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HONCHO

A bit of the old, and a good bit of the ultra new make Honcho a distinctive bird. It's the latest in a series going back to 1967—hence that familiar look. But head to head it is a tough customer—and if you haven't tackled FAI, its modest gadgetry may get you into the mood.

If you are into free flight comp, especially Half A, here is something to sink your teeth into. It has a consistent climb pattern and transition to glide. Don't be spooked by "gadgetry"—it isn't half as bad as it looks. This is a winning model with an impressive pedigree.

● Rudy Kluiber

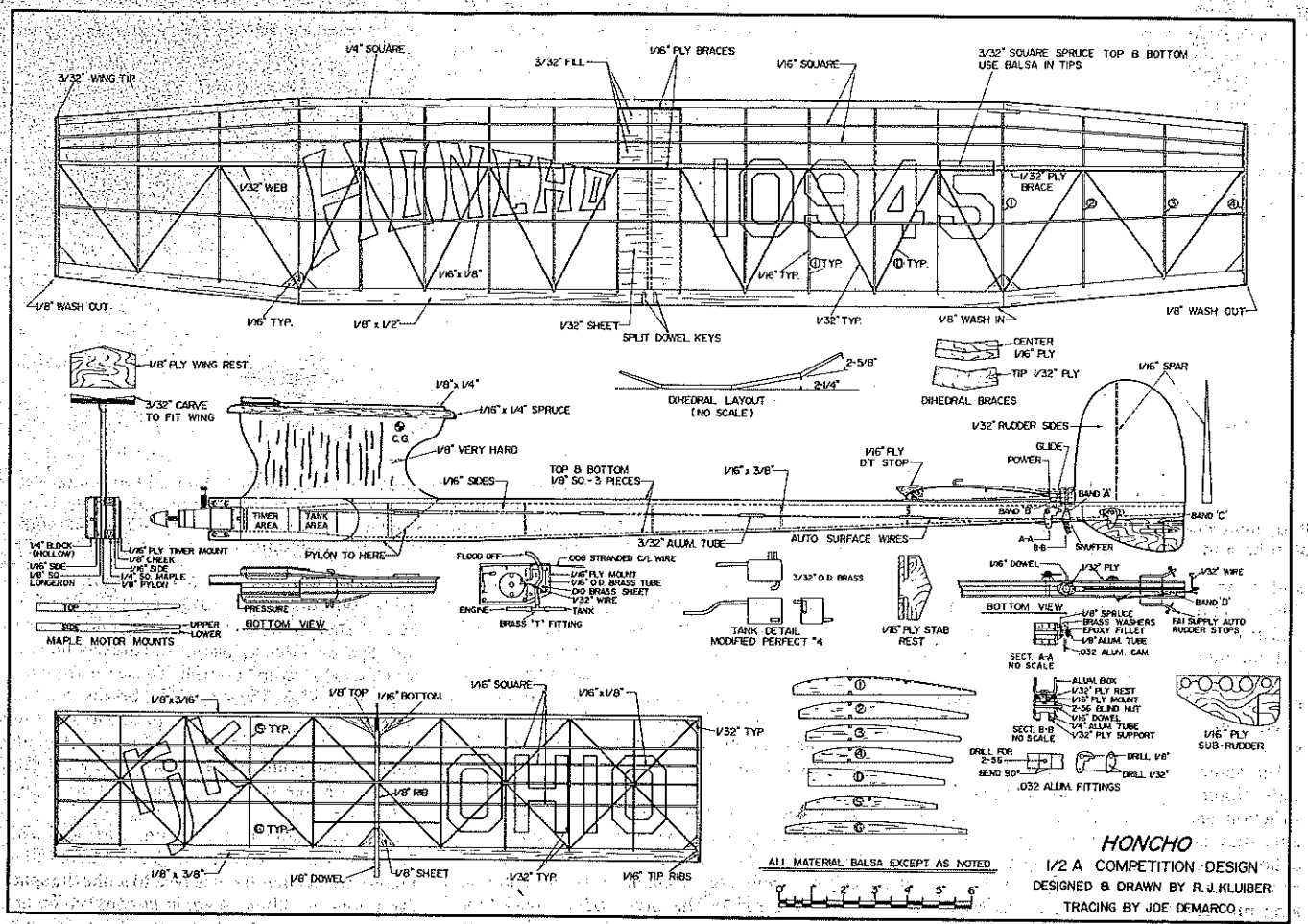
Photography by Michael Koster

BEFORE I begin with a brief introduction and history of the Honcho design, I want to make one important point. If many of you are like me, you have already looked at the plans and the pictures and you've probably noticed a few things somewhat unusual for a ½A FF—pressure and flood-off fuel system, sidewinder engine mount and auto surfaces. You may have immediately come to the conclusion, "I don't need that stuff to make a model fly" or "that's just something else to go wrong" or "it's interesting, but I don't understand it." Let me try to convince you otherwise.

