The author, Jim Scarborough, Dist. X Associate Vice President, with his Texan 750. Modifications to the original design include reduced stab area, longer tail moment, and higher pylon.

PHOTOS BY KENT MONTGOMERY

THE TEXAN 750

By JIM SCARBOROUGH . . . There's nothing so consistent as a well-tried design that has been continuously modified and updated over a period of 10 years. Here is the latest version of a veteran design.

• The Texan was designed in early 1952. Ed Miller and Jimmy Summersett (of San Antonio, Texas) designed and built the first versions. Since then, model engines have increased tremendously in power and engine runs have been reduced. In order to stay competitive with the Texan, I've made numerous modifications since I started flying them in 1962. The stab area has been reduced, tail moment increased, pylon raised and fuselage lines have been cleaned up, among other things.

The model has evolved with consistency in mind. I for one dislike test flying. Once the model has aged three or four months, it should not be necessary to test fly it any more. I go to a contest, and though the model may not have been used for several months, the first flight of the meet is usually made by my 750, and is a max at that! Ample decalage, rigid wing, and pylon height, all contribute to an inherently stable, forgiving design.

The construction of the 750 is very conventional and simple. Once all the ribs are cut out, you'll be pleased the way it seems to fall together. Carefully select your wood, with strength and weight in mind, but above all, keep the stab and wing tips light. I like to start by building the wing and stab first. Make rib templates from 1/16 plywood. The diagonal ribs in the wing are oversize to allow for sanding to size in place. They are also made long and are to be cut to length at assembly. All ribs are 1/16 contest balsa. Stack them to cut spar slots and for sanding.

Starting with the right wing, notch trailing edge (or cut 1/16 off all ribs) and pin in place. Pin down leading edge and both spars.

Glue in all ribs, except the ones at the dihedral joints. On the right main panel, leave the diagonal ribs out until the assembly is dry. Un-pin this panel from the board and prop up the leading edge 1/4 inch at the polyhedral break, while keeping the trailing edge pinned down. Now install the diagonal ribs. This will build and lock in the correct amount of wash-in.

Bevel a light piece of 3/32 sheet balsa and glue it on at a 45 degree angle for the wing tip. Do not install the top spar at this time.

After the wing is dry, remove it from the plan and mark the rib curvature on the tip, using a straight edge laid on top of the ribs. Carve and sand to the correct contour. Don't forget to relieve the forward portion for the 1/16 planking.

Rub the plan with cooking oil to make it translucent. Turn the plan over to build the left wing in the same manner as the right wing, except the wash-in is omitted. When dry, install tip dihedral, hard balsa dihedral braces and ribs. Then join the center panels at the proper dihedral angle, install hard balsa braces and ribs. Now install the top spar. Butt-glue the 1/16 soft planking to the leading edge, to all ribs, and the top spar. Pin down until dry. Use care to get good glue joints, as this planking adds a lot of strength to the wing.

