

The MODEL BUILDER

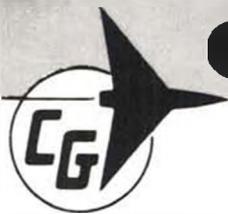


MARCH* 1973

85 cents

volume 3, number 16

*combined with FEBRUARY



CARL GOLDBERG

The Solid Evidence on CG RETRACTS

Now after more than a year's use by thousands of modelers, we'll bring you each month solid evidence on CG Retracts. Proof of dependability and durability. How they carry heavy airplanes working off of grass fields and last for hundreds of flights. Practical and almost service-free, they work for experts and average flyers—and they'll work for you!

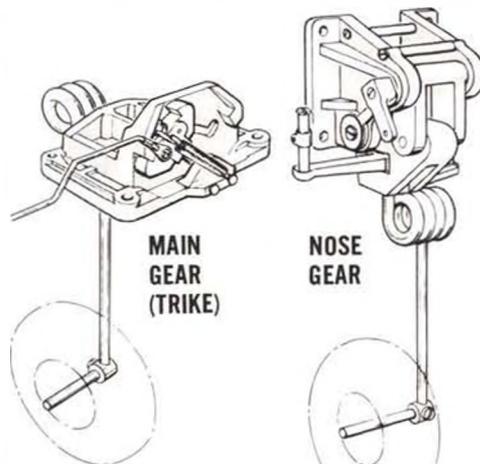


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Dave Brown

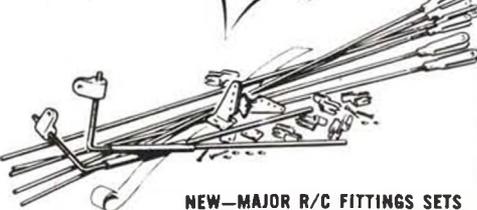
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TRI-GEAR Retracts—RG3—\$24.95
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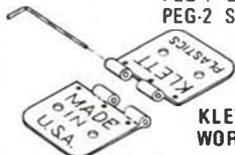
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To protect your fuselage and insure smooth operation of your pushrods. Precision made of tough nylon. Easy installation. Large for 5/64" wire, small for 1/16" wire.

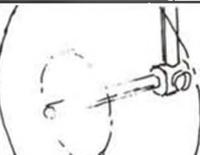
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RK2-7 7 for \$1.10 RK2-15 15 for \$1.95
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Hardened steel collar and screw SA1 75¢.

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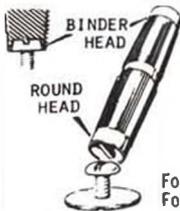
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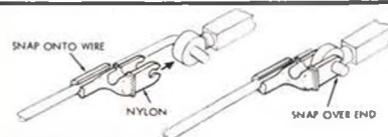
This nylon reinforcing tape is extremely tough when applied with epoxy around the center when joining wing halves. 2 1/2" wide x 5 ft.—N2 50¢. 3/4" wide x 5 ft. N1 25¢.



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SOCKETS DOWN ONTO SCREW HEAD — CAN'T SLIP OFF AND DAMAGE YOUR WING!
Takes Round Head Screws and Binder Head.

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For 1/4" Nylon Screws SD1 98¢ ea
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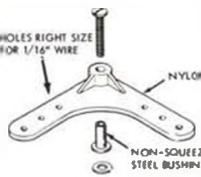


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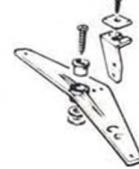
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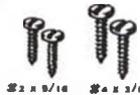
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PRICES

Complete System (wired with LG-47 Amplifier)	\$ 99.95
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Handy Printed Fuselage Sides — Build Internal Structure Directly On the Wood.

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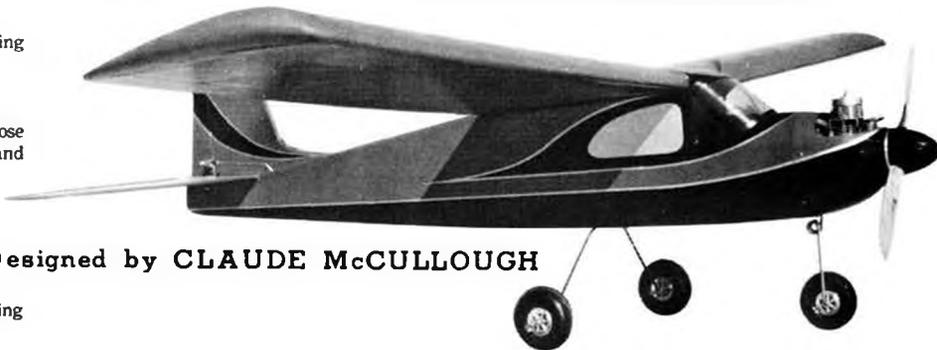
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Dr. Ralph Brooke says,

"Every doctor should have copies of The MODEL BUILDER in his reception room . . . That way, his patients won't mind waiting if he happens to be out flying models during office hours!"

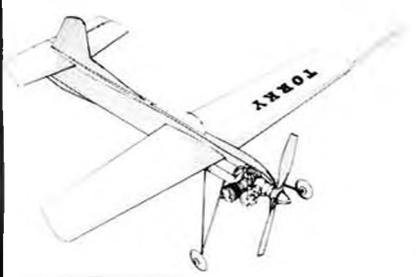


The MODEL BUILDER

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 WEIGHT 30 Ounces

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- All fabric construction.
- Complete building and flying instructions.

The MODEL BUILDER

MARCH*

1973

volume 3, number 16

*Combined with February

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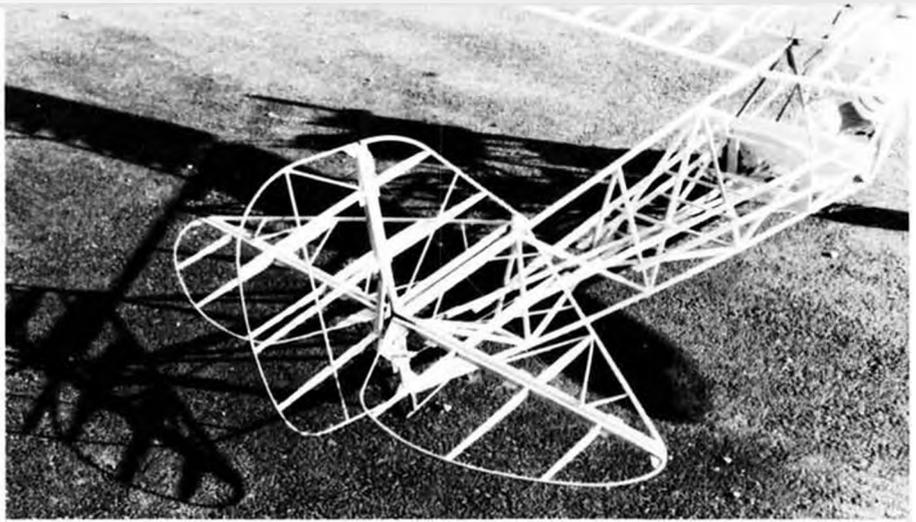
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Cover: Lake Elsinore, California forms the background for this superb shot by modeler and professional photographer, Chuck Colwell. The Mark's Models Wind ree was suspended on fine monofilament line rather than shot in passing, in order to stop the lens down for extreme depth of field. We coulda fooled ya though. Right?



One of these days . . . ! Our 3 inch-to-the-foot C-3 Airknocker is still under construction after more than four years since it was started. Maybe this year . . .

from Bill Northrop's workbench . . .

EXCUSES, EXCUSES

● Notices were sent out to all of our advertisers and to all hobby dealers who handle *The Model Builder* that this issue would be late. We're sorry that we could not let you, our readers, know about the situation until now.

Without taking up your reading time . . . and space in the magazine that can be put to better modeling use, we will simply state that problems associated with rapid expansion (subscriptions and new dealer orders are pouring in), slow printer delivery, and increasingly unreliable postal service, we have had to literally "skip" February. By more or less combining February into the March issue, and streamlining our circulation and production staff, we hope to remain on a more stable schedule, with the magazine appearing at the beginning of the month for which it is dated.

NOTE: All subscriptions will be extended one month to compensate for the "loss" of the February 1973 issue.

You know, this cover date thing is sort of ridiculous anyway. Why not just label every cover with "CURRENT ISSUE" and let it go at that?

ADIOS, GMC

Well, it appears that AMA may have finally found the answer to the GMC (No, not "Generous" Motors! We mean the Great Magazine Controversy.) A recent proposition has been tentatively accepted by all 5 model publications (though reluctantly by one of them). It goes something like this:

1. Starting in January 1974, all five magazines will carry AMA's eight pages of news, as now published in AAM only.

2. At a considerable savings over the current arrangement, AMA will pay each month to publish the eight pages of AMA news (to be furnished camera-

ready by AMA).

3. Rather than paying for a magazine subscription as part of their dues (which would thus be lower), members will pick up their *favorite* magazine and find the AMA news therein.

The plan is based on the logical assumption that most every modeler buys or has a subscription to at least one of the five publications, and so communication with AMA members will continue. (In fact, it may improve. Who's to say a member reads the AMA news if he's not inclined to read the remainder of a magazine?). In addition, having all five mags carry the news means that the AMA "message" will get to more non-members.

Best part of all is that maybe now we can get back to modeling and knock off the hassling.

ONE REPORTER'S OPINION

We are publishing the following article by Thermal Thumbers Bulletin editor Mike Keville because we feel the same way.

"A very real and present danger to the modeler has appeared in the form of so-called 'discount' hobby suppliers. You may ask 'what danger is there in lower prices?' Well, draw your own conclusions from the following:

A. The hobby shop owner *knows* his products. In the case of every hobby dealer I've known, each was an active builder/flier/competitor. If we buy an item and later need to replace, modify, understand, duplicate, exchange, or do ANYTHING to it, our local dealer will do so with a smile. Then he'll stand by patiently while we look at every piece of balsa in stock.

B. The 'discount house,' in many cases, is nothing but a toy store. The clerk who may sell you a K&B .40 for

7 dollars less, wouldn't know an FAI Power ship from a Wakefield, and really doesn't care, since his hobby is golf. And for a real thrill, just ask one of these guys if you can go through his wood selection!

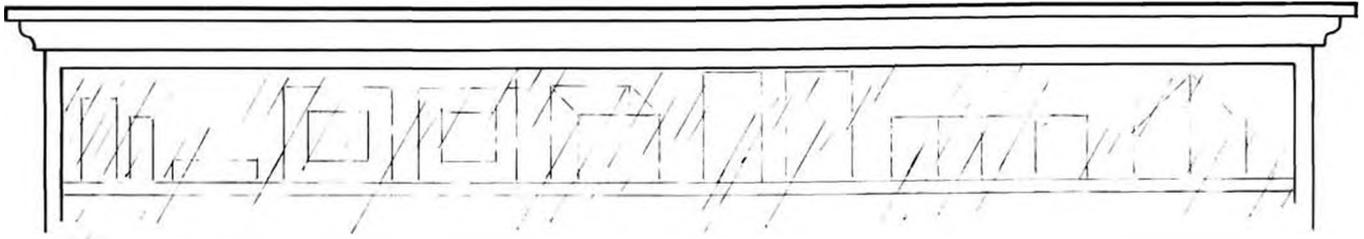
C. The hobby dealer isn't getting rich. We know of one dealer who was forced to quit when his store rent was raised. The dealer has a family to feed and could probably live better in another line of work, only he loves models and modelers. He gets "ripped off" by shoplifters and can ill-afford the losses. He gives free advice to some jerks who then go to the toy store to buy the item for a buck less. Most of all, when you're waiting for the glue to dry, and/or just want to get out of the house for a while, he will "hangar fly" with you all day or night . . . maybe over a cold beer.

D. The discount house is there for one reason: to turn a profit. You get a "Bentwing 480" kit for 8 bucks instead of 12, but you can bet your fancy they're crying all the way to the bank. You can't go in and talk models because (a) they're too busy, (b) they don't want to, (c) they can't.

E. The biggest danger of all may be to the manufacturer. If a customer should purchase one of their products, what about that personal attention when he can't figure out how to cover his wing or start his engine? The hobby dealer will personally show him how; maybe stay late at the shop to solve the problem. The result, Mr. Manufacturer, is another satisfied user of your products. Suppose you take the item in question back to the toy store: are you going to get that personal attention there? I doubt it. You'll probably be

Continued on page 44

OVER THE COUNTER



●Bridi Hobby Enterprises, new address: 1611 E. Sandison St., Wilmington, CA 90744, is just now releasing kits for the latest in the famous Kaos series, the Super Kaos. Capable of performing all AMA and FAI maneuvers, this newest of Joe Bridi's designs is agile and responsive at high or low speeds without any harmful snap tendencies.

The ship is easily built from machine-cut, select, top grade balsa and hardwood parts. Indexing is used throughout the construction design to ensure easy and true assembly. Ship can be built and flown with or without retractible landing gear. There is ample room for all types. Complete kit, including all special hardware, costs \$57.95.

* * *

Kraft Systems, Inc., after many years as a leading manufacturer of radio control units, has now broken into the model aircraft kitting field. In what might be considered an unexpected approach for a company whose leader is well known throughout the world for his abilities in pattern competition, the first kit to be produced is a flying wing designed primarily for R/C combat!

Developed by Joe Martin, a member of the Kraft organization, the flying

wing is simply two butt-joined, cardboard covered foam wing panels controlled by elevons. A hardwood profile type "fuselage" is epoxied to the center section, carrying a side-mounted 35 to 60 engine and exposed plastic bottle tank in true C/L combat style. Quarter inch plywood tip plates extend mostly downward and carry wheels on the in-board side. A nose wheel, steered by the elevon system, and mounted on the "fuselage," completes the trike gear undercarriage which must claim to have the widest tread on record.

To be called the Wing-Master, the . . . er . . . plane is designed to be flown with

the Kraft KP-2B or S "brick" radio (no throttle), which is mounted, exposed, in a pocket cut out of the top of the wing at the center. A complete "Products in Use" report will be presented next month. Price was not determined at this time.

* * *

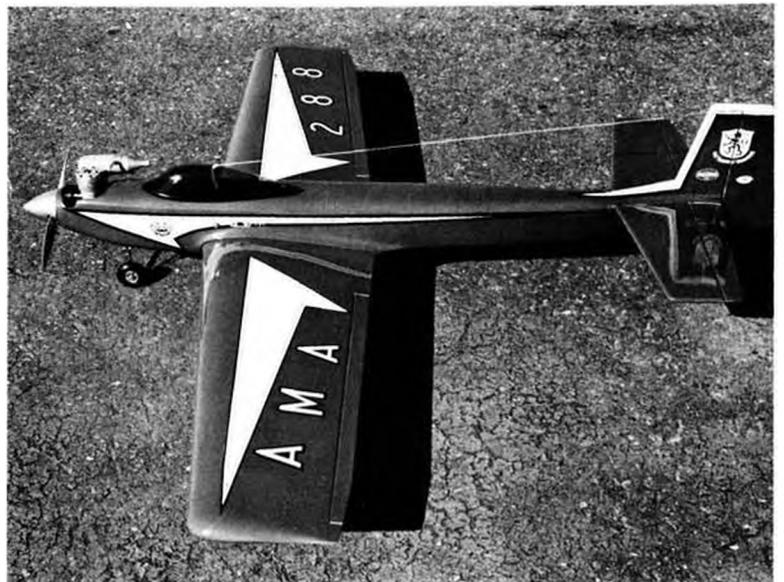
Los Altos Models, Box 1477, Mountain View, CA 94040 is now offering White Trash, a 10 foot span R/C competition sailplane (original Rick Walters design was published in January 1972 MB) in kit form. The kit features a fast building foam cored wing which is available in both 120 and 144 inch versions.