The auto surface mechanism on the Honcho is extremely simple. It requires no special materials or machine shop, and while I don't think any good contest model could be declared foolproof, I worry a lot more about my own goofing up than I do about the plane letting me down. With this set-up you can get the consistent climb pattern and transition to glide that is so important, especially if you fly where the short seven- and five-second motor runs are used. While this design has placed in national competition, it is not an "experts only" model. Anyone who has built and flown a few kit models should be ready to try it.

So while you're thinking it over, here is a quick introduction to the Honcho.

The Honcho series began in the fall of 1967. For several years prior to this I had been flying larger floater-type models with a degree of success, but I had been more and more impressed with a style of model I first saw in Canada. These were small, high-powered planes with high pylons and rear fins. They seemed ideally suited for the three-minute-max contests which were becoming commonplace in the Midwest. The first Honcho was a tiny 180 sq. in. TD-powered ½A. Much to my surprise, it flew right off the board. (Eventually



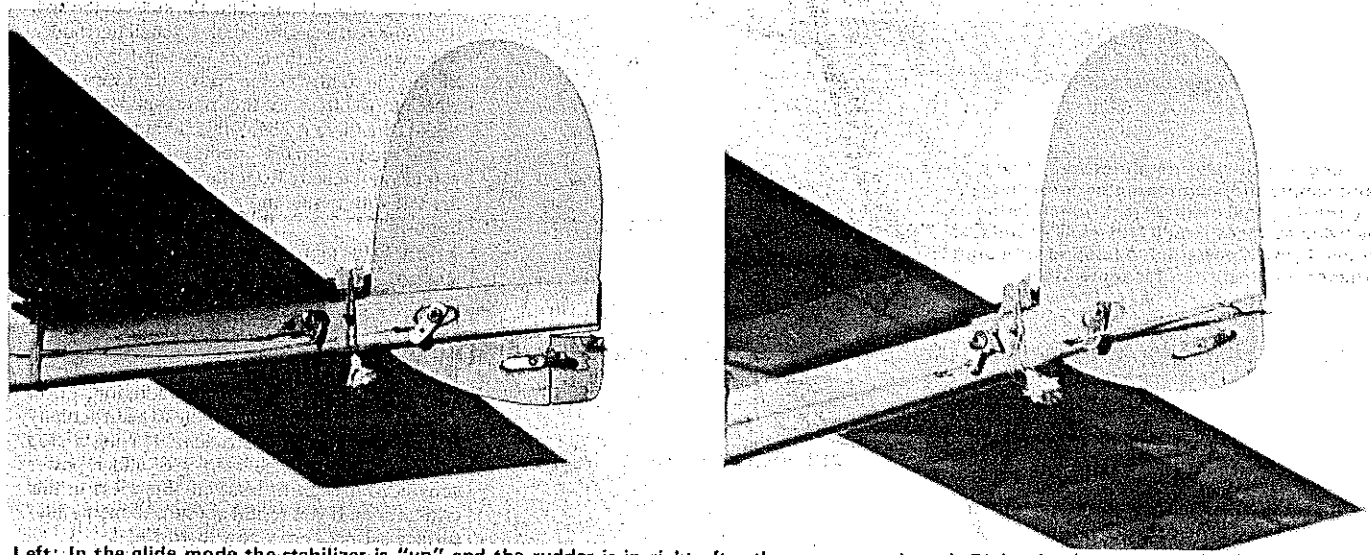
FULL-SIZE PLANS AVAILABLE . . SEE PAGE 128

