HOW TO CULTIVATE . . .

BY BOB UPTON . . . Here is an eye-catching, scale-like sport model designed by one of NMPRA's top fliers. It has all of the requirements for sport competition; speed, stability, maneuverability, and economy.

• "Beanpalch" is the happy result of a less than scientific, evolutionary process. My approach to model aircraft design falls into the category of "rotten luck triumphs over science again!" Moreover, my "that looks about right" attitude toward model design work seems to work rather well for me, so take that, you slide rule types!!

I wanted, in this day and age of super collosal 800 mph retract, R/C pattern bombs, an airplane that would be fun to fly, relatively stable, and an airplane that looks like its full size brother. I've even had people say, "Beanpatch looks like a real airplane!

Anyway, the model started out if life as a tail dragger with a constant chord wing. I needed a snappy design that would keep me in practice for Formula I racing, hence the tail dragger configuration. This particular version met its demise in a Valley Flyer spin contest which I would easily have won if the judges had continued counting the number of revolutions as I skillfully screwed the model into the ground.

I didn't particularly like the constant chord wing, anyway, so prototype No. 2 has a modified "Perigee" style wing (designed initially by Tom Brett), with a tri cycle type main gear attached thereto.

Like many modelers, I hate to build wings, so start here, guys, and get the worst over with.

You can use the "slacked rib" concept to make the ribs whereby the center and end ribs are cut out and the appropriate number of intermediate rough cut ribs stacked there between sanded to shape.

Bell or disc type sanders are handy for this particular operation.

Use a straight building surface, obviously, and lay out the ¼ by 3/8 trailing edge and the 1/4 by 1/4 rear bottom spar directly over the plan, and after installing the ribs, proceed fabricating with the top of the wing, i.e., attach the front and rear spars, leading and trailing edge sheeting, and the sheeting that spans the center section from ribs W-1 to W-4, as well as the sheeting spanning end ribs W-11 and W-12, respectively.

A BEANPATCH?

Add the wing tips and you are ready to join the wing panels. Alter the wing is completed and the servo area cut out, add a two-inch strip of glass cloth around the center section of the wing.

Start the fuselage by cutting out the left and right fuselage sides according to the plans, including the 1/8 fuselage doublers. If you prefer, you can substitute 1/32 plywood for the 1/8 balsa doubler, however, I have found the balsa wood doubler adequate for the job. Glue the doublers to the inside surfaces of the fuselage sides and set aside to dry.

Locate the firewall and bulkhead positions on the inside surfaces and mark with a ballpoint pen for a reference line when assembling the fuselage. Bandsaw the firewall from 5 ply *1/4"* plywood and locate the motor mount. Drill and insert blind nuts for the mount and attach the nose-gear steering brackets to the back side of the firewall. Cut out the rest of the fuselage bulkheads, including the turtle deck formers, and you are ready to assemble the fuselage.

Locate the firewall (F-1), F-2, and F-4 on the fuselage, being careful to maintain alignment, and glue and tape in place. Next, pull the tail post together with a pair of clothes pins, checking again to be sure all the formers arc properly aligned. Be particularly careful to make sure the firewall is square with the previously marked reference lines. Since I'm not a great believer in engine down thrust and side thrust, alignment problems arc much simplified.

Next, glue in the rest of the bulkheads forming the turtle deck, etc. Since the nose gear is behind the firewall.

I would suggest installing the nose wheel apparatus, including the nylon push rod guide, wire, etc.