First model airplane kit by Kraft Systems, the WING-MASTER, for R/C combat . . . or whatever!



The Drag'n Fly 40 Mark II, by Dumas Products.



The new Super KAOS by Bridi Hobby Enterprises.



Here at last! The fabulous ANTIC BIPE, by Lou Proctor. Same fuselage and tail as ANTIC monoplane. Span is 64 inches.

Optional flaps are included. Fuselage and tail are conventional balsa construction. Kits, which include Solarfilm covering are priced at \$49.95 (120 inch span) and \$55.00 (144 inch span).

* * *

The long awaited Antic Bipe, designed and produced by Lou Proctor, is at last becoming available. A follow-up to the famous Antic monoplane, the Bipe is essentially the same fuselage and tail but with 64 inch span biplane wings.

Lou Proctor's Antics and Nieuport II are the most exotic model airplane kits ever produced. In the basic tradition of the hobby of years ago, when models were built in the same fashion as their full size counterparts, Proctor airplanes are constructed of spruce, plywood, balsa, and bamboo. In addition to this, you find functional rigging with turnbuckles, control cables actuating surfaces, inspection panels, and so forth.



GUILLOW enters the balsawood retail field with this dealer display package.

There isn't space here to fully describe the kit or the extent of prefabrication. Although we built an Antic about 5 years ago, we were still left in speechless wonder upon examining the Bipe kit which just arrived a few days ago. If we can somehow find the correct words and still sound believable, we'll describe it all in an upcoming Products in Use article.

* * *

House of Balsa, manufacturers of the Shoestring quarter midget racer, now have a sheet of self-adhesive mylar fuel proof product decals scaled to quarter midget size. Price is \$1.49. Familiar labels include Champion, Gulf, STP, Goodyear, Texaco, Bardahl, Shell, Flying Red Horse, and of course, the Quarter Midget insignia.

* * *

Williams Bros., well known producers of molded plastic accessories, has updated the 2-inch scale Le Rhone engine kit to include an attractive engine stand for display purposes. Price is \$11.95.

Another item coming soon is an engine/cowling kit for "Golden Age"



Updated 2" scale Le Rhone by WILLIAMS BROS. features display stand.

R/C models. Main feature is a cowling that carries scale engine cylinders and also fits nicely around the model's actual flying engine.

* * *

Dumas Products, Tucson, Arizona, is introducing an improved version of the popular, all birch plywood Drag'n Fly 40 kit. The Mark II version provides all but speed and maneuverability in a radio controlled boat.

* * *

Vortex Model Engineering, manufacturers of the popular Santa Barbara One Design and Soling-M R/C sailboats and kits, is back in production. Expecting a normal Fall slump in orders, the plant stopped production in order to improve



WILLIAMS BROS upcoming "Golden Age" plastic engine for sport R/C models.



All molded styrofoam R/C SUPER CHIPMUNK by MIDWEST.

facilities for an expected increase of sales in 1973. Problem was, the slump didn't happen! Consequently, orders started piling up.

All of that is over now. Back-log orders have been shipped and most items are in stock. The S/B kit has been increased to \$165, and the same kit minus sails is now \$130. Assembled Santa Barbaras, less radio, are now \$400. The Soling-M, Sail Control Unit and sail prices have not changed.

* * *

Sid Morgan's Vintage Plans has now acquired the Robert Sweitzer line of "Custom Plans Service" plans for R/C models. Includes such items as 90 inch Heath Parasol, 101 inch Stinson Voyager, 108 inch J-3 Cub, 60 inch Waco UMF-3, 60 inch Boeing F4B-4, and others. Send 25 cents to Sid at 13157 Ormond, Belleville, Mich. 48111, for complete list.

* * *

Midwest Products has announced

several additions to its range of model kits for 1973.

Top of the line is Norm Page's Mach I pattern ship. Norm won the 1972 Masters (and a place in the US R/C Team) with this plane, also the Tangerine meet. Kit is amazingly complete, features foam cored wing and stab, molded retract gear wheel wells, and rolled plans. Price \$49.95.

The popular Midwest Little Stik has been scaled up to 54 inch span (600 sq. in.) for .19 to .45 power. It's called the Sweet Stick 600, and sells for \$32.95.

Art Scholl's well known Super Chipmunk has been scaled to 46 inch span and reproduced in an all molded styrofoam kit, which comes complete with aluminum motor mounts, hinges, horns, preformed wire, etc. To be powered by .09 to .19 engines. Price \$24.95.

Aiming at the beginner to modeling, Midwest is introducing a new series of inexpensive, easy-to-build, 20 inch span,

Norm Page's MACH I by MIDWEST PRODUCTS.

all sheet balsa, rubber powered scale models. Kits feature color printed die-cut wood, interlocking construction, self-stick decals, preformed wire parts, rubber, prop, etc. J-3 Cub, Citabria, L-19 Bird Dog, and Cessna Cardinal each sell for \$1.95.

* * *

Hi Johnson, well known model manufacturer for many years, has now teamed up with Lee Druckman (Milman Engineering spoked wheels) to form Hi Johnson Model Products. The company address is 1669 Twelfth St., Santa Monica, CA 90404.

Aim of the firm is to produce top quality modeling accessories and equipment. Some items currently available include the Flexiscope fuel tank (1 to 4 ounce capacity), in-line, fuel can, and clunk fuel filters, full fulcrum bell-

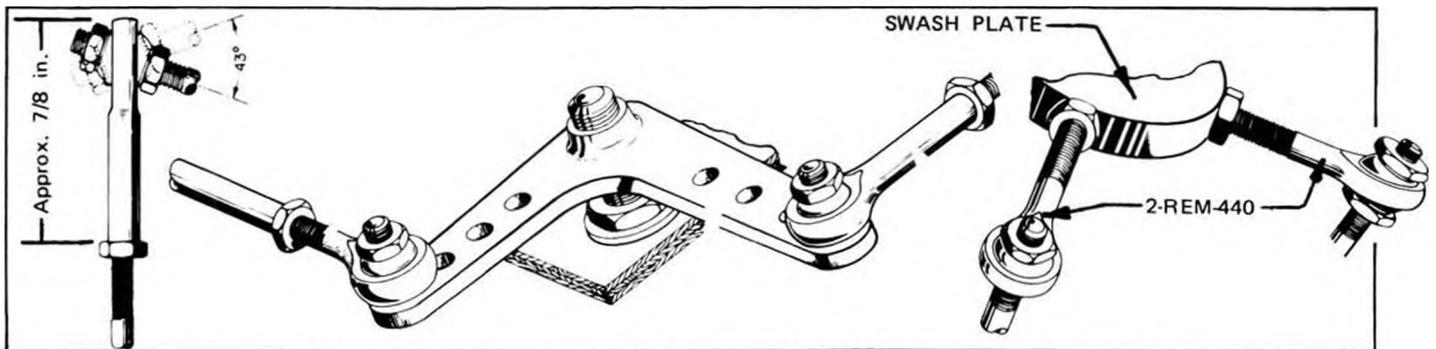
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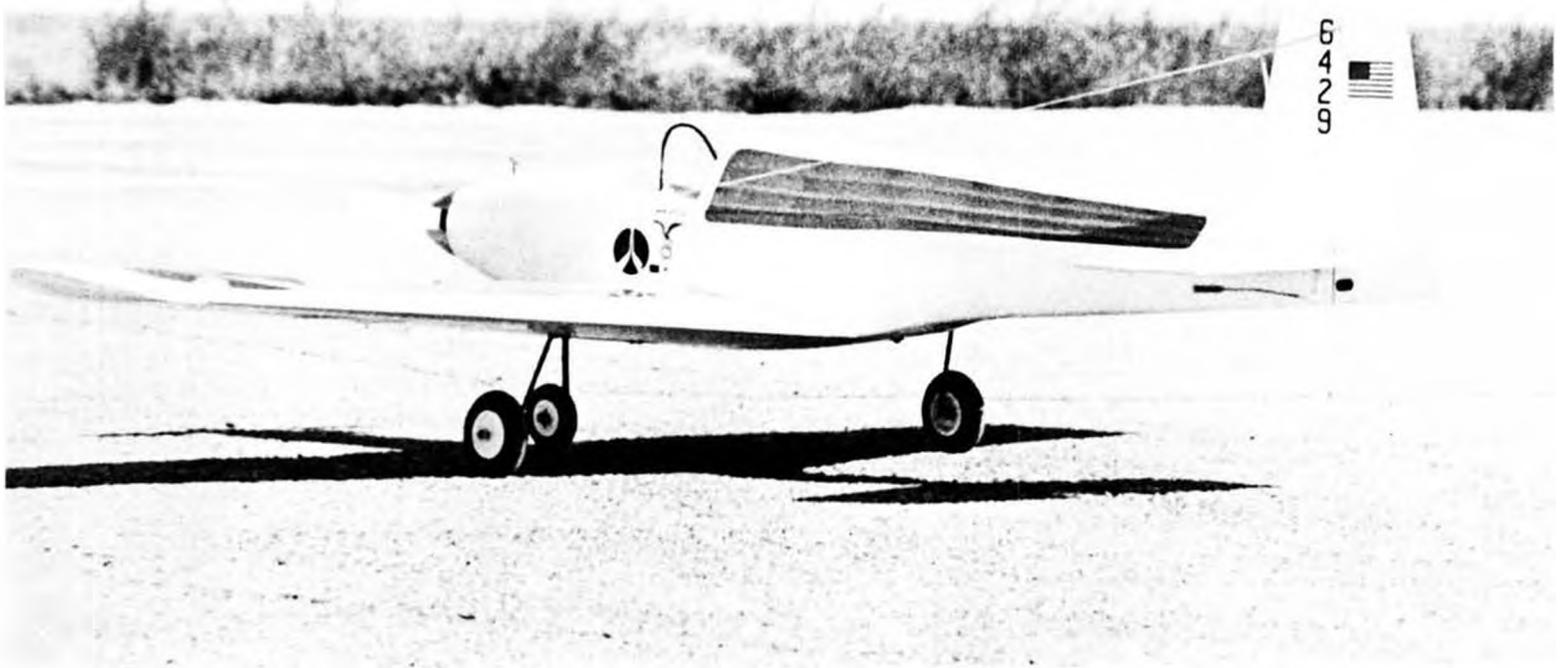
CITABRIA, one of four 20" rubber powered (or CO₂) scale ships by MIDWEST.



Unique fuel caddy with attached electric pump by SULLIVAN PRODUCTS.



Miniature rod ends in several screw sizes, by HI JOHNSON MODEL PRODUCTS, will have many modeling applications.



HOW TO CULTIVATE . . . A BEANPATCH?

By BOB UPTON

Bob's beautiful little .40 powered scale-like sport model had the misfortune of being in the first issue of *The MODEL BUILDER* . . . misfortune in that it didn't get the exposure it deserves. Beanpatch has all the requirements for sport competition; speed, stability, maneuverability, and economy.

● "Beanpatch" is the happy result of a less than scientific, evolutionary process. My approach to model aircraft design falls into the category of "rotten luck triumphs over science again!" Moreover, my "that looks about right!" attitude toward model design work seems to work rather well for me, so take that, you slide rule types!!

I wanted, in this day and age of super colossal 800 mph retract, R/C pattern bombs, an airplane that would be fun to fly, relatively stable, and an airplane that looks like its full size brother. I've even had people say, "Beanpatch looks like a real airplane!" Anyway, the model started out its life as a tail dragger with a constant chord wing. I needed a snappy design that would keep me in practice for Formula 1

racing, hence the tail dragger configuration. This particular version met its demise in a Valley Flyer spin contest which I would easily have won if the judges had continued counting the number of revolutions as I skillfully screwed the model into the ground.

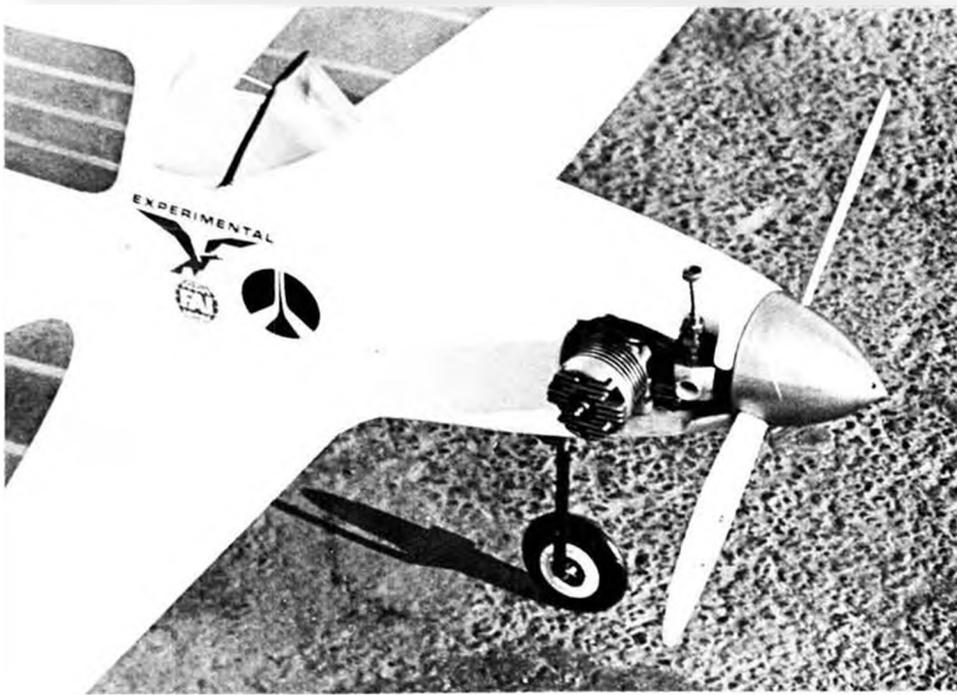
I didn't particularly like the constant chord wing, anyway, so prototype No. 2 has a modified "Perigee" style wing (designed initially by Tom Brett), with a tri-cycle type main gear attached thereto.

Like many modelers, I hate to build wings, so start here, guys, and get the worst over with. You can use the "stacked rib" concept to make the ribs whereby the center and end ribs are cut out and the appropriate number of intermediate rough cut ribs stacked

therebetween and sanded to shape. Belt or disc type sanders are handy for this particular operation.

Use a straight building surface, obviously, and lay out the $\frac{1}{4}$ by $\frac{3}{8}$ trailing edge and the $\frac{1}{4}$ by $\frac{1}{4}$ rear bottom spar directly over the plan, and after installing the ribs, proceed fabricating with the top of the wing, i.e., attach the front and rear spars, leading and trailing edge sheeting, and the sheeting that spans the center section from ribs W-1 to W-4, as well as the sheeting spanning end ribs W-11 and W-12, respectively. Finish off the top of the wing panel with the cap strips.

