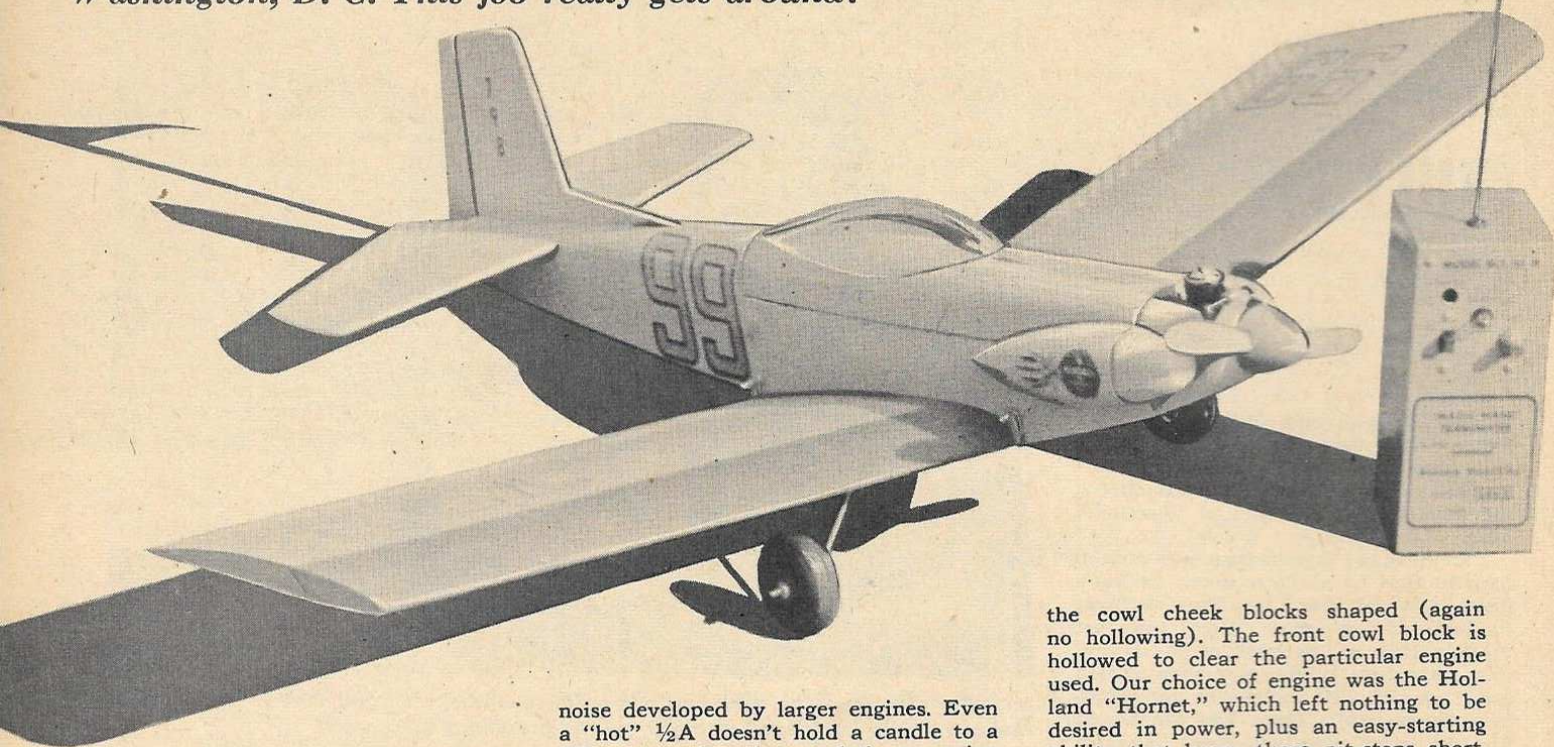


Radio controlled pylon racing with pit stops by Half-A powered planes is latest experiment by the SLOW Club of Washington, D. C. This job really gets around!



■ Just picture this . . . there you are, transmitter in hand, your pylon racer has just become airborne, and you head for that #1 pylon. Oops—that was a little wide of the mark so you bear down on pylon #2 more accurately now, but this time you cut it too close. So on #3 you've just about timed your "keying" right; on you go, round and round. The ½ ounce tank doesn't hold much, so there's a "pit-stop" coming up soon. You leave the transmitter on and quickly refuel—on smooth ground you start up and prepare to R.O.G. (on rough ground you'll lose precious moments in getting back to the take-off area, but that contributes to the excitement). Time for the flight is scored from the initial release until you cross the finish line after the last lap, so you can see it is quite exciting, what with the pit-stops required by the intentionally small fuel tank.