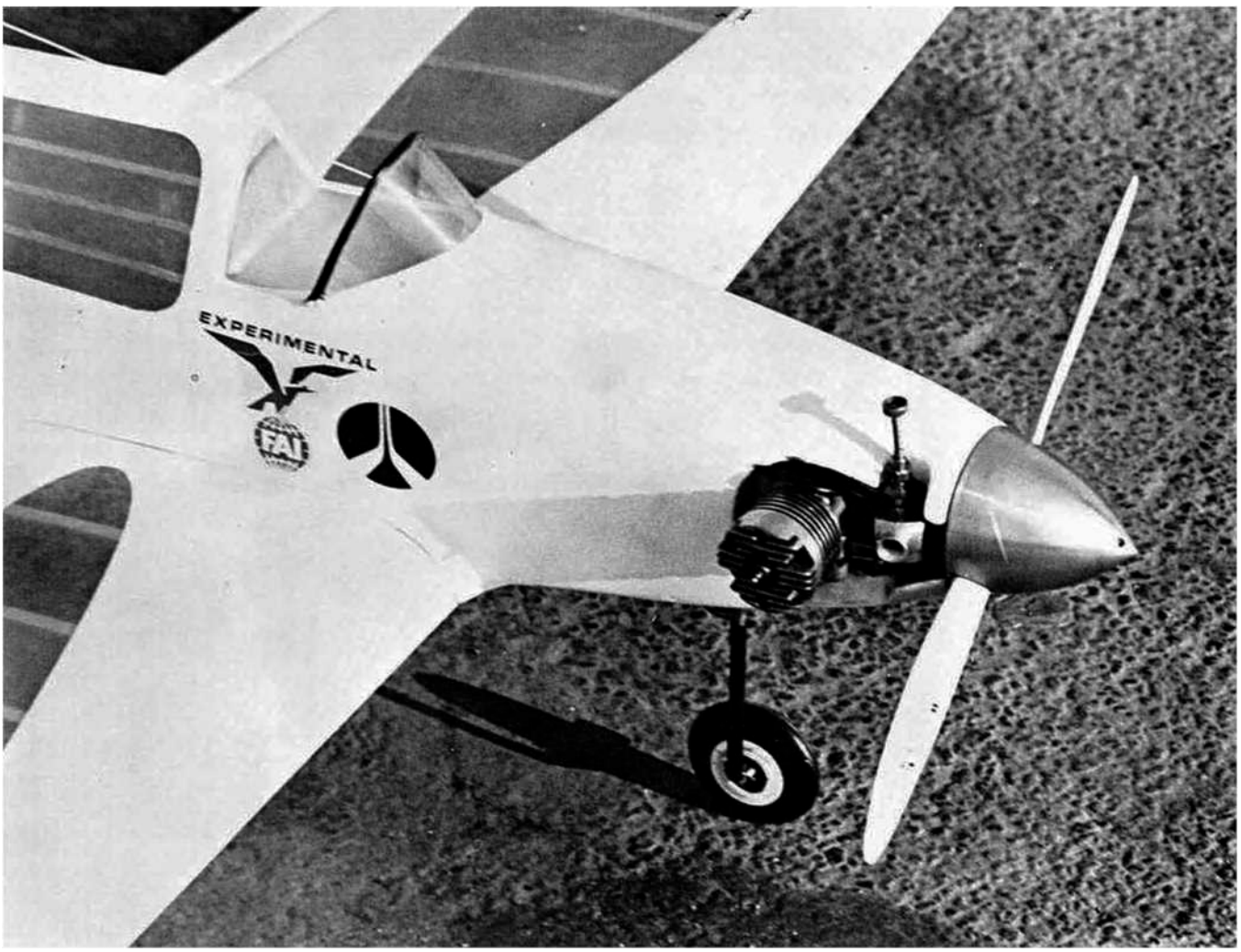
Finish off the top of the wing panel with the cap strips.

Turn the cured wing over and insert the hardwood landing gear blocks and all of the plywood doublers where indicated. Note detail A-A; be sure the grooved vertical block restraining the end of the landing gear wire is securely epoxied in place. The plywood dihedral braces, W-14 and W-15, can be epoxied into the nearly completed wing panel. The bottom of the panel can then be sheeted like the top surface and set aside to dry while the other wing panel is built.

