

Better get the little bird up, Keith—those trees are kind of moving in on the Mini! Could be he is only taxiing, but sure does look like take-off.

mini smog hog

BY KEITH DONALDSON . . . famous old plane, Nats winner too, has to come to life again—but this time in miniaturized form (not that small: 3/4 size, which puts it into the size most of us are seeking these days.) If you haven't yet gone the Mini path, we can recommend this scaled down version of an old bird.

• If you happen to save all your modeling magazines (as most of us do), and happen to live in New Jersey (as some of us do), you might (as we do) while away the long, miserable New Jersey winter evenings alternately thumbing through old issues of Model Airplane News and building airplanes to crash next summer.

If you got as far as the November 1956 issue, you would learn in Ed

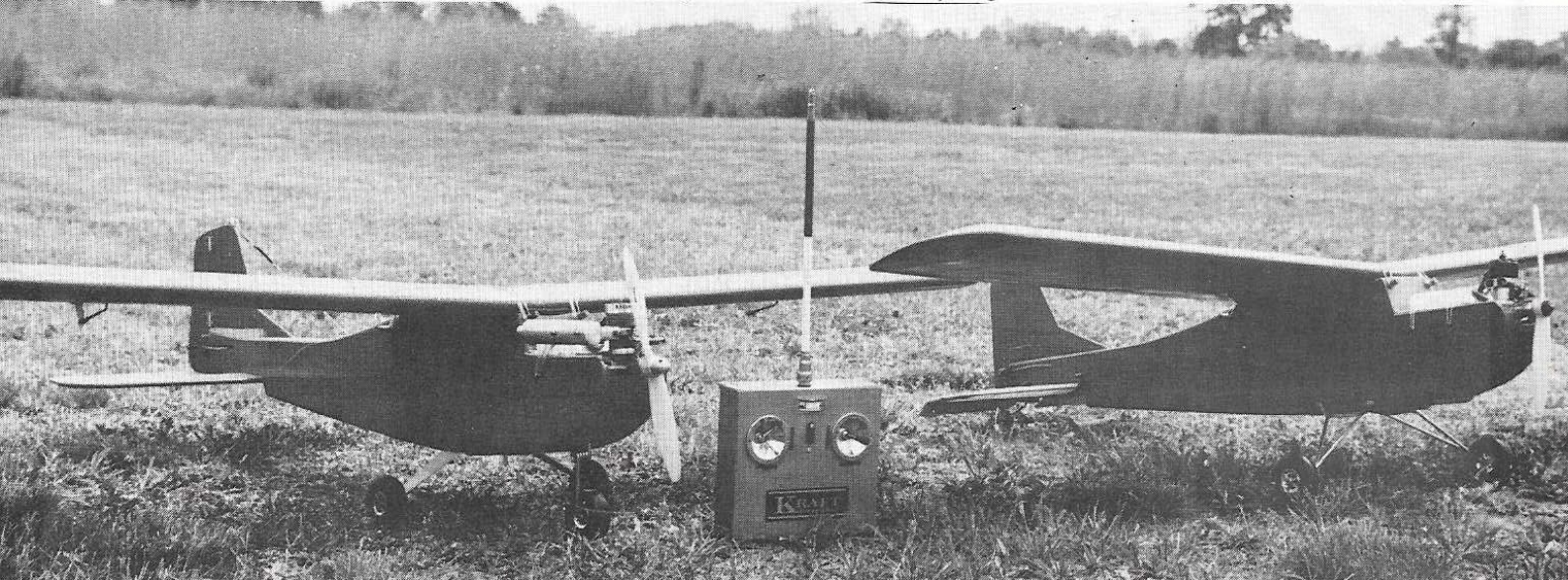
Lorenz's Radio Control News column that 1st place in R/C Multi at the 1956 Nats was taken by Howard Bonner and his "Smog Hog." A little farther down in the stack is the February 1957 issue, which featured a construction article for the Smog Hog. For 50¢ you could have gotten the full size plans drawn by Cal Smith, with plans for two Ukies to boot. M.A.N. no longer has these available — too bad! — but Chuck Gill has

one pasted on the ceiling of his shop, if you find yourself in that neighborhood.

