

# GROOVY TUNA

By JON DAVIS

Groovy Tuna was designed for the 1973 World Champs in Wiener Neustadt, Austria. The objective was to produce a model capable of performing well, both in the light early-morning lift, plus the stronger afternoon turbulence. Groovy Tuna meets both these requirements relatively well, but there is a bit of sacrificing which had to take place to come up with an all around model. Groovy Tuna is happiest flying in light air. If you want nothing more than a thermal-pig, then build a stock "Maxine" (M.A.N., 1970). The Maxine is as tough as an old boot (Fortunately it flies much better than an old boot.).

For those of you who are wondering where the name Groovy Tuna originated, I suppose some explanation is in order. Thomas Koster, of Denmark, built a power ship called "Hot Tuna." Who could leave a name like that alone? (By the way, "Hot Tuna" is also a San Francisco rock band.) Well, one night I went in to have supper, and there before me sat a spinach and tuna casserole which the cook had named "Groovy Tuna." I couldn't resist using the name. I was even going to hang some of the spinach from the trailing edge for effect, but I soon scrapped the idea. What a great psychological effect it would have on the competition to have your model come flying out of a giant casserole bowl with tuna and spinach hanging from it! Er, uh . . . oh well, not such a good idea.

## DESIGN

The design of Groovy Tuna (the airplane, not the casserole) is pretty straight-forward in most respects. Compared to the "Maxine," the wing was stretched a bit, the stab size was reduced, the rudder area decreased, and the moment lengthened. Groovy Tuna uses an airfoil which is a copy of John Gard's Unlimited-Rubber model. The prop is a Schwartzbach with no changes.

Groovy Tuna climbs up fast and its redeeming feature is the glide. Here in Albuquerque, in early morning air, the model will do just over three minutes (3:05 to 3:10). In the early morning air at Taft, it would do right at four minutes. There were some models doing more than this . . . most notably John Gard's model . . . but they were not competitive in the afternoon thermals.

For those of you of an experimental nature, the Groovy Tuna has flown with a stab size of only 33 square inches. The normal size is 44 square inches, and this is considered small. The smaller stab would let one put a few more inches in the wing, but it should only be flown in extremely dead air. It simply can't han-

dle the turbulence with such a small stab. Forty square inches appears to be the lower limit for an all around, stable Wakefield.

## BUILDING

The Groovy Tuna is not a beginner's model. If you want a simple, easy-to-build and fly model, then build a Maxine. The wing of Groovy Tuna is simple, and the internal spar, though somewhat of a pain, is strong. The easiest way to cut out the opening in each rib for the spar is to use an aluminum template with a small hole (.030 diameter) drilled at each corner of the spar rectangle. When the rib is cut, simply poke a pin through each of the four holes and then use a small knife-blade to connect the holes. Presto (or is it zap?), and the hole for the spar is cut. The three inner ribs on each wing are 1/16 ply, with holes drilled for the aluminum tubing. The wing tips are laminated from four pieces of 1/16 by 1/4 soft balsa soaked in water for 15 minutes, and curved around a form. The stab is also simple, the tips being made in the same manner. Don't forget the webbing under the spar, as it gives it a lot of added strength.

The pylon is made completely of 3/32 balsa. The top of the pylon is made by placing a solid balsa core between two outer ply ribs and then sanding this to the wing airfoil shape. Holes are drilled all the way through the block and the wing wires are inserted. A hole down through the top, intersecting the wires, gives a place to epoxy the wires to the block. Using your own discretion, make the pylon *strong*. I use Hobbyproxy Formula 1 to secure the pylon to the aluminum motor-tube. It must be a *secure* bond.

The boom is formed from 1/16 sheet balsa, soaked in water, and wrapped over a form. This is wrapped with an ace bandage. After it has dried, remove it from the form and glue the seam with an epoxy-type glue.

The motor tube and front-end are hard to make, since you need a machine shop. They are available, fortunately, for purchase! The front-end is the same one used on the Maxine, which Jim Taylor sold for awhile. He has ceased production, but now I am making them, using the same dies. The complete front-end is \$12.50p.pd., and the aluminum motor tube and two fittings are \$16.50p.pd. Order (now!) from:

"HUBS"

c/o Jon Davis  
303 Fontana N.E.

Albuquerque, New Mexico 87108

The noseblock can be made of aluminum or of laminated wood.

Use your own ideas and discretion when building Groovy Tuna. Personalizing a model to suit one's own taste is generally helpful and more rewarding.

## TRIMMING

Before flying, be sure that the wing and the stab are flat. Washout in both tips is O.K. but the center panels should be flat. The stab should be tilted approximately parallel to the inner right wing panel. The rudder tab should be set straight. Grind a couple of degrees down and right-thrust into the nose doubler.

Hand glide the model for a fairly slow, right-hand glide. First flights should be made with about 100 turns, launching slightly up and right. Groovy should climb out all the way with the nose up. If it tends to flatten out at the end of the motor run, then take out some of the down-thrust. As the winds are increased, Groovy should climb very steeply at first and then shallow out some, all the while turning sharply to the right. On full winds, the model should make about 2-1/2 to 3 turns before the prop folds. It should then go into a gentle, slow right-hand glide.

Groovy Tuna employs a 16-strand motor for a fast climb. The run will be anywhere from 28 to 30 seconds, depending on your location, etc. Here in Albuquerque (5,000 ft), the motor run is usually 23 to 26 seconds. In Taft (sea level), the motor run was usually over 30 seconds.

Getting the power pattern just right is difficult, and takes many test flights. My own models generally have a lot of right-thrust, almost no down-thrust, and slightly left rudder. Wing warps are tricky . . . I don't really know enough about them to use them properly. I usually push the model right into the edge of a stall in both power and glide, however, I'm not really sure this is the right thing to do.

## NOTIONS, POTIONS, and TRIVIA

I use Pirelli rubber, er, uh Filatti that is, with a glycerin-green soap lubricant. The motors are broken in by stretching them seven times the original length for 15 minutes. If you really want to have a good climbing model then wind the s(leep) out of the rubber: You're going to break a lot this way (nerves included), but it's worth it.

I have an idea that by changing the airfoil a better model might result. Either the B-7406 or the Bogart airfoil, which Bob White uses, would be good. If anyone tries it, I would be interested to hear the results.

Good luck flying Groovy Tuna! If you have any questions, please feel free to write. No doubt some aspects of the model are vague.

P.S. Don't write and ask for the recipe for the casserole . . . it wasn't very good!

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MODEL BUILDER