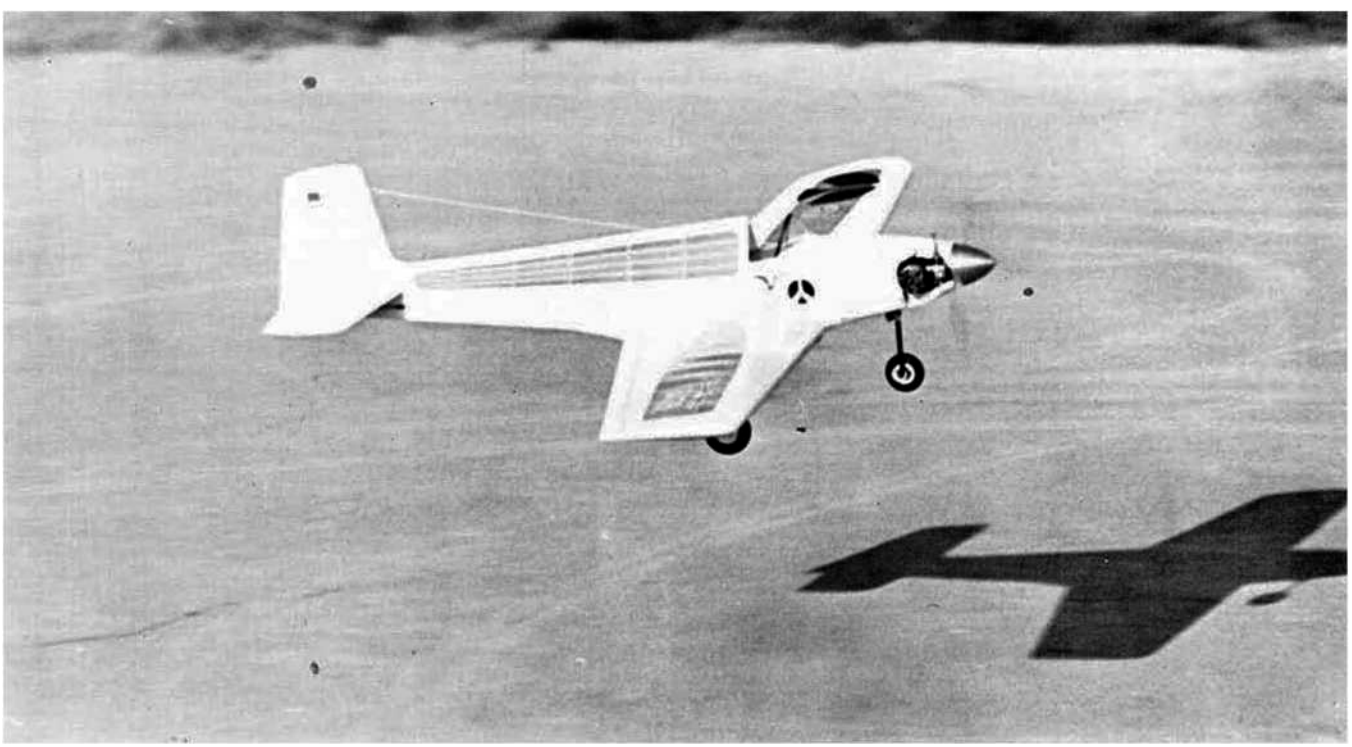
Merely invert the wing drawing and build the other wing panel directly over the plan. Leave the center sheeting off of the bottom of the second wing panel to get at the dihedral bracing when the two wing panels are joined.

Add the ailerons per the plans, using the torque rod method outlined and be sure and pin all hinges with toothpicks or the like!

Beanpatch's designer and builder, also a top pylon competitor. Bob Upton, Plane is covered in Jap tissue. How about that!!



Notice the pylon racing influence in the neat way the fuselage lines flow back and around the Enya 45 from the aluminum spinner.



Beanpatch about to pounce on its own shadow. The little ship has very pleasing, scale-like lines. Reminds one of an EAA homebuilt.

This is easy to do at this time since the top and bottom nose structures arc off, exposing the front section. Install the cockpit floor and instrument panel prior to fitting the top decking. The top decking is comprised of the three sections outlined on the plans. The decking is started by gluing the top center piece to the top of F-l and F-2 and to the top of the instrument panel, followed by fitting the two side pieces in place. Carve and sand the fuselage sides and top piece so that the diagonal side pieces fit flush to the top and side, then glue in place.

Next, rough cut the bottom block and be sure to hollow the inside section of the block to clear the engine mount before gluing in place. Glue the top,1/2 by 3/4 soft balsa turtle deck piece in place on the rear formers, being sure to cut the1/4" slot for the fin, then insert all of the stringers forming the rest of the turtle deck. The bottom, cross-grained 1/8" sheeting may then be attached and the whole mess set aside to thoroughly dry. Before final shaping of the nose section of the fuselage, I usually install the engine with spinner attached so that l can accurately locate the spinner and provide the proper clearance between the spinner and the fuselage. I also insert a 1/16" plywood nose ring behind the spinner to toughen up this rather vulnerable section of the model. Remove the engine and do the final shaping and sanding of the fuselage.