Turn the cured wing over and insert the hardwood landing gear blocks and all of the plywood doublers where indicated. Note detail A-A; be sure the



Note the pylon racer influence in the neat way the fuselage lines flow back around the Enya 45 from the aluminum spinner. Ship finished in red tissue and white lacquer.

grooved vertical block restraining the end of the landing gear wire is securely epoxied in place. The plywood dihedral braces, W-14 and W-15, can be epoxied into the nearly completed wing panel. The bottom of the panel can then be sheeted like the top surface and set aside to dry while the other wing panel is built.

Merely invert the wing drawing and build the other wing panel directly over the plan. Leave the center sheeting off of the bottom of the second wing panel to get at the dihedral bracing when the two wing panels are joined. Add the

ailerons per the plans, using the torque rod method outlined and be sure and pin all hinges with toothpicks or the like! Add the wing tips and you are ready to join the wing panels. After the wing is completed and the servo area cut out, add a two-inch strip of glass cloth around the center section of the wing.

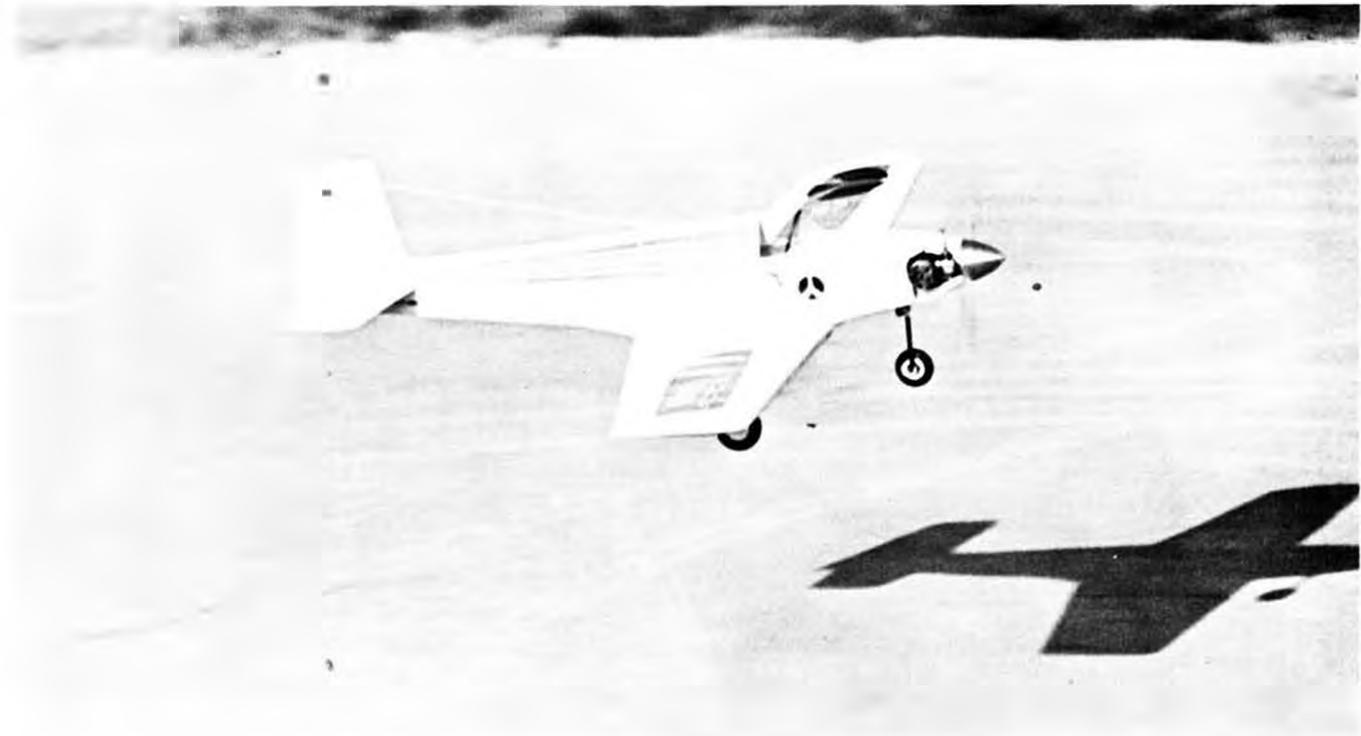
Start the fuselage by cutting out the left and right fuselage sides according to the plans, including the 1/8 fuselage doublers. If you prefer, you can substitute 1/32 plywood for the 1/8 balsa doubler, however, I have found the

balsa wood doubler adequate for the job. Glue the doublers to the inside surfaces of the fuselage sides and set aside to dry.

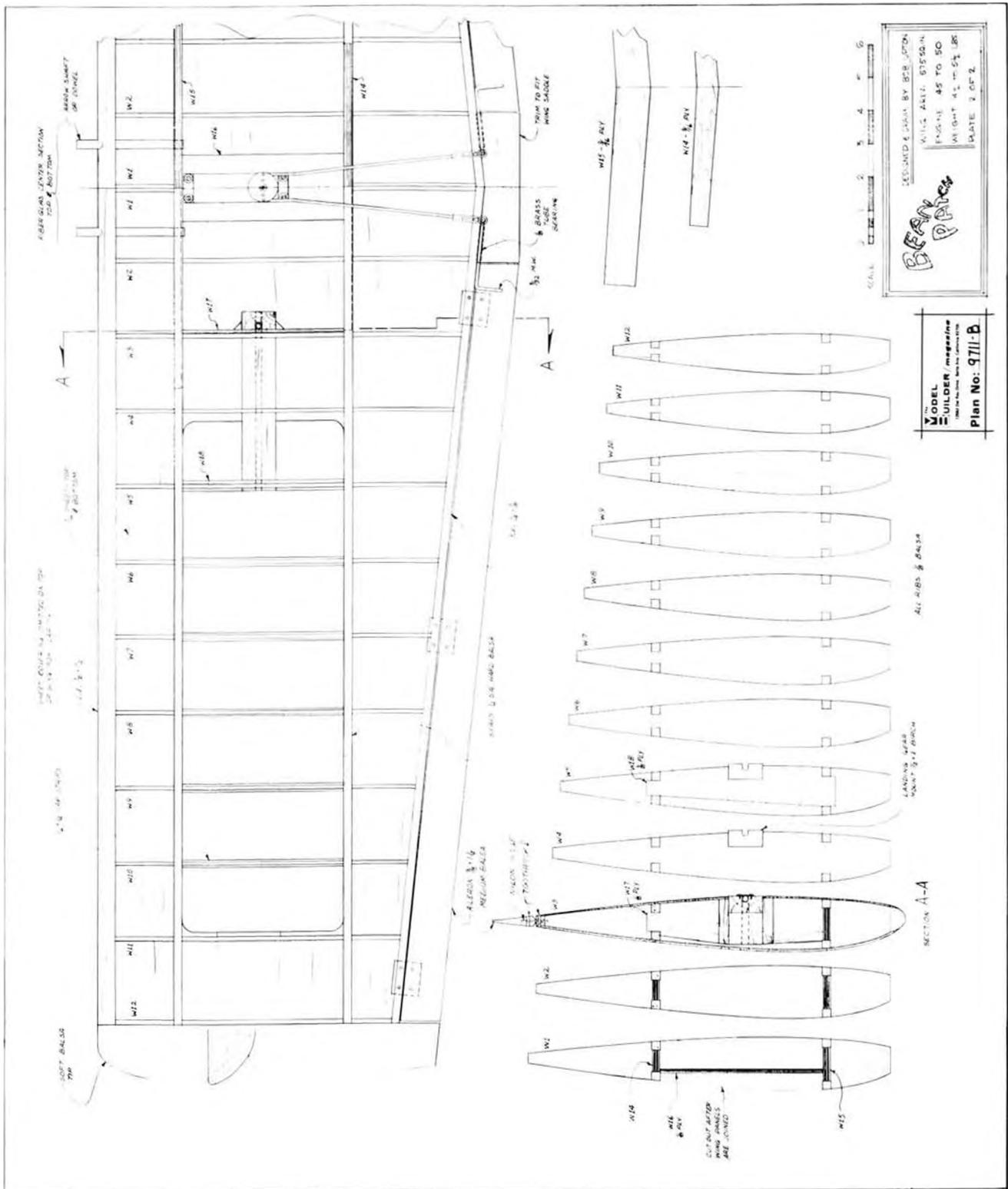
Locate the firewall and bulkhead positions on the inside surfaces and mark with a ballpoint pen for a reference line when assembling the fuselage. Bandsaw the firewall from 5-ply 1/4" plywood and locate the motor mount. Drill and insert blind nuts for the mount and attach the nose-gear steering brackets to the back side of the firewall. Cut out the rest of the fuselage bulkheads, including the turtle deck formers, and you are ready to assemble the fuselage.

Locate the firewall (F-1), F-2, and F-4 on the fuselage, being careful to maintain alignment, and glue and tape in place. Next, pull the tail post together with a pair of clothes pins, checking again to be sure all the formers are properly aligned. Be particularly careful to make sure the firewall is square with the previously marked reference lines. Since I'm not a great believer in engine down thrust and side thrust, alignment problems are much simplified.

Next, glue in the rest of the bulkheads forming the turtle deck, etc. Since the nose gear is behind the firewall, I would suggest installing the nose wheel apparatus, including the nylon push rod guide, wire, etc. This is easy to do at this time since the top and bottom nose structures are off, exposing the front section. Install the cockpit floor and instrument panel prior to fitting the



Beanpatch about to pounce on it's own shadow. The little ship has very pleasing, scale-like lines. Reminds you of an EAA homebuilt.



FULL SIZE PLANS AVAILABLE – SEE PAGE 64

top decking. The top decking is comprised of the three sections outlined on the plans. The decking is started by gluing the top center piece to the top of F-1 and F-2 and to the top of the instrument panel, followed by fitting the two side pieces in place. Carve and sand the fuselage sides and top piece so

that the diagonal side pieces fit flush to the top and side, then glue in place. Next, rough cut the bottom block and be sure to hollow the inside section before gluing in place. Glue the top, 1/2 by 3/4 soft balsa turtle deck piece in place on the rear formers, being sure to

cut the 1/4" slot for the fin, then insert all of the stringers forming the rest of the turtle deck. The bottom, cross-grained 1/8" sheeting may then be attached and the whole mess set aside to thoroughly dry. Before final shaping of the nose section of the fuselage, I usually install the engine with spinner attached so that

I can accurately locate the spinner and provide the proper clearance between the spinner and the fuselage. I also insert a 1/16" plywood nose ring behind the spinner to toughen up this rather vulnerable section of the model. Remove the engine and do the final shaping and sanding of the fuselage.

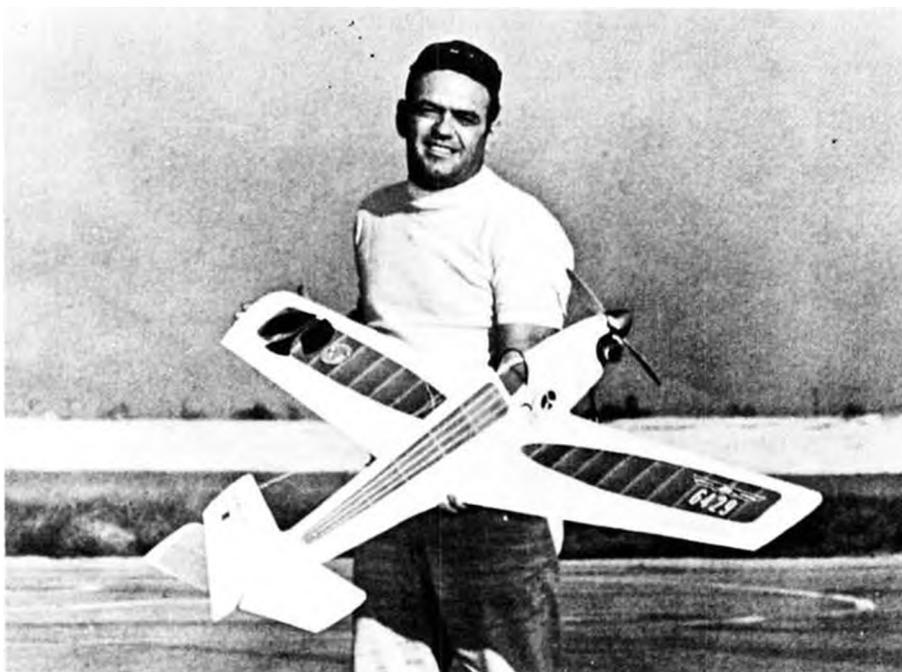
The stab, elevator, fin and rudder are conventionally constructed and are added to the fuselage after final shaping, sanding, and hinging.

The wing may be attached to the fuselage in a number of ways to suit the modeler's particular preference. I like the leading edge dowel and trailing edge bolt method. On this particular model, I use two dowels at the leading edge with a single 8-32 screw into a blind nut at the trailing edge, as shown on the plans.

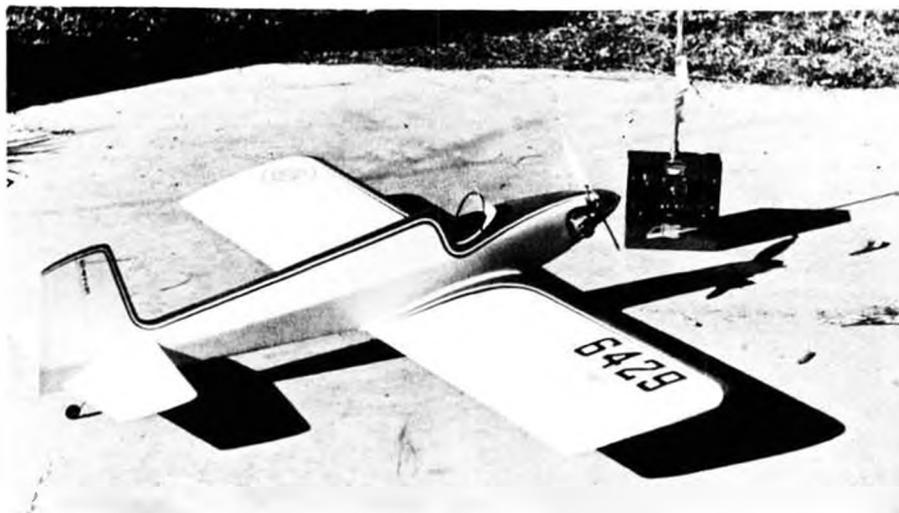
Believe it or not, out of pure nostalgia, I covered "Beanpatch" with colored Japanese tissue and applied many coats of clear buterate dope over the open areas. This material has proved to be surprisingly tough. The model has flown many times and is holding up well.

"Beanpatch" is fully acrobatic, holding its own with a modest Enya 45 up front. I realize, of course, that most self-respecting pattern flyers wouldn't be caught dead flying anything with less than a .60 belching forth up front, so I don't expect to attract these guys. However, if you want to fly all day without an intermediate trip to the local hobby shop for another gallon of fuel, then "Beanpatch" is made for you.