it proved too small for the consistency needed for successful contest flying.) A 400 sq. in. TD-15-powered ship was scaled up from the ½A and this model placed second at the 1969 Nats in Philadelphia. Since then the Honcho has been built in many sizes and classes from .02 payload to Class C, and has continued to do well including a first in B and several other places in ½A and A at various Nats. As recently as the 1978 Nats in Lake Charles, LA, Honchos placed third in ½A and third in A. Auto surfaces were added to the ships starting in 1970. Once again, I can thank my Canadian friends for the original auto serface arrangement, although I have made some modifications. Likewise, the Honcho design has been changed here and there over the years, although the basic layout remains much the same.

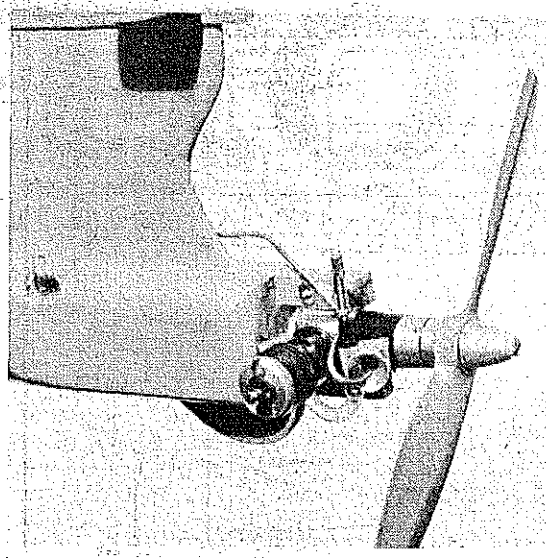
The use of this particular engine/auto surface set-up requires a TD .049 with a KirnKraft needle valve assembly, pressurized backplate and preferably, enlarged venturi. These items may be available through local hobby shops or you can obtain them from Joe Klause at Kustom Kraftsmanship. You may also want to look into his line of completely reworked TD engines which I have used for some time. This may set you back a few dollars, but it is really a worthwhile investment, as your engine will be easier to tune and stands to gain some power as well. (At the end of this article is a list of several sources for competition items which you may want to try.)

Construction

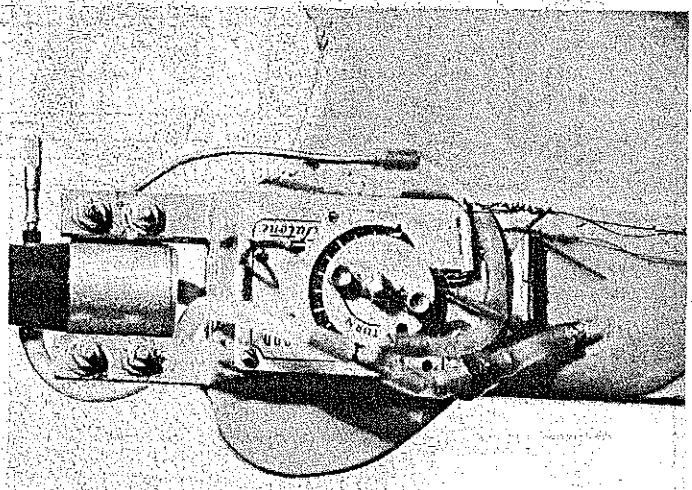
Wing and Stab: These are relatively straightforward in structure and should not present any problems. There are, however, a few particulars which I would like to cover, especially for those who may not have built a wing or stab using diagonal or union-jack type construction. With regard to the wing, make spar notches only in the ribs for the main panels prior to construction. Glue all the diagonal ribs and the tip ribs in without notches. Then cut the notches one at a time with a razor and straightedge, using the plan



Left: In the glide mode the stabilizer is "up" and the rudder is in right after the cams are released. Right: In the power mode, the stabilizer is "down" and rudder is left, held by bands on aluminum cams. Once trimmed, Honcho requires no more attention than the average contest ship.



