

Edit By Hisat.



The Midwest-RCM Air Races was the first major competition event designed especially for pulse proportional. Join the Goodyear races with the . . .

THE CASE FOR THE COMPACT RACER

THOSE of you who are regular readers will recall the "Getting Started in R/C" article in December RCM. This step by step program introduced you to the Whiz Kid and the Cessna 150, both of which utilized the Midwest molded foam wing. By now you should be semi-pros at guiding the tame ones and are, no doubt, itching to move onward and upward in R/C with something that offers more challenge and more fun. If so, hang on for the Hoosier Hotshot.

There is scarcely a modeler alive who has not been moved by the sleek lines and frisky performance of a Goodyear racer. Yet for many of us, the fun of building and flying in a simple competition event has been little more than a dream for a variety of reasons. Certainly lack of time, skill and money are among the foremost. The "Hoosier Hotshot" is the first of three simple solutions to your problems. Designed around the readily available .049 size engines and using the molded foam Midwest wing, this mover is easy to build and a cinch to fly with a choice of tame and hot configurations. With the growing variety of single channel equipment to choose from—a multitude of mortgage free versions await you.

HOTSHOT

The .049 class Goodyear racer is a logical outgrowth of the interest created by the return of full scale racing throughout the country and the .40 engine sized R/C versions which have created coast to coast interest in recent years. The latter have provided a much needed shot in the arm to a somewhat jaded and pattern-weary sport, but of late have been the subject of criticism. Some of it seems justified. The author was one of many who witnessed the Goodyear exhibition races at the Chicago NATS last summer. As the guided missiles rounded the pylons at a variety of attitudes and altitudes (causing more than one flag man to hit the dirt) and then leveled out to hit speeds in the neighborhood of 100 mph plus on the straight-away, the strong personal re-

actions was to run for cover. Before the Friday night session was over—several expensive and beautifully finished models' remains were scattered around the area. To this "chicken" racing fan it did not add up to "fun" flying.

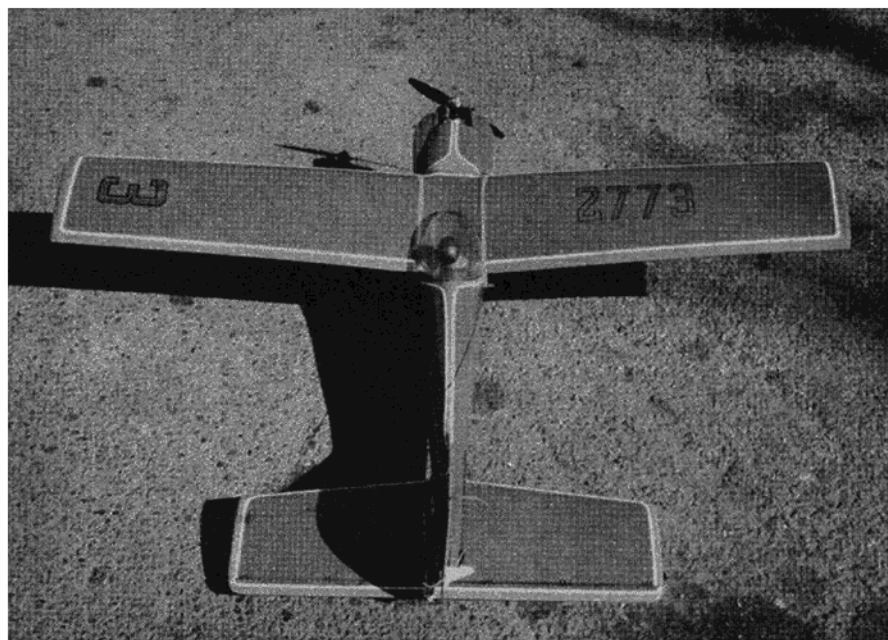
It is not the intent here to deny anyone their form of fun, but rather to extend the definition to include more of us "jus' plain folks." To each his own—live and let live and all that.

The Hotshot and his brothers would not have been born but for the gentle urging of Frank Garcher who whiled

away many an hour of AT&T time with ye olde editore Donne in deepe discussions regarding small Goodyears. Big Frank confronted this designer with the problem over a cup of coffee one windy Wednesday last June. Demonstration flights of the Whiz Kid and Cessna 150 had been successful and the talk turned to .049 Goodyears. The situation was outlined and a decision made to utilize a cut down version of the regular 44" foam wing. On the trip back to Madison with Frank Adams, the basic ideas began to shape up through a prolonged dialogue.

HOOSIER HOT-SHOT

by Owen Kampen



The following day rough drawings were sketched out — some calculated hunches based on several months of foam wing flying resulted in what seemed like a reasonable force arrangement and the balsa began to fly. The Hotshot was completed by Monday — test flown by Adams and ye timid author on Wednesday and placed in Garcher's hands — at dusk the following day. His whoops of joy could be heard as far away as Chicago and before the day was over a decision was made to kit the Hotshot. While this must establish some sort of record it is basically a confirmation of an old saying (which I just made up) to the effect that given wings, tail, motor and a framework to hold them together — something is bound to happen!

Be that as it may — some interesting facts were beginning to appear. First, on an .049 Golden Bee engine, the Hotshot wasn't hot. Responsive — but not hot. Second — the clipped wing and the 26 oz. plane had a power off glide that defied the rules — it just slowed down and eased in like a bird. On short grass, the wheel landings were a joy. The whole job was a novice's delight. One small question remained, like would it go like a racer? A ¾ oz. tank and a Cox T.D. solved that in a hurry.

