TR-260

By DON HIRST. . .A quarter-scale version of a relatively new French aerobatic plane is an easy building, fun flying entry into giant scale aircraft. With a Quadra engine and a resemblance to the Laser 200, it's a beaut!

• In 1986 at the 13th World Aerobatic Championships, the French Team unveiled their latest competition aircraft, the TR-260. It has a wingspan of 27 feet, 4 inches; length of 19 feet, 3-1/2 inches; and is powered with a 260 hp Lycoming engine. I first read of it in an article by Don Berliner in the April 1987 *Model Aviation* magazine. It was a neat-looking aircraft, with a strong resemblance to the Laser 200, and since I had built and flown several giant scale models in this category, it seemed I couldn't go too far wrong in modeling the TR-260. The results far exceeded expectations, as it proved to be easy-to-build, good-looking, and, best of all, a great-flying airplane. It is very maneuverable, and relatively fast for giant scale. This makes it a fun-to-fly aircraft with flight characteristics that fall somewhere between typical giant scale and the smaller .40- to .60-powered ships. If you haven't had the pleasure of owning a quarter scale, this would be a fine first one, since you won't have too much time or money invested in it. Incidentally, the relatively inexpensive Quadra 35 or 40, or Zenoah G38 is more than adequate for power, and any larger engine would not be needed nor recommended. I used an 18-10 Zinger prop on both the Q-35 and Q-40.

If all this sounds interesting, let's get to building one. I'll not go into great detail on construction as this is not a beginner's project. If you have built from plans before, little if any explanation is necessary, but for those who have not, I'll cover some of the important points.

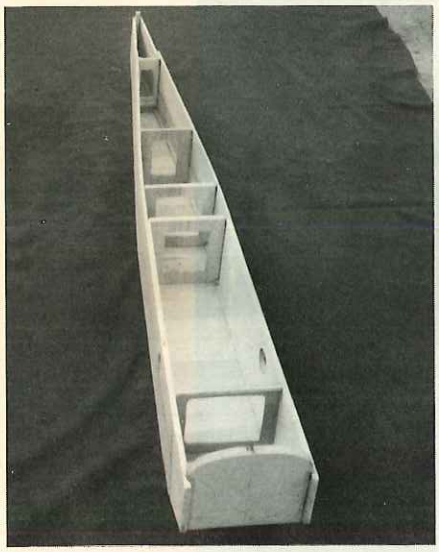
The author's wife, Elaine, with the French TR-260 model in quarter scale. Quadra powered, the TR-260 is a good entry into quarter scale for the modeler looking to build bigger ships.

WING

Build the wing before building the tail section. This should be done because the jigging required is a 3/8 by 3/4-inch balsa strip which is later used in building the tail. Note that the wing is built upside down over the plan, with the top main spruce spar fastened flat on the building board. This builds the proper amount of dihedral into the wing panel. You'll note that the rib templates do not show the rear 1/4-inch spar cutouts. These cutouts are easily and more accurately done after the top and bottom spruce main spars are glued in place. Just place a straightedge in the proper spar location and mark each rib, then cut for the 1/4 by 1/4-inch spars. Be sure to build the wing with the 1-1/2-inch aluminum tubing inserted in the ribs as shown. Due to a certain amount of distortion in the printing of plans, the ribs should be checked with a straightedge after they are glued in place but before sheeting. Any high ones can be sanded down, or low ones built up. You will note that the ailerons are cut out after the wing is completed. This is easily done with a razor blade to cut through the sheeting, and a hacksaw blade to cut the ribs. Quarter-inch thick strips are then added to the front edge of the aileron and to the 1/4 by 1/4-inch rear spars. Allow for the one-inch throw when hinging.

FUSELAGE

The fuselage is very simple to build. Cut out the sides as indicated by the small arrows on the side view, add the 1/8-inch lite

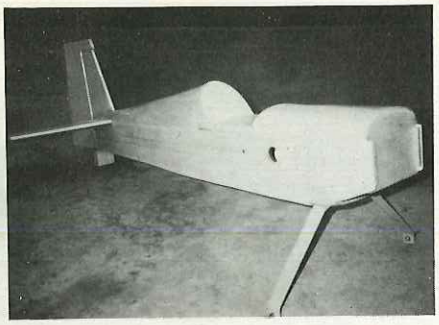


Fuselage box construction is basic; standard modeling fundamentals are used in constructing the 260, but this is NOT a beginner's project!

ply doubler and 1/4-inch square strips as shown, and assemble upside down over the top view on the plans. The 1/2-inch firewall is added after the fuselage bottom half is completed and turned over. Be sure to install the pushrods before completing the top half.

The 1-1/2-inch hole for the wing tube is most easily cut before assembling the sides, but leave until later the rear 3/8-inch dowel hole. This rear dowel hole is important to locate as accurately as possible, as it determines the proper wing incidence (1/2 degree positive). Be sure both wing panels are set the same. The dowel position can be changed easily if you wish to change the incidence.

The tail section is built in the conventional manner. Be sure to use spruce where indicated on the plans, as this eliminates the need for any external bracing. When hinging the elevators, allow for a minimum



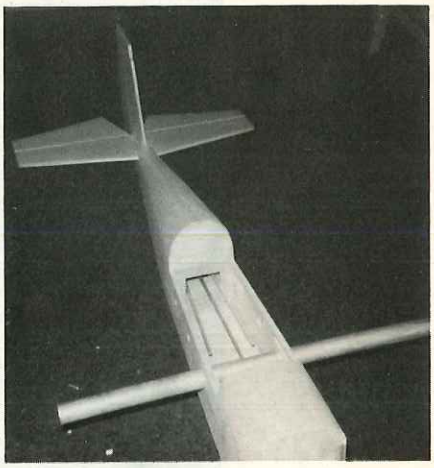
Test-fitting parts before assembly assures a structurally sound fuselage. Be sure to add pushrods before completing top half of fuse.

of 1-1/4-inch throw both down and up. Note that the elevators are not connected to each other. A separate servo is used for each one.

FINISHING

The prototype was covered with Super Coverite on the wing and painted with Pactra Formula-U, sprayed on. The fuselage and tail were covered with silkspan paper applied damp, doped, and sprayed with Pactra Formula-U. Any covering and finishing system will be fine, so just use your favorite method. I simplified the scale color scheme on the prototype shown in the photos, but for an exact scale replica, please refer to the April 1987 *Model Aviation* article described earlier.

When everything is complete and assembled, accurately check the balance point to be sure that the model balances at the point indicated on the plan. The importance of proper balance cannot be overemphasized. It seems odd to have to stress this as it is so often mentioned in construction articles, and on plans and kit instructions, but time and time again I've witnessed fliers who haven't even checked this prior to making that first flight. Their cavalier attitude regarding proper balancing never fails to surprise one, considering the dismal performance of an improperly balanced model. The 1250 mA battery can be shifted as needed for balance.

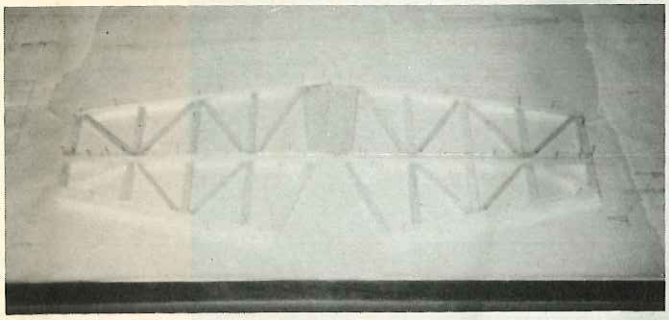


Holes for wing tube are best cut before the fuselage sides are assembled.

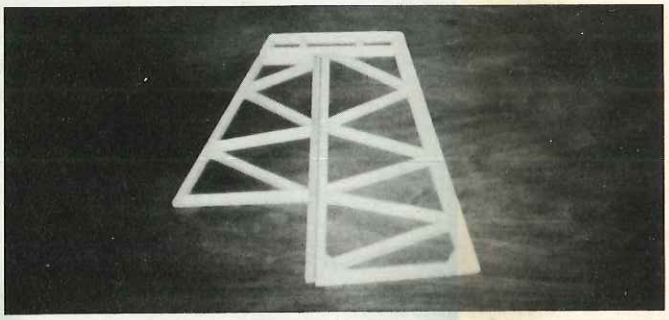
Cowl, canopy, wheel pants (if desired), and landing gear are available from T & D Fiberglass, 30925 Block, Garden City, Michigan 40135; cowl and wheel pants only from Fiberglass Masters, Route 1, Box 530, Goodview, Virginia 24095. I used the Garmhausen Cap 21 cowl and canopy. Landing gear material (if you wish to make your own) and the 1-1/2-inch diameter wing tube are available from Aircraft Spruce & Specialty Co., 201 W. Truslow, Fullerton, California 92632. If you don't already have a favorite source of balsa, spruce, and ply, these materials are available at a very reasonable price from Balsa USA, P. O. Box 164, Marinette, Wisconsin 54143. Just be sure to specify soft, medium, or hard balsa when ordering.

FLYING

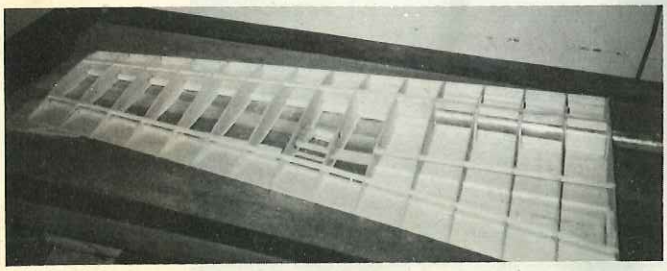
Before making that first flight, set the amount of surface throw as follows: 3/4-inch up and 3/4-inch down on ailerons, 1-1/4-inch up and 1-1/4-inch down on elevators, and all the throw you can get on rudder. Seal the hinge gap with tape on the bottom side of the ailerons. After a flight or two, you can change the throws to suit your own



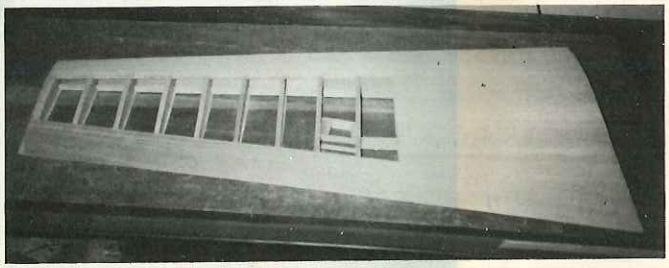
Stab being laid out on plan. Note that the elevators are not connected to each other; there is a separate servo for each elevator.



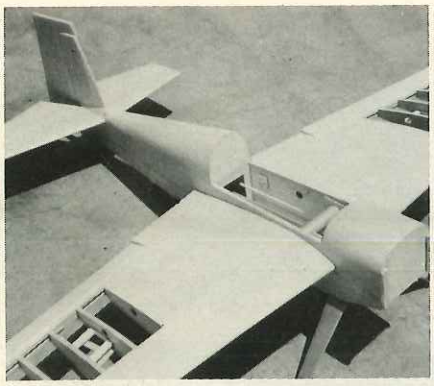
Rudder is conventional construction too; be sure to use spruce where indicated so that external bracing is not necessary.



Wing panel with wing tube being fitted. The wing is built upside down on board in order to get correct dihedral angle set in.



Left wing panel, right-side up. Note that on plan rib templates do not show rear 1/4-inch cutouts; these are easier once main spars are glued.



The 260 components are here assembled in a trial run to ensure proper fit of all assemblies.

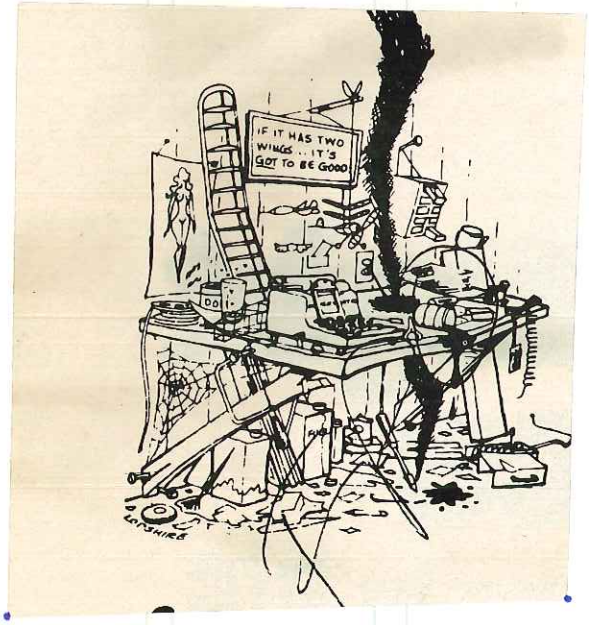
The finished 260 is a beautiful model; its lines reminiscent of the Laser 200 aerobatic aircraft.

personal preference.

The very first flight of the TR-260 went off beautifully and with no problems. Subsequent flights have shown that takeoffs are very easy with no tendency to ground loop. Turns can be very tight or gentle, as you wish. Axial rolls are fairly fast and true. Slow rolls require a bit of down elevator when inverted, as you would expect. Point rolls are sharp and there is no tendency to roll past the desired point. Inverted flight is good, but does require some down elevator to be held. Loops look good, though outside loops are not as tight as inside ones. Landings are easy, however, in calm air, the TR-260 is somewhat of a floater, so allow ample approach space if you fly off a short runway.

The only criticism I have of its flight characteristics would be that under strong, gusty wind conditions you have to stay on the ailerons to keep the wings level. This is a tendency that most of the giant scale ships I've flown seem to have to some degree, but it's no real problem. I wish I could say that the TR-260 can do every maneuver in the book, but unfortunately I am not able to do some of the more difficult ones myself, so I really don't know its full capabilities. This is an area that you will have to determine for yourselves after you've built one.

Here is one last sales pitch for you to consider if you haven't as yet had a gas-powered giant scale model. A Q-35 will run for approximately 15 minutes on a 16-ounce tank of gas. The cost of the gas and oil mix, as you know, is about $1 a gallon. Glow fuel costs about $10 a gallon. Get out your handy calculator and figure the difference over a one-year period; it might surprise you. Well, there you have it. Hope you'll build one. •



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