Rudy uses the flood-off method for engine run control—note the flood-off tube and the pressure line just behind the cylinder.



The auto-surface wires attach to arm on timer, the flood-off under extra arms—pressure line from "back door" into the front of the body. Use of this particular engine/auto-surface set-up, requires a TD .049 with a KirnKraft needle valve assembly. All sources are given.

and the notches in the main panel ribs for a guide. Also, note the full depth braces at all wing joints and also the 1/32 sheet web between the top and bottom main spars. I also think it is much better to build the washout and washin into the wing panels from the very beginning, rather than attempting to twist it in while doping or by using steam.

The same basic procedure holds true for the stab. Notch the straight ribs only prior to construction and cut the notches in the diagonals after they are glued in place. This may seem a tedious process, but it will make for much more accurate construction and is really easier in the long run. It will probably help to make some practice notches in scrap wood in order to insure a good fit for the spars.

Cover the wing and stab with a good grade of Japanese tissue. After covering, but before doping, mount the various keys, hooks, etc., on the wing and stab. Mount the ⅛ dowel at the rear of the stab by carving or filing a half-round groove into the trailing edge area and epoxying the dowel into it. Reinforce this area with a patch of silk. Give the wing three or four coats of nitrate dope cut 50-50. Two or three coats on the stab will do. Fuelproof with epoxy or polyurethane finish. This can be thinned somewhat and I try to brush it on very sparingly except in those areas most likely to come in contact with exhaust spary, such as the bottom center of the wing and along the front of the stab.

Fuselage: Essentially, the body is a profile or Starduster type of layout built flat on its side, except for some variations in the nose area. The beam mounts are strong and easy to install and allow the use of the pressurized "backdoor," which is an essential part of the engine/timer/auto-surface operation.

The sequence of body construction is as follows. Pin down a quarter-grain sheet of 1/16 X 3 balsa for the body side. Draw the body profile on the sheet. Glue ⅛ sq. top and bottom longerons from nose to tail. Add some ⅛ sq. uprights at the nose and as supports for the pylon. Add 1/32 X ⅛ strips to longerons at rear of body in order to center the sub rudder. Make up the pylon from hard ⅛ sheet and add the ⅛ X ⅜ spruce strips to top of pylon. Glue pylon in. Add the second ⅛ sq. longerons to top and bottom. These run from rear of pylon to where the sub rudder begins. Add sub rudder. Add the 1/32 X ⅛ strips on top of the sub rudder. Add motor mounts. (Have your engine handy at this point to check for a snug fit between mounts.) Make slight adjustments, if necessary, before glue sets.

