

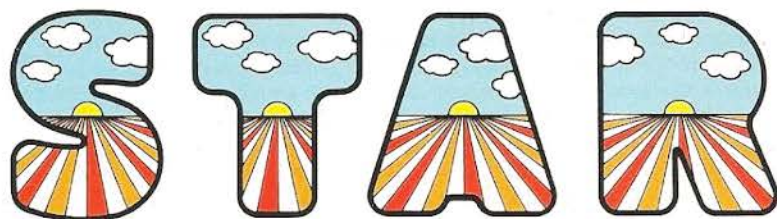


How many of us have sat and dreamed about an airplane that would fly any of the patterns, be fairly inexpensive, reap praise from our flying buddies, and best of all, be extremely quick to build?

If this thought is up your alley, then read on cause you're gonna' love this.

Before we get started, run over to your magazine pile, dig through your old copies of Dewey's Dramatics (RCM's) and drag out your October '68 and September '70 issues. (Whatta ya' mean you don't have 'em??) Turn to pages 46 and 47 respectively and read all the poop that Chuck Cunningham and Dr. Ralph Leidner have to put out. If you've gotten this far then you needn't read any more of my trash, just dig out the wood 'n glue, clean that half finished Banshee with the crooked wing off the bench, (which, seriously, is what I did) and get after it. If you're not done in two weeks, you're hurtin'. (Took me a month.)

Before you read any further, get out an envelope and stamp, and dash off an order to either Hobby Lobby in Brentwood, Tennessee, or to the Lanier factory for a Jester hard skin wing with conventional gear retract cutouts (tail dragger). These wings are already covered, have spars, tips, and gear braces installed, and for \$19.95 can't be beat. The airfoil is the old Citron design which was one of the first triple taper wings used. Lanier has used this wing for as long as I can remember and anyone who has flown one can attest to its handling qualities. Enough on the wing for now, though. Get that order in the mail, and while you're waitin' for it to come, get started on the fuselage.



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FUSELAGE

After obtaining the necessary plywood, cut 3 "C" shaped pieces of 3/4" plywood to the outside form of the fuselage bulkheads A, B and C as per Dr. Leidner's article. Make sure the diameter of the jigs include the thickness of the 1/32" fuselage sides. Mark the center of each jig and screw them to a piece of plywood at the proper distance on the centerline. Now take the

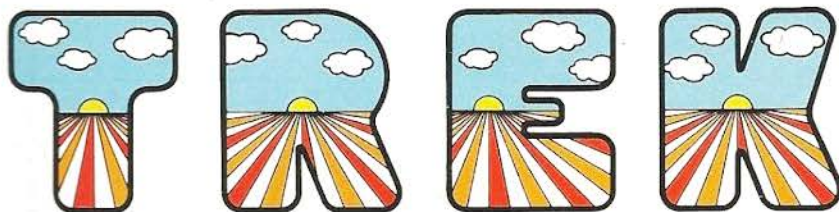
12" x 48" piece of 1/32" plywood and draw a centerline lengthwise. From here on be sure and make ALL measurements from this line to insure a true pattern. Once you've got it all laid out as per the plan, take a regular X-Acto knife with a #11 blade and, using a good straight edge, cut out your pattern. When you're done you have 40 percent of the fuselage finished although I'll admit, it doesn't look like it at this point!