If you keep reading through the stack, you will discover that the Smog Hog won the '57 Nats, too, when Bob Dunham built ailerons into his version. Dunham also won the '58 and '59 Nats with his "Astro Hog," nothing but a Smog Hog cleverly disguised by moving the wing to the bottom of the fuselage.

(Continued on page 46)

Two versions of the Mini Smog Hog: conventional two-wheel gear and the modern tricycle gear. Note ailerons in trike, not in conventional.



MINI SMOG HOG . . . CONTINUED

If you persevere (the effort now assumes the status of "research"), you will turn up Hogs with an astounding variety of radio equipment and motors, together with all the "improvements" made to Bonner's original design. You are also left with the impression that about one out of every four R/C flyers in the country during the late 50's and early 60's was doing it with a Smog Hog.

Bonner's original Hog weighed in at a dainty 5-1/4 pounds, pretty light for better than 860 square inches of wing, and a Fox .35 proved more than adequate for the task. Most copies turned out somewhat heavier than that, and consequently required a bit more muscle to haul them around. This was especially true if you were fortunate (?) enough to own 10-channel reeds, complete with five working servos, to drop down into the Hog's innards. If you weren't so affluent (some of us weren't), and went the VariCamp route, you saved a good bit of weight but perhaps had certain other problems. Some of the more popular variants included ailerons and/or trike gear, but most versions were built to the original specifications — standard tail-dragger with rudder, elevator and throttle controls.

The Mini Smog Hog is a three-quarter size copy of the original. I had intended to build it full-size, being inspired by Bob Peru's Hog chugging around majestically with an Enya 60 — but nobody knew where I could find all that wood locally, and I didn't know how I could afford it if I did find it! However, some easy arithmetic showed that at three-quarter scale, one could be built without using all the balsa in Monmouth County — it would still be a reasonably good-size plane, capable of flying comfortably with a .20 to .30; it would probably be able to perform a few modest aerobatics, yet it should have a bit of inherent stability, helpful to those of us who still occasionally crash and burn.

Having gotten that far, the only way out was to build the darn thing — so I



Even scaled down, there still is plenty of room in the capacious Smog Hog type interior.

did. It *didn't* fly right off the proverbial board . . . as a matter of fact, it was pretty miserable until trimmed out, but after that it was very nice. One of our older club members, who remembers the good old days, wondered why I hadn't built it with ailerons so as to be able to do Cuban Eights, like Bob Dunham.

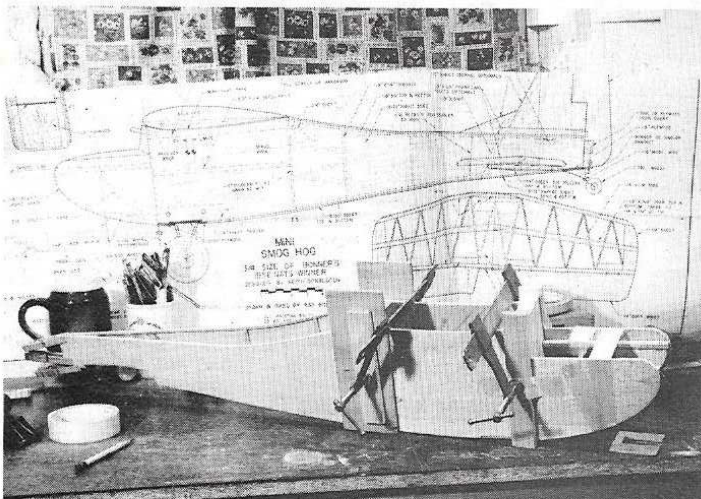
Well, one thing led to another, and pretty soon I found myself turning out another one, complete with ailerons and trike gear. The trike gear certainly makes takeoffs easier, and roll maneuvers are somewhat more axial with the ailerons, but aside from that, there's no essential difference between the two. The first one weighs just over 3-3/4 lbs. ready to fly, and the second, with the trike gear and extra servo, is a bit under 4-1/4 lbs. With a muffled Max .30 for

power, neither one can quite make Mach 1, but they both eventually get where they're going. So, if you're ready for something a few steps beyond a Delta Dart, but you're not quite ready for an Eyeball and the FAI Pattern, I think the Mini Smog Hog is the one for you.

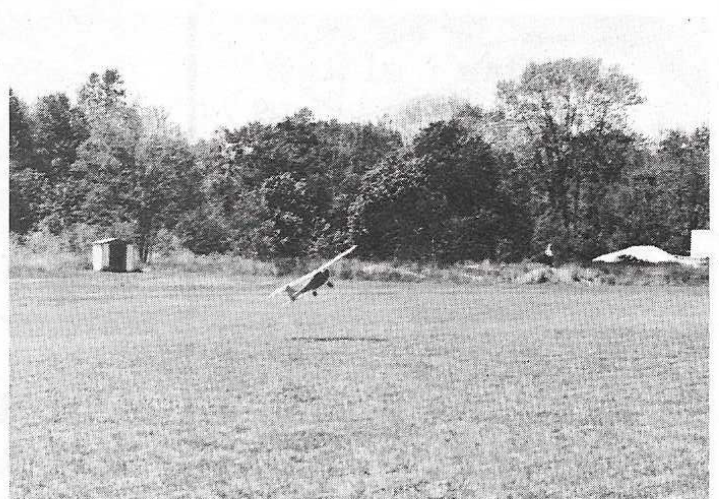
CONSTRUCTION

Construction of the Mini Smog Hog is quite straightforward (honest!) and follows conventional practices which in this case doesn't simply mean that that's the way I build 'em. The fuselage, for instance, is the well-proven, often used, and not very pretty BOX. Since you will need it in hand when it comes time to glue the fin and stab to something, you might as well begin here. When you transfer the fuselage side patterns to the 3/32" sheet, include the positions of the thrust line and the formers, and when you get to the 3/8" tripler, make sure that the top surface is flat and parallel to the thrust line. Install blind mounting nuts in the 3/8" x 1/4" bearers before installing them. They can be epoxied in place after careful trial fittings show them parallel to, and equidistant from, the thrust line. If you correctly indicated the former positions (90° to the thrust line) and cut the three formers with parallel sides and good, square corners, you are pretty much home free for an accurately aligned fuselage. Therefore, take F-2 and F-3 in one hand, the fuselage sides in the other, a bottle of Titebond in your teeth, and glue all those parts together the right way. A carpenter's vise is helpful for holding things together while the glue dries, but C-clamps, pencils-and-gum-bands, or even bricks, will do in a pinch; a few pins will tend to keep the formers from sliding out of place. Alignment can be checked by drawing the sides together at the tail post to see how well they mate without forcing. A run-through of the above without glue will reveal whether or not all is well and, perhaps, what can be done about it. Epoxy F-1 in place, join the sides at the tail post — again carefully aligning things — and the hard part is over. (Aren't you glad you took your time and did it right the first time!?)

(Continued on page 50)



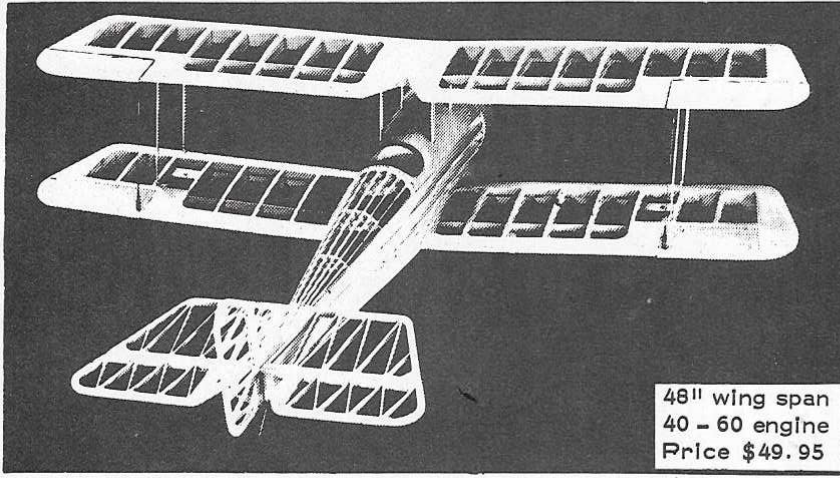
Old slab sides with the curved dorsal area in the fuselage. Looks good!



Nothing like a hasty take-off, one wing tip down but still climbing out!

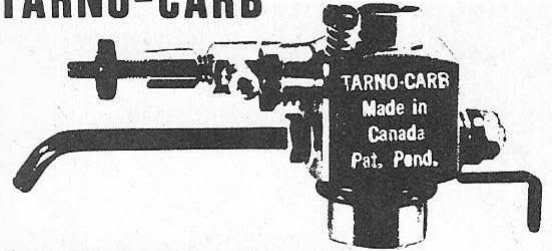
WWI STAND - OFF SCALE

BRISTOL BULLET



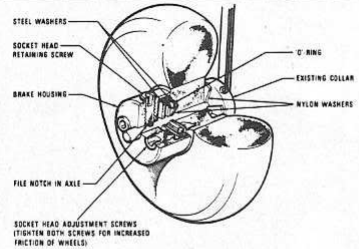
48" wing span
40 - 60 engine
Price \$49.95

TARNO-CARB



THE BEST!

For most engines \$19.95



TARNO-DRUM BRAKE

The brake that works EVERY TIME \$3.95

strato ... OUR QUALITY COUNTS

STRATO MODEL PRODUCTS ROUTE 6 BLAKELY, PA (717) 383-0551

See your dealer or send 25¢ for our brochure.

Dealer & distributor inquiries invited.

Mini Smog Hog (Continued from page 46)

Top and bottom sheeting is next; liberal use of masking tape eases the pin-hole problem when you finish the crate. You may, if you wish, continue the 1/8" sheet cross grain around under the nose to F-2. Add the 1/4" LG reinforcement and wing seat, the 3/8" sheet parts above the bearers, the windshield block, and then whittle and sand to your heart's content. Save drilling holes and installing dowels until after finishing.

Fin and rudder are so simple I won't insult you by telling you how to make them, except to say that you really need only round the edges slightly; don't try for super-streamlining, since this ain't that kind of airplane. Also, if you don't care to fiddle with the aerodynamic balance on the rudder, don't bother - I used it on the first version I built

**TWO...
GREAT NAMES IN
MODEL 'COPTER FLYING!**

Hegi Enstrom's F-28A

Field-tested, flight-proven, this scale model of the Enstrom F-28A (DS-22) by Dieter Schluter, flies forwards, backwards, sideways, left and right. Climbs and descends vertically hovers in mid-air, flies straight and level. Perfect for "backyard" flying. Utilizes .60 or .61 engine and any 4-channel radio system. Kit includes pre-finished fiber glass fuselage (unpainted), all parts for easy assembly. Specs—Fuselage: approx. 57", Main Rotor dia: approx. 60", Flying wgt: approx. 11 lbs. Replacement parts available



\$359.95 KIT
less engine
(shipping charges extra)

R/C HELICOPTER FLYING AT ITS FINEST!

KALT BELL "JET RANGER"

Kalt's Bell Jet Ranger does everything a full-size 'copter does... ascends, descends, hovers, flies straight and sideways. Designed for small space flying, it responds precisely on any 4-channel radio system. Custom-crafted kit includes pre-finished fiber glass fuselage (unpainted) and all necessary parts for assembling. Specs—Fuselage: approx. 53", Main Rotor dia: approx. 55", Flying wgt: approx. 9½ lbs., Engine power: .60.

Replacement parts available



\$399.95 KIT
less engine
(shipping charges extra)

ARISTO-CRAFT
DISTINCTIVE MINIATURES

DEPT. MA83
314 FIFTH AVENUE
NEW YORK, N.Y. 10001

Wholesaler-Retailer Inquiries Invited

(rudder-elevator), but on the second, simply widened the chord of the rudder by about 3/8".

Stabilizer and elevators are only slightly less simple than the fin and rudder. The stab framework is built first, with the top spar added while everything is still pinned down. When dry, unpin, flip it over and add bottom spar; shim up the TE and LE with scrape 1/8". Coat hanger wire can be used for the elevator joiner in place of the 3/32" music wire. It has all the torsional strength required, but can be tweaked gently if (when?) you don't get the two elevator halves quite lined up the first time.

Wing: Now, if toy airplanes flew without wings, you'd be near the end, but they don't, and you're not; grit your teeth and get with it. The basic instructions are: Cut out all the parts and glue them together to form a wing. However, as with so many other things, if you cheat a little bit, it'll go a lot easier. The

genuine 2415 airfoil is really bi-convex; there's not a straight line in the outline. But if you make the ribs flat on the bottom, from the rear spar back, you'll have essentially the same airfoil, and you will also be able to do some pinning down on your flat work bench without a whole extra bunch of shimming (there's enough of that, anyway!).

