-inch-square balsa strip to the trailing edge of the ribs. Glue the top spar into place and then glue the 1-inch triangle leading edge to the front of the ribs. Glue the trailing-edge sheet-balsa into place, put a weight on the rear of the wing, and glue on the leading-edge sheeting. Turn the wing over and sheet the opposite side. Glue the center-section sheeting only to the wing's lower surface, and then add your capstrips. Glue the 3/32-inch balsa shear web (vertical grain) into place, and then cut access holes in center section of the webbing for receiver and battery access. Glue the wingtips into place and add plywood supports for outriggers. Make the ailerons of 1/4-inch-square balsa strips, as you did with the tail assembly.



The completed wing is slid into the cutout in the fuselage and glued into place. It must be installed perpendicular to the fuselage and aligned with the horizontal stab.

FINAL ASSEMBLY

Insert the wing into the fuselage slot, and mount the horizontal stab. Make sure that the wing and stab are parallel to each other, and glue them into place. Glue the fin in place and drill a hole for the nose gear where shown. I use the Fults* RF 400 nose gear, and I file flat spots on each side at the top so that it won't pivot after I've glued it into place.

Sand everything with 200-grit paper and finish it with 400-grit. Apply your mind-bending color scheme with your favorite covering, and install your hinges and control surfaces.

The outrigger skids on the plans work well with the small wheel in the rudder. This gives you excellent ground handling, and you won't have to worry about it spinning around on you the way that some other fun-fly models do.

Mount your engine and check the balance. Place your servos so that your model balances slightly nose-down.

FLYING

Make sure all controls work in the proper direction. The amount of control travel isn't critical, although you certainly want enough to fly the airplane. Start out with 1/2 inch up and down on the ailerons and 1 inch up and down on the elevator. The rudder is very effective, so start with minimal travel. The takeoff is quite easy, and once it's in the air, you'll be surprised by its handling characteristics. It's really a gentle airplane, yet it will turn on a dime when you want it to. You can haul in full up-elevator and it won't stall or snap.

For the scratch-builder's kit write to Dan Santich Models, Inc., Rt. 2, Box 293, Pinnacle, NC 27043; (919) 368-9644.

**Here are the addresses of the companies mentioned in this article:*
***O.S.**; distributed by Great Planes Model Distributors, P.O. Box 9021, Champaign, IL 61826.*
Ace, 116 W. 19th St., Box 511C, Higginsville, MO 64037.
***Sig Mfg.**, 401 S. Front St., Montezuma, IA 50171.*
***Fults Tooling**, P.O. Box 95, Champaign, IL 61820.* ■