

THERE YOU ARE, just minding your own business reading an interesting book on air racing. Then—*bam!*—they do it to you. Suddenly you've fallen prey to an irresistible urge to create a Scale model of whatever captivating airplane has just leapt off the page and into your heart.

In this case I was innocently reading through the excellent book, *September Champions* by Robert Hull. It wasn't till page 33 that I lost my head. The Laird Solution had always been a favorite of mine—and there it was, the full-size aircraft in all its beauty! The caption infected me, too. It seems that the Solution was built in less than a month, just in the nick of time for the 1930 Thompson Trophy Race.

It was kismet! How's a modeler to resist? Setting aside my book, I repaired to the workshop, where a quick look through the balsa rack ensured the deed. Next, I mined a set of three-view drawings out of the stack of books piled in the shop, and made sure everything else I needed was there.

The balsa began to yield to the knife and sander, and in just a short weekend the metamorphosis was complete. Now a terrific-looking model, the Laird in the photo from the Robert Hull book was ready to take to the air.

Let no one lead you astray; modeling is addictive. And if I ever thought there was any cure, I know differently now. The fact is, I am haunted by visions of profile Golden Age air racers flying—no, streaking—

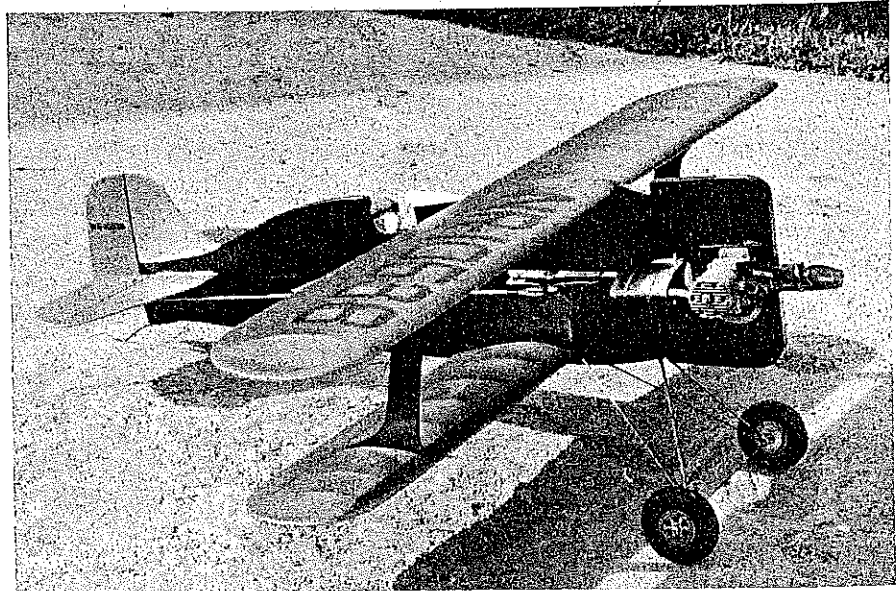
past; two, three, maybe even four in the same circle, their bright colors dazzling the eyes as those roaring engines tear at the air.

Whew! It's over now. Sometimes we modelers get carried away. Actually that little biplane "Speed" Holman rolled out onto the flying field in 1930 had been on my list to build for quite some time.

For a biplane, the Solution has a lot going

for it. The upper wing is mounted to the fuselage, eliminating those nasty cabane struts and all the other hassles of aligning the wings. This model is both very quick to build and very rewarding to fly. I hope you share my madness and build this airplane too. You might even try talking a friend into building one to race against.

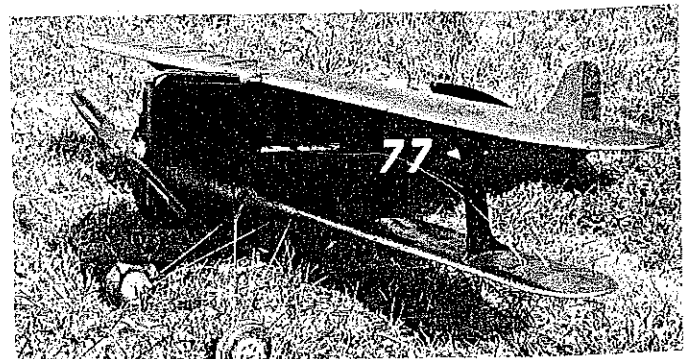
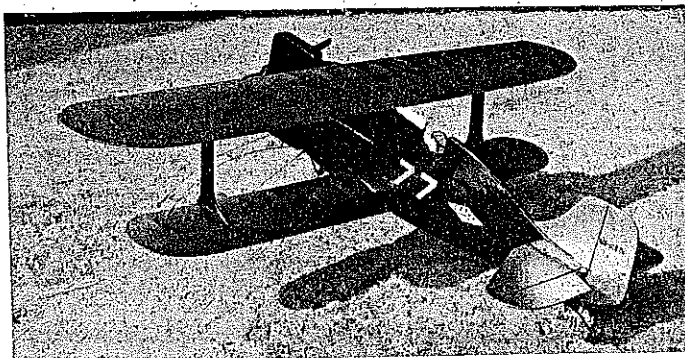
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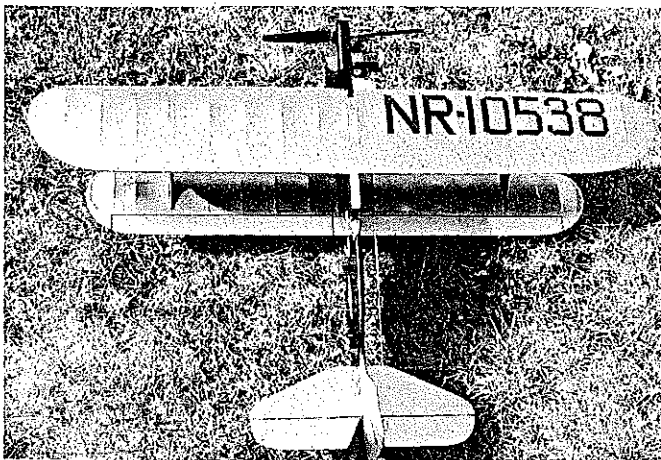
The concept of the original plane was to fair in the minimum amount of airplane possible behind the big Pratt & Whitney engine. The model benefits from that concept. With its minimal frontal area, it flies more like a trainer, enabling the novice pilot to fly a hot-looking ship.

Laird Solution ⁶⁴⁵

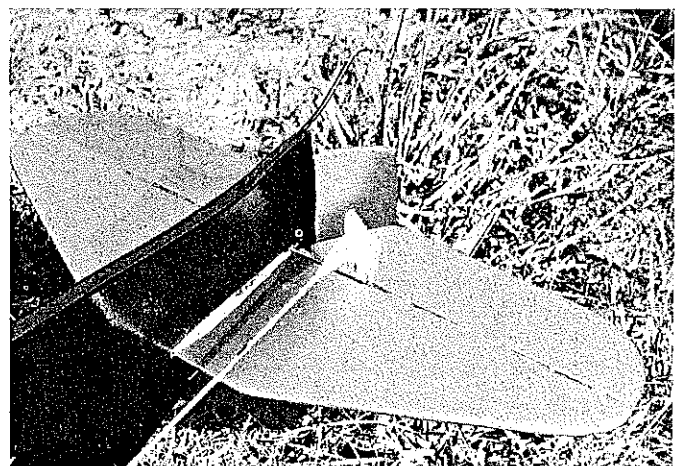
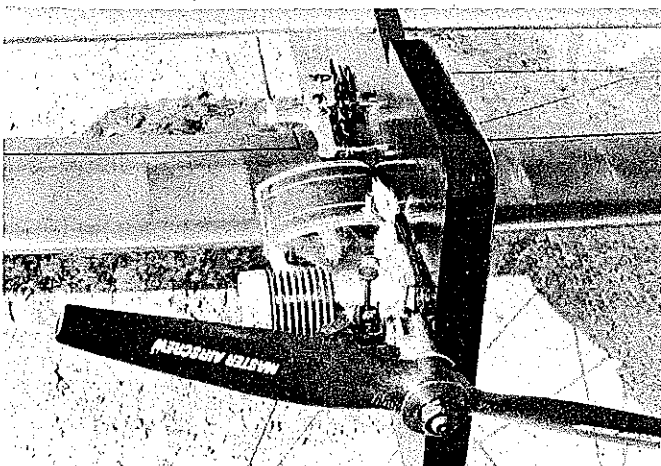
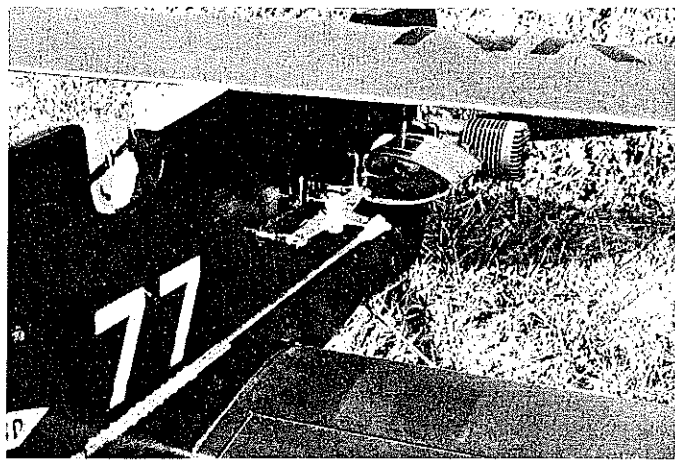
This Control Line profile model of the famous 1930 Thompson Trophy racer is an excellent choice for a very simple, fast-building first biplane. Having the upper wing attach to the fuselage means there are no cabane struts to contend with. Designed for .25 to .35 power, the model is a spunky performer. ■ John Paul



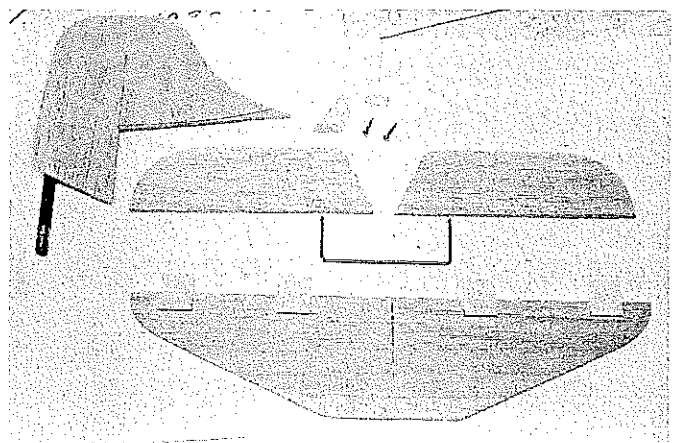
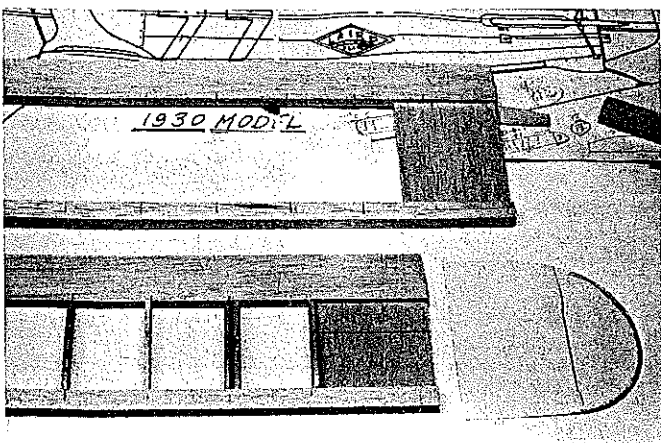
Left: The Laird Solution is very distinctive in its gold-and-black color scheme. The original aircraft was a very hot racer. It was built within a month to compete in the 1930 Thompson Race. The model's lead-outs can be seen exiting the wing strut guides. Right: Spry is the word for the Laird. The small-size package is a lot of flying fun. The design's upper wing mount makes for simple alignment and a strong structure.



Viewed from above, the Laird's great platform shows up well. With its respectable nose length the model balances well right off the workbench. The tail has been slightly enlarged to improve the elevator response, making it a smart flier. Right: The pilot's view of the control system, tank, and engine. The control system is rugged and effective, yet with all parts easily accessible for adjustment and/or replacement.



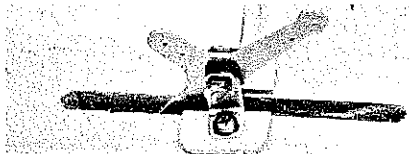
Left: A .25 to .35 engine will give plenty of encouragement for flight. You can see the bead of silicone glue used to hold the fuel tank in place, a neat and effective attachment method. Right: The elevator control hookup is simple. A nylon control horn and clevis make it easy to adjust the elevator to neutral. Note also the extremely simple tail skid arrangement and the offset rudder that helps to keep the control lines tight.



Left: The partially completed wings. Construction is very simple. The leading and trailing edges are joined by the tip sheet. The rib locations are marked, and the ribs are then glued in place. A cardboard tip template is helpful in transferring the shape to the balsa and in ensuring that both tips will be identical. Right: The tail components ready for assembly and painting. The wire elevator joiner slips into holes that are carefully drilled into the edge of the elevators. The rudder offset is demonstrated by the pencil (at upper left) positioned under the rudder.

Construction

Building the wing is very simple. Begin by cutting out all the parts. While the top and bottom wings are different lengths, the airfoil is the same for each. I stacked strips of $\frac{1}{8}$ -in. sheet balsa together for the ribs, and band sawed them all at once. Cut the ribs out of $\frac{1}{8}$ -in. sheet. Cut the wing tips out of

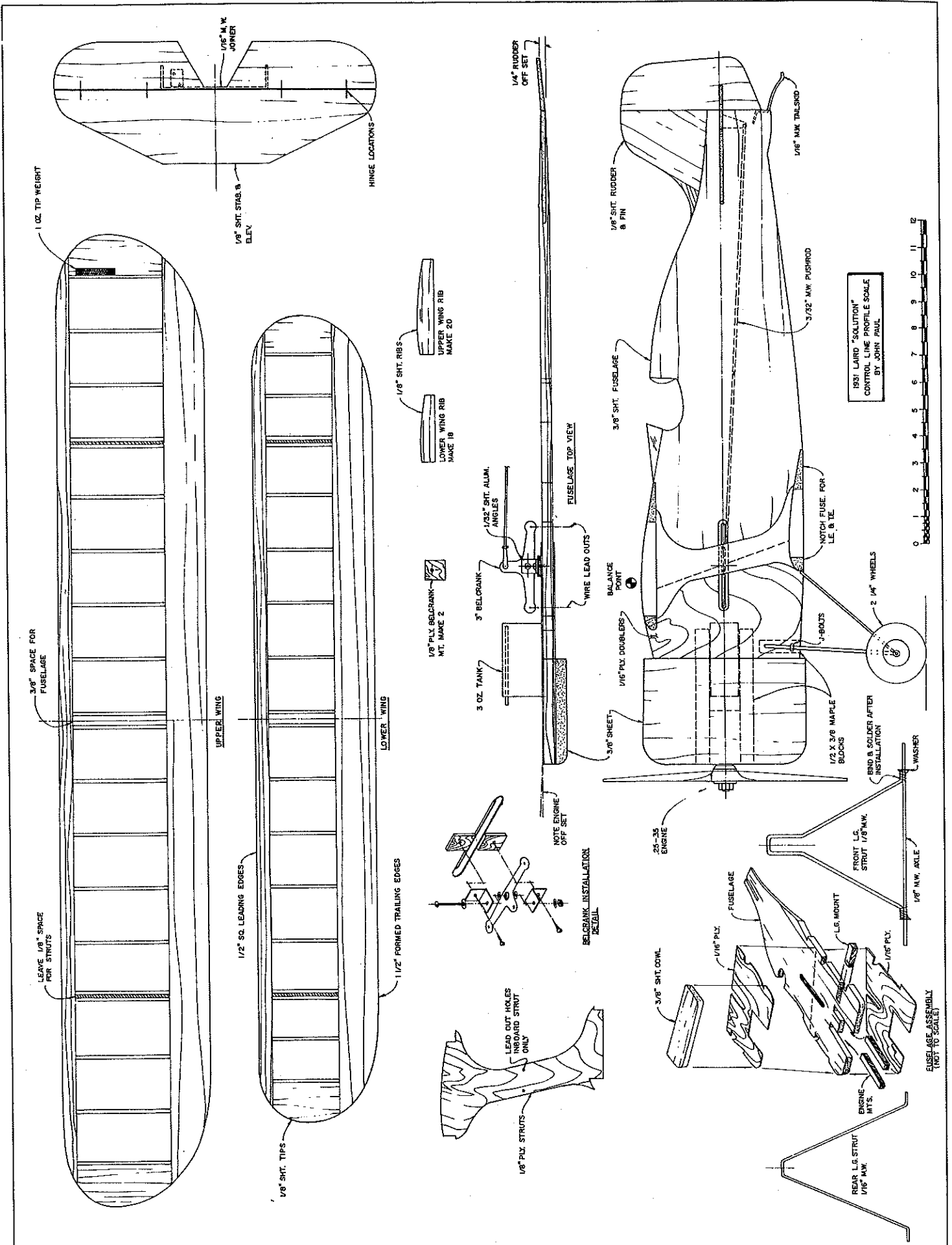


Close-up view of the bellcrank details. Two aluminum angles hold the bellcrank off the fuselage side, while two wood screws hold the angles to the plywood bellcrank mounts.

the same size sheeting.

Pin the trailing edge to the plan, and glue in the tip pieces. Add the leading edge, and then the ribs. Make sure the space for the struts is a snug $\frac{1}{8}$ in. It's helpful to insert a scrap of $\frac{1}{8}$ -in. balsa between the two ribs and pin them together before gluing them in place.

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ing and spiraling in the air. How gracefully the Free Flight models performed their ballet-like maneuvers—for the most part. Sometimes a model would get over-banked in a turn, and we would witness the re-ritting of a model.

One member had a low-wing Pacemaker at the field. This was a very radical airplane at a time when almost all models were high-wingers. This model was thought to be a better, more efficient flier. It was painted in a bright blue and yellow prewar military aircraft paint scheme.

On its first hand-launched flight it screamed into the sky, then in a shallow arching turn the model headed down, down towards the ground. In this fatal maneuver the plane looked smooth and graceful. We were all transfixed, as if hypnotized, watching the demise of the airplane. Then just before hitting the ground the Pacemaker righted itself and bumped to a hard landing, suffering damage to the landing gear and left wing tip. "Blankety blank low-wingers, they never fly right," fumed the owner. "I'd sell it for fifty cents if anybody would offer it," he continued. Quick as a wink, I took him up on his offer. I ended up with a snazzy, repairable Gas model.

Later on I came to own and fly models such as the Cleveland Cloudster, the Comet Zipper, and finally, just before we were all interrupted by the war, a Cleveland Play-boy.

Other fond memories revolve around the Pittsburgh-Allegheny County Airport flight path that we lived near. We saw all the early transports as they landed and took off—the Boeing 247 that was in the race with Douglas, the last of the vintage Ford Tri-motors, the Stinson Model A, and American Airlines' large and cumbersome bi-winged Curtiss Condor. And of course the DC-2s and DC-3s. We saw balloon races and great dirigibles like the Graf Zeppelin and Hindenburg. This mix presents quite a memory fix.

Modeling in those days was not as complicated as it is now. We were never overly concerned with safety, though we did practice it. Safety was everyone's responsibility. Liability insurance wasn't even thought of. Seems like nothing sueable ever happened to us. When we had to chase and retrieve an errant model, property owners weren't hostile. They were always more than helpful. Spectators were just that, seemingly glad just to watch and not interfere.

I went back to visit Five Fields a couple years ago for the first time in 40 years. No more will we be able to fly there, unless the high school which is planted in the old flying field can be removed. But as I sat on the hill I watched the birds, imagining them as the graceful Free Flight models that once, many years ago, executed their intricate maneuvers from this field. One can still dream,

can't one?

Laird Solution/Paul

Continued from page 74

When the glue is dry, remove the wing from the plan, and trim the wing tips to shape. Cut the outline from a piece of light cardboard to form a template. Mark, carve, and trim the leading edge to shape with a razor plane.

Sand the leading edge and the tip. Add a 1-oz. weight to the top outboard wing tip, and you're finished with the first wing. Assemble the second wing the same way.

Tail, elevator, stabilizer, and rudder. Cut out the tail surface pieces, the elevator, stabilizer, and rudder. Sand all edges of these parts.

Join the elevators with a wire as shown on the plans, and hinge them to the stabilizer. I've fallen in love with Sig's Easy Hinges. They need no aligning or fussing; all you do is cut the slots, insert the hinge, and glue. I'm a simple kind of guy!

Cement the rudder to the fin with the ¼-in. offset, and set it aside.

Fuselage. Make the core from a single sheet of ¾-in. balsa. Pick a sheet that's light-weight and straight. Cut a length to match the fuselage, and splice this to the other part

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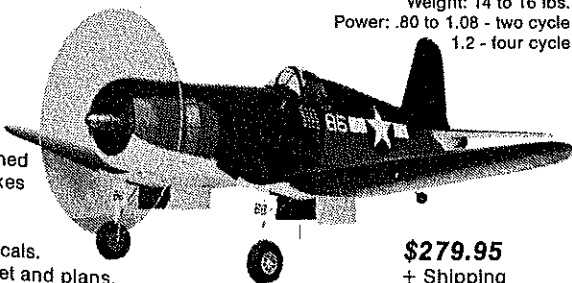
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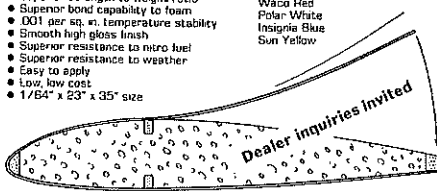
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to make a 6-in.-wide sheet. Transfer the outline of the fuselage to the sheet, and cut out the core.

Take a good look at the sketch on the plans, noting all the cutouts in the core sheet. These are the notches for the engine mounts, landing gear block, upper and lower wing, bellcrank, and stabilizer. It looks like a lot of work making the cutouts, but do it now as it will make the assembly go quickly and accurately.

Cut out the plywood doublers, engine mounts, and landing gear block. Lay the first plywood doubler on the bench, apply white glue liberally to its top surface, and set the fuselage core over it. Position the engine mounts and landing gear block, smear more white glue over them, and lay the top plywood doubler in place.

Add the blind mounting nuts for the engine, and glue the 3/8-in. sheet cowl block on top of them. After checking that all parts are well aligned, generously weight the entire sandwich. Take a coffee break—or go wash your car.

The wings can be covered and finished while the fuselage is drying. Use your favorite method; I'm hooked on dope and silkspan. The prototype received five coats of dope with a light sanding between coats.

While the dope is drying, bend the landing gear parts out of music wire. However, don't solder them together until they are installed. Make up the bellcrank assembly, which is less difficult than it might appear. It's simply a standard assembly with the ad-

dition of two aluminum angle brackets.

If the glue has cured sufficiently, proceed with trimming the fuselage. Drill the holes for the landing gear strut as well as those for the J-bolts. Install the landing gear struts, binding them tightly with copper wire before soldering. Glue on the small plywood bellcrank mounts, and install the bellcrank. Add the lead-outs; they're hard to install after the wings are attached.

Fit in the stabilizer and rudder, and glue them in place. Take the time to make sure they're properly aligned. Install the elevator horn, and hook up the pushrod. Test the control system for smooth operation. If the slot in the fuselage needs to be enlarged, do it now.

Round off the fuselage corners to your liking. Cut out the plywood struts, being sure to drill holes for the lead-outs in one of them. Trim away the covering from the slots on top of the bottom wing and on the bottom of the top wing.

Check the fit of the struts in the slots, and that of the wings to the fuselage. If you made your notches well, these parts should fit nicely. If they don't, make 'em fit nicely.

Mix up a batch of one-hour epoxy, and glue the bottom wing to the fuselage. Pin the wing in place, and epoxy in the struts. Add the epoxy to the tops of the struts and to the fuselage where the top wing will be mounted.

Slip on the top wing, and position it. Measure the gap between the wings to make sure they are parallel, adjusting as neces-

sary if they're not. That's why we use the slower setting epoxy for this job. Once everything is well in place, allow the assembly to cure.

Covering and finishing. Apply a few coats of dope, following each with a light sanding, to the fuselage and tail assembly.

The full-size Laird Solution was painted in black and gold. My model duplicates that scheme. The wings, rudder, fin, stabilizer, and elevator were gold, while the fuselage and landing gear were gloss black. Just minutes before the race started, the racing number 77 was quickly painted on in white. The model's registration letters and numbers were cut from a black trim sheet and applied to the wings.

Flying. Bolt on your favorite engine in the .25-.35 size range. Add the wheels, then finish off the lead-outs. Check the balance point, and you're ready to race! I suggest getting to the field as soon as you can, so that the pre-race fever has a chance to subside. Then crank up the engine, and fly into the past!

The Laird Solution is a spunky model. It's got a lot of life. If you'd like to try a bit of inverted racing, modifying the wing airfoil to a symmetrical section would be fairly easy to do. Hmmm . . . Come to think of it, maybe I should try skywriting!

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