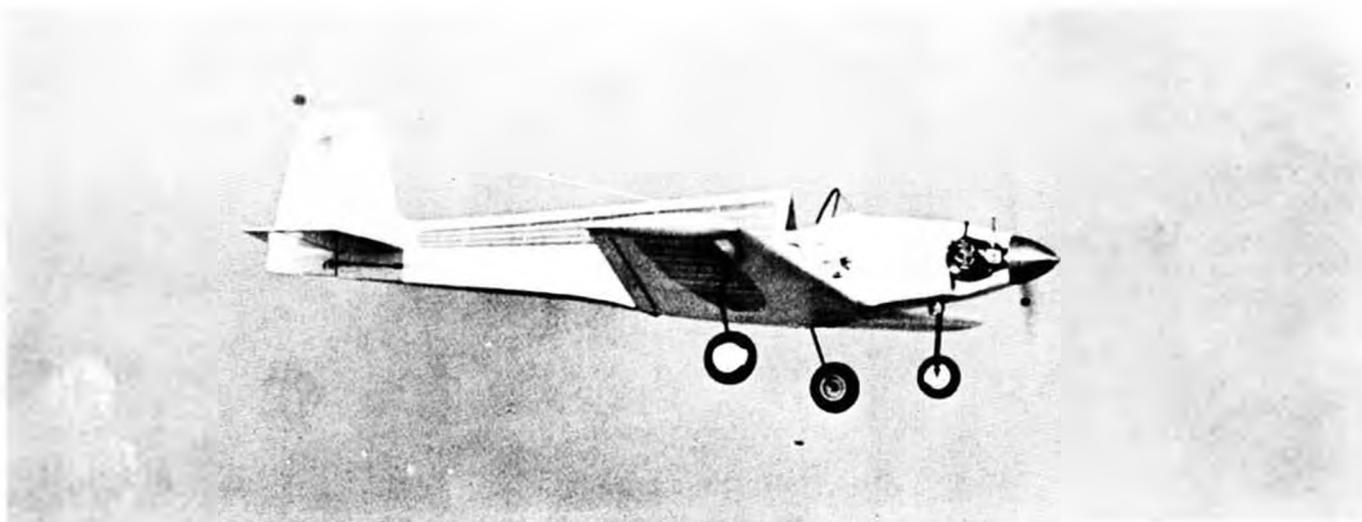
Come to think of it, "Beanpatch" is nostalgic from beginning to end since it does have the look of the "stick and paper" days of modeling. Oh well, what's wrong with that, anyway? ●



Beanpatch's designer and builder, also Model Builder advertising rep, Bob Upton.



Before the spin contest! Beanpatch No. 1, the straight-wing tail-dragger. Frank Capan photo.



Bob brings Beanpatch in for a low fly-by for the benefit of Nate Rambo's camera. All it needs is a pilot sitting up there, enjoying the ride!



The old faithful Midwest Tri-Squire lives on. This one by Wayne Kincaid, Kingsport, Tenn. Heathkit 6-meter radio. Tri-Squire is one of the few true trainer-type R/C models. Many of today's better pilots earned their wings with this reliable aeroplane.

RADIO CONTROL REPORT

By FRANK SCHWARTZ

● This is the third in what really isn't a series, but ye Head Editor apparently thinks I can spel purty gud so I'm back again. First issue we talked generally and told you what the "column" would concern itself with. Then last month I rambled on about choice of a good trainer and type of equipment to use and select.

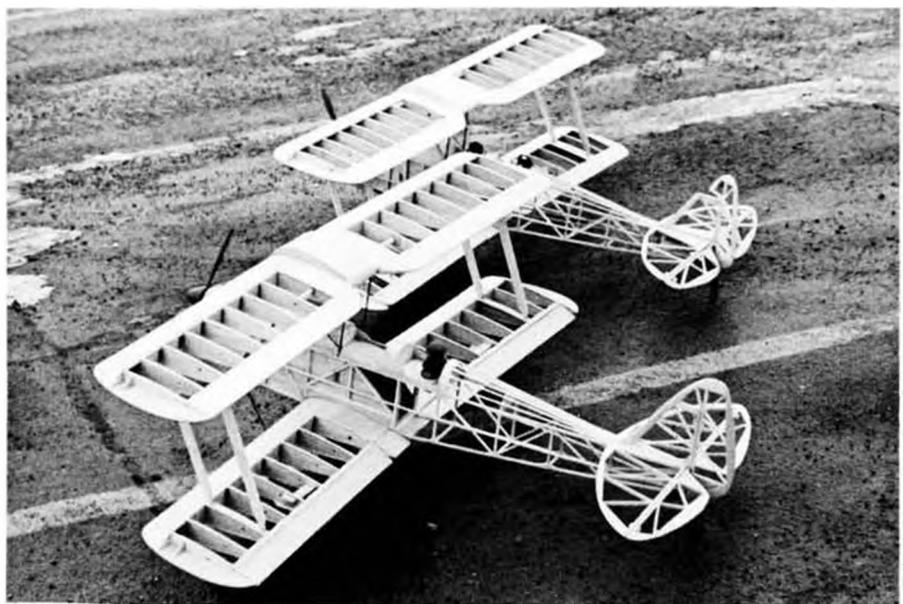
One thing I neglected to mention was "mode" . . . which means which sticks to work what. By far above all other arrangements is elevator and ailerons on the right stick and motor and rudder on the left stick (Mode II). This applies to most right handed people . . . I've seen some weird arrangements for a couple of "lefties." Most equipment comes with this set-up. Then a smaller group prefers ailerons on the right along with motor, and elevator and rudder on the left (Mode I). Some of the top competition flyers use this less popular arrangement and their reasons, if you would ask them, are most interesting and often show some tremendous thought behind the choice. Then there is the single stick, in which the transmitter is cradled in one arm, and you operate the 3-axis stick (knob twisting controls rudder) with your free hand. Generally speaking, single stick is only a little more popular than Mode I, nevertheless, there are those who use it and love it. If you don't already have any pre-conceived ideas your best bet would

be the first mentioned system arrangement, Mode I.

Then, when you get your major investment and bring it home, for gosh sakes read the Instruction Manual . . . or as my kids call it: The Destruction Manual. The manufacturer really means for you to read it . . . and, he hopes . . . understand it. If you don't, find someone who does and have them explain it to you. Some manufacturers give you a very sketchy manual and others have a very comprehensive one with details

on installation in your plane. Again, as I mentioned before, there is a fine book put out by RCM, with photos and details most complete on how to install equipment in a plane. This is certainly a good buy for the novice . . . and from browsing through it, I think it would be good for the R/Cer who has been around a while, too.

Getting the equipment in the plane isn't as easy as you think. It can be a pleasure . . . or pure hell. Usually the novice dives right in and does some fan-



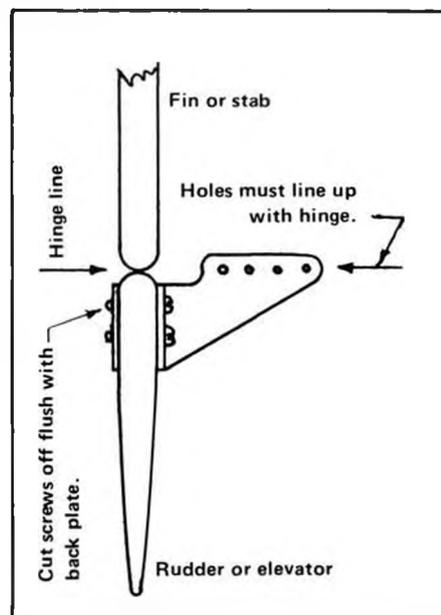
Twin standoff scale Tiger Moths by Larry Quigley and Chuck Leitch, Omaha, Neb. Scratch-built, they are primarily spruce construction with glass cowls. Fly well on Veco 61's. Real nice!



This Fairey Swordfish is available as a Complete-A-Pac kit from Bob Holman Plans, PO Box 741, San Bernardino, Ca. 92402. Span is 60-1/2 inches. He has many others. See the Classifieds.

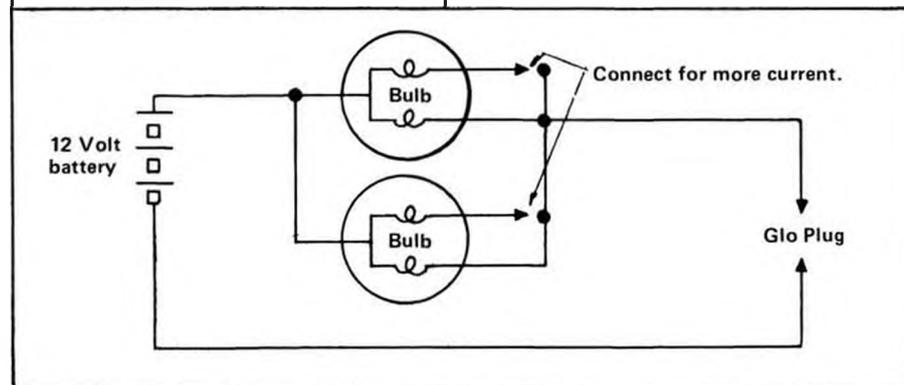
tastically weird things to get the equipment in the plane. I think . . . and think again . . . neatness really does count.

Make the push rods (if shown on the plans of the plane you built) carefully and make sure they don't rub against bulkheads or something else. They should exit the rear through a neatly cut slot and go direct to the controlled surface. No turns in the road please. Try to get it in as straight a direction as possible.



Then there is the problem of mounting the control horn. You might be surprised about this . . . sounds simple. Not necessarily so. I've seen some that were screwed into the balsa with wood screws, which pulled out and caused a crash on the first flight. The balsa is naturally too soft to sustain a screw mounting. You have to have a wooden or plastic backing plate on the other side of the control horn. Carl Goldberg makes a fine line of horns with backing plates as does Rocket City and many others. Look at the little picture that usually is included and try to do it their way.

Now everything is OK isn't it? No, it isn't. Chances are that no one told you exactly *where* on the surface the horn should be mounted. I've seen them all over the place. The holes on the horn should be exactly at right angles to the surface and *directly* over the hinge line. If this doesn't make sense look at the diagram I drew. (See sketch) Oddly enough this simple thing is often completely ignored in plans, as the manufacturer of the kit assumes you know this. Should you mount the horn other than in this place, you will get what is called differential. That means that you will have more travel to one side of center than the other. Example: one new

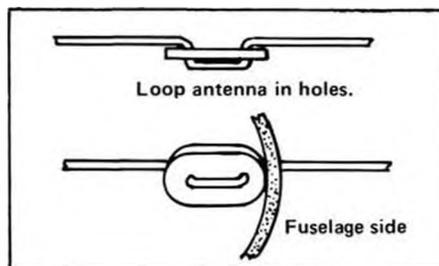


Dropping resistor for 12 volt battery is made from two No. 1157 double filament automotive bulbs. Gives a choice of current depending how rosy you like your glo-plugs to glow! Two heavy filament filaments in parallel make a good starting point for shielded plugs. Idea by George Wilson.



Bulkhead switch mount for outside operation, by D&R Products. Only 88 cents.

flyer at our field complained that his plane would turn violently to the right when he gave it a right command, but that left was almost non-existent and he was having trouble flying when he needed to turn left. We looked at his very well built and finished plane and found he mounted the horn at the *rear* end of the rudder instead of at the hinge line! Nobody told him where to mount it and



Strain relief gimmick made from control horn, etc.

that's where he thought it should go. Happens more times than you think, too.

Again neatness really counts, and spend some time thinking out the installation of your equipment. The rubber grommets supplied by the radio manufacturer were meant to be used. They cushion the servos and keep vibration from the engine from being carried to them and causing them to fail. Vibration is the biggest problem with the electronic equipment. Even the battery pack is susceptible to vibration damage and can fail. You should use foam rubber or try some of the golden foam put out by Sullivan, which comes in all thicknesses.

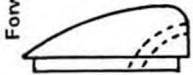
Usually your equipment comes with special trays to mount the servos, which often provide for the switch, too. Hmm . . . that crazy little switch can give you fits. It can be in the plane and you can't get to it. D&R makes a nice little 88 cent gimmick that allows you to tie a piece of music wire to it and then there is this little rod that sticks out the

Antenna exit made from rubber model thrust button.



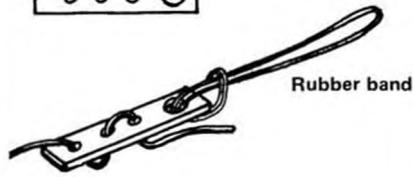
Top

Ideal antenna exit. Not presently made by anybody!



Side

Antenna end fitting. Make from 1/16 micarta.



Rubber band

side of the plane which you push and pull to turn the radio off and on.

Better than music wire is 1/16 inch copper clad welding rod. You will get a lifetime bundle at the welding supply shop for a dollar. You can solder to it and it is very handy for a variety of uses, as it will bend easily. It is good for the switch wire and you can solder a little blob on the end so you don't punch a hole in your finger.

Some people like to drill a 1/16 hole in the switch toggle or bat or whatever you call it, but often you break the



Consistant European pattern contest winner and top contender for this year's World Champs in Italy, Austria's Hanno Prettnner and his Super Sicroly.

Report on the fifth annual Bled Cup pattern competition in Yugoslavia . . . a tune up for the 1973 World Championships in Italy. By Fritz Fleischhacker.

bakelite and have to replace the switch, so try for the D&R gimmick . . . or you can, of course, mount the switch on the side of the fuselage. This means a rectangular hole and two screw holes . . . and please, remember to mount the switch on the opposite side from the exhaust. That oil goes everywhere and no sense making it easy for it to get inside.

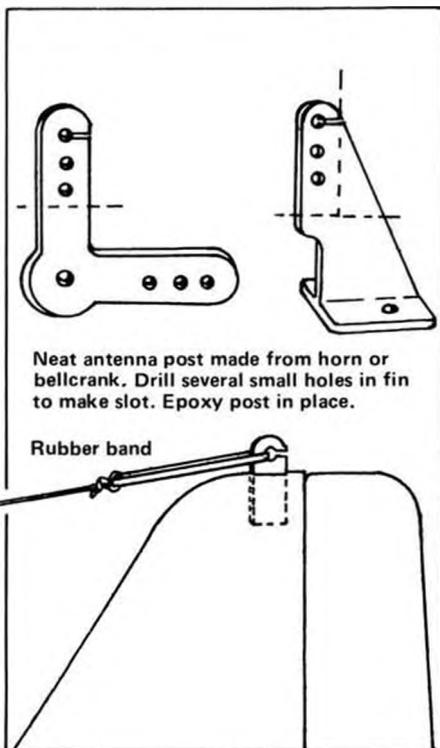
Possibly the most overlooked thing on any installation, be it novice or pro, is the durned antenna. Some people

Continued on page 45

● For the fifth time, the International Bled Cup was carried out in Lesce/Bled in Yugoslavia. A total of 28 participants from 7 nations took part in the competition from September 29th to October 1st. The standard of the participants was very high, because apart from the World Champion Giezendanner (Swiss), vice World Champion Matt (Liechtenstein), and the 4th of the world championship Prettnner (Austria), there were a few participants for the 1973 World Championships in Italy who were present: Matke, Neckar (Germany), Weixelbaumer (Austria), and Merse, Markun (Yugoslavia). Moreover, some top pilots from Germany, who provided half of the participants, took part.

