

# “Ole Tiger”

Beautiful and a bit different, this winning Formula I pylon racer really stays in the groove.

BOB MORSE

I am another one who has been bitten by the racing bug. Put it off for a couple of years, and then was shamed into building a Formula I ship. And I grabbed a good one to start with, a T-tailed Rivets. This business of “going fast and turning left” really turned out to be a ball, and look where it’s got me — trying to write a story about one of my all-time favorite racing aircraft, Bob Downey’s famous “Ole Tiger.”

Ole Tiger began life in 1947 being built by Jim Miller and raced as “Miller Special Little Gem.” In 1963, Bob Downey rebuilt the Miller Special into the Ole Tiger configuration and has been a consistent winner since then.

The October, 1967, issue of “Private Pilot” has some excellent photos and an informative article, and Volume IV of “Racing Planes” (Aero Publishers, Fallbrook, California) has an excellent racing history of Ole Tiger, and also has the three-view drawing that provided the data for our model version.

We began doodling up our 450-sq. in. version during 1968 and finally got her airborne in the fall. She’s been flown at Mile Square, Cotati, Turlock, and at the Pioneers Field at Sunnyvale—all in California.

Ole Tiger is not a difficult ship to build, and it does build into an attractive model. One of the features we have tried to preserve is the extremely low aspect ratio of the wing. We have done a little revising in this respect, but the overall effect is still there. So, if you’d like something a little different to race, have a go at this model.

**Wing:** One of the features is its extremely thin wing. Have no fears though. It is not new and has been well tried and proven, both in flight characteristics and strength in such ships as Joe Foster’s “Rivets,” and Jim Kirtland’s “Shoestring.”

In addition to having excellent flight characteristics, it is perhaps the easiest wing to build that we have ever had.

Wing data as follows: Span, 40” and chord of 14½; thickness at root, 1” (14%), at the tip, 3%; mean thickness of the wing is 8½%; aspect ratio, 3.4.

As you can see on the plan, the wing is built on building boards. It goes without

saying that your wing will be no better than the board you build it on, so start with a good foundation. We obtained our building boards from a pattern shop, and it’s called “Perfect Plank” and consists of successive vertical laminations of pine and is faced in a milling machine and is true. It’s fairly expensive, but once purchased, is good for a long time.

You will need two pieces 20” long and 16” wide. Lay one piece flat on your bench, butt the second piece to the first and block one end up to obtain the dihedral angle shown on the plans. When it’s about right, staple the two boards together so that the top surfaces are perfectly flush at the joint. A bead of glue along this joint will “lock up” the boards for sure.

After all this, the actual construction can begin by edge gluing four wing skins together. We glue ours up so that the bot-

tom skin joints are parallel with the rear spar and the top skin joints are parallel with the leading edge which provides a sort of cross-grain construction in the finished wing.

Our favorite method of gluing the sheets is to first run masking tape over all joints in one panel, opening the reverse side of the joints, and brushing a light coat of “Starcrest” coating resin in the joints, then laying the panel out flat with the taped side down. In two hours, the joints are ready for sanding. (A word of caution: use only “Coating” resin. Starcrest makes other resins, such as laminating resin, but only Coating resin is easily sanded.) Final sand one side of each panel making sure that the bottom surface of the two bottom panels and the top surface of the two top panels are sanded.

*Continued on page 56*



After year of Formula I racing this Ole Tiger, Bob finds he hooked on left turns and said: “We’ve had much more fun in Formula I racing than when winning a pattern event.”

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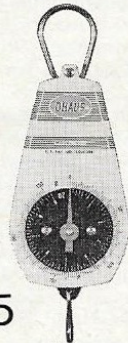
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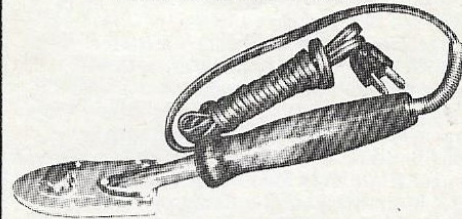
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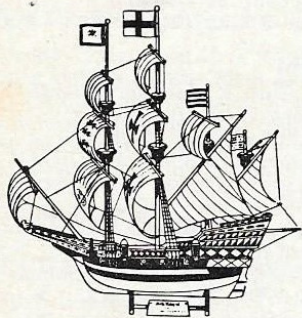
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## Ole Tiger

Continued from page 19

Next, assemble the two aileron bellcranks on their 1/16" ply panels and you're ready to assemble the wing.

First, pin the two bottom skin panels, sanded side down, to the building board. Glue the 1/16 x 1/4 spruce bottom spar in place, wing tip to wing tip, bending it through the center section area, then glue all ribs in place out to bellcrank assembly. Install bellcrank assembly with wire pushrod running through inboard ribs to servo cutout area, and then complete rib installation. Now add 1/16 x 1/4" spruce top spar, again wing tip to wing tip. Now, add the 1/16" sheet balsa vertical grain pieces from top to bottom spar. These pieces are the most essential pieces in

the entire assembly, so cut them to fit and cement them well! Cut aileron pushrod slot through the lower skin, using the slot in the ply crank mount as a guide.

The leading edge and rear spar can be glued in place, immediately followed by the top skin, sanded side up.

The basic wing assembly is now complete and needs only the soft sheet trailing edge and tops glued in place. The entire trailing edge, including ailerons, should be rough shaped before gluing to rear spar (only tack glue in aileron area).

The complete wing assembly should be ready to lift from the building board on the third evening, and you'll be pleasantly surprised to find what a strong wing it is.

We would recommend that the final sanding of both leading and trailing edges, cutting and finishing the aileron

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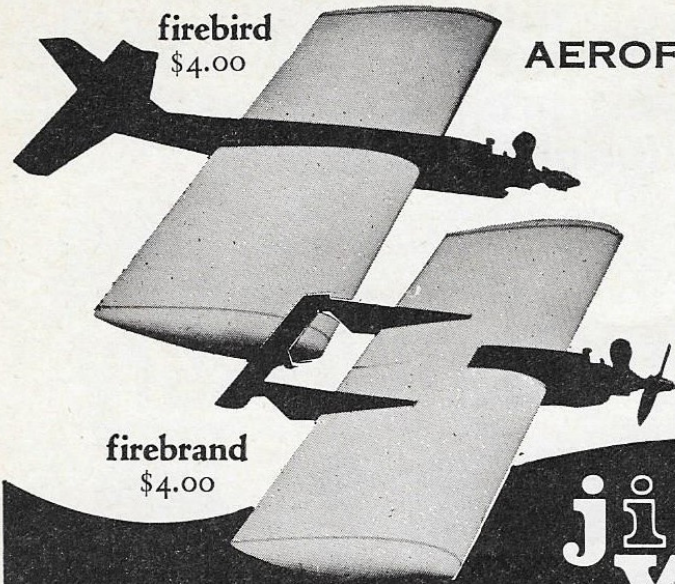
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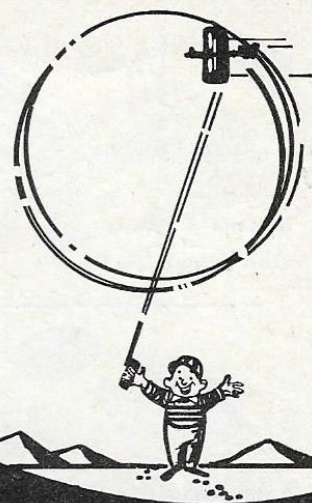
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and initial finishing coat be applied now.

**Fuselage:** Fuselage construction is fairly standard. Only two things cropped up that we hadn't done many times before. One is the landing gear. We hadn't seen a really good gear hung from the bottom of a fuselage before, and we sure didn't want the bottom of Ole Tiger all fouled up with a sheet metal or two-wire gear. Finally figured out the single leg torsion bar set-up shown, and at the next race we attended, there was the same setup in a Minnow. The gear really works well; we must have had close to a hundred landings and still not a mark on the fuselage.

The second item is forming the boat-bow section beneath the engine. It's much easier to form if the plywood doubler is initially contact-cemented to the fuselage sides from the landing gear rearward. After the basic fuselage box assembly is glued up, pull the ply doubler into the shape shown in the plan view and glue to the firewall bulkhead and at the point. When this has set up, apply contact cement to the formed ply doubler and forward end of the balsa side plate. After setting up, pull the balsa sides in to ply

doubler. Forming the sides in this manner will provide the boat-bow without any undue stress being built in.

With the basic fuselage box finished, assembly of the complete model is next. The finished wing, stabilizer and fin are installed, and then the fuselage top formers. Planking the forward fuselage top and sheeting the rear top are next. Now install the nose blocks. Be a little careful working in the nose area, especially in positioning the ply spinner plate. Start the nose blocks with the lower block (with the lower engine mount beam epoxied in place). Once this is cemented securely to the top edges of the fuselage sides and the firewall, bolt the engine and upper mount beam in place and cement upper mount to firewall. Now proceed with the side blocks and top block. Work the forward edge of the nose blocks down so that with spinner in place you get the running clearance shown.

We have used the Williams Brothers cheek cowl for simplicity and they have worked out quite well. The L. H. cowl provides a dandy place to install ballast well forward and out of sight.

Ballast will be needed. Our ship ready-to-fly with a Micro Avionics XL outfit, weighed 4 lbs., 6 ozs. and was tail-heavy. With the NMPRA rules requiring 5-lb. minimum weights, 10 ozs. of lead is bolted securely to the lefthand ply cheek-cowl positioner. This brought the ship up to the 5-lb. minimum and also moved the CG to slightly forward of that shown on the plan. More about this later.

**Tail Surfaces:** Pretty straight forward here. Use medium to hard balsa sheet for all surfaces as they do take quite a beating.

**Finish:** We've all got our pet methods of finishing, so have at it in any fashion that suits you. We stumbled onto a method that's not only fast, but provides a pretty decent model when you're done.

We give all surfaces an initial coat of Starcast coating resin (do not use laminating resin). This will set up in about two to three hours. Give it a light going over with coarse sanding cloth to knock off the high points, then flow on a second coat, being careful of runs. When this coat sets up, it should be glass smooth.

*Continued on page 62*

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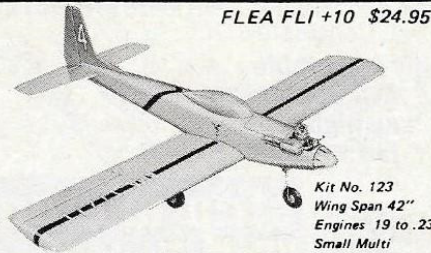
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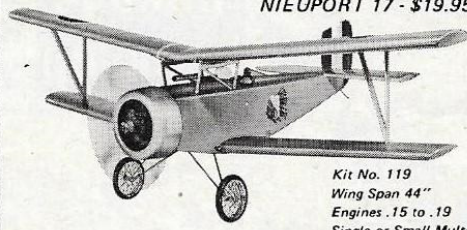
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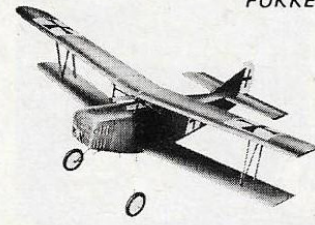
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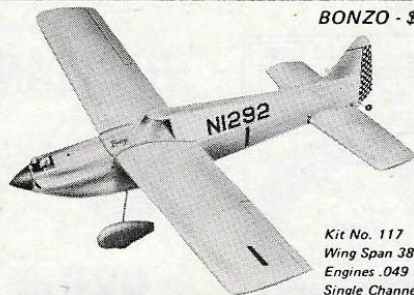
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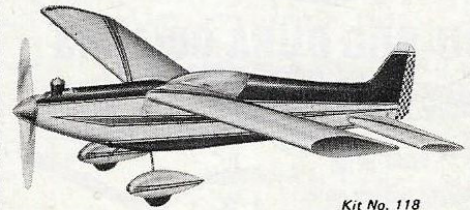
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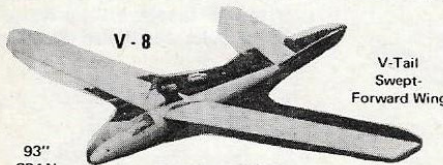
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This second coat should be lightly sanded with 300 wet or dry to remove the gloss. Now spray two light coats of Hobbyoxy color (thinned at least 30%). This should give you a glass-smooth brilliant base color.

We applied the trim and numbers by laying out the design lightly in pencil. Then using an ink ruling pen and compass we outlined all the trim with Hobbyoxy, and then filled in with brushed Hobbyoxy. The colors we used are white all over, red trim and blue pin stripes.

**Flying:** Only one word of caution, do not attempt to fly if the center of gravity is aft of the position shown on the plans. You will really have a wild one on your hands. Balance the ship at the point shown, or forward of the point shown and you'll have a beautiful flyer that really stays in the groove.

We've heard it said many times by many modelers that they can't fly Formula I ships, just too fast! Don't believe it; the ships are fast, yes, but their speed makes them very responsive, and this quick response makes them a lot easier to fly than the neophyte racer might think. Our attitude is that racing has put a lot of fun back into R/C. We've had much more fun in losing a Formula I race than in winning a pattern event.