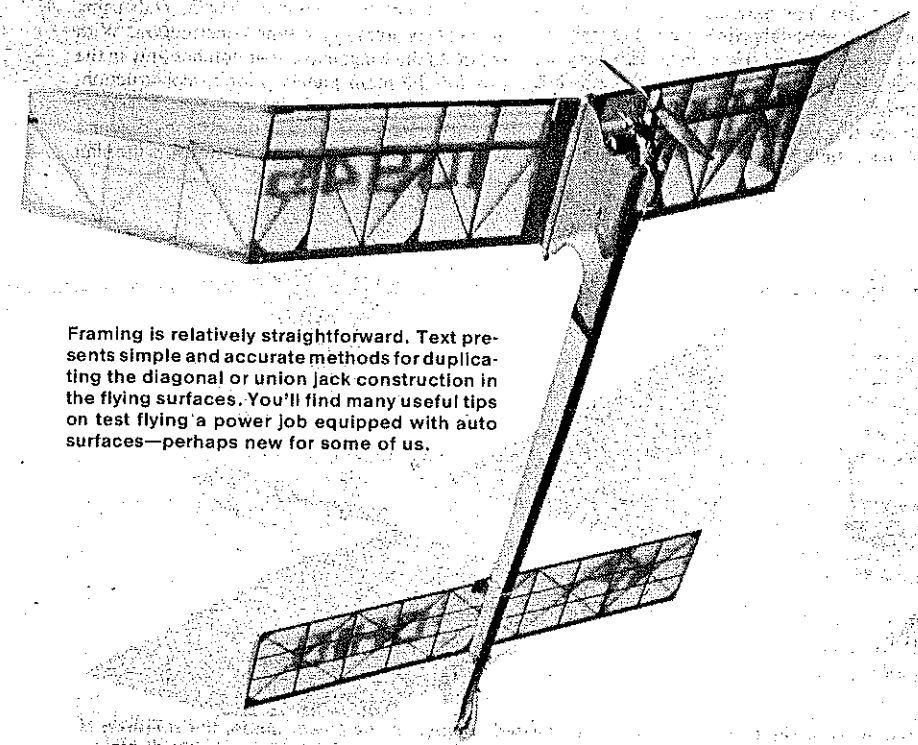
Cut out a hole in the pylon, and body side below it, where the tank is to go. The tank will be taken care of later, but it is best to make the space for it now. Add final ⅛ sq. longerons on top and bottom which run from rear of motor mounts to rear of body. Add ¼" high spacer between mounts at nose and some ⅛ sq. uprights in pylon area. Add 1/16 X ⅜ formers. Add 1/16 body side. This side is not perfectly flat, of course, because of the motor mounts. So work carefully in this area to make sure the body side follows the contour of the mounts.

Add the ⅛ balsa cheek and the ply timer mount. Remove body from board. Make up tank and fit into place from the right body side. The pressure line should end up running along the outside of the body to a point just past the front of the body. Hollow out a ¼ sheet cheek to cover the tank and pressure line. This completes the nose structure.

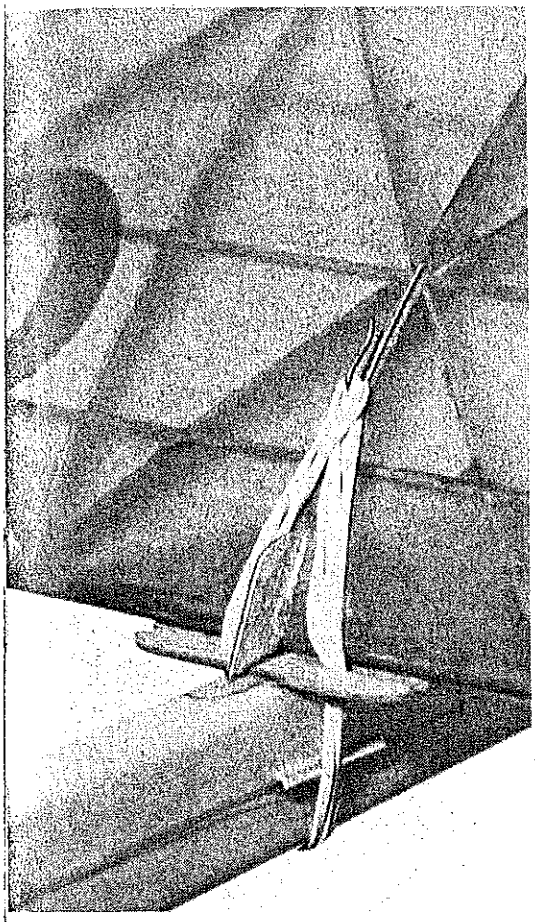
The rudder is formed by bending the sides around a vertical spar. Glue the sides to the spar first, then pull edges together. Eyeball the rudder. If it is warped, cut the edges apart and try it again. Mount the rudder on the body with a very slight amount of offset to the right—about 1/32". Make sure there is absolutely no hint of left turn in the rudder—this is important. I suggest that you cover the body from the rear of the pylon to the tail with tissue and then add the remaining hardware.