Lesce-Bled became known because of the 3 L-Cup (Yugoslavia, Austria, Liechtenstein), which unfortunately was carried out last year for the last time. The organization was accomplished in the already-known excellent way by the members of the Aero Club Kranj. Each round began punctually and everything else went on without any protest. Switzerland, Germany, and Yugoslavia formed an international jury and also the 5 referees came from different countries. Even before the competition began, there were great discussions about the ranks of the 3 favorites, because this was the second meeting of the 3 champions for this year. In spring, at the International Graupner meeting in Gorizia, Hanno Prettnner was the winner. Second was Wolfgang Matt and third Bruno Giezendanner.

Continued on page 48

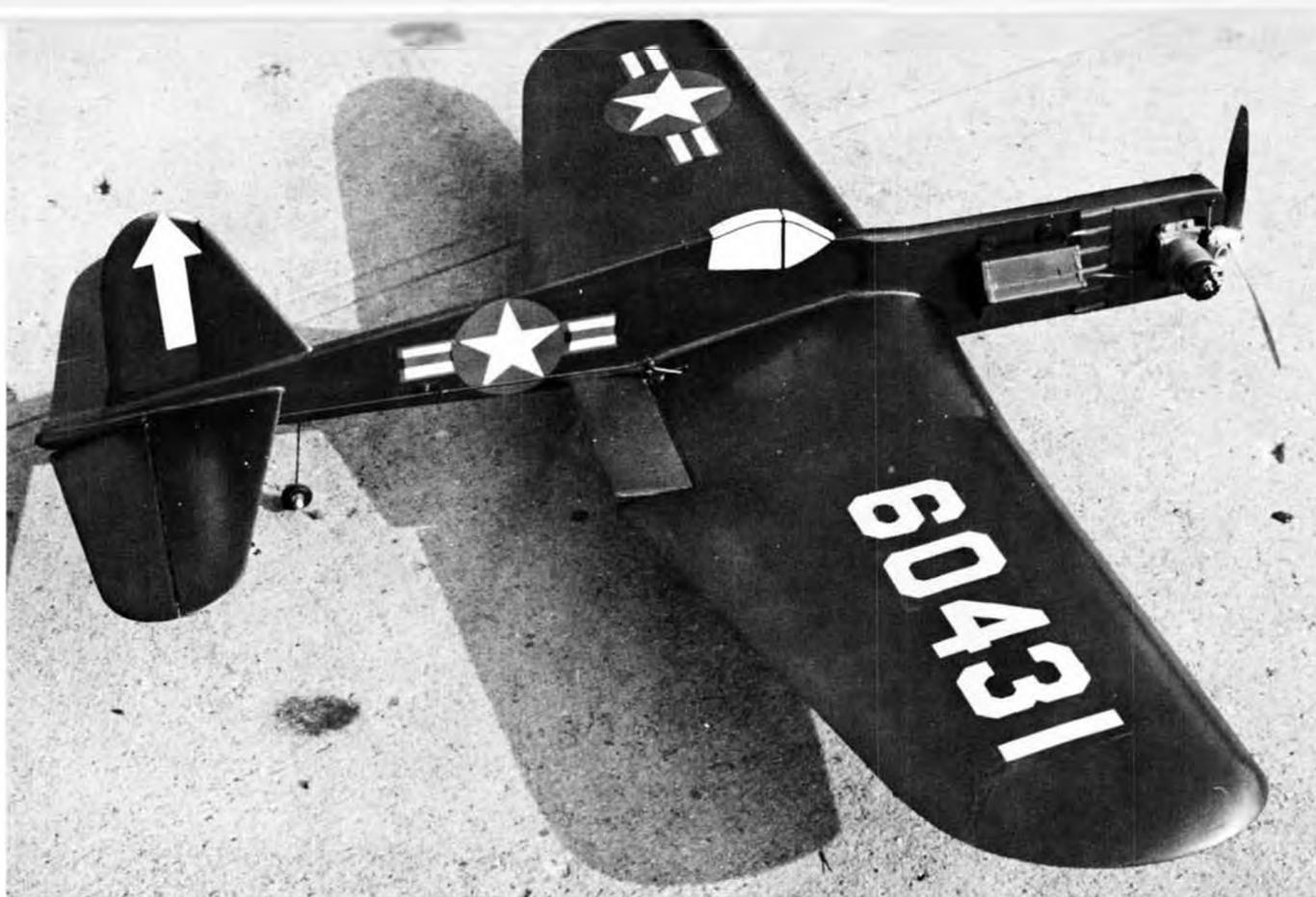


Neat antenna post made from horn or bellcrank. Drill several small holes in fin to make slot. Epoxy post in place.

Rubber band



The world's biggest kit? Eloy Marez' daughter Patti, 5'-2" with his Hegi Bell Huey Cobra kit. It's in all three boxes!



CORSAIR "F4 U/C"

By JACK SHEEKS Great flying profile stunter for .40 engines. More and more scale is appearing in stunt circles. Profile is the easy way to get there.

● This profile stunter should be called the DuVall Corsair. Why? If Dennis DuVall hadn't been so persistent with me it would never have been built.

The C/L model clubs here in Indianapolis are much like others around the country . . . they lean strongly toward

profile models. These ships cost little to build, take a heck of a beating, and are a ball to fly, while transposing a raw beginner into a pilot.

In some areas of club activity, the competition gets tough even without the members knowing it. Some thrive

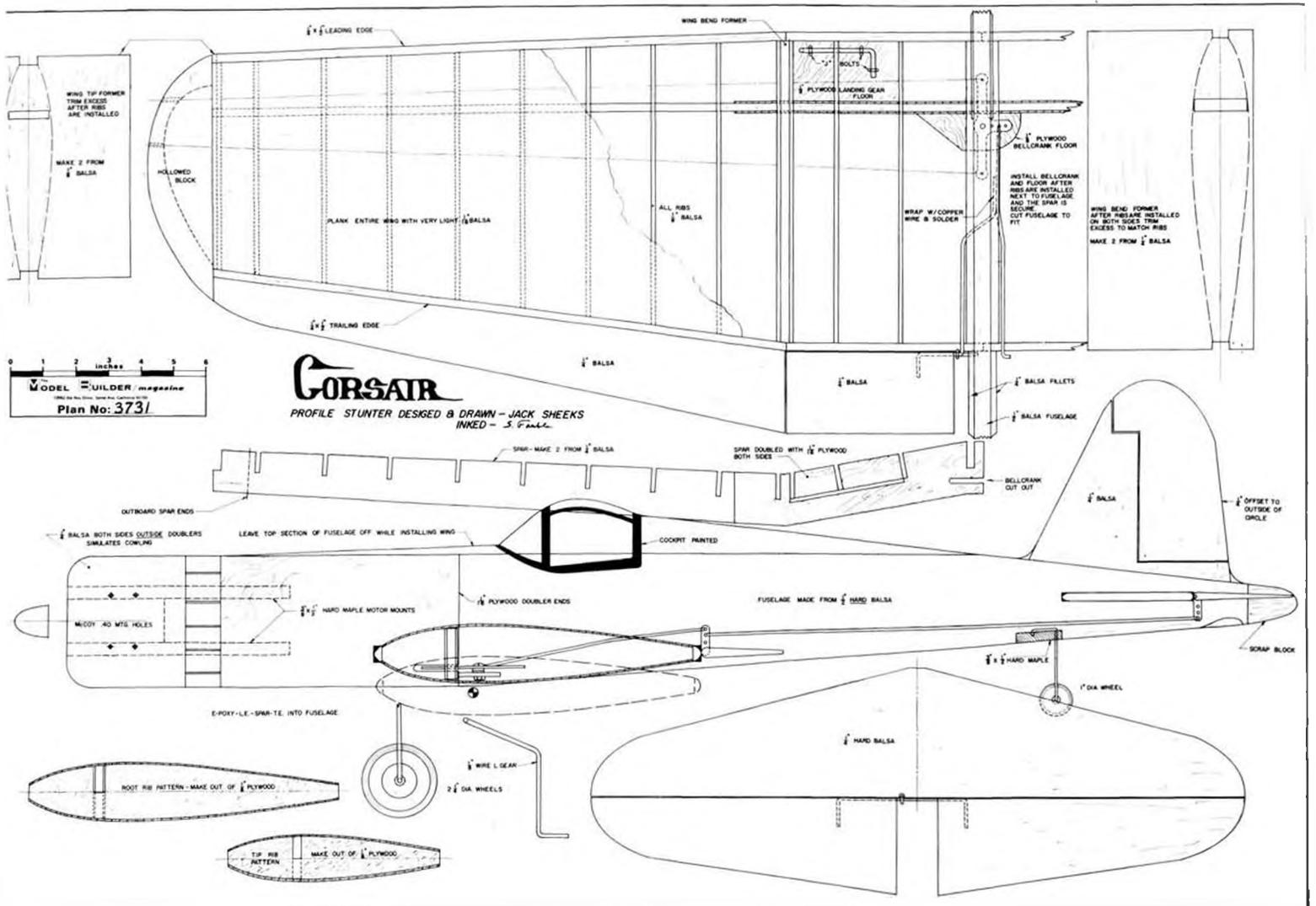
on which plane is faster, others on whose plane is finished the best, while still others feel like a king if their ship will out-perform the competition in stunt pattern. The latter is the category that Dennis DuVall falls into. Dennis has about 4 months of flying the entire pattern under his belt and decided competition stunt was his bag. Well, there are many good stunt model kits and plans on the market now, so that was no problem; but he wanted something out of the ordinary for profile stunt. On one of his frequent visits to my balsa butchery palace we were discussing the many avenues of design and the varied aircraft that would fit the bill. I had to



If the engine doesn't give a hoot about starting, you sometimes have to supply your own "Hoot." John Durham assists Dennis.



Dennis DuVall gives us a look at the underside of the profile Corsair. A Top Flite 11/6 Power Prop worked best with the McCoy 40.



open my mouth and tell him the Corsair has always been a favorite of mine and that I had a plan I had drawn five years ago and never built.

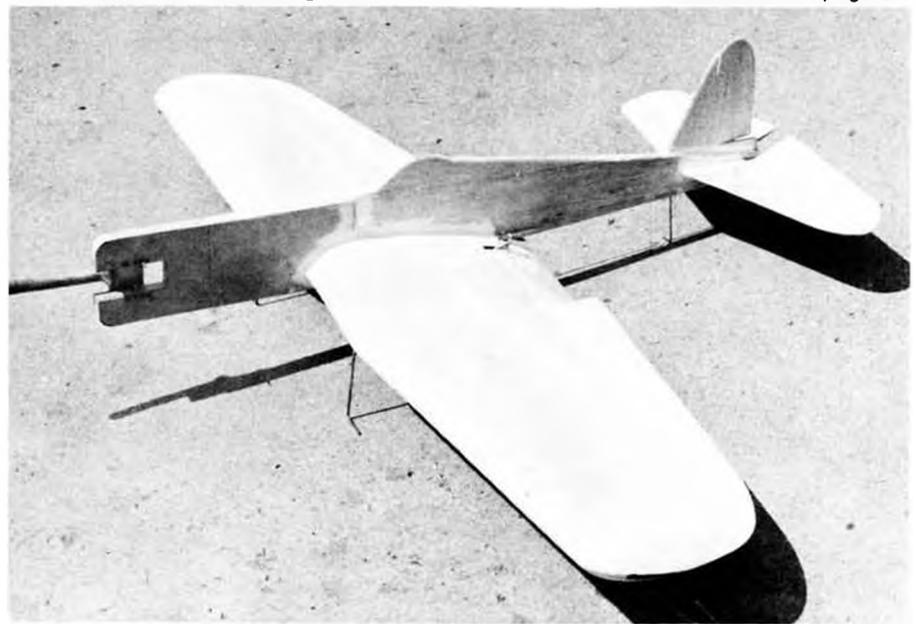
That did it. Nothing would stop him until I drew a profile of the ship; same size as the full scale ship, but with a profile body. His wife, "Buns," was a little perturbed 'cause we worked into the wee hours. The kids were fussy and she had to work the next day, but undaunted by his wife's threats of his having to sleep in the car, he insisted I complete this project. When I would say, "I'll finish this in the morning," Dennis would give me one of his hurt puppy looks, and we'd continue putting a line here and there, explaining as we went.

After Dennis had the Corsair finished and ready to fly, I told him I should have the honor of its first flight. Much to my surprise he said OK. The ship grooved well and turned quickly but needed a few trim changes. After the changes were made the ship flew a good stunt pattern . . . but something was still lacking . . . The right prop . . . We finally settled on a Top Flite 11 x 6 Power Prop. This seems to have settled

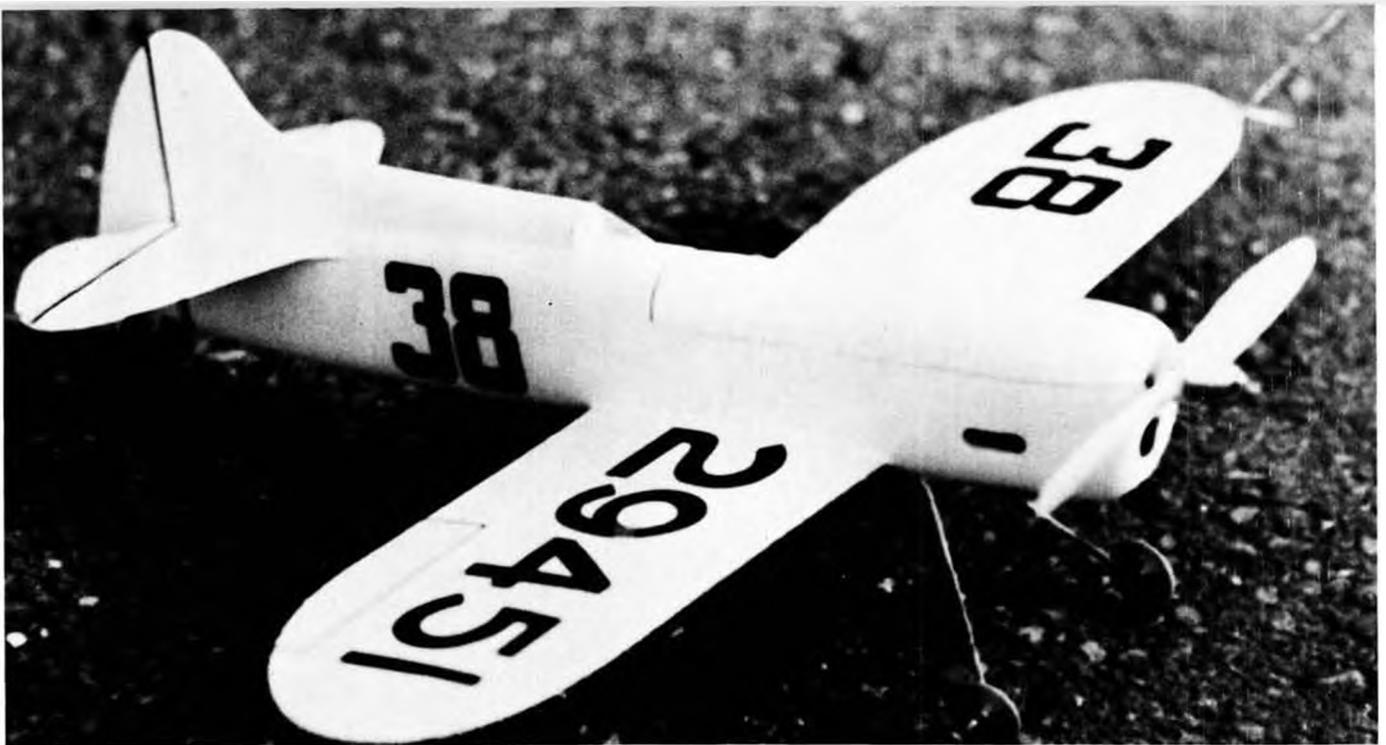
the McCoy 40 down to a steady run and now the Corsair turns in a very good constant pattern. And believe me the ship is a real eye catcher at the flying fields whenever and wherever it appears. So, if you're one of those guys who wants that little something extra in a

profile, read on.
CONSTRUCTION

To begin this profile jewel, go to your nearest hobby dealer and buy the lightest and straightest wood he has. Now that you're back home in your
Continued on page 61



"Mercy, Mathilda, you look terrible without your makeup and shoes on!" What's up front? Looks as though Dennis is planning to screw the Corsair into the ground.