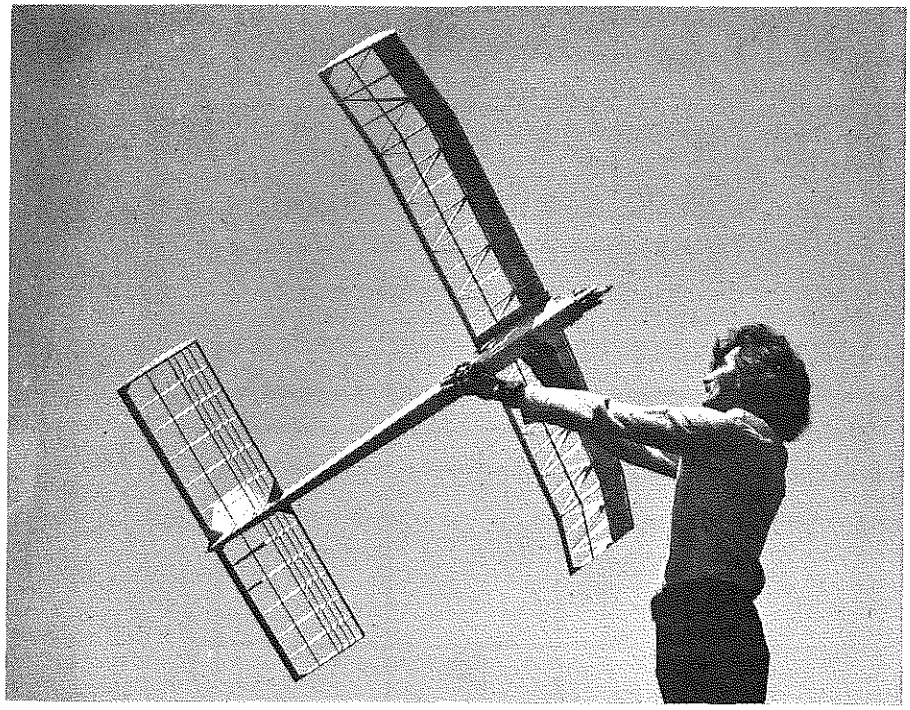
Carve the leading edge to match the

contour of the planking. Round the bottom of the leading edge upwards approximately 3/32 inch (no knife edge). Sand the entire wing carefully. Apply three coats of dope, sanding lightly between coats.

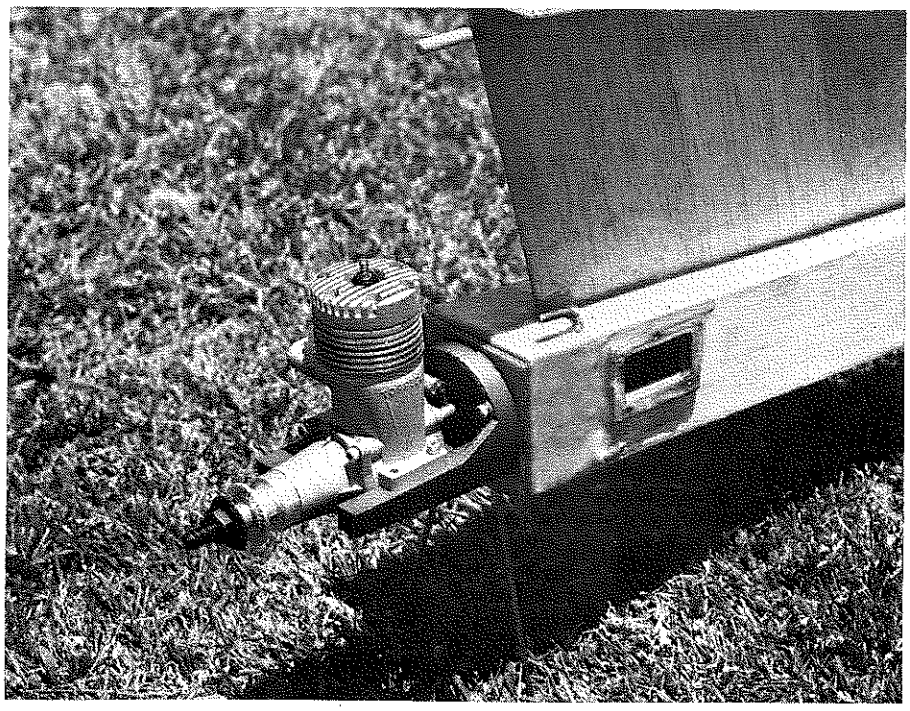
The stab is constructed in much the same manner as the wing. On later versions, I have been making a smaller stab by reducing each tip by one inch. You may build either version, though I recommend the smaller stab.

All ribs are soft 1/16 sheet, except the center two, which are hard 1/8 sheet. Stack the ribs, sand, and cut the spar slots. The spars, and leading and trailing edges, will have to be spliced, unless you have 48 inch wood.

Notch the trailing edge (or cut 1/16 off ribs) and pin down. Pin down the spars and leading edge. Put in all the ribs. Glue pieces of 1/16 sheet in place at a 45 degree angle for the tips. When dry, put the top spars in. Remove from the board and carve the stab tips to shape as done with the wing tip assembly. Carve the leading edge to shape. Round the bottom up about 1/16. Sand the entire stab carefully and give three coats of dope.



No matter from what angle, covered or uncovered, the Texan looks a heck of a lot better when it's being held by Jim's wife, Judy, as seen on the cover. Sorry 'bout that, Jim!



Close-up of front end, showing K&B 40 RR on Kraft/Hayes radial mount. Note plywood timer mount and fuel line outlet tubes. Pylon is 3/8 sheet balsa.

Cut the stab key/pull-up from 3/32 plywood and epoxy into place. The rudder is cut from medium 3/32 sheet. Glue the anti-warp strips in place and sand to a streamline section. Cut out the slots for stab spars. The bottom of the rudder should be flush with the bottom of the stab ribs. The rudder may be glued in place now, or after covering the stab.

Before covering the wing, check it for balance. Pick it up between the forefingers at the center section. It should hang level. Trim wood from the heavy tip or add dope to the light tip 'till it balances. Cover the surfaces with tissue and water shrink. Apply five coats of dope to the stab and seven to the wing. Use plasticized butyrate dope thinned about 50-50. Cut out any decoration desired from tissue and apply, using thinner.

After a few days of curing, warps may be removed over a toaster. All surfaces should be flat, except the right main panel which should have 1/4 inch wash-in.

Now that the flying surfaces are out of the way, the fuselage may be constructed. Cut two sides from hard 1/8 sheet. Again, 48 inch wood is desirable. Use straight-grained balsa, preferably from the same sheet. Cut out the pylon bulkheads and glue to sides. Maintain trueness of sides during this operation. When dry, pull the tail end together and glue. Install the rest of the bulkheads. Cut a firewall from 1/4 plywood and drill holes for your favorite motor mount. Press in blind nuts and epoxy it into place. Don't forget the left and down thrust. If a rear rotor engine is used, move firewall back 1-1/8 inch from where shown on the plans.

Cut a pylon from medium 3/8 sheet. Drill 3/16 holes for the wing hold-down dowels. Sand to shape and epoxy into place, being careful it is true in all directions. Maintain the incidence angle shown on plans.

Cut the stab platform from 1/8 plywood and glue in place.

Install a hard tank or pen bladder, and cut a hole for the timer. The tank shouldn't be over one ounce capacity. In case of a timer malfunction, you'll appreciate the smaller volume. Put 1/16 medium sheet planking on the top and bottom of the fuselage. Use straight grained wood with the grain running fore and aft.

Make a false firewall from 1/8 plywood and carve a groove into it for the 3/32 wire gear. Epoxy the gear into it and drill holes to match the firewall. This removeable gear is quite handy if you want to put floats on the model.

Put a piece of glass cloth and resin around the front end for added strength. Glue a piece of trailing edge stock at the front of the stab platform. Put in the

platform from very hard 1/8 sheet and epoxy to the pylon. Put the stab hold-down wires on the rudder and the rear of the fuselage. The snuffer tube can go on at this time. Glue the 3/32 x 3/16 spruce rails on the wing platform to make a cradle for the wing.

Sand the fuselage complete, keeping the corners square and sharp. Apply seven or eight coats of butyrate dope and a coat of your favorite fuel proofer. I still use Fuller's Plast.

Put the wing and stab on the fuselage. Ensure that they are perpendicular to the fuselage center line and key them in place.

Attach the engine mount and gear. Install your favorite engine and timer. Plumb up the system, using a fuel filter ahead of the needle valve. Reinstall the wing and stab. Check the CG. It should fall as indicated on the plans. Add nose or tail weight until it does!

Flying. Once more, check all surfaces. They should all be flat, except for 1/4 inch wash-in on the right wing. The rudder should be flat and on the center line of the fuselage.

Hand glide the model. Remember, the CG is fixed. If it dives, add shims under the trailing edge of the stab. If it stalls, add shims under the trailing edge of the wing. Glue them in! It is most embarrassing for them to fall out when the engine is started.

The model should be made to glide to the right. Shim up the right side of the stab until a circle of about 200 foot diameter is obtained.

Start the engine. Lean it out 'till it is just starting to come in. Launch the model nose up and banked slightly to the right. Use about a 5 second engine run. The model should go out to the right in a climbing turn.

If it is too tight to the right, or wants to go to the left (a no-no), add a piece of trailing edge stock to the rudder (on the left side for too tight right and vice versa). The use of trailing edge stock is far better than bending a tab as it can't be accidentally hit or broken off. If you add too much, you can easily trim it down. Gradually increase power until full power is reached. The ship should make two to three full turns going up and transition into the glide without any hesitation. A right-left pattern may be used, but I feel there is too much of a chance for the transition to be loused up by rough air or what have you. This way, it pops out at the top right in the thermal you were after.

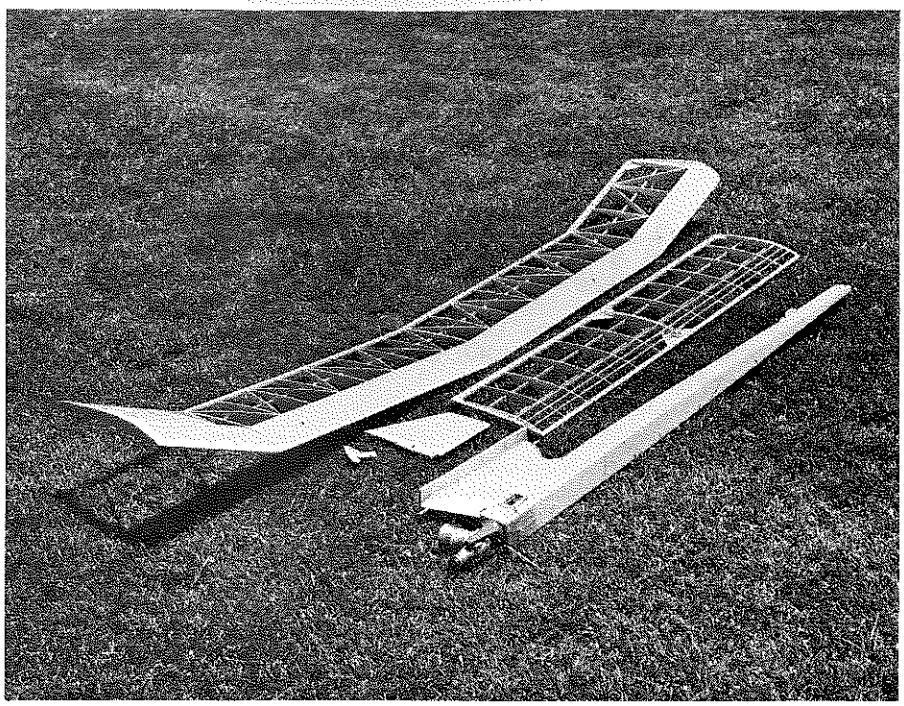
This is a good contest model and should win you many first place awards. I will be glad to personally answer any questions concerning this model. I can be reached at: Box 393, Lawndale, California 90260. Thermals! ●

Flying Near Airports? Be Careful!

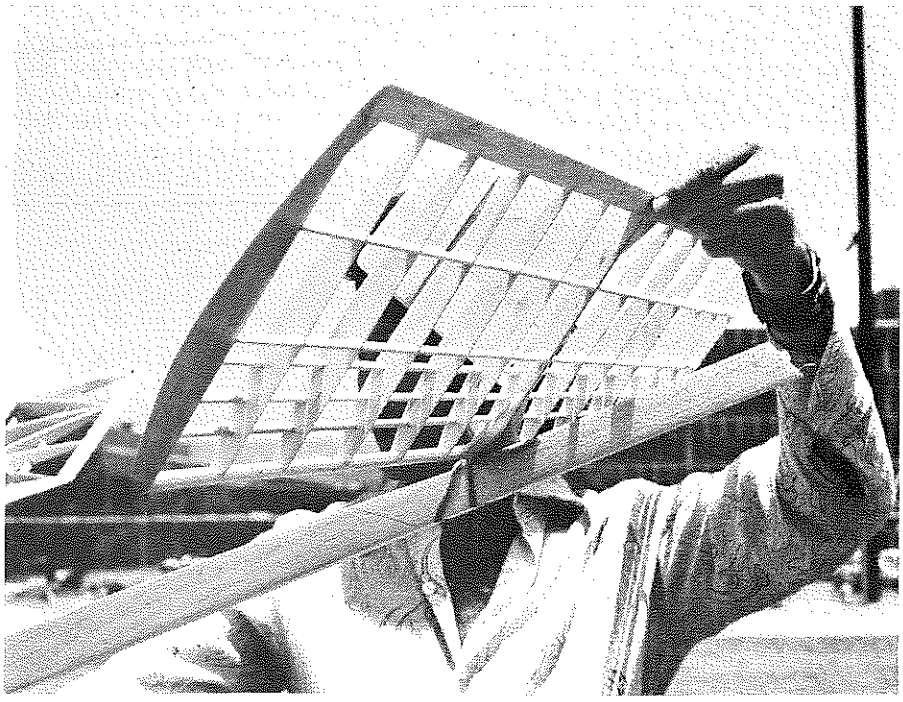
Free Flight or Radio Control flying near airports, or in any situation which might involve the possibility of models being in the vicinity of full-scale aircraft operations, must be avoided—or conducted so as to eliminate any dangerous situations. Models should not be flown in the proximity of full-scale aircraft operations unless the flyer has someone else with him for the sole purpose of watching for full-scale aircraft and supervising the flying so as to prevent accident possibilities.

PROTECT YOUR RIGHT TO FLY!

Safe Flying Is No Accident!



Completed framework, ready for covering.



Vertical plywood 'fin' through center of stab keeps it lined up properly when in the DT position. Note grain directions in 3-piece rudder.