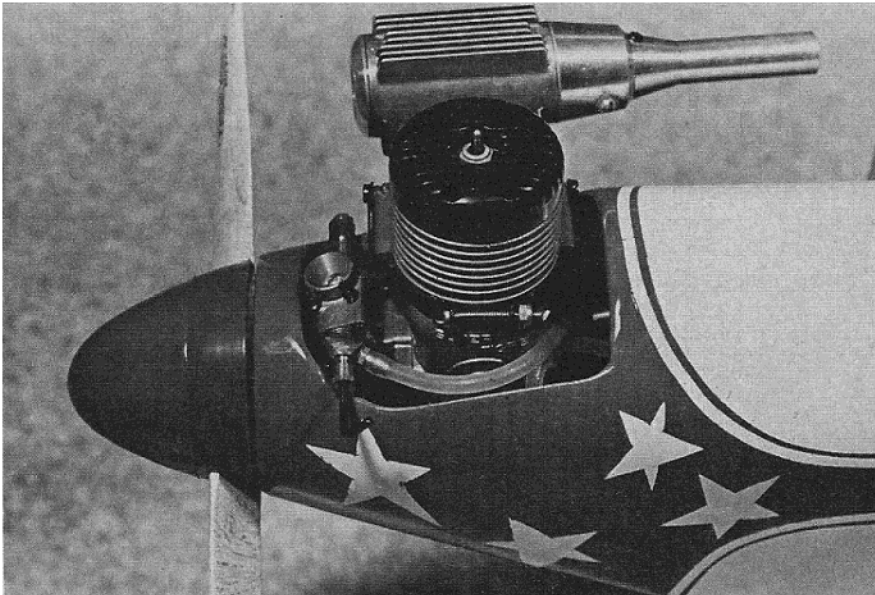


**Photos
And Text By
BERT G. 'DOC' MOORE**

Next mark and cut a slit, 1/4" wide and 7" long, as per the plans for the vertical stab. In doing so, drill a 1/4" hole, 7" forward as shown by twisting your X-Acto knife back and forth. You'll later find that this will keep the plywood from splitting when folding the fuselage. Next cut the two bulkheads and firewall using 1/8" and 1/4" plywood, respectively. An inexpensive compass will do a good job of scribing the necessary arcs. Make sure you mark a centerline on the bulkheads, too.

Next cut out the 1/8" plywood doublers and tail block as per the plans. Epoxy the doublers on each side of the 1/32" pattern using 5 Minute epoxy. Epoxy keeps the plywood from warping, plus it's quick. Make sure you allow 1/4" at the front for



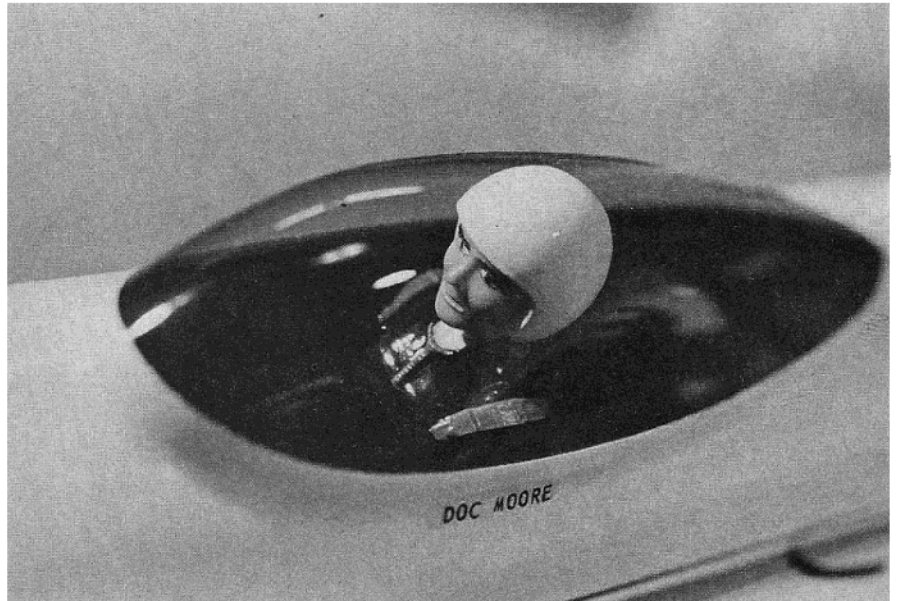


after putting a liberal coat of 5 Minute epoxy on them, push them back down and re-align. Wait until each one has dried before proceeding to the next one. Again, be sure to re-align each bulkhead when you put them back in. You have to work fast when using the 5 Minute epoxy but you will ensure a better fit because you can hold the sides in until the epoxy sets.

After everything is good and dry remove it from the jig and turn right side up. Re-wet the top of the tail section and then, while holding the tail-end down on your bench, very carefully pull the tail together to see how it looks. Center it up all the way around and then repeat the whole sequence except put a good coat of epoxy on the tail block before starting. Put plywood scraps down each side and clamp with "C" clamps until dry. Next, add two 1/4" balsa cross braces as shown followed by the 1/4" balsa bottom block. Follow this with a Kraft-Hayes or Tatone mount mounted dead center on the