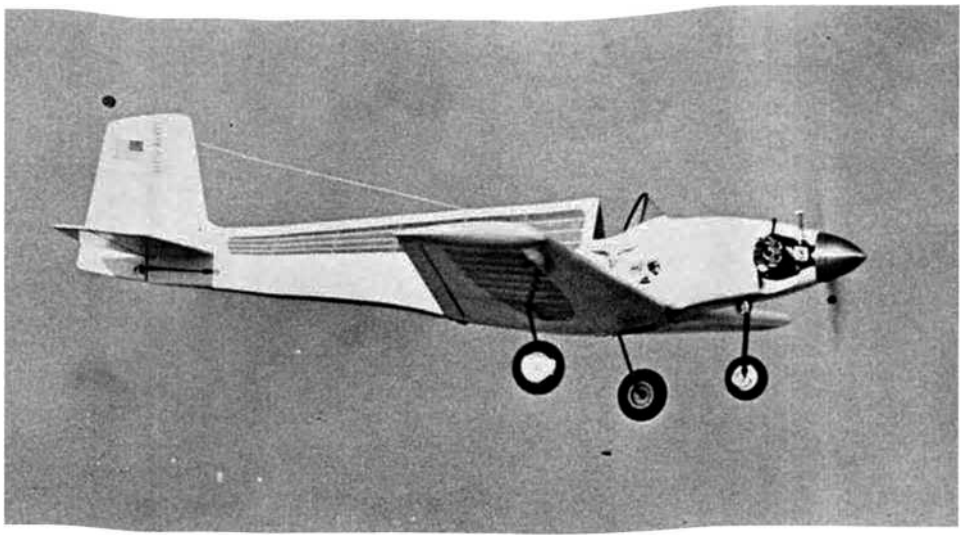
The stab, elevator, fin and rudder are conventionally constructed and are added to the fuselage after final shaping, sanding, and hinging.

The wing may be attached to the fuselage in a number of ways to suit the modeler's particular preference. I like the leading edge dowel and trailing edge bolt method. On this particular model, I use two dowels at the leading edge with a single 8-32 screw into a blind nut at the trailing edge, as shown on the plans.

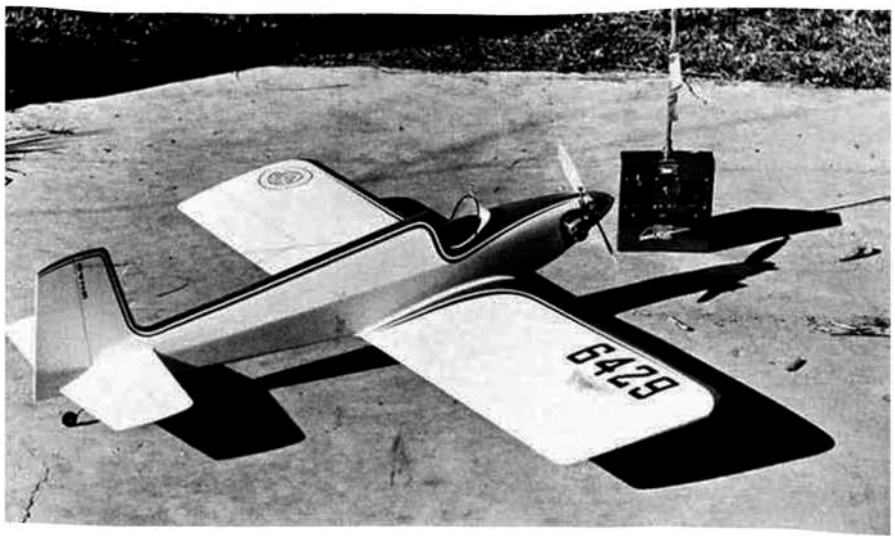
Believe it or not, out of pure nostalgia, I covered "Beanpatch" with colored Japanese tissue and applied many coats of clear buterate dope over the open areas. This material has proved to be surprisingly tough. The model has flown many times and is holding up well.

"Beanpatch" is fully acrobatic, holding its own with a modest Enya 45 up front. I realize, of course, that most self-respecting pattern flyers wouldn't be caught dead flying anything with less than a .60 belching forth up front, so I don't expect to attract these guys. However, if you want to fly all day without an intermediate trip to the local hobby shop for another gallon of fuel, then "Beanpatch" is made for you.

Come to think of it, "Beanpatch" is nostalgic from beginning to end since it does have the look of the "stick and paper" days of modeling. Oh well, what's wrong with that, anyway?



Bob brings Beanpatch in for a low fly by for the benefit of Nate Rambo s camera. No matter what the angle, this little job grabs you.



Before the spin contest! Beanpatch No.1, the straight wing tait-dragger. Evolution from pylon racer easy to see. Frank Capan photo.