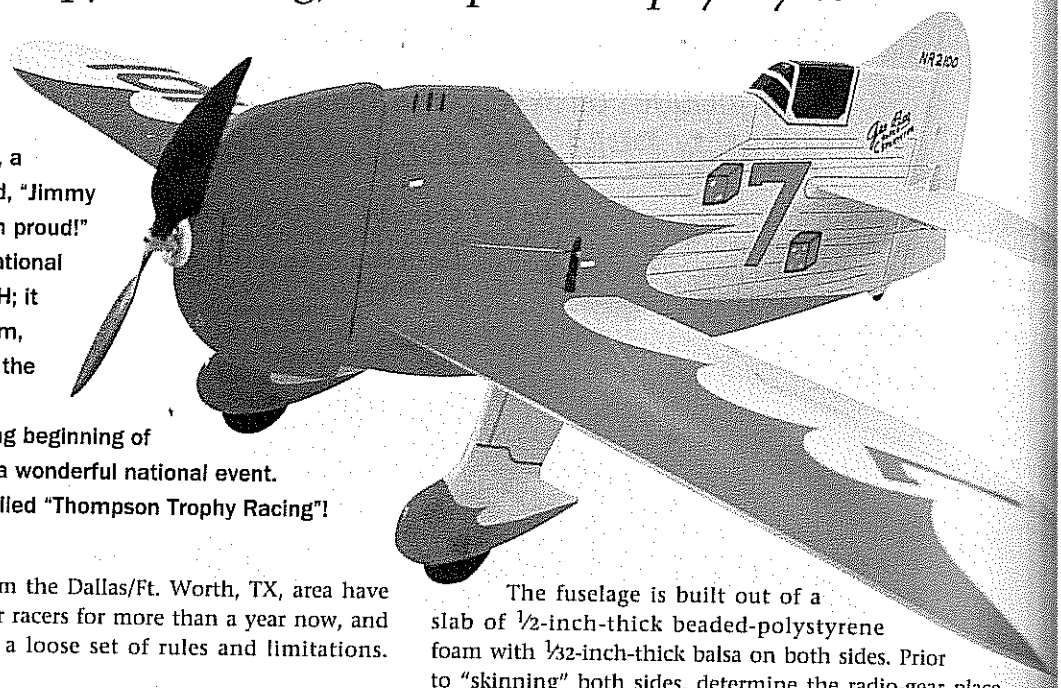
by Jerry Small

Profile Gee Bee

Indoor pylon racing, Thompson-Trophy style!



As it gently touched down after its first flight, a nameless railbird shouted, "Jimmy Doolittle would have been proud!" No, it wasn't the 1932 National Air Races in Cleveland, OH; it was a local basketball gym, and the racer didn't have the 800hp that Gen. Doolittle enjoyed. It was the exciting beginning of what I think will become a wonderful national event. Perhaps it will even be called "Thompson Trophy Racing"!

A small group of fliers from the Dallas/Ft. Worth, TX, area have been building these indoor racers for more than a year now, and they have come up with a loose set of rules and limitations. Basically, the planes must:

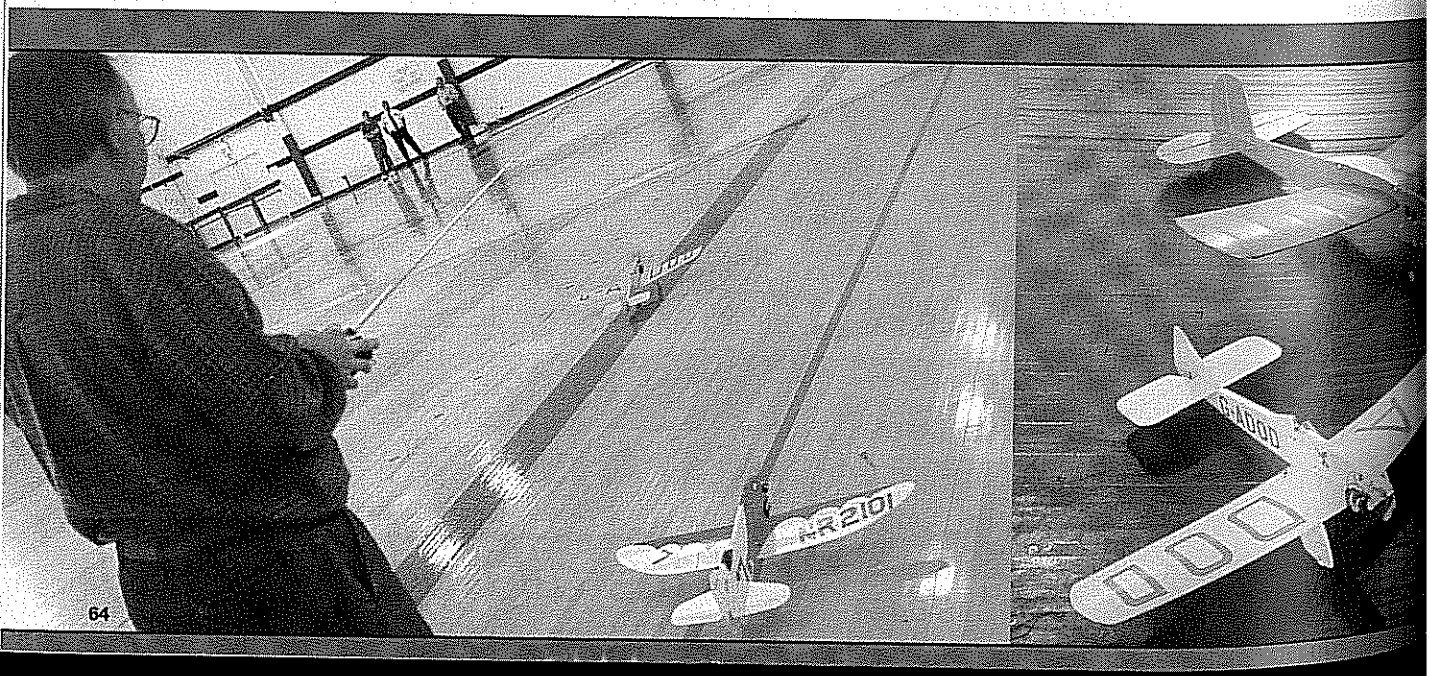
- resemble Golden Age racers in profile;
- have approximately 200 square inches of wing area;
- carry no more than 6, 120mA battery cells;
- weigh 6½ to 8½ ounces (7½ ounces seems to be the average);
- must take off on their own.

If you're interested in this up-and-coming micro pylon racing, the plan that's presented here is a good place to start. It doesn't get any better than a Gee Bee! It's an incredibly simple design, and most people will be able to just use the plan. I'll keep this brief so you can get started.

The fuselage is built out of a slab of ½-inch-thick beaded-polystyrene foam with 1/32-inch-thick balsa on both sides. Prior to "skinning" both sides, determine the radio-gear placement, and cut out the appropriate areas.

Hold the servos, receiver, etc., in place with masking tape, and use 3M77 spray adhesive to "plank" both sides with the 1/32-inch balsa sheets (3M77 won't attack the foam; check all other adhesives). The proper way to use the 3M77 is to first lightly "mist" both the foam and the balsa. This stuff is heavy, so be gentle.

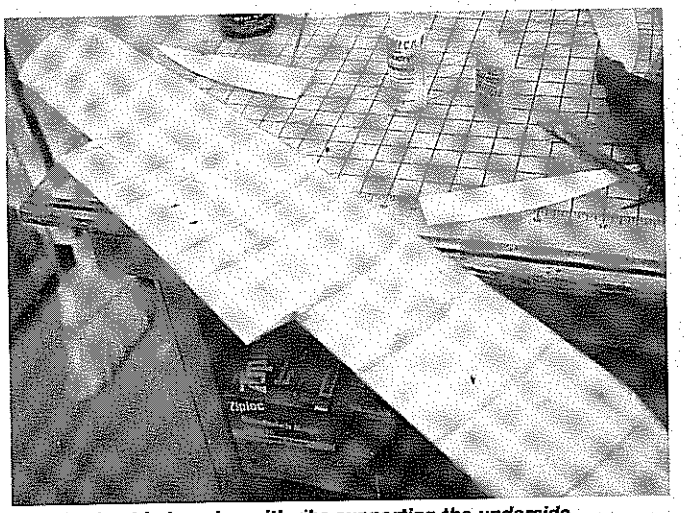
The tail surfaces are all 1/16-inch balsa and should be C-grain. Applying Japanese tissue isn't tricky: just mist both the tissue and balsa with 3M77 and apply the tissue, smoothing it down with your fingers. Do the bottoms (if applicable), and lap the top



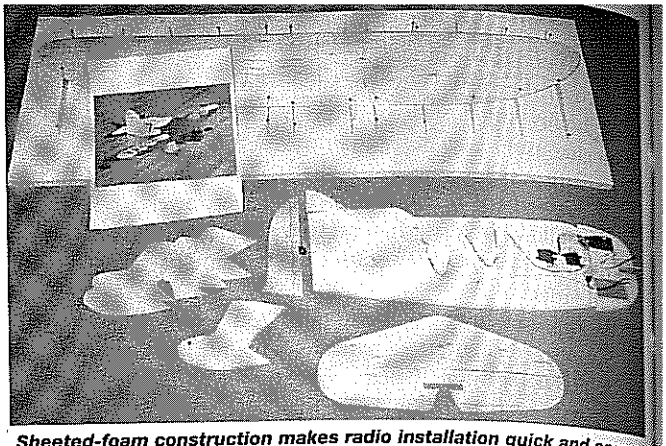
When you see the plan, I think you'll agree that this is easy. It really works and will take the toughest of landings.

The controls are also simple. You will need motor control, elevator control and coupled rudder and ailerons. To couple the aileron and rudder, use 0.045-inch-diameter piano wire to connect the servo arm back to the aileron. From there, use 0.007- to 0.010-inch-diameter piano wire or Kevlar-reinforced fishing line to go from the aileron horn back to the rudder. You can also use the fishing line on the elevator.

Finishing the Gee Bee would be easy if they made white tissue, but the white is really clear. You can either have a wood and red Gee Bee or spray white on first. Floquil paint seems to work best. It's light and has a lot of pigment—both pluses! You'll find it in model train hobby shops.



Simple sheet balsa wing with ribs supporting the underside.



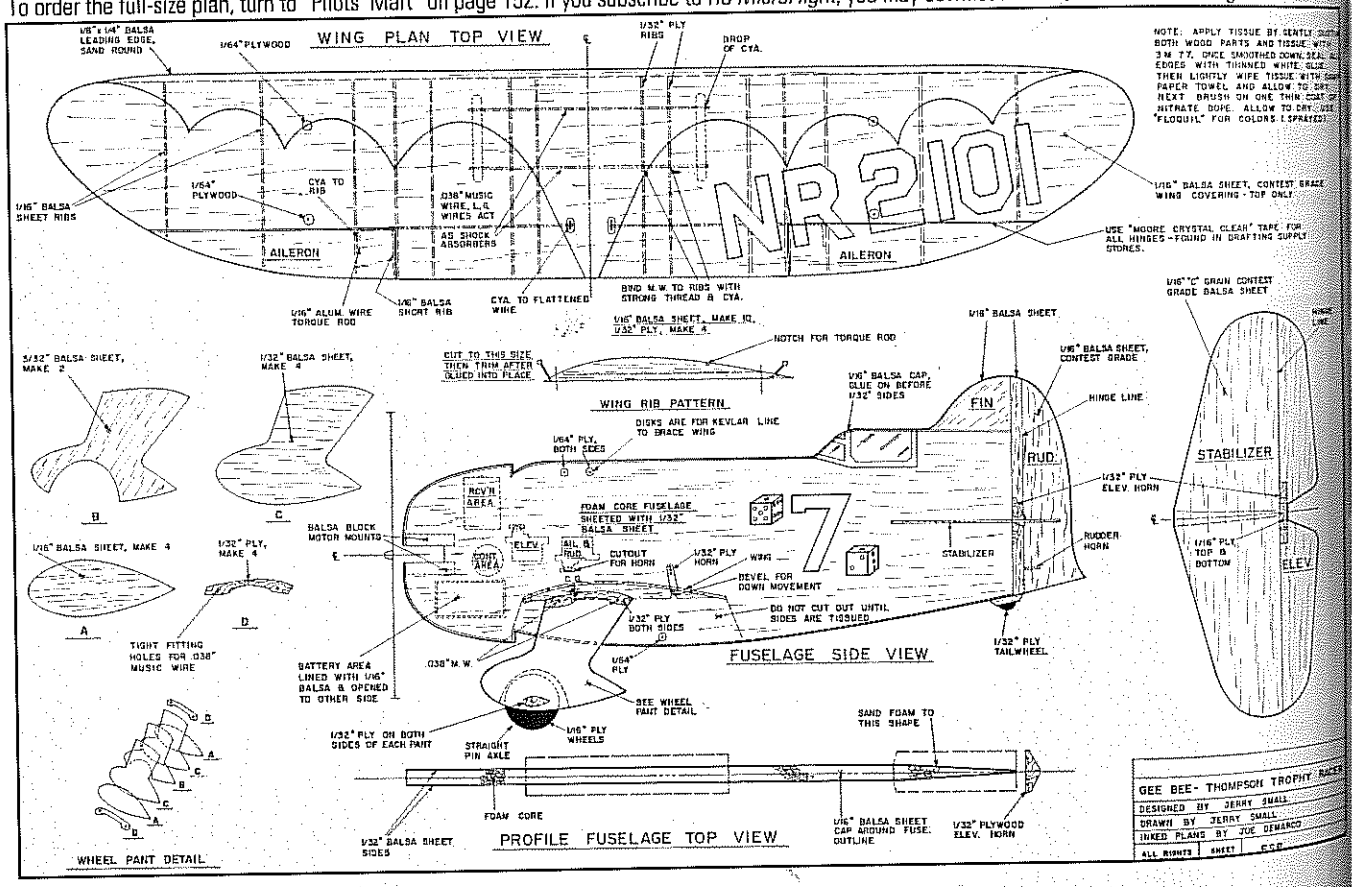
Sheeted-foam construction makes radio installation quick and easy.

Before we can fly, we have choices to make: which motor and prop? As I write this, the best motor appears to be the Mighty-Mo 1524 with a 4:1 gear ratio driving a 9-inch WES-Technik carbon-fiber prop. I bought both of these from Todd Long Models*, and I understand David Lewis* also sells them.

The gearbox is a different matter. I made mine with gears I found in a toy store and some Delrin bearings made by Bob Wilder. You can also buy 4.2:1 gears from Cloud 9 RC* and Kenway Micro Flight*.

The best part: the Gee Bee flies well and has continued to get better as we make improvements and learn more about how to make a slow indoor model fly like a racer. A model such as this seems to need a lot of aileron throw and needs its coupled rudder to move very little; in fact, it may be best to have no left rudder at all and only a little right rudder.

To order the full-size plan, turn to "Pilots' Mart" on page 152. If you subscribe to *RC MicroFlight*, you may download it free at www.rcmicroflight.com.



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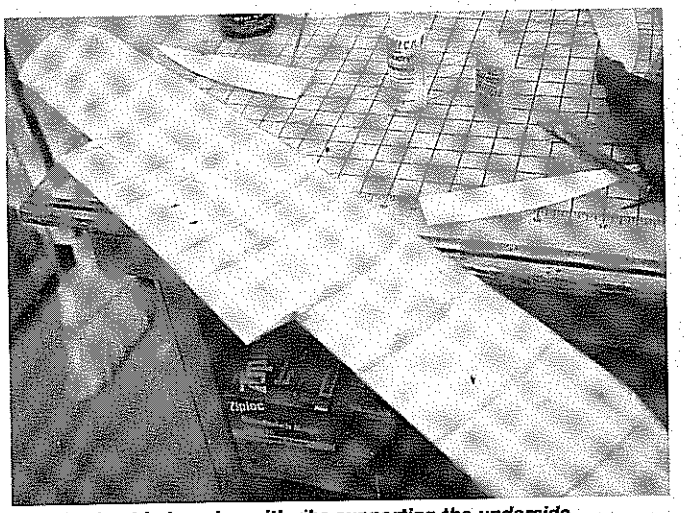

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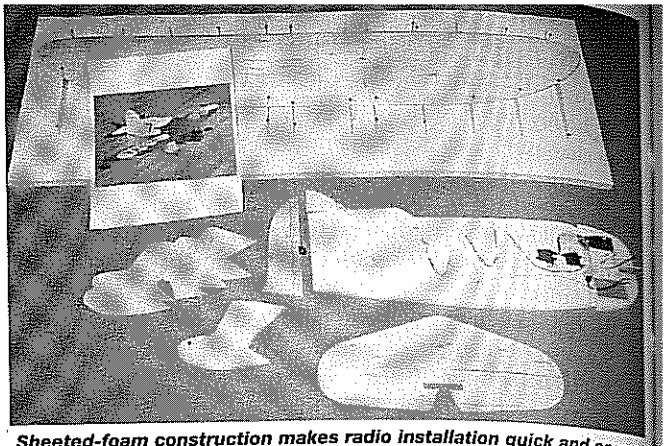

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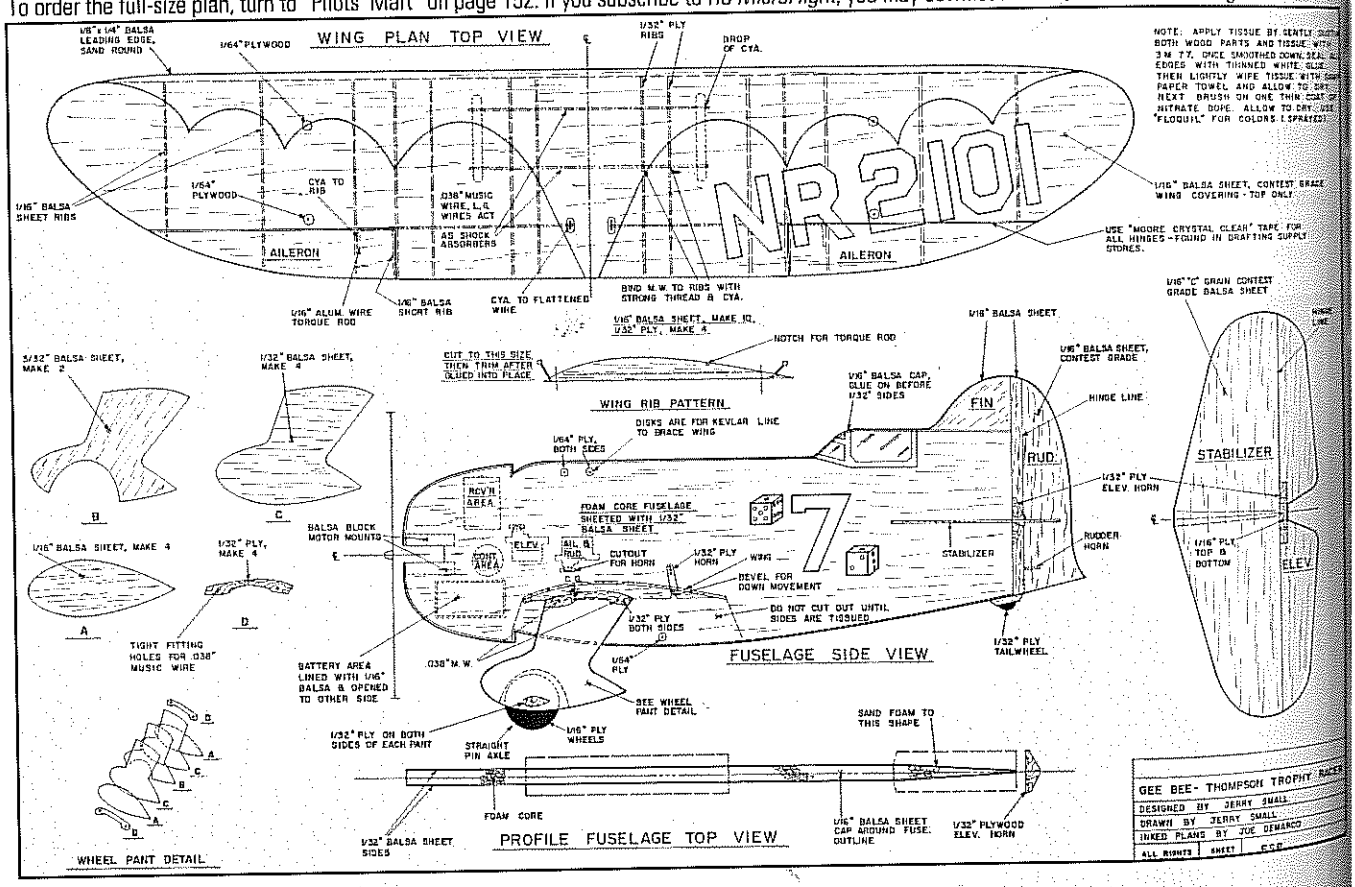

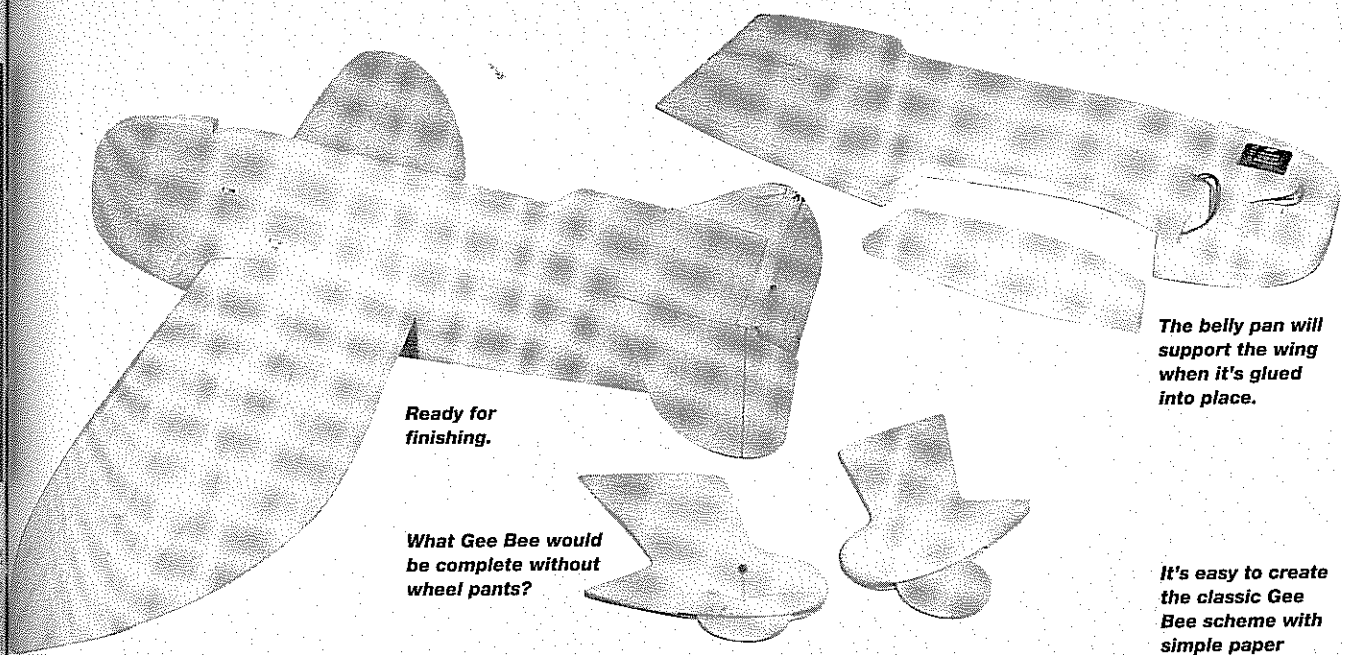

Ready for finishing.

The belly pan will support the wing when it's glued into place.

What Gee Bee would be complete without wheel pants?

It's easy to create the classic Gee Bee scheme with simple paper masks.

If, when entering the left turn, you have equal left and right rudder, the nose begins to drop at the end of the turn as you continue to hold aileron, but you need right rudder to help "fight" the model as it comes out of the turn. Let me know how this works for you.

Well, now you, too, can make Jimmy Doolittle proud and have a genuine Gee Bee. Build one or two and start to hold local races. We do this once a week; we race around two pylons—one at the top of the "key" at each end of a regulation basketball court.

It's too much fun to see three of these micro models dogging it out! Trust me; you'll love it!

Addresses are listed alphabetically in "Featured Manufacturers" on page 158. ✚