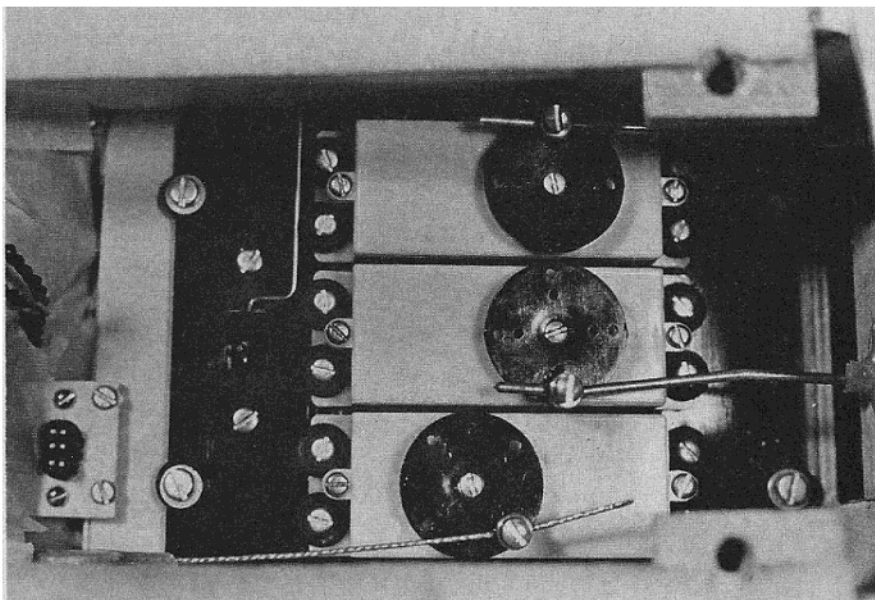
mounting the firewall. Next epoxy the tail block to one side of the rear and the spruce stringers up each side to the wing saddle. Once you've finished this, you're ready to make this mess start looking like an airchine.

With your jig ready to go, take the plywood pattern, and, with a warm wet sponge, wet a 3" wide swath down the outside centerline. As you do this the wood will start to curl which is what we want to happen. Now gently bend the wood and force it into the jig at points A, B and C. Next, take the firewall and 2 formers and push them into the proper position, being sure to align the centerline marks of the bulkheads with the centerline of the fuselage. This will ensure a true alignment. You can also double check by laying a small level across the wing saddle at different points. The bubble should be in the center if your work bench is level and if the fuselage is in alignment. Next pull the bulkheads out, one at a time starting at the firewall and,



firewall, temporarily install your engine, then epoxy some 1/2" balsa blocks around the engine to form up the nose. Fair this into a 2 1/2" spinner to break up the molded plywood look. Now step back and look at your pride and joy. Still doesn't look like my pictures does it? Don't lose patience yet, the hard part is over.

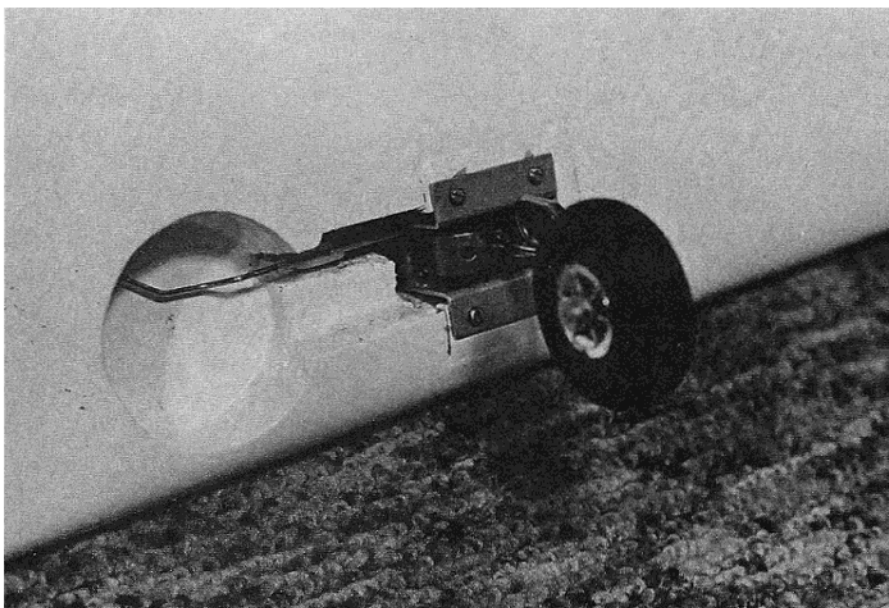
If you want to finish out the cockpit, make a small sub-former and glue in place as shown, followed by the bottom piece. Then with a razor saw, cut across the top the desired width and then down the sides with an X-Acto knife. Paint all of the inside with flat black paint and install a small Williams pilot. This is followed by a 9 1/2" Du-Bro canopy cut down to size and installed with Formula I Hobbyepoxy and masking tape. Follow this with a fillet of Epoxolite to give it some style. Next make the tank compartment hatch out of 1/8" plywood and install with 6 screws into spruce runners running up each side. Install the wing



hold-down screw blocks with epoxy as shown, waiting until the wing is finished to drill for the 1/4" x 20 bolts. Paint the engine and tank compartment with Hobbyoxy Formula II and set the whole mess aside to dry.

WING

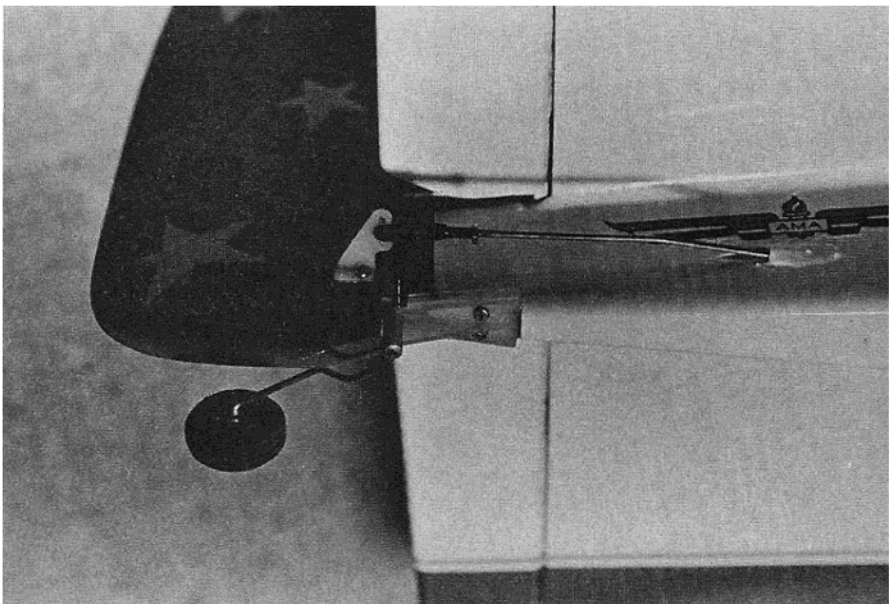
By now a full week of evenings should have elapsed and you should have your Lanier wing. Begin work here by modifying the retract cutouts to suit your type gear. I used CAS units with 2 1/4" Du-Bro wheels, however KDH, Proline, or Rom-Airs work as well. The wood blocks supplied with the wing work well by epoxying them into the wing and following with a 3/16" plywood mounting plate with blind nuts. Epoxy all of this in and line the wheel wells with epoxy and you'll have a pretty strong and nice looking installation. Follow this with a 1/16" thick balsa strip inlaid into the trailing edge then trim off the excess



mounting, the horizontal stabilizer. The best way to do this is by installing the wing in the saddle and blocking it up on a flat surface to obtain zero incidence in relation to the table by measuring from the leading and trailing edges to the surface. After you have the wing blocked, it becomes easy to measure at the rear of the fuselage by measuring the same distance from the table at the trailing and the proposed leading edge to obtain zero incidence here as well. Do this on both sides of the fuselage and then cut out a 1/4" slot with either an X-Acto knife or on your Dremel saw. Once you've done this, block the whole mess back up, remeasure, and epoxy, following with the dorsal fin. Next, cut all hinge slots and holes for the pushrods of your choice. I used the new Du-Bro nyrod and steel units which work great. While cutting the hinge slots for the rudder, install a Top Flite or Goldberg steerable tailwheel bracket.

covering. Use epoxy here, too. Next measure for your particular servo type and make the necessary cutouts as shown. Be sure to make the cutouts large enough to line them with 1/8" plywood. Next join the wing halves together with Formula II Hobbyoxy. Hold together with masking tape and stand on end to dry. The dihedral is already designed into the Lanier wing so don't worry about it. Just butt the two halves together and you have it. Cut the 1/4" plywood inset 3" wide and mount it in the leading edge at the wing joint by recessing flush. This will give strength for the wing dowels. Next, wrap with a 3" wide strip of fiberglass tape and paint with a couple of coats of Hobbyoxy Formula II. While this is curing whip out two ailerons from 1 1/2" trailing edge stock. That's right, 1 1/2", after all, we want this dude to roll don't we?? With this, roll it will!!