First off, cut out the ribs, using your favorite method. There are 25 ribs: 24 are of 1/16" sheet and one is of 1/8" sheet. The 1/8" rib is the center rib, and is in three parts; one fits between the LE dihedral brace and the front spars, the second part fits between the front spar dihedral brace and the rear spar dihedral brace, and the third part fits between the rear spars and the trailing edge. The center rib is installed — as is traditional — when the panels are joined, and the three parts are trimmed to fit at that time. You may or may not have some different ideas on wing construction, but I suggest the following se-

quence: (1) Pin down the lower rear spar (shimmed up 1/16") and the lower TE over the plan. (2) Attach 12 1/16" ribs; pin and weight these as required to get them lined up properly. As part of this step, and before the glue sets, slide in a length of 3/8" stock under the front ends of the ribs until it touches the bottom surface of each rib between the front end and the lower front spar position. Make sure that this piece is the same distance back on each rib, and pin it down. This ought to help keep the panel true. (3) Install the top rear spar. (4) With only a little fumbling, install the lower front spar, propped up the right amount. (5) Install the top front spar. (6) Install the sub-leading edge. If you didn't pre-shape it, be careful when you get it to the right outline, or you'll have little pieces of ribs all over the place. (7) Install the shear webs on the rear faces of the front spars. When all that is dry, leave the structure pinned to the board, but pull out enough pins to let you (8) attach the upper LE sheeting, (9) upper TE, and (10) upper cap strips. Let all that dry well, take it off the board, flip it over, and pin it down — use 1/4" or so strips to keep the panel from rocking. (11) Attach lower LE sheeting and (12) lower cap strips. When dry, remove from the board, trim any overhang in the LE sheeting, and attach the 3/4" x 3/8" LE, sanding to shape after dry. The second panel is built the same way, only opposite handed.

When both panels are completed, glue them together with the dihedral braces and the three-part center rib; remember, dihedral at each tip is 2-1/4". Considerable trial fitting will probably have to be done before actually applying the glue, since the LE sheeting, spars and TE will have to be trimmed to a reasonably flush fit. Probably the worst part of the whole job is getting the LE dihedral brace to stay in place while you worry the front section of the center rib between the front spars and rotate it into place to wedge that brace into position. Some of that operation can be done before the panels are firmly fixed to the board, and that has to be done while the other braces and sections of the center rib are fitted and glued in place. The remainder of the center section sheeting can be attached after the dihedral is set; when that is dry and the center section joint neaten up, the 4" fiberglass tape can be applied, using low viscosity epoxy or polyester resin. After the center section reinforcement has dried, don't worry too much about the strength of the joint; unless you forgot a lot of parts inside, it's strong enough. Stick on the tips, and all you have to do is cover the wing — aren't you glad it's not a biplane?