All flights in 1966 were made using an Adams twin actuator on rudder only, giving response immediate and solid with fine proportional action. Rolls were something to see, and in the turns, the Hotshot responded to a little top rudder by grooving without diving. Holding full rudder resulted in a fast steep spiral dive which built up speed in a hurry. This was converted into many exciting premeditated and unpremeditated maneuvers. Fearless leader has installed an Airtrol system in his beautiful version and reports being most pleased with the results. A Tomoser GG1-S has since been acquired but current winter weather in Wisconsin has prevented testing. Also to be considered is the Rand and World Engines GG units. The only caution is to go easy on batteries to keep weight in the 26-28 oz. range for best performance.

No actual racing was attempted by the author, though 2 planes have been flown to gain some experience in togetherness. Reliable authority has it that some two dozen Hotshots are being flown by a group in Texas and that enthusiasm is running high.

All indications point to this becoming the year of the "compact racer." Why not jump on the bandwagon before it's too late — you wouldn't want to be the last on your block—now would you?

WING STAB

The Midwest molded wing and stab can be used as they come from the box, though some surface treatment of the foam is recommended. Perhaps the

easiest is the application of contact shelving paper available in a wide variety of colors. It's a good idea to seal around the edges using plastic tape to prevent loosening.

Another method involves a couple of coats of thinned down white glue—then silkspan and a couple more coats of glue. **WARNING — airplane glues and dopes dissolve foam!** Some spray enamels also contain damaging solvents so test first. The author has found the use of artists' acrylic polymer colors work quite well. In any event, watch the weight build up.

The wing should be cut down to 36"-38" using a sharp knife, coping saw or what have you. Both squared tips and those tapered up from the bottom have been used with little apparent advantage either way. The experimenters might try adding vortex tips a la Phil Kraft's Nats winner, Nov., RCM. It's my belief that there is more at stake here than is generally acknowledged. The stab, too, can be shortened by as much as 1" on each tip with no danger and somewhat faster performance. It's your option. If the foam should break — repair with Hobby Pox, no ribs and spars to untangle here.

Before starting, decide on which engine will be used as an internal tank installation is necessary for the Cox T.D. Midwest aluminum motor mounts bolt directly to the firewall eliminating hardwood bearers. A side mounted engine version should be given consideration as it permits a lower tank installation and somewhat cleaner lines. The Cox .049 Golden Bee is recommended for the novice primarily interested in sport flying.

FUSELAGE CONSTRUCTION

1. Place doublers carefully in position on the inside of each fuse. Side and mark with a ballpoint pen. Glue in place using contact cement such as Weldwood. **Be sure you have a left and a right side.**
2. Place right side over plan side view and mark location of formers F1-F2+F3. Glue F1 and F2 in place on right side.
3. Glue ¼" sht. braces on fuse top and bottom between F1 and F2 and add ¼" sq. strip along rear fuse bottom.
4. Glue two sides together at F1 and F2 — keep square while drying. Add ¼" sht. braces and ¼" sq. strip to inside of left side.
5. Glue and clamp rudder post in position making sure post is vertical and sides bent equally. When dry, glue F3 in position.
6. Drill the ¼" ply motor mount for ¼" blind nuts for a Golden Bee or for the Midwest ½A motor mounts if a Cox .049 TD is to be used. Epoxy in place.

7. Glue bottom and side nose blocks in place and carve to shape.
8. Glue rear fuse top deck sides in place.
9. Add fin making sure it is aligned **straight**. Do not attach rudder yet!
10. Glue and bind tail skid in place and then add stab saddle.
11. Line nose with ½" foam — install tank if T.D. is used. Glue on nose top block, carve and sand to shape. Carve soft block cheeks if desired and glue in place. Add wing and stab dowels.
12. Install R/C actuator and push rod or rods of ¼ sq. spruce. Finish sheeting fuse bottom. Add oil scoop.
13. Put waxed paper between fuse and wing and rubber band wing in place. Use Epoxy or white glue to fix the canopy former and the carved front block to wing, sand to smooth fit with the rest of the fuselage.
14. With cut down canopy in place, trace around base where it rests on the wing. Remove canopy and paint cockpit interior with flat black enamel (not dope). Epoxy canopy in place.
15. 2 coats clear dope plus 2 of color followed by 2 clear. Then stitch rudder in place and connect push rod using a Du Bro "quick link." Use a nylon rudder horn if flying superhet radio — to eliminate noise.

FLYING

1. Make sure the plane balances as shown with batteries and receiver installed. Keep C.G. forward for racing.
2. The glide should be flat and quite fast — shim the stab if necessary to achieve this.
3. Launch **fast** and straight out or in a **slight** climb.
4. As this model is very responsive to rudder, give small control signals until you are familiar with the plane. The nose will drop quite fast if rudder is held too long.
5. Pylon turns should be made while nose is up. Establish the degree of bank desired then back off and hold a little top rudder to maintain altitude. When using rudder only, **pulse proportional is recommended.**
6. Model slows up considerably when engine quits and glide is surprisingly flat and smooth.

When using galloping ghost systems for added elevator control a Cox .049TD is recommended to compensate for the increased drag inherent in these systems. Make minor control corrections until familiar with plane and system.