These 36" span ½A Pylon Racers are really exciting, and it does not hurt financially, either. It is really pylon R/C flying on a small budget—you'll be amazed at how much fun the triangular course is. Visually the models are exciting what with their bright colors and large racing numbers. If that isn't enough, give serious thought to the fact that these jobs require little flying space and are quiet compared to the .19 to .29 jobs flown in many areas. Important factors to consider, as many, many flying sites have been lost due to the encroachment of constant building developments or from complaints regarding the

noise developed by larger engines. Even a "hot" ½A doesn't hold a candle to a .29 as regards noise, so let's get going on making a "Pylon-Polisher."

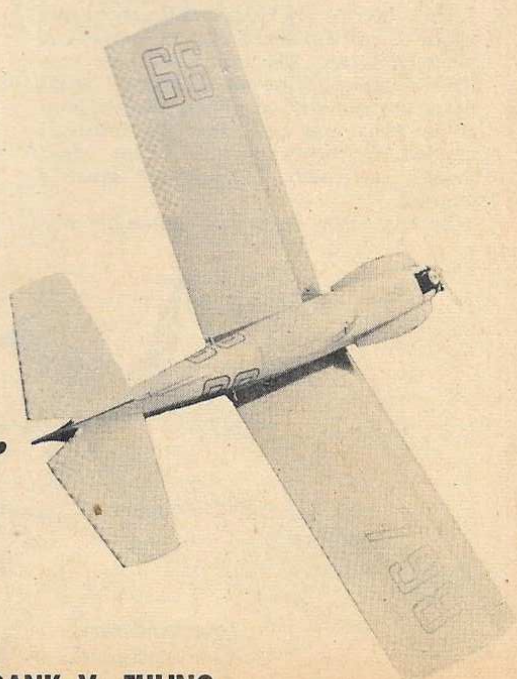
Medium balsa is to be used, except where noted otherwise. The fuselage sides are cut from ⅛" sheet first, and after the various formers are cut out, the assembly can be started. Do this over the top view—pin things together inverted, with the front area forward of former "C" overhanging the workbench. The sheet bottom piece aft of the wing is cut as per the top view outline (minus the ⅛" dimension on each side for the side sheeting). The amount of formers shown on the plans may just be considered a minimum—once the various components are mounted, additional bracing and/or formers may easily be added as you see fit. Former grain should be cross-wise for maximum strength. For the small penalty in weight, be sure to cement joints well, especially in areas of concentrated stress, such as the landing gear, spars, and nose of fuselage. Be sure to sheet in the area of the fuselage bottom that is directly over the wing, as this will be the weakest area if left uncovered.

Various blocks finish off the balance of the fuselage. In the case of the top-fuselage blocks; tack-cement them in place—once the rough shaping of the outside is accomplished, they are removed and hollowed out. Cap the ends of the removable top block with ⅛" sheet for strength. Also the front end of the turtle-deck section (from cockpit rear to rudder). The bottom cowl block can now be shaped (no hollowing) and

the cowl cheek blocks shaped (again no hollowing). The front cowl block is hollowed to clear the particular engine used. Our choice of engine was the Holland "Hornet," which left nothing to be desired in power, plus an easy-starting ability that keeps those pit-stops short.

The escapement and torque rod can be mounted before or after the turtle-deck block is in place. Whatever control system is used, just be sure that movement of the rudder is always easy, with a minimum of backlash or "play" in the system. Use firm straight-grained balsa for the tail surfaces to keep warpage to a minimum. After cutting to outline sand edges round and cement in place. The method of hinging the rudder to the fin is optional, but should work smoothly and last long. The nylon thread system shown works very well, provided too much dope isn't worked into the "flexing" area of the threads, as this will stiffen up the movement of the rudder too much. The tail plug removes for

Pylon Polisher....



Designed by FRANK V. EHLING

escapement rubber winding in a manner similar to the removable nose of a rubber-powered model.

Twenty wing ribs are cut from firm 3/32" sheet. Assemble in separate panels or in one piece, as you wish. But be sure to block up the trailing edge at a consistently equal height along the span, so that no "built-in" warps occur. The dihedral gussets have to be added before the sheeting goes on. Be sure that the glue joints in this brace area are strong.

Once the top sheeting and rib capstrips are in place, add the landing gear struts, as this must be done before the bottom sheeting is applied, especially around the center section. Wing tips are now rough-shaped and cemented in place. When cement is dry, they are finish-sanded and doped to resist nicking. A cut-down Berkeley "Minnow" canopy is used, but any canopy of similar size and shape will do. A realistic touch would be the addition of a helmet-clad pilot head inside the canopy, providing the right size could be found. This necessitates lowering the level of the fuselage top inside the canopy, so a 1" head could fit. For the "detail-hound," this is no trouble, as space will be needed for a scale-appearing instrument panel too. We leave these details up to your personal whim.

Once the wing covering is all on, several coats of clear dope are recommended for all exterior surfaces. For a good-flying model, we'll do without the wood-filler or sanding sealer. Clear dope is as good a way as any of sealing the

porous surface that balsa has. Two or three coats, followed by two of pigmented dope, should do a good enough job. Use bright, cheery colors, similar to those that were popular on full-scale Goodyear midget racers.

We do not dwell at length on sandpapering—we assume that you know enough to taper off from rough to fine grades of sandpaper as a project goes along. And when you are doping the job, really fine finishing grades of Wet-or-Dry paper softly and deftly used give an even smooth surface.

When the model is ready to hand-glide in preliminary flight tests, you'll see the advantage of the large removable fuselage top. It exposes plenty of room fore and aft of the C.G., so that batteries or receiver can be shifted if glide-tests show that it needs to be done. For the first few "heaves" it isn't necessary to rigidly mount various components. Actually it is better to stuff things in with crumpled tissue until we get a fast straight glide. Don't expect the flat glide of a free-flight or towline glider. Just reasonably flat with no sign of stalling. Not too fast a drop, which might be if your C.G. is too far forward of the position shown. Or if your wing is at much less incidence than that shown.

The first power flights are not to be attempted until all the radio equipment checks out. It is hopeless to assume that R/C equipment will work in the air if it has not thoroughly been checked out on the ground. Instructions that come

Full size construction drawings for "Pylon Polisher" are part of Group Plan # 1260 from Hobby Helpers, 1543 Stillwell Avenue, New York 61, N. Y. (85c).

with present-day R/C outfits are so explicit that just about any grade-school youngster can fully master the technique.

The first power flight should be made into the wind (if any) and you should give the model just enough "boost" to have it gain perceptible altitude. If it seems too sluggish, try another launch at increased rpm's. You should let the model "go fly itself" until some altitude is gained. A short "blip" now and then will show you how the model responds to your command. You'll see how it may drop off in altitude if held in a turn too long, or how difficult it will be (at first) to make a smooth 90 degree or 180 degree turn.

If the model should veer appreciably to one side in launching, blip it into a corrective turn just long enough to keep it from "winding-in" in a tighter turn until it is diving. Once it is on the ground, you can check it more fully for warps. If it veers only during power flight and goes straight in the glide, you'll need to offset the engine a little to the side opposite to that in which the model turns. If you detect a slight stall (especially noticeable in straight-ahead flight) a little more down-thrust

(Continued on page 52)

The RADIO CONTROL SYSTEM that "THINKS"

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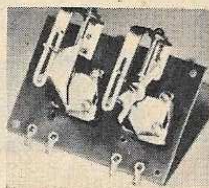
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Polisher

(Continued from page 27)

is recommended. This is accomplished by inserting washers between the engine back-plate and firewall (top of engine only) so that the shaft of the engine points downward more than before.

Babcock's "Magic Carpet" R/C equip-

ment was used by the author and is highly recommended due to light weight and trouble-free operation. Paul Burke, a friend of the author, has made a similar Pylon Racer (see Feb., 1960 *American Modeler*, page 60). This worked very well with a new Polk receiver. Another job, by Bob Violet, is waiting for its receiver and will be in the air soon. For rudder-only operation, these models are very quick and responsive. If you so desire, use of a large tank for just sport-flying would be a barrel of fun. That's up to you. And if your group or club is "equipment-poor," give serious thought to sharing a single transmitter. In any small group of fliers, more than one flyer is rarely ready to fly at all times, so just one transmitter is all that is required, anyway. If each model is equipped with a similar plug, you can even unplug the receiver from one job and plug it into another, sharing the receiver too. The balance of the R/C equipment is cheap enough not to require sharing on a group basis.

One more bit of information. If your group doesn't have a particularly smooth take-off area, larger wheels are recommended. Even a school playground will do for this job as a flying site, providing that the area isn't fenced in too close. But keep away from trees and buildings. It is amazing how often a "radio-controlled" model can end up in an unclimbable tree or rooftop especially toward the end of a flying session, when batteries are run-down and one's depth perception is "off."