"Howard Mike" 1/2A proto contest ship by Bob Adair, inspired by Nats stunt champ Kieth Trostle. Took 5th at 1971 Nats. Note left-hand prop.



CONTROL-LINE

By Dick Mathis

● Apparently, the mere mention of the word "Autogiro" (column before last) sets some of our readers off pretty well. The response has amazed me. It seems there was an autogiro kit way back in the forties. Edco made it and at least three of your fellow readers built one. Rene Mechin of N.Y.C. wrote, "... it flew just fine. Weird thing, I had an 'over the hill' McCoy .49 in the thing just to see if it would and was amazed. Can't remember what happened to it though." Rene went on to report that Larry Scarinzi has been selling copies of plans to the Edco over the last few years (26 of 'em), so it lives on.

Then H.C. Hulick of Pittsburgh popped this one on me: "In my early days of U-control, I bought an Autogiro kit. This was about 1947 or 1948 as best I can remember. That was the only

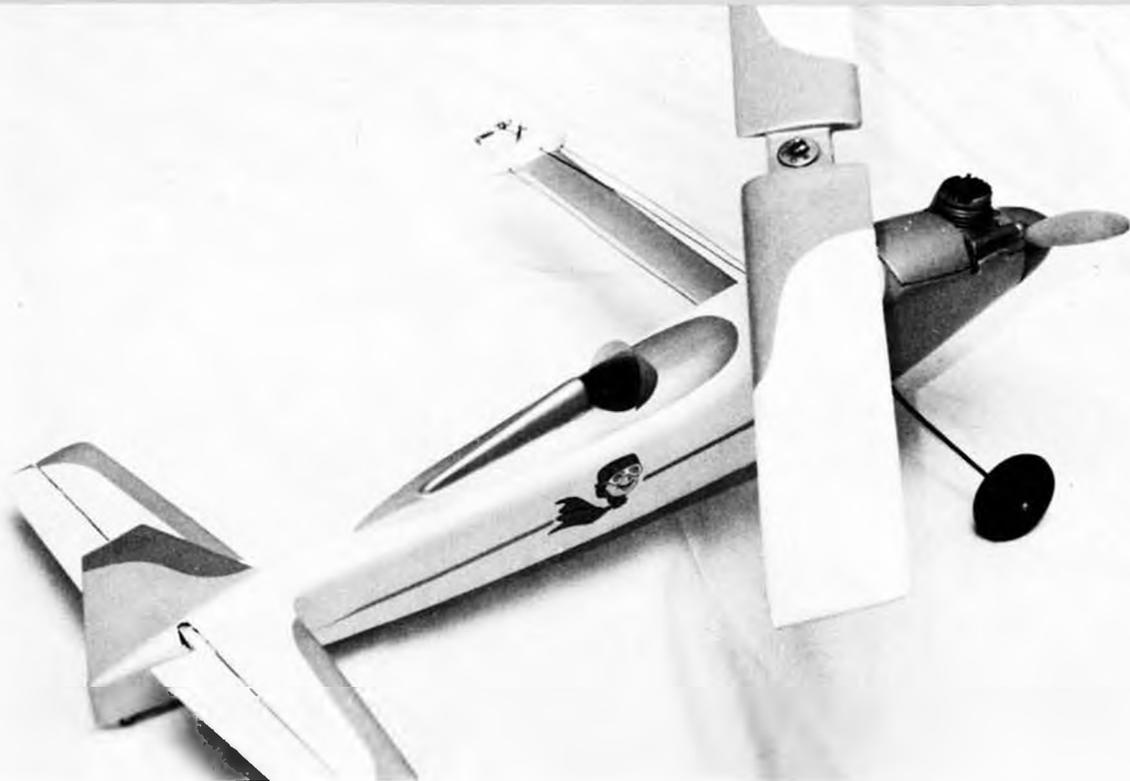
such kit I had ever seen, and finding it to be unusual, I bought it and built it. In its first form I used an Ohlsson .60 with ignition. The 'giro flew great. With motor running we would give the rotor a spin and let it taxi. After 30 feet, rotor speed was enough for takeoff. The model flew fine; just like most ships of its day, with good climb and dive control but no loops or even wingovers. I flew the 'giro over a two year period

quite a few times with no real problems. As you might imagine, it was a real sensation whenever flown, especially with other modelers."

Mr. Hulick continues: "The 'giro got a second life after eighteen years of storage and several movings when my son discovered it and cleaned it up with a new coat of paint. This time we used a FOX 35 on glo and it flew just like before only a bit better due to lower



The translation is, "First Slobovian Airliner," by Bob Adair. Causes quite a few double-takes with dummy engine cylinder and pilot's chair. Note air-conditioned fuselage.



This is the modified Edco Autogiro discussed in the text. Power is a Fox .35 with throttle. FR shook out several attics with his recent request for info on powerless rotor aircraft.

weight without the ignition parts. Again it was a real grabber wherever he flew it. The only problem is that there is no glide. When the engine stops she loses lift and goes down right away. As fuel gets low you fly low and get ready to give full up when she dies, and hope to stay in one piece when she hits. The pivoting rotor will, on a hard landing, let one blade dip and hit the body." Mr. Hulick goes on to offer to send the whole airplane to your columnist! Stay tuned for the results when Fast Richard gets ahold of this gem!

Then Bob Adair writes from Arkansas with info on more autogiros. There was a wild twin rotor one by either Roy Clough or Paul Del Gatto (help us) in one of the mags. Another one for an Anderson .65 appeared in American Modeler in March/April 1965 (order Plan Group 465). It had throttle control and its designer, Ole Dan Nielsen, claimed it could hover and supplied photos to prove it. Matt Smith of Dallas came up with plans for this one. It used a McCoy 35 case for the rotor assembly bearing. Bob sent a photo of his own 'giro, built, but modified from an old Edco kit in 1956. Reports it is a good flyer and has stood up over the years. He writes: "I have never tried to stunt it, but I once talked to a modeler who had built the same kit and claimed that he looped his."

Our beloved editor got into the act by sending plans to a tethered (string attaches to pivot - no controls - you

just stand outside circle and pray) autogiro from the 1958 "Air Trails" annual. It's called "Circle Whirly," has an old K & B "Infant" .020 for power, and even includes a trick mail sack pick-up setup, which must have been pretty touchy!

So, we have some interesting questions. (1) Were there any other kits for autogiros besides Edco's? (2) Will an autogiro loop? (3) Will an autogiro fly upside down? (4) Will I get rich and even more beautiful so I can move out of the Swamp? (5) Will this column ever end?

THE PLAN FROM HERE

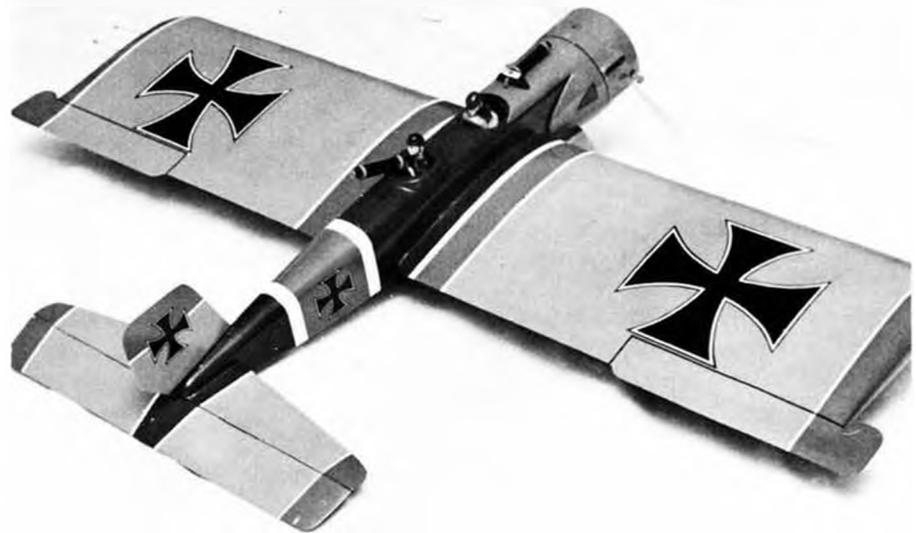
I suspect Johnny Clemens, our AMA

President, who is the ultimate ukie enthusiast, can shed some more light on the autogiro topic since he goes back to the 1930's in ukie. It's rumored he has an Edco kit in the back of his shop, plus maybe he can explain to me how they really work! I'll try to come up with some design guidelines and flying tips so we can all get into the act. I'll print everybody's address in case you'd like to correspond.

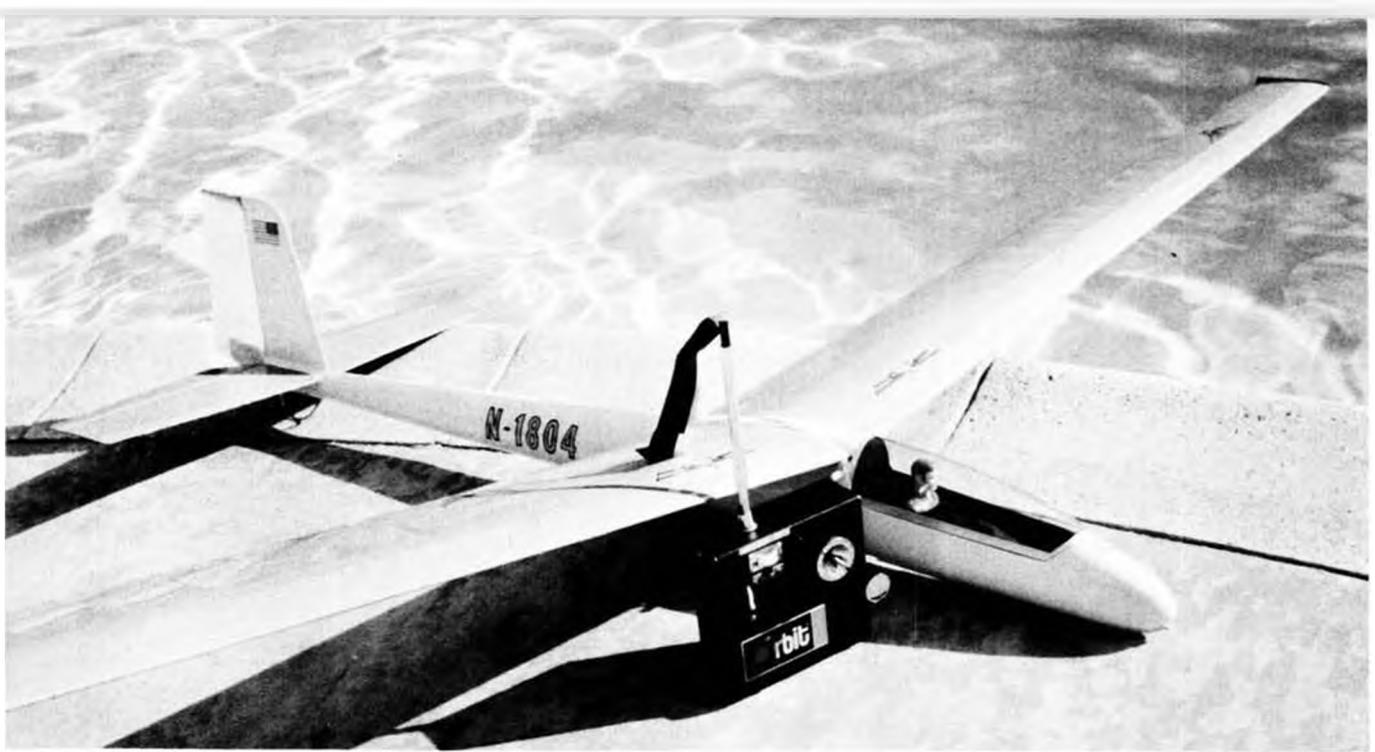
H. C. Hulick, 158 Woodhall Dr., Pittsburgh, Pennsylvania 15236.

Robert J. Adair, Quality Acres Lot 48, Blytheville, Arkansas 72315.

Rene Mechin Associates, 117 East Thirtieth St., New York, N.Y. 10016.



Another Adair aeroplane, this one a McCoy Redhead 35 powered sport stunter, built in 1961 and still going strong.



JP Models' Dart II and Orbit 4 Channel Single Stick make a nice combination for sport or competition flying.

PRODUCTS IN USE

ORBIT TAKES A RIDE IN THE JP MODELS DART II

● Paul Parszik, owner of J.P. Models, 26557 Mazur Dr., Palos Verdes Peninsula, CA 90274, doesn't hardly even talk to us any more.

Actually, you can't really blame him too much. Early last June, in a moment of wild anticipation, and with only about five weeks to go, we decided it would be just a great idea to build an R/C sailplane and enter the National R/C Soaring Championships in Chicago. Both our Graupner Cirrus and Wik Kestrel had bitten the dust in unfortunate accidents, and we were temporarily "without silent wings." Of course, all we had to do in the meantime was to prepare notes for AMA R/C Contest Board meetings, arrange judging schedules for Pattern and Scale flight competition, and work 25 hours a day on this modeling rag.

While still swept up in this bit of lost logic, we called Paul Parszik and sold him on how important it was to get a Dart II kit to us *immediately* . . . which he did. Our reason for choosing the Dart II was based on examination of the kit just a few weeks earlier, during The Model and Crafts Show (MACS) at the Anaheim Convention Center. Here we saw a glider with all sheet balsa tail surfaces, easily built wing panels totaling 134 inches span, and best of all, a completely finished and painted rolled plywood fuselage . . . ready for radio in-

stallation.

And speaking of radio, a call to John Elliot of Orbit, just a few miles down the road near Orange County Airport, brought us a 4 channel, single-stick system on 53.4 with PS-4 servos . . . by UPS yet . . . didn't even have to go get it!

So what happened after all this excellent service? Five weeks later, as we frantically packed to catch the plane for Chicago, the Dart II, except for a planed and sanded stabilizer, had not been touched. As for the Orbit radio, we had removed the tranny from the molded foam packing box, turned on all switches, wiggled and twisted the control stick (about as useful as kicking tires on a new car) and then put it all away again (Yes, with the switches turned off!).