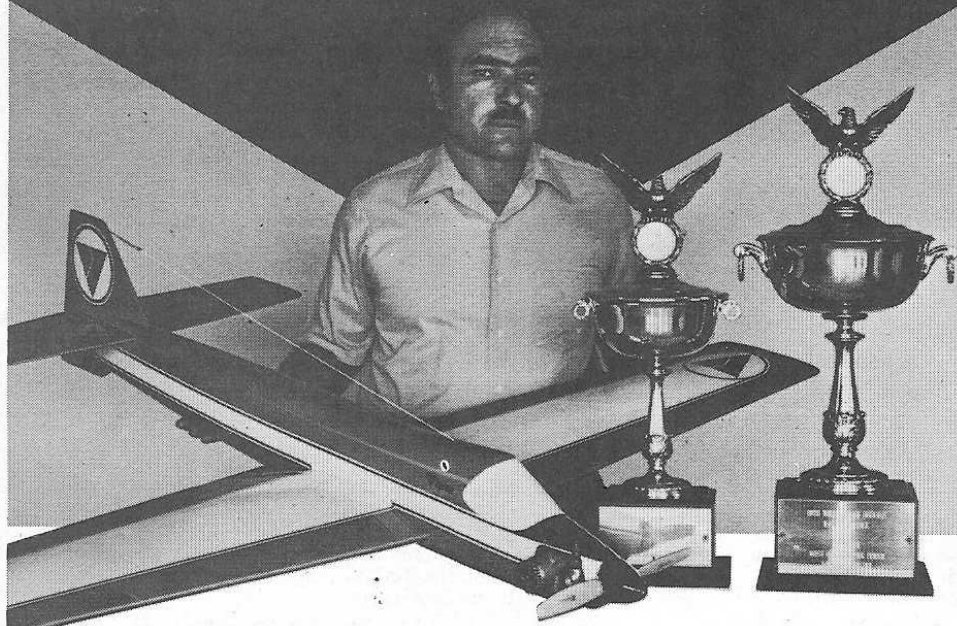
FINISHING

Now comes the time to catch up on all the little things you may not have gotten to yet: glue on fin and stab (cover the stab first), install required hinges and horns, make pushrods and pushrod exit holes, install throttle cable and tail wheel bracket... that list seems endless, but at last you can get out your brush (or whatever) and apply the finish. One thing I will not give any advice on is how to finish a model. The kindest thing anyone can say about my finishes is that they are fuel-proof, and I have heard some comments that are considerably more unkind than that. I'm not hard-hearted, though, and if anyone wants to borrow my broom, all he has to do is ask.

So anyway, let's say you've somehow finished the model, added wing and landing gear dowels, installed radio gear, checked balance, and otherwise have done those things that you ought to have done. Now you are ready for The Moment Of Truth. Take the thing to your field and have an expert fly it and trim it out. Let him fly it three or four times, and in between flights, make the corrections he suggests. If you've been reasonably careful with incidence angles (that means how accurately you cut out the wing and stab

**FIRST PLACE
WINNER**
Best Original Design
and
Most Outstanding
Finish. 18th Annual
Toledo Conference.

DARIO BRISIGHELLA SR. says:
**FOR MY COMPETITION MODELS,
THE ONLY WAY TO GO IS
AeroGloss DOPE**



Winning best finish awards with offbeat combinations of Aero Gloss has become a habit with Dario Brisighella Sr. of Oak Creek, Wis. His latest: A "plum-crazy" combination using his own specially blended "international orange," "rich plum," and "ice white," with jet black striping on the widely publicized "VIPER." "It may be that I just think of models and Aero Gloss together," Mr. Brisighella says, "but in thirty years I've never gotten a bad job using it." Which is not such a bad reason to consider Aero Gloss for *your* next competition model.

Other reasons:

PRE-FORMULATED AND READY TO USE—For dependability, for convenience!

40 DISTINCTIVE COLORS—Providing an unlimited color range for the unique and trend-creating color concepts that contest judges are always looking for.

TOUCH-UPS AND ADDITIONS NO PROBLEM. With Aero Gloss, another matching jar is always available. Leftover paint or mix can be used again.

INNOVATE, BLEND, CAMOUFLAGE! The exclusive Aero Gloss formula comes in military flats, fluorescents, candies, metallics and in spray and brush-on dope.

AT YOUR HOBBY DEALER IN SIZES FROM 1 OZ. TO 1 GAL.

***pactra* industries, inc.,**

6725 SUNSET BLVD., LOS ANGELES, CALIF. 90028



saddles), thrust e and balance point, there shouldn't be too much to do to make this a nice-flying airplane, that won't have you white in the knuckles from takeoff to landing (crash?).

A word about the ailerons: If you decide to go for them, make the decision early enough to plan ahead for the bellcrank platforms, pushrod holes in ribs, servo well, and other constructional considerations. The construction of the conventional ailerons outlined on the plan is — dare I say it? — conventional. The details are, as they say, left as an exercise to the reader; however, a modest amount of differential *is* required if you want them to do their job properly. Either fit the horn so that the clevis attaches forward of the hinge line (assuming the horn is on the underside), or use the appropriate bellcrank (not 90°), or a little of both.

If you decide that the conventional ailerons are too much of a hassle (I built the

second version that way, and I wouldn't argue with that point of view), feel free to use strip-type ailerons, and still be in the spirit of the thing. There were a few Hogs to which strips were added. If I were doing it that way, I would keep the fuselage-mounted servos well down in the servo area, and sweep the aileron horns well forward, which would give the required differential and avoid fouling the horns on F-3. ■