The next step, and probably the most important, is cutting the slot for, and





- BILL OF MATERIALS**
- 1 — Lanier wing (Jester design with hard covering and conventional gear retract cutouts).
 - 1 — set CAS, KDH, Pro Line, or Rom-Air retracts.
 - 1 — 12" x 48" sheet Sig 1/32" plywood.
 - 1 — 6" x 12" sheet 3/16" plywood.
 - 2 — 12" x 24" sheets 1/8" plywood.
 - 1 — 6" x 12" sheet 1/4" plywood.
 - 1 — 36" length 1/4" square spruce stick.
 - 4 — 36" lengths 4" wide 1/4" medium balsa.
 - 1 — 1 1/2" x 4" x 6" soft balsa block.
 - 1 — steerable tail wheel bracket (Goldberg or Top Flite.)
 - 1 — Sullivan SS-12 fuel tank.
 - 1 — Kraft-Hayes or Tatone mount to fit engine selected.
 - 1 — set 2 1/4" Du-Bro wheels.
 - 1 — 1" Veco wheel.
 - 2 — sets Du-Bro pushrods.
 - 1 — 9 1/2" Du-Bro canopy.
 - 1 — small Williams Bros. pilot.
 - 1 — 2 1/2" Williams Bros. spinner.
 - 1 — pack of 15 Klett hinges.

FINISHING

Now the whole mess is starting to look like an airplane, ain't it?? Finish fairing in the nose to the 2 1/2" spinner, fair and fillet the tail surfaces with Epoxolite, following with a thorough sanding of the fuselage AND wing with 400 grit used dry. Paint the fuselage and tail surfaces with one coat of K & B Surfacing Resin, sand with 240 dry followed with another coat of resin. Next, sand with 400 wet to finish preping the fuselage. Follow with one or two coats of K & B Superpoxy on both the fuselage and wing. Let this cure for a day or two and then mask for trim as desired. I would suggest at this point to use Superpoxy for your trim as it sticks much better to the base coat than butyrate or lacquer. Follow this with the hinging of all control surfaces and installation of the tail wheel using your favorite methods.

RADIO INSTALLATION

At this point I put my radio in, however some of you may want to get all of this out of the way before painting. I used a Pro Line with PLS 11 servos plus the Pro Line 180 degree servo for the retracts. This radio has been tremendous and is certainly an added asset to the way the plane performs. I have heard reports that the flying time has been shortened considerably by the high drain I.C.'s being used but I have experienced no trouble whatsoever even after 7 or 8 consecutive flights.

ENGINE

The engine is the new Super Tigre G60 Bluehead complete with the Super Tigre Venturi muffler. This engine is a great performer and pulls the 7 1/2 pound ship around as if it weighed 5 pounds. It is easy to start, has a fantastic idle, and the power output is second to none. The only fault I can find is that the new cylinder casting has tabs to hold a muffler but Super Tigre has

failed to modify their muffler at the time of this writing. I am sure by the time you read this all muffler manufacturers will have made the necessary changes for the G60 series. Meanwhile, just grind out the ends of the mounting flange on the muffler with your Dremel Moto-Tool, put some GE Silicone Sealer around the exhaust port and clamp it on. It'll work fine and the GE sealer keeps it from vibrating loose. Use a Top Flite 11/7 1/2 Super M Power Prop, a Sullivan SS12 tank, and you'll get consistant 12 minute flights with plenty of pulling power.

TRIMMING AND FLYING

Now bolt on the wing and make sure it balances as shown on the plans before heading to the flying field. An important point to make here is that the plane needs to balance as shown. If it doesn't, it just won't handle right. If, flying inverted, you find it

takes a lot of down elevator to hold it level then you've got it nose heavy. When balanced properly it should take just a breath of down elevator to hold it level inverted.

Flying is a real dream. Once started, just aim it down the runway and pour the coal to it, leaving the elevator in neutral position. The tail will raise after about 10 feet of roll and all that is needed then is to hold rudder as necessary to keep it straight. When sufficient speed is obtained ease back on the stick, suck up the gear, and hang on. If it's your first retract ship, as it was mine, you're gonna' love it. Trimming was pure joy, mainly because it required none. I can honestly say it's the first airplane I've built that didn't require some pretty radical trimming procedures. This can be attributed to the Lanier wing and the trueness of the plywood fuselage.

As I said earlier, the plane will fly all the



maneuvers easily. During vertical maneuvers it has no tendency to torque in any direction and it will knife edge the full length of the field. Four point rolls are smooth and slow rolls are beautiful. Landing is no problem as the plane has no abnormal stall tendencies. It will slow down but you have to work at it. Set up a proper approach however, and you can 3 point it hands off.

To sum it all up, it's an Arm Chair Pattern Flier's dream. It is quick and easy to build, economical from a cost standpoint, and extremely rugged with its biggest plus being its handling characteristics. I hope those of you that build it enjoy it as much as I do. If you have any questions or want to tell me how your plane flies, drop me a line. My address is, Bert G. (Doc) Moore, 350 Wayne Drive, Shreveport, Louisiana 71105. □

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