Refer to the plans and pictures for installing the auto surface mechanisms. Make sure the aluminum fittings rotate freely, but without excessive play. Use four narrow cloth hinges to attach the auto rudder to the sub rudder. I use auto rudder stops from FAI Supply. These are epoxied onto each side of the sub rudder. In addition, I drill and tap the stops for a 2-56 bolt so I can actually bolt them onto the sub rudder. Having a stop come loose while the ship was under power convinced me not to trust anything less in this critical area. If you're still not sure about the auto surface set-up, here's how it works.

One rubberband (A) goes from the 1/16 dowel on the body side up over the box, down around



Framing is relatively straightforward. Text presents simple and accurate methods for duplicating the diagonal or union jack construction in the flying surfaces. You'll find many useful tips on test flying a power job equipped with auto surfaces—perhaps new for some of us.



Small plywood fitting serves as dethermalizer stop. Strategically placed tubing guide keeps stabilizer bands off the auto-surface wires.

the fuse and back up to the dowel. A second band (B) goes from the dowel down around the bottom of the body, up and over the ⅛ dowel on the rear of the stab and around the aluminum cam mounted on the body side. When the auto line to the timer is engaged, this cam maintains tension on the band (B), holding the stab down in the power setting. When the auto line is released, band (B) is released allowing the stab to kick up until the ⅛ dowel comes into contact with band (A) stretched across the top of the box. This is the glide setting.

When the DT fuse burns through band (A) the stab pops up all the way to DT position. In like manner, band (C), running from the second aluminum fitting to the wire horn holds the auto rudder in the power setting. When band (C) is released, the auto rudder is pulled into the glide setting by band (D). The timer is a Tatone flood-off, mounted upside down with an additional arm mounted next to it. The extra arm holds down the flood-off tubing. The auto surface wires engage the arm on the timer itself.

Finish the front end with sealer and two or three coats of epoxy or polyurethane. The last item should be the auto lines. Make these from .008 stranded control line. Loop the wires through the aluminum fittings, wrap with copper wire and solder. Then run the wires through the tube guides to the nose. Form loops at the other end to fit over the timer arm. Some of the purists may balk at having the auto lines hanging out in the open for all the world to see. By all means, do your thing and run them inside the body, if you prefer. But having them on the outside makes for easier installation, troubleshooting and replacement. Besides, when the model is several hundred feet up, bouncing along in some lift, you can't even see those wires!

When the lines are engaged on the timer arm, the aluminum fittings should be in the position indicated on the plans. Bend a flood-off tube from 1/16" brass. Solder a brass tab to the tube so it can be bolted onto the engine. Also, solder a short (¼") length of 1/16 I.D. brass tubing onto the rear end of the flood-off tube to provide a tight fit for the surgical tubing coming from the tank. The pressure line is a short length of tubing running from the pressure fitting on the rear crankcase cover of the engine to the tubing from the tank which extends just past the front of the body.

Trimming: Now that you have your new little gem all done, it's time to run out to the field to do some flying, right? Wrong! Now it's time to thoroughly check out your engine/timer/auto surface setup. This is partly to become comfortable with the setup and to make sure it works properly. If this is your first experience with auto surfaces, it may seem as if there are an awful lot of rubber-bands, arms, cams, etc., to take care of. Don't let it throw you. That's a normal reaction and once you get into it, the whole operation will become quite automatic.

Check everything with the engine running. The flood-off release should occur about a half second *before* the auto surface release. This can be adjusted by bending the extra arm over the flood-off line closer to or farther away from the timer arm. Okay, now let's go flying!

Pick a calm morning or evening. Begin with auto surfaces in the glide setting, adjust for a steady right-hand glide using auto rudder and some stab tilt. My ship's actual current settings are 3/16" right stab tilt, 5/16" right rudder,

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finals. *Fourth* place was a 5:38! The preliminary races were run to give everyone a chance to get in some flying. With six entrants, we weren't in any hurry, so we just said everyone will fly back-to-back qualifying flights and then we will take all six to the finals. We all used the qualifying heats to kind of get it all sorted out. But the finals were strong! I must point out that of the six entrants in that contest, there were two K&B 5.8s (mine and Mike Grebb's) and the remainder were HP .36s (40s with a short-stroke crank in them to make a legal-size engine).

