

THE TRIDENT

By RANDY WRISLEY . . . Wing in back, stab in front, three fins, no ribs, and an engine that pushes. If that ain't out of the rut, we'll change its name to "Tomato Juice". Try *THIS* on your little 2-channel radio!

• Simple, fast, unique. Those were the design goals I set out to achieve when I began work on the Trident, 3 years ago. A good measure of success and some colossal failures made this project one of the most interesting I've undertaken. As presented, it makes a fine sport flyer for those of us who have some stick-time on aerobatic aircraft. If you are a beginner, please build a beginner's model. Trident is dynamically stable. It goes where you point it, until you point it someplace else. Aerobatics are quick and clean. It flies fast, stalls gently, and has no bad habits. In fact, when you build one, you'll be surprised at the ease of construction and ease of flight. Mine have all flown right off the board with only minor trim changes required. Interested? Let's build one!

FUSELAGE

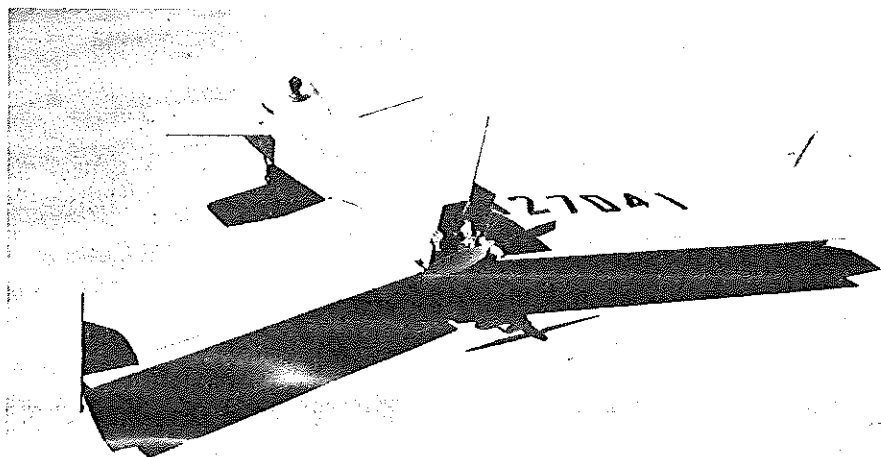
Standard construction is used here. Cut all formers from 3/32 plywood. Make all cut-outs and holes before installation. Cut sides from medium 1/16 sheet. Mark locations of formers, cut nosewing slot, and cement the 1/16 balsa doublers in place. If you use plywood for doublers, make it 1/32. Install formers, taking care to maintain correct alignment. Sheet fuselage top

with 1/16 balsa applied cross-grain. Bend and install landing gear. The gear is shown true length in the front view. You can eyeball the sweep-back or clamp bent gears in a vise and measure it. I chose the former. As long as it sits on all 3 and rolls straight, you're okay. I used a piece of 3/16 square spruce, slotted on one corner, to hold the mains in. FIA and a spacer hold nose gear in. Be sure to epoxy every-

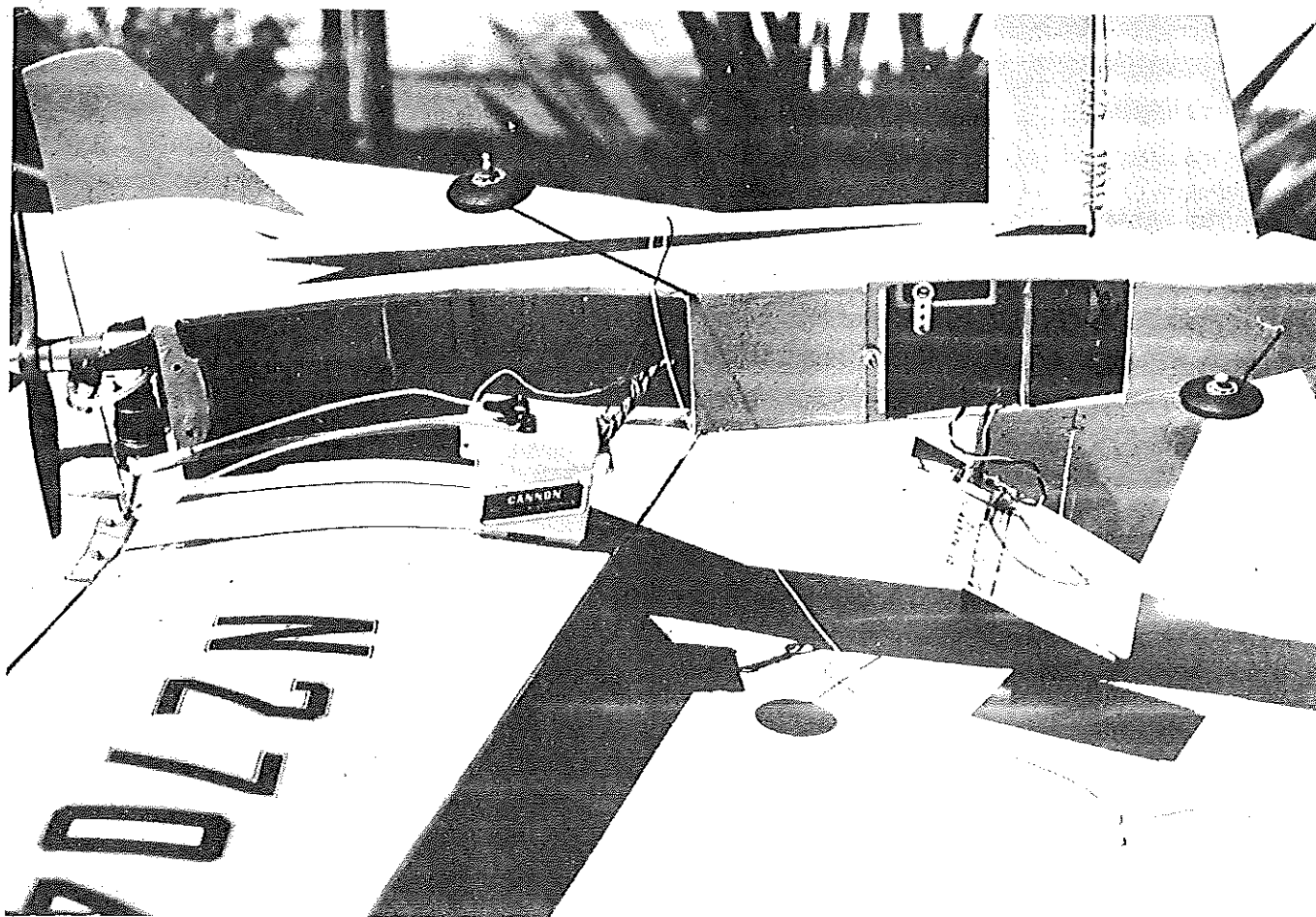
thing well. Now sheet the bottom where shown with 1/16 balsa, cross-grain. Might as well make the hatch now too. Install and shape nose block. Sand it smooth and set it aside until we build the wing.

WING

Spend some time studying the plan to become familiar with construction. Although different, it is simple and



Going away view shows uniqueness of Trident's layout. If you break a prop, it sure will be the hard way! Design is one of several tested.



Any complaints about accessibility? Forward hatch contains switch and covers "elevator" servo. Cannon receiver/servo tapes to top of main wing and drives ailerons. Tank is in top rear of fuselage. One-piece transportation is easy with 30 inch wingspan. Wing is of spar and cap-strip design.

quick. With Hot Stuff, you can build it in about 2 hours.

Begin by installing the 1/8 square spacers on the leading and trailing edges. Use 1/16 scrap balsa as a guide to center the strip. Pin 1/8x7/8 hard balsa spar down on the plan. Follow with L. E. and T. E. Cut all components to required angles and install 3/32 ply spar joiners. Now; raise L. E. and T. E. 1/4 inch off the plan, using 1/4-inch blocks spaced about 2 inches apart. Install 1/16 x 1/4 ribs by bending them over the spar and attaching to L. E. and T. E. Install center section planking with grain running cordwise. Now, flip wing over and repeat the process. Be sure to add 1/16 to your jig blocks to make up for the added height of the ribs. When you finish and the cement dries, sand it to final contour. Install front hold-down dowel by cutting a hole in top planking. Epoxy dowel in place on top of plywood leading edge joiner.

Make ailerons from 3/4-inch shaped trailing edge stock. Bend linkages from 1/16 wire using brass tubing as a bearing. A piece of tubing soldered on top and flattened makes up the horn. Temporarily hinge and install ailerons on wing. The assembly can now be fitted to the fuselage. Shape spruce hold-down block to clear wing and install in the fuselage. **NOSE WING, ELEVATORS AND RUDDERS**

These are simple sheet structures. Don't omit the plywood dihedral brace from nosewing. Cut surfaces out, add dihedral to nosewing, and install 1/32 wire linkages to elevators. Sand everything smooth and you are ready to cover.

COVERING

Use your favorite plastic film here. Cover the entire airplane before assembly.

ASSEMBLY

Start on the fuselage. Install tank, using scrap 1/4-inch sheet wedges. Use Hot Stuff to keep it stuck in. Remember the pickup has to be in the bottom rear of the tank. Route fuel lines through firewall and bolt the engine in place.

Poke elevator linkage through nosewing slot. Slide nosewing in place and cement. Install elevator hinges. I used thread stitching on the prototypes. Install elevator servo upside down on the left side with servo tape. Bend elevator pushrod, slip over 1/16 wire joiner, and solder a washer on either side to keep it centered. Pin elevators in neutral, and solder completed pushrod joiner assembly to elevator linkage.

Install aileron servo on top of wing, ahead of fuel tank, with servo tape. I used a Cannon Tini-Block system. If your single servo rocks around, build a low box to keep it in place. Perma-

nently install ailerons and bend pushrods to shape. A 1/16 plywood plate is cemented to the bottom of the wing for mounting bolts.

Install all 3 rudders. Bolt wing in place and try controls. Remember elevator must move *down* to raise the nose! Now add finishing touches like wheels and trim. A 225 Ma battery pack fits under the nose wing. Raise linkages by pulling them back and wedge batteries in place with foam. Install canopy, and pilot if desired, and you are ready to fly.

FLYING

Well, it's nervous time! Check your balance point and make sure surfaces are aligned. Install a pusher prop or reverse ported crankshaft.

If it rolls straight and isn't warped, you're ready. First flights are best made with 6x3 prop and low nitro fuel. Give yourself a 1/2 tank of fuel and start the engine. Adjust for maximum rpm when model is held nose up about 45°. Take off into any wind. After 30 feet, feed in some up elevator and the Trident will fly! Turns are best made after you get about 50 feet high. Bank with aileron, turn with elevator. Smaller props and more nitro make it go faster. Let experience be your guide. Here's hoping your Trident brings you as much pleasure as mine has brought me!