Well, here it is, seven months later and we finally have the project finished! No reflection on the time required to build the Dart II . . . it really is easy and fast building . . . and by the way, the radio was updated to a 1973 model.

Let's take a more detailed look at the Dart II.

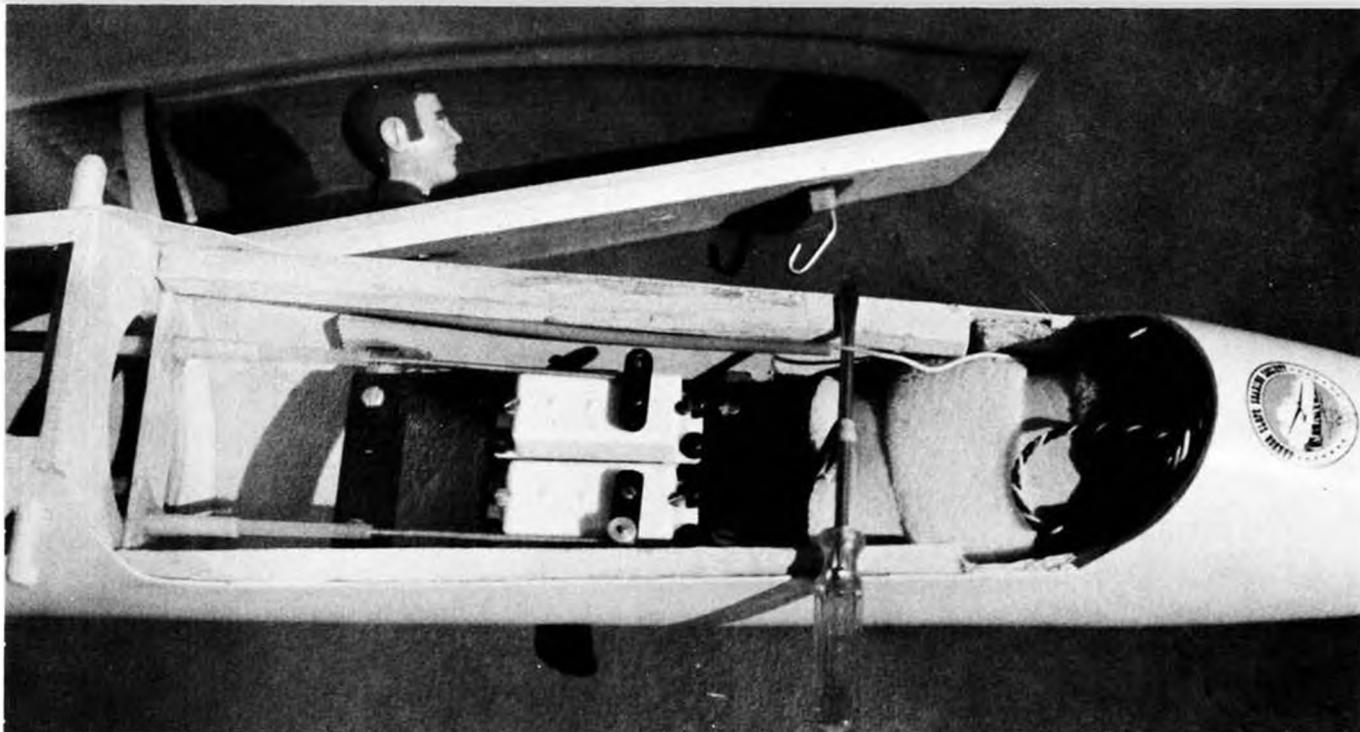
As you may or may not know, the Dart II is an expanded or enlarged version of the original 100 inch span Dart. Outside of a slightly longer fuselage, and of course, 34 more inches of wingspan (with a proportionate increase in tail surface area), the two ships are

identical.

Outstanding feature of the JP gliders, of course, is the finished and painted plywood fuselage. Basically, it is made from a single 1/32 inch plywood blank which is rolled over several ply bulkheads to a round section, except at the top, where the ends of the blank meet and are glued to a triangular top spine. The compound curved nose is a thick molded fiberglass cone which is epoxied and blended into the ply shell. The fuselage comes completely built, sanded, and painted in white epoxy; every bit as rugged where needed, but considerably lighter than an equivalent all-fiberglass fuselage.

Tail surfaces are pre-cut 3/16 inch sheet balsa and require only shaping and sanding to an airfoil section prior to covering and/or finishing. Although lightening holes may be cut in these surfaces, a preliminary check of balance suggested to us that it might not be necessary. (It wasn't.)

The plans provide both left and right wing panels, handy if you want to build both at the same time, and appreciated if you've ever built "two lefts" by mistake. The airfoil is described as a modified Eppler 387, and no matter how you look at it "flat bottom builds easiest." Basically, the wing construction consists of top and bottom spruce spars at about the 30



Simple installation has PS-4 servos on tray, receiver next, and battery pack in the nose. Switch harness not used. Screwdriver props up tube for inside antenna. Rubber band holds hatch in place, completely covering radio compartment. Painted pilot comes with kit.

percent point, which is also the high point of the section, with sheeting on top and bottom which extends over the leading edge strip. Solid webbing between spars, from root to tip, completes the "D" tube structure, which of course supplies all of the wing strength. The remaining portion of the wing is open with a solid triangular trailing edge. The root end of each panel is totally sheeted for about 8 inches, tapering for the next 12 inches to distribute the bending loads gradually.

We were a bit apprehensive about the spindly 3/32 x 3/16 inch spruce spars,

but they seem to be strong enough, *provided* the webbing is well fitted and glued in order to transform the spar structure into an "I" beam. Don't skimp on that webbing! We definitely don't agree with Paul, however, on butt joint splices. It's bad enough to have them at all, but then to butt *all* of the spanwise members (leading edge, trailing edge, spars, and sheeting) at the same location . . . no dice! We scarfed the spars and trailing edge, putting the joints out of line with each other. This required the purchase of extra spar stock, but it was worth it for our peace of mind.



We added the 1/8 inch OD brass tube skid. Low stab position makes it extra vulnerable, especially during landings. Stab touched first when ship was at rest, actually bent it from weight.

One other modification was the addition of 1/16 x 1/8 diagonals from spar to trailing edge between all ribs, a habit left over from free-flight days, and probably not necessary.

Incidentally, before adding the top sheeting, we propped in about 3/8 inch washout in the tips rather than rely on warping it in during covering. Also, from wetting the top sheeting to facilitate curving it to fit the airfoil, we found that the wings came off the board with built-in elliptical dihedral! Since this ain't all bad, we simply took some bend out of the 1/4 inch joining rod to compensate. The curved dihedral actually looks kinda sexy!

Speaking of joiner, fiberglass tubes are epoxied into the ply root ribs to receive said 1/4 inch rod. Unfortunately, it took hours of hand sanding with emery cloth to get that joiner to fit in the tubing. Brass tubing slipped on easily, but we were determined to use what came with the kit. A second small wire joiner is employed to maintain proper and equal angle of attack in both panels.

Unlike most sailplanes, the Dart wings are joined to a solid center section block and are then strapped onto the fuselage with rubber bands. We intend to modify this arrangement in the near future and will pass the info on to you when it's done.

Another modification was made in anticipation of a problem bothering other Dart flyers. The low stabilizer position makes it quite vulnerable to damage by hard objects on the ground

Continued on page 62



SATAN MK.III

By **BOB BEECROFT** A red-hot Class A competition free-flight that gets results without a lot of auto-gimmickry. Prepare for the coming season's battles with a sharp weapon.

● The Satan series began during the last days of the short-lived 178 ounce rules. The first two national records were set with a heavy (9 1/2 oz.), 320 square inch version of the design. These were the 1/2 A and A Junior records. Both records were set after the rules changed to unlimited weight.

With the then-current long motor runs, a large 425 square inch version was built for 1/2 A - A competition, weighing 8 1/2 ounces. This airplane took full advantage of the long runs and had a superb transition and glide, with surprising penetration due to the sharp leading edges used. This airplane picked up the Senior 1/2 A and A records.

The large, light model even handled the wind well, as was proven one very windy year at the Phoenix Southwest Regionals. Many airplanes stacked due to the wind, but the 425 just went up and up, flipped out into the glide, and maxed every flight. This Mark II version was built in a variety of sizes from 320 to 1000 square inches . . .

The Mark III Satan, of which the 520 is the latest in the series, has been built in sizes from 240 to 1300 square inches. The Mark III comes after a lapse of several years in building activities due to service, marriage, college, and so on.

The current series configuration was developed after some study of the state

of the art, and is a compromise between the very smallest and hottest climbers, and the larger Mk II Satans. The 520 inch wing and large stab give a beautiful glide, very fast climb, and smooth transition.

My own Satan 520 uses a Super Tigre G - 15 .19. Initial choice for power was the Rossi .15, but due to lack of availability here in San Diego, I finally settled on the Tigre. Any of the hot .15's can be used with success, or for a milder ship, a Cox or other good .09 could be used.

CONSTRUCTION

The flying surfaces are pretty conventional, so not much detail is neces-



"Hey Ma! Looky here at Mark Spitz holding a toy airplane!" Cool it, folks, it's only Bob Beecroft, and the "toy" is Satan.



Ply "hook" on DT stab also acts as a stop, eliminating limit wire. Orbiteers are a San Diego free flight club. Bob is 1973 President.

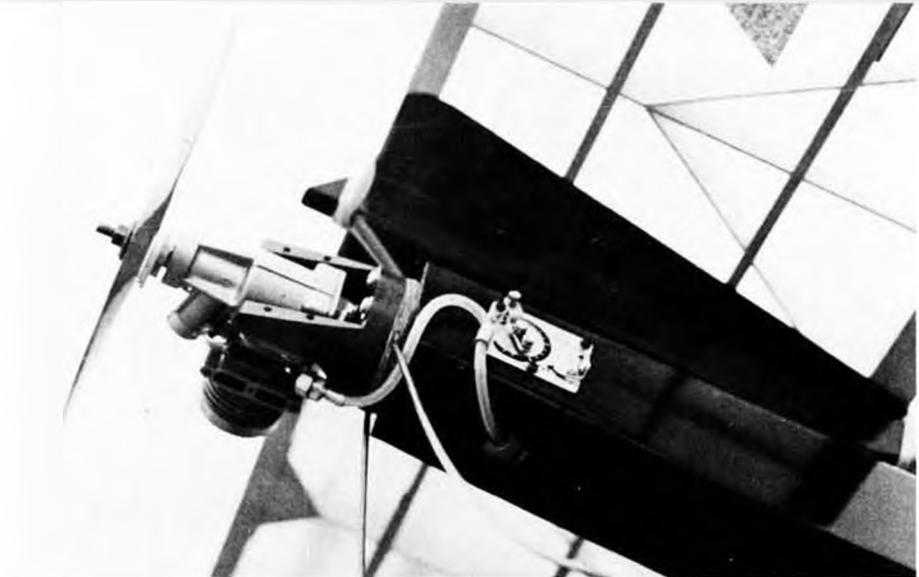
sary . . . A couple of notes though. Don't skimp by using balsa for the top spars. Spruce really adds a great amount of strength, and very little weight. Pick medium grade balsa wood for the center section leading edge, trailing edge, hard for the bottom spars, and lighter grade for the main panels. The wood in the tips should all be very light stock. All the ribs are light quarter-grain 1/16 sheet, except for the ribs at the tip polyhedral breaks which are 3/32.

There's a reason for the strange plan layout. Try building the tips in one piece, and the same for the main panels. This way, a very closely balanced wing can be built. In addition, you prefabricate all the spars, ribs, leading and trailing edges, it is super-fast. *Leave out* the rear bottom spar until the truss ribs are all cut and fit into place.

The truss ribs are all put in as rectangles (slice a 1/16 X 3 X 36 sheet into three 1 X 36 inch strips), and leave them square on top for the time being. When fitting in the truss ribs, block up the leading edge of the right main panel 5/16 of an inch at the far right corner, to build in the wash-in. Same goes for the *trailing* edge of the wing tips; block them up 1/8 inch for wash-out.

Now let your Titebond (thinned 1/3 water to 2/3 resin) dry overnight . . . You can go on to the stab while this dries.

After the wing is dry, pull it up, and flip it over. It will sit steadily on the flat tops of the untrimmed ribs. The notches for the rear main spar can now be cut at the precise angle to which the spar passes through the truss ribs. Cement a SHARP razor blade to a piece of scrap, so that the blade protrudes a quarter inch. This makes an excellent tool for notching the ribs to the proper



Plumbing is simple and direct. A Bahrman pacifier resides in hole, which is epoxy lined. Tatone Cut-Off timer, and Kraft-Hayes mount complete facilities for .19 Super Tigre.

depth. Place the bottom spar over the notches already in the straight ribs, and drop the blade down into the truss ribs, using the spar as a guide, the blade flush against it. Pull up the spar, knock out all the pieces, and check the fit. Should be perfect. Double glue, and push the spar in place.

Now pin the wing back down, right-side up, wash-in and wash-out blocks in place. Be sure to double-glue all parts with Titebond; brush a coat on both surfaces, let the glue set a few minutes, then re-coat, and assemble the parts. Later, another coat is brushed around every side of every joint. Don't try for a fillet, just let it soak in. If the joints all fit well, a super-strong structure will result.

Although not shown on the plans, I use 1/16 ply dihedral braces at the L.E., T.E., and on both sides of the bottom spars at the center panel breaks, plus nylon tape over the L.E. and T.E. joints. To keep the tips light, use 1/16

ply at the L.E. joint, and only on the front side of both bottom spars. The T.E. joint is just glued and taped, and if fit well, will be more than strong enough.

Before putting the dihedral in the wing, trim all the truss ribs to shape, and with a large sanding block, carefully sand them all down flush with the top of the straight ribs. Carve and shape the leading edges to the shape shown, and do the finish sanding on all the wing panels. Now, after the dihedral is in, all that remains to sand is the joints. I usually leave the 3/32 sheet tips 'till last, but they could probably be put in and sanded to shape more easily before the tip panels are on the wing.

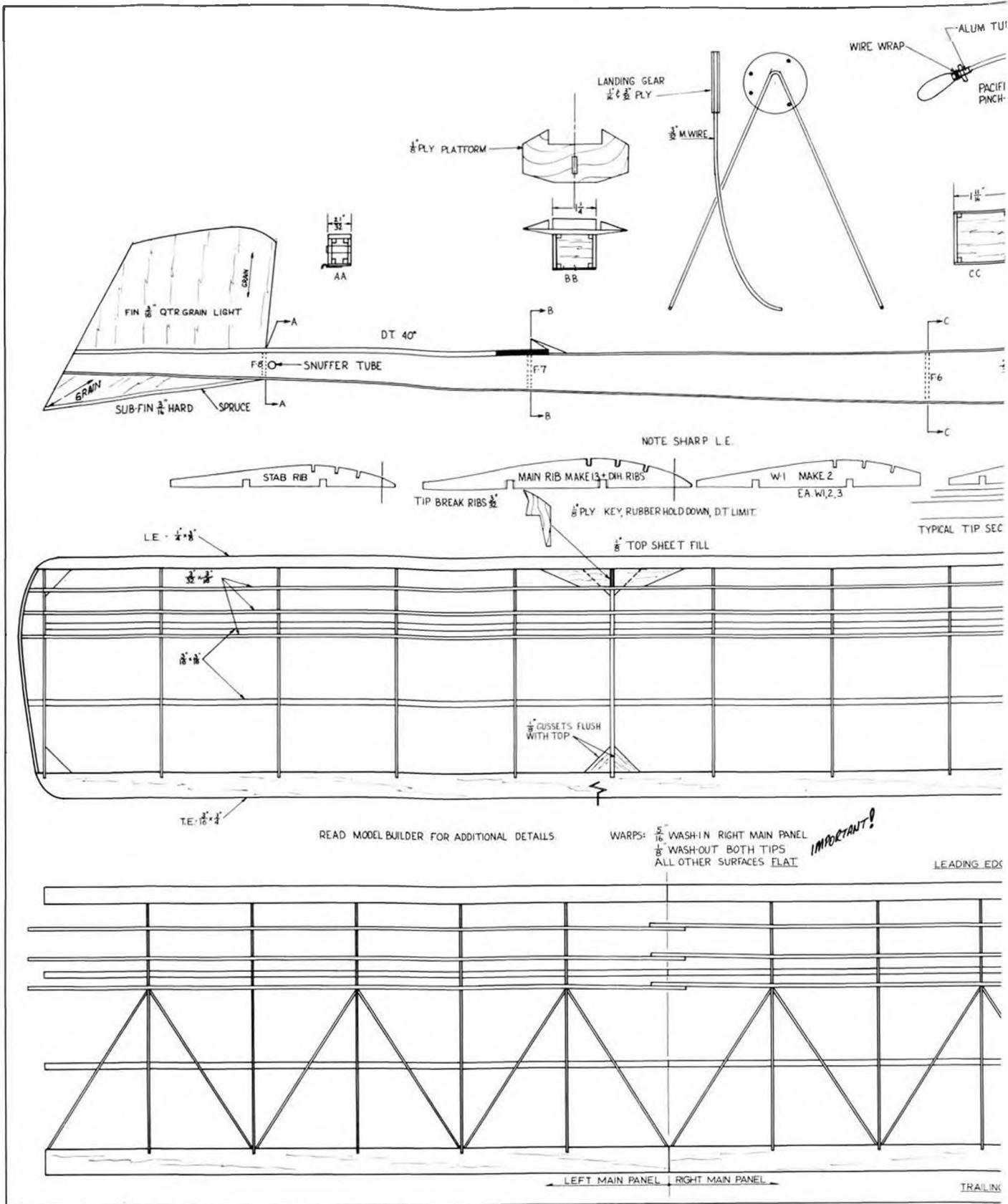
The stab is very simple. Keep it light, and *flat*. If you use the D.T. system shown on the plans, you'll have to build in the 1/8-inch ply D.T. stop-key/rubber hold down, and be sure it is very securely cemented in place. I like this system
Plans and more text, next two pages.



DT snuffer tube is mounted across fuselage. Note evidence of R&D on fin area.



Keys are important for constant and continued alignment. Ship is finished in black Hobbyepoxy fuselage and . . . er . . . pink tissue wing and stab. Snoopy turns up just about anywhere, not so?

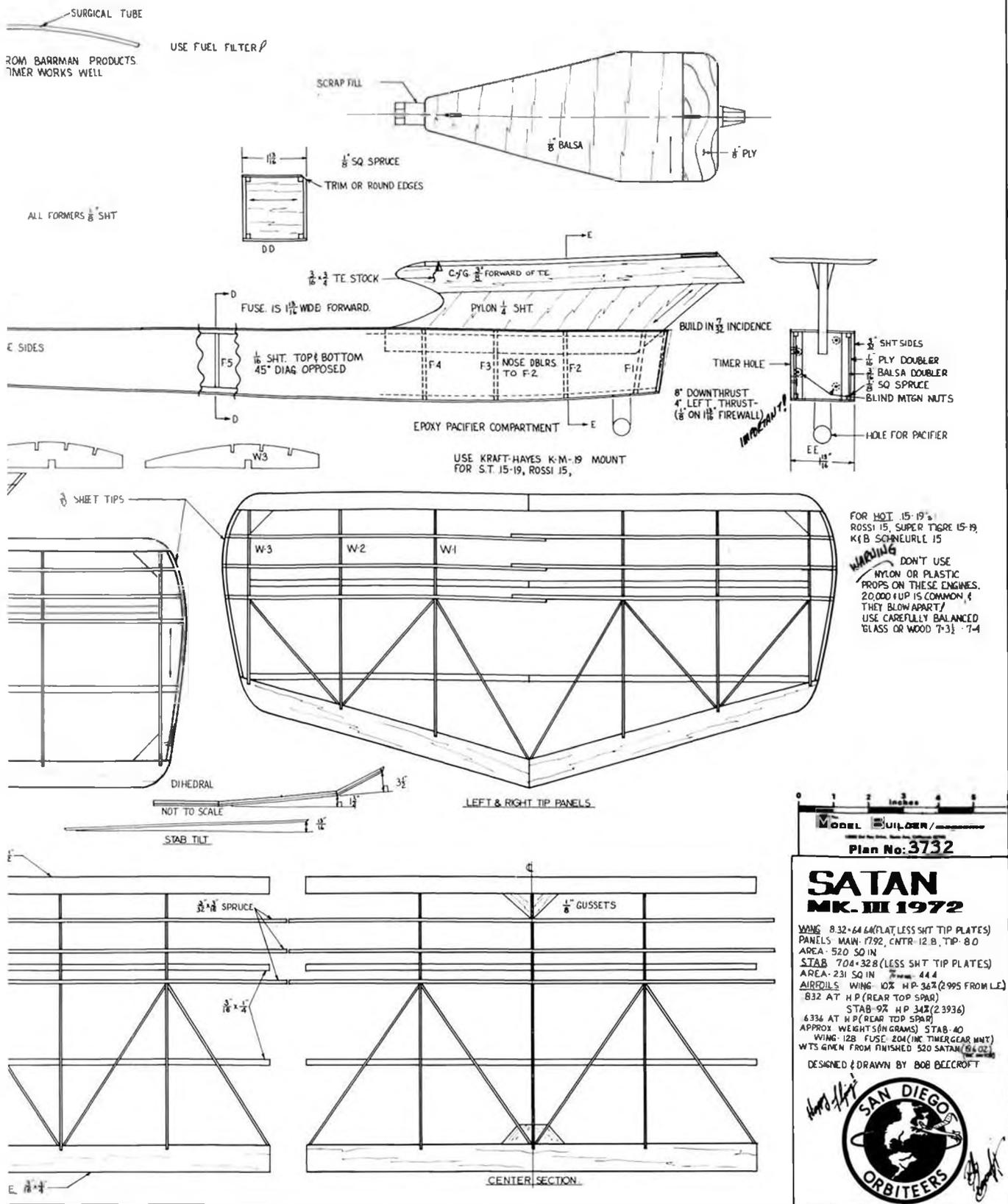


FULL SIZE PLAN

because no limit string of any sort is needed, and hence, there is nothing to hang up, which could result in no more Satan! Trim the key to give about 40 degrees of pop-up, and make sure it is long enough so as not to allow the stab to come off. I've never lost a stab, but for the weak at heart, put on a limit wire if you must.

The fuselage is probably the most time consuming part of the airplane, and I always built it last. I like to have the wing and tail covered and doped by the time the fuselage is nearly done, so that they can be strapped to the body, and the center of gravity checked prior to the pylon being permanently affixed. I build as much of the body as possible,

including sheeting, fin, sub-fin, and so on, bolt on the motor and gear, and put on the wing and tail. You have to give an educated guess as to how much weight the finish will add to the tail of the fuselage, but if anything, you want a slightly nose-heavy model. It takes very little ballast to move the C.G. back, and



AVAILABLE -- SEE PAGE 64

a *bundle* to move it forward! Slide the pylon back as necessary, but not more than half an inch. Still going to be tail heavy? Better check that stab weight, and build another one if necessary.

I recommend building the fuselage upside-down on a good centerline. Center mark every former when you cut

them out (ACCURATLY!) Cut the pylon formers to 5/8-inch depth to accept the pylon, but leave the pieces in place, and center mark all of them too. Cut out the fuselage sides, and be sure there is no bow up or down in them.

Frequently, when you cut a long sheet of balsa diagonally, it will bow somewhat, so I cut them a bit on the

large side, and then trim with a straight edge down to the proper size.

Tack the tail together, pin it down to the center line, then proceed with the formers. The nose, back to the second former, has a 1/16 ply, inside doubler on each side, and a 3/16 balsa doubler on the inside of that. See detail

Continued on page 58



FREE FLIGHT

PHOTOS BY GEORGE BAHRMAN

As the late-night television MC's always say, "Here's a man who needs no introduction!" If you're an active free-flyer, you should know him . . . if you don't, it's about time you did . . . TOM HUTCHINSON.

● I've always thought that I'd make a great columnist, so when Bill Northrop made me an offer I couldn't refuse...I agreed to take over what Mel Schmidt had done such a good job of starting. Since I'm naturally egotistical, opinionated, thin-skinned and vengeance-minded, I don't figure to have any trouble getting some response from my readers (both of them, only one of whom is related to me). But, an initial column like this is hard to write (which is probably why I'm writing this part last). With nothing to build from or reply to, it's a bit

like speaking in a vacuum.

However, now that I've managed to get this far, the feeling of power is starting to come to me--like a South American army officer taking over the government radio station. Keep those cards and letters coming, and maybe this thing will get going well enough that I'll be able to emulate my journalistic idols (Horace Greely, Jack Anderson and Hugh Hefner), so we can have some sexy West Coast muckraking. And let us begin with . . .

WHICH DESIGNS ARE

THE WINNINGEST?

Earlier this year, a letter in *American Modeler* questioned the Satellite's claim of being the "winningest AMA power ship in the country." It said that this might be true for the West Coast, but certainly not for the entire country. This made me curious . . . so I set out to determine which designs were doing all the winning in Southern California. Early results (for the first half of the year) were printed in the *Thermal Thumbers Bulletin*, and now that the contest season is over, the final results for 1972 can now be tabulated.

The results of all FFMAASC contests in Southern California were accumulated and point values assigned to each contest placing (5 points for 1st, 4 for 2nd, down to 1 point for 5th). I did this for individuals first, then broke it down to each design, based on what I knew about who was flying what. (This was not too hard, since most of the winners were familiar faces at nearly every contest. However, the Starduster may have gotten less credit than deserved, since most of the unfamiliar faces were probably using them).

The final results indicated that Southern California is "Starduster" country, with Sal Taibi's design narrowly nosing out the Texan in overall points (98 to 95). Breaking down the results into small 1/2 A & A) and large (B & C) categories shows the Texan at the top of the list in B - C, and my Maverick/Bur-



Our columnist for this, and we hope, a lot of future months, Tom Hutchinson, about to turn one loose at Lake Elsinore, California.

rito Brother leading in 1/2 A - A.

It's interesting how many of these designs are former NFFS models of the Year (if a similar compilation is done in other parts of the country, next year's selection committee could have something more concrete to go on). It's also interesting how old some of these winning designs are . . . the Starduster and Texan were first published a dozen years ago, but are still winning, despite rule changes along the way. Kit models also showed up well, but that's to be expected, since such a listing tends to reflect how often a particular design is flown.

... 1/2 A ...

Starduster	33
Maverick	32
SHOCer	25

... A ...

Galaxie	48
Burrito Brother	40
SHOCer	16
Starduster 16	

... B ...

Texan	23
Satellite	14
Faulker (orig.)	13

... C ...

Texan	42
Starduster	41
SHOCer	36

... 1/2 A/A ...

Mav./Burrito Bro.	72
Galaxie	68
Starduster	49

... B/C ...

Texan	65
Starduster	49
SHOCer	47

Gas (overall)



Southern California's most winning design, according to Tom's analysis, is the venerable Taibi "Starduster." This is designer Sal's son Mike, with a 600 sq. in. version at Taft.

Starduster	98	Diez (orig.)	21
Texan	95		
SHOCer	89		
HL Glider			
Polly	68		
Sweepette	31		
Flash	18		
A/2 Glider			
Dragmaster	74		
Sleeper	41		

WHAT'S NEW AT COX?

Dale Kirn was a special guest at a recent SHOC club meeting, and revealed some good news for 1/2-A flyers. Dale's been working closely with the Cox factory on getting some of the production bugs out of the Tee Dec .49's,

Continued on page 63



Second best design, in Tom's report, is the Texan. Tom Carmen tunes the McCoy 60 in this 1000 sq. in. model of Ed Miller's design.



Third most winning SC design is the SHOCer, by Mel Schmidt. Plans were published in the Jan. 1972 issue of MB, and are still available.



LIL' Flapper

"It's a bird!" "It's a plane!" "No, it's . . . Flapper?" Here's a living room model for rainy days or to scare hell out of that crooked guest who never knows when to go home. By HAL COVER

● Some years back I flew all types of indoor models quite extensively and one of the most interesting was the ornithopter. They seemingly appear to either fly well or tear themselves to shreds. The small ornithopter presented here is a 1/3 size version of one which I designed and at one time held the Category I National Record. As a result of that ornithopter's success and ease of adjustment, I decided to see how small one could be built and still fly. When this one was finished and flown, I was quite pleasantly surprised. You will find it well relieves the monotony of

of quiet smooth indoor flying and gives many hours of entertainment.

The Li'l Flapper can be flown quite easily in a living room, and with luck, flights of 45 seconds can be obtained. The little bird is easy to build and adjust, but it is important to make all parts as shown and they must fit correctly with no sloppiness, otherwise the life span of your bird will be quite short . . . or in some cases it may even beat itself to death. So follow the plans and instructions carefully and have fun.

FITTINGS

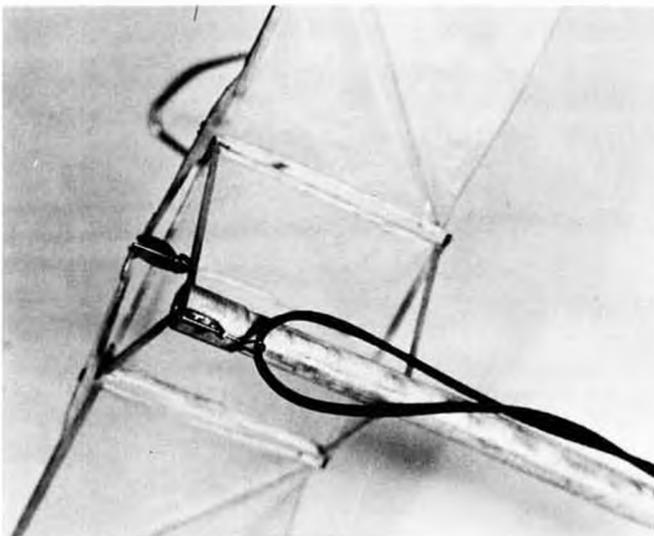
All fittings are made from .004

thick aluminum sheet (disposable aluminum pie plate will work well.) Holes can be punched in the sheet with a piece of .012 piano wire sharpened on one end. It is best to punch the holes in the sheet prior to cutting out the various parts. The thrust bearing is made in a similar manner using .020 aluminum.