One of the local guys cornered me at that contest and wouldn't let me go until he had given me a piece of his mind. It seems that, in his opinion, I don't mention the local Houston racing people enough. He intimated that maybe my heritage might be suspect unless I said *something* about the Houston racing people in my column. Well, he just wouldn't understand that I feel uncomfortable when blowing my own horn or the one that I'm part of. But in order to make peace among the natives, here goes one giant, colossal, "how great we are" statement. (Please understand that I'm only doing this to soothe the ego of at least one local flier.) O.K., here goes.

"If you want to race, you got to be in *Houston!* And why not? I mean the best there is, is here. Why, just look at the results from our last "fun fly." Those are Nats-winning times. And Houston has won Rat at the Nats so many times that the trophies for it are automatically made up with Ron Esman's name on them. Goodyear? Why, the current Nats champ is a Houstonian. And Slow Rat will be ours this year! So, how do you spell "race?" Why, H-O-U-S-T-O-N, of course!"

Good grief! I just re-read that, and I think I'm going to be sick. I sure hope that helps, John! And don't anybody out there get down on me for doing that. I had to.

W. R. Lee, 3522 Tamarisk Ln., Missouri City, TX 77459.

FF HONCHO/KLUIBER

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1/16" negative stab incidence.

Now, for the sneaky part. Obviously, the first power flight with an auto surface model can be pretty hairy. So, a while ago I came up with a trimming method which makes those first couple of flights relatively safe.

I took a model that was already trimmed out, set the auto surfaces to the power position and gave the model a series of test glides. By working backwards in this manner I was able to observe how a model that was already in trim would behave in these test glides. If I could make an untested ship behave similarly in the test glides, I could predict a safe initial power flight. I call this "power gliding." Here's how it works.

First, get the auto surfaces to the power settings. My actual settings are 1/16" left rudder and zero stab incidence. Now, pick out a spot on the ground about 40 feet in front and glide the model at the spot with a good firm launch. (Much harder than you would ordinarily test glide.) Make sure you keep the nose slightly below the horizontal as you release. The model should go straight at the spot for 20 or 30 feet and then the nose should slowly come up and over to the right as the ship slows down. There should be no left bank tendency at all and no abrupt stall. Adjust auto rudder and stab incidence to achieve this.

Repeat the "power gliding" until you're sure you are getting the desired reaction. That is, the nose coming slowly up, perhaps three or four feet, and around to the right. It may require 15 or 20 glides, but be absolutely certain you've got what you want. Make sure there is no breeze to affect this testing. Once the power glide looks good, the model is ready to be flown.

Power flights should begin wiht about a two-second full-power engine run. Always launch in a near vertical position, slightly to the right of the wind.

The model should climb straight away leaning slightly to the right. Don't worry too much about the transition to the glide until you have increased the engine run to about five seconds. At this point, if the model heels over sharply into a semi-wingover when the motor cuts, the auto surfaces are coming in too quickly after flood-off. If the model stalls, there is too long of a delay after flood-off before the auto surfaces move. Adjust the spacing of the two arms on the timer accordingly to get the proper transition. You should be able to adjust the power pattern on the Honcho to really groove without any suggestion of Dutch roll or stair-climbing on the way up. One turn in seven seconds under power is about right. One last suggestion: on every flight as you are ready to release the model, look down at the stab and auto rudder to be sure they are set properly—leave the snap rolls to the Pitts Specials.

Once trimmed, this model won't require any more attention than the average contest ship. I hope you will be pleased with its performance. Should anyone wish to contact me concerning the article, my address is: Rudy Kluiber, 2021 Lakeland Ave., Lakewood, OH 44107.

Listed are some sources for engines and props which you may wish to try: