

AETOS

AETOS is the Greek word for eagle, a superior bird in the air. Actos was designed to fill the gap between the 15- and 35-sized airplane. The profile look does not stop its performance. The Aetos will help the novice to get the feel of a 35-size airplane but not at all the cost, as we all know the price of balsa wood is getting higher and higher. The wing span is 42 inches, which means you don't need to have a large car to go to the flying site.

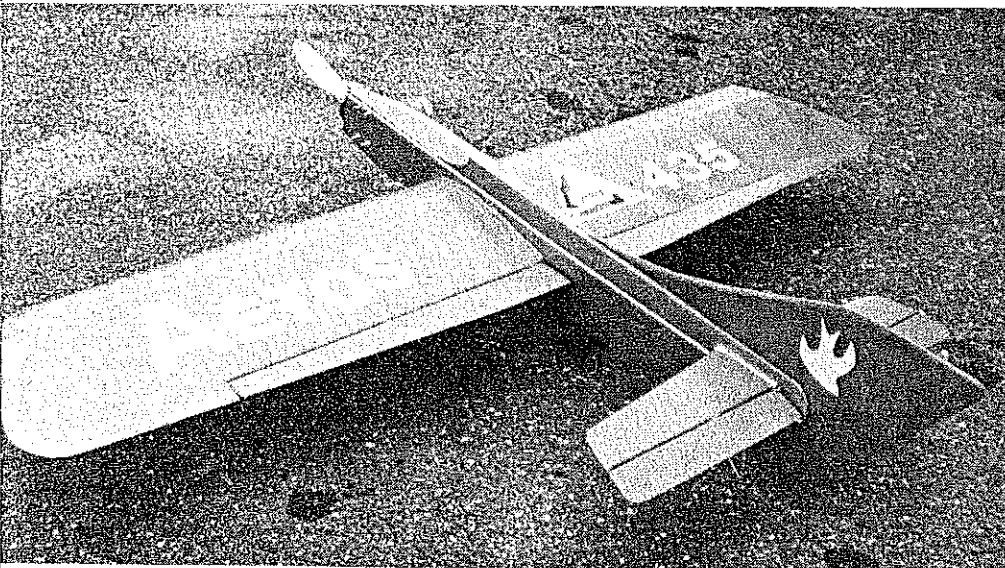
If, like us, you felt a twinge of inspiration, credit the catchy outlines—they say sport, suggest a jet, and as the canny eye perceives, the flapped ship is competently designed.

For the intermediate stunt flier, this Fox-25-powered profile has character, both in appearance and performance. Roger Greene

Construction: After studying the plans carefully, make patterns out of thin cardboard, like chipboard or gift boxes. Glue the patterns on the cardboard, then cut the pattern out. Fine sand the pattern edge so you will make a smooth line with a felt tip or ball-point pen.

Fuselage: After the parts are cut out, assemble the fuselage first, so it can be drying while you build the rest of the plane. Use Tight Bond to glue the $\frac{1}{2} \times \frac{3}{8}$ " engine beams to the $\frac{1}{2}$ " balsa core. Then glue the $\frac{3}{32}$ plywood doublers and $\frac{3}{32}$ balsa fuselage sides to the $\frac{1}{2}$ balsa core. Use a homemade vise to glue fuselage together. The vise is two pieces of $\frac{1}{4}$ plywood, with six 8-32 \times $1\frac{1}{2}$ " screws with washers and wing nuts. Drill six $\frac{3}{16}$ holes about $\frac{1}{4}$

Editor's Note: *We have always admired Roger's neat control-line projects. Not only does he know what he is doing but his models look as good as they fly—and he has a charming way of dividing up his text. If you encounter the wing two or three times, or the fuselage more than once, etc., it is because he arranges his instructions in a natural order of building—your Aetos will seem easy to build, therefore. Incidentally, Roger is studying for the ministry, and it could be a long time before he honors us again. He'll make a fine "Sky Pilot."*



Sweeping curves, eye catching fin, wing and stab tip rake, all add to distinctive appearance.

inch from the outline of the fuselage. Slip fuselage in, then tighten. Set aside to dry about 24-48 hours.

Wing: Cut 1 inch off for trailing edge of wing from two $3 \times 1/16 \times 36$ balsa sheets. The remaining 2 inches is for the leading edge planking, which will be glued to the leading edge triangle. Use Siment or Ambroid (glue must be waterproof).

Tape wing plan to bench; cover with wax paper or Saranwrap. Pin $1 \times 1/16 \times 36$ balsa trailing edge over plan. Space the ribs on the $1/8 \times 1/4 \times 36$ bottom spar over plan. Put top spar on ribs, then the $1/8 \times 1/2 \times 36$ leading edge and trailing edge pieces. Check alignment, glue, and pin to trailing edge. Also, glue top $1 \times 1/16 \times 36$ trailing edge sheet. Epoxy $1/8$ bellcrank plywood mount in place. Set aside to dry.

Rudder: Cut and glue rudder pieces together over plan, that is covered with wax paper or Saranwrap.

Flaps, Stabilizer, and Elevator: Draw a line on the edge side of each surface in the center. Use this as a guide to sand and hinge to. Sand each surface to shape as shown on plan. Drill, insert epoxy in holes, then push control horns in, align, and pin over plan. Set aside to dry.

Fuselage: Remove from vise. Glue top $1/4$ balsa piece in place, align, and pin.

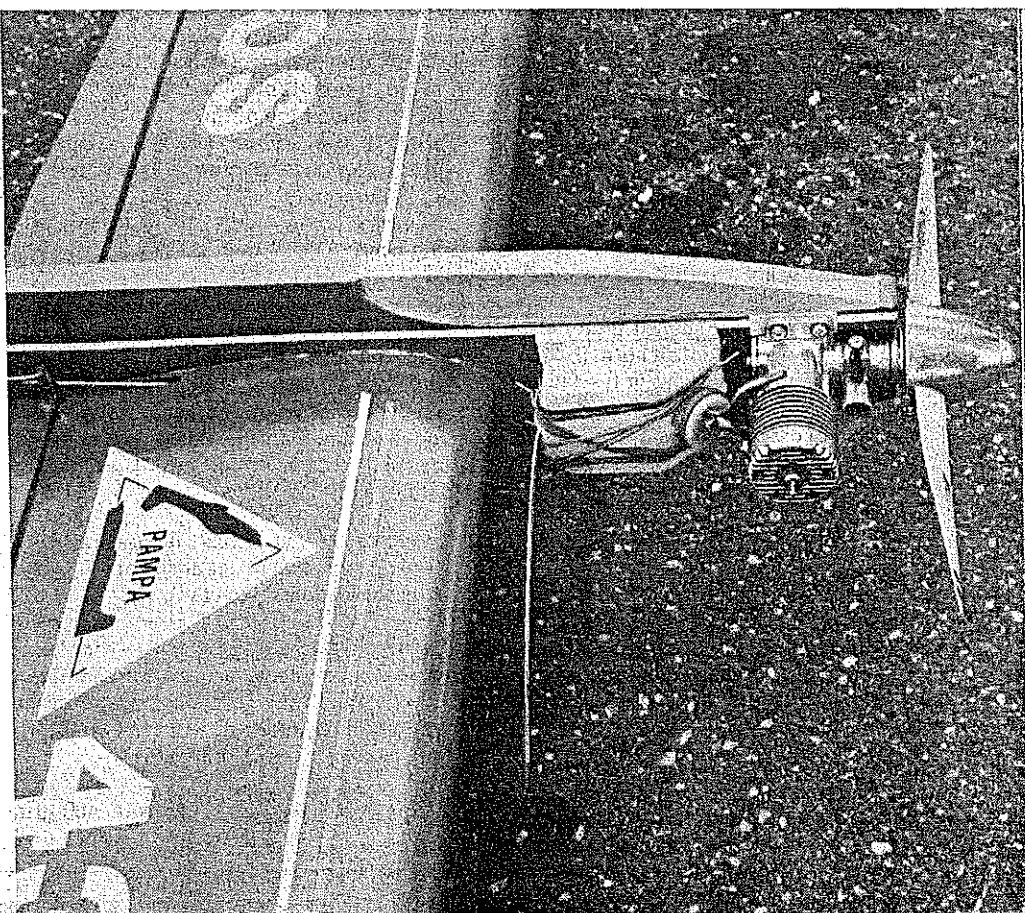
Wing: Connect leadouts and pushrod to bellcrank. Insert leadouts through the in-board ribs. Secure bellcrank to platform with bolt provided. Solder nut so it will not come off in flight.

Moisten leading edge planking, towel dry (to remove excess water), wrap over wing and pin lightly. Be careful not to damage the wood with the pins while wet. Glue wing tip pieces together, then glue to end ribs. When the planking is dry, glue with Siment (or similar). Always check alignment (looking from the trailing edge to the top or bottom of the thickest part of the airfoil). These two should be parallel to be properly aligned. Set aside to dry.

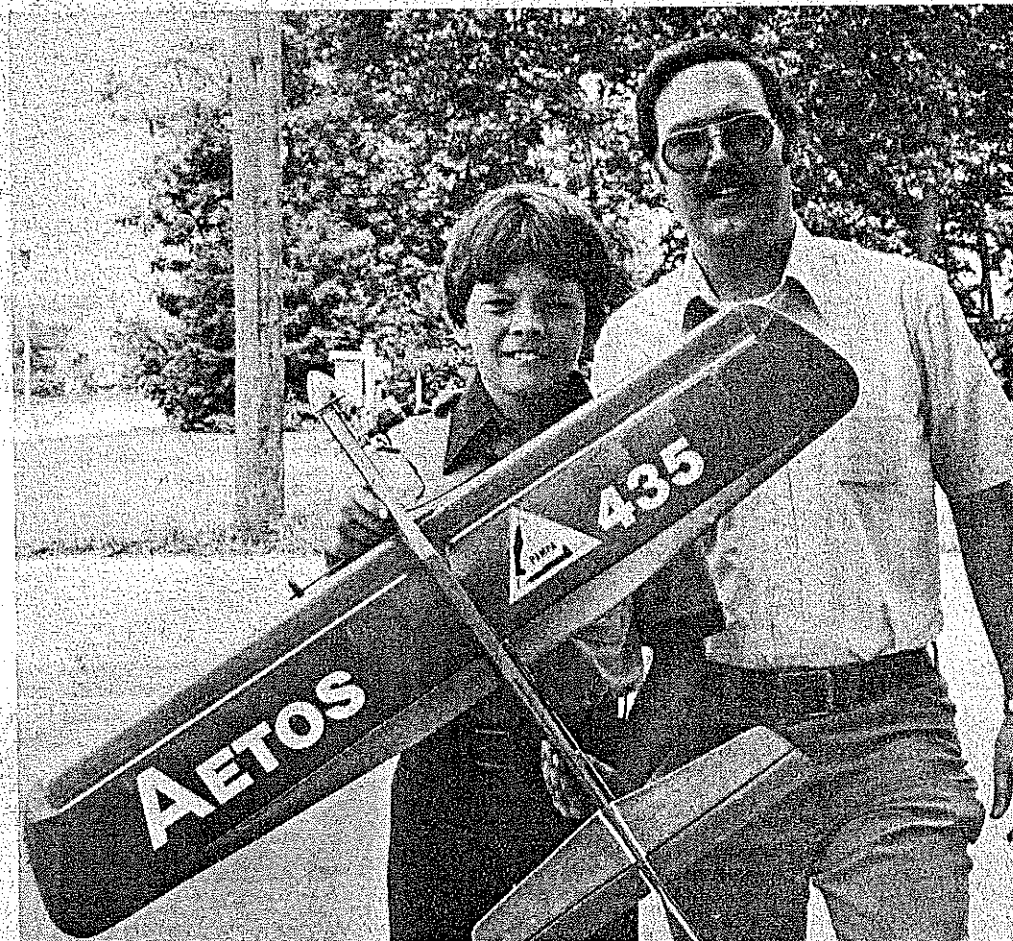
Flaps, Stabilizer, and Elevator: Cut slots to receive hinges. Put some petroleum jelly (Vaseline) at the hinge point on each hinge to avoid epoxy getting into the hinge point. Do not epoxy hinges to wing at this time. Put epoxy into slots, then insert hinges. Make sure that the hinge line is aligned with the trailing edge.

Rudder: Sand to shape as shown on plan.

Engine Installation: Use four 4-40 bolts $1''$ long and four "T" nuts. To ensure zero-degree thrust alignment, remove the glow plug. Cut a 12-in. piece of $1/8$ wire and place it between the center cooling fins of the head. Looking down on top of the engine, the wire will give you a line to eyeball the engine to zero degree thrust. Mark



The side-mounted Fox 25 with what appears to be a 2-oz. Sullivan slant tank—Roger didn't say. Tank appears to be shock mounted on pad to eliminate foaming and there is evidence of liquid Silicon rubber beading. PAMPA emblem has respect.



Roger and son, David, with Aetos. Note Roger's PAMPA decal. Typical of special interest groups, PAMPA puts real meaning into stunt—why not join the guys with white hats?

and drill the holes and check them to make certain they fit.

Fuselage and Wing: Make a mark on the leading edge planking $3/32$ inch from the $1/2$ center rib. This will tell you where the fuselage will be after you plank the center three ribs with $1/16$ balsa. Sand to shape on plans, being careful not to sand the edge off the canopy area. When the flaps are dry, solder a U-shaped piece of tin to the bearing on the control horn. (See plan.) Insert flaps into wing slot in fuselage, then insert wing. Epoxy the flap hinges same as before. Epoxy the wing and fuselage together by aligning the marks on the leading edge planking, (made earlier) to both sides of the fuselage. Using a drafting triangle, square the leading edge with the fuselage, let dry.

Drill in the $3/16$ dowels now, use epoxy. Bind $1/16$ music wire for tail skid, wrap with copper wire, epoxy as shown on plans. Install $1/4$ " balsa bottom piece, now glue with Sigment.

Epoxy stabilizer to fuselage. Align by measuring from hinge line to hinge line. This measurement should be equal on both sides. If not, make it equal before epoxy

dries; also looking from the front of the plane, the bottom of the stabilizer should be "sitting on top of the wing." If it is not, align it to be. These necessary steps will insure that the airplane will fly properly.

Rudder: Glue rudder to fuselage with Sigment.

Connecting Flaps and Elevator: Overlap the pushrods, elevator to flaps about one inch. Wrap with copper wire. Set elevator and flaps to zero-degrees and solder. Now wrap pushrod from bellcrank to flap pushrod with copper wire. Have bellcrank in neutral and flaps at zero-degrees and solder.

Leadouts: If you haven't done so already (some people like to get ahead of the plan), wrap the leadouts (see plan).

Landing Gear: Using $1/8$ " music wire bend to shape on plans, using side and front views. Make four gear clips as shown on plan. Bolt to fuselage with two 4-40 1"-long bolts.

Finish: Fine sand airplane with 400-grit

sandpaper. Brush on three coats of clear sand with 400-grit sandpaper until smooth. Cover wings with medium grade Silkspan. Brush on three coats of clear dope, sand with 400-grit sandpaper. One coat of sanding sealer is next, sand, and add one more coat of clear. Now it is time for the color. I used orange, white, and blue. Paint canopy light blue. Your AMA numbers are white and the rudder insignia is white. The thin stripes are blue and white. After your plane is completed, let it dry for three days—if you can! Then brush on three coats of 50-50 thinner and clear let dry.

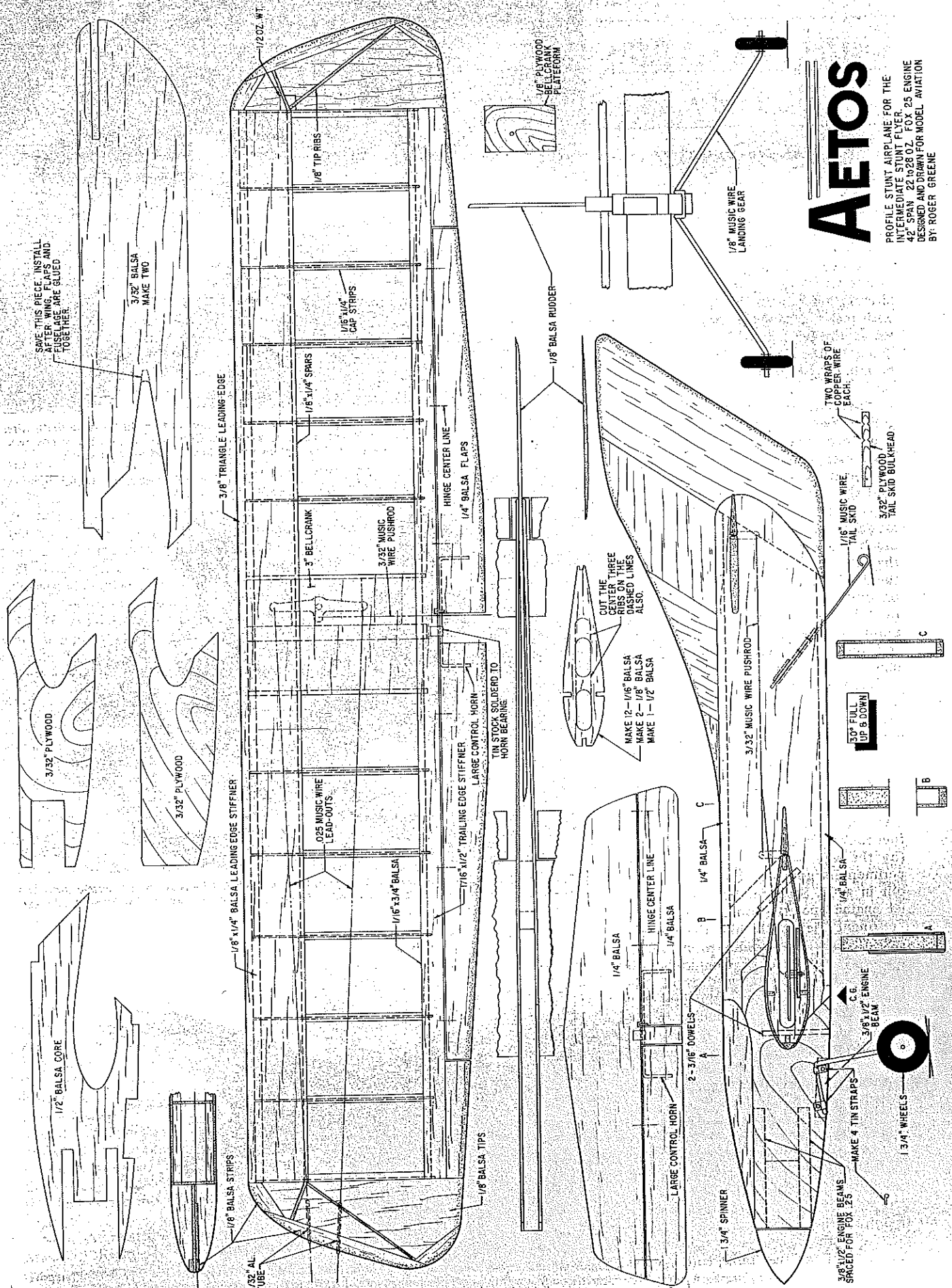
Flying: Nothing tricky about flying the AETOS. The control surfaces move a maximum of 30° either side of neutral. It is very stable because the stabilizer is larger than the elevator. It will turn very sharply when given full control.

I am sure that your AETOS will give you a lot of enjoyment as mine is giving me. Mine weights 26 ozs. Yours could weigh less because of the newer finishing techniques and better choice of wood.

Happy flying.



From the left side, other details are visible—landing gear attachment, lead-out guides, showing bit of up flap coupled with down elevator. Especially note indication of thickness to profile fuselage. Roger uses simple "hollow" construction—looks better and is quite light.



AETOS

PROFILE STUNT AIRPLANE FOR THE INTERMEDIATE STUNT FLYER.
 42" SPAN 22 to 28 OZ. FOX 25 ENGINE
 DESIGNED AND DRAWN FOR MODEL AVIATION BY ROGER GREENE

FULL-SIZE PLANS AVAILABLE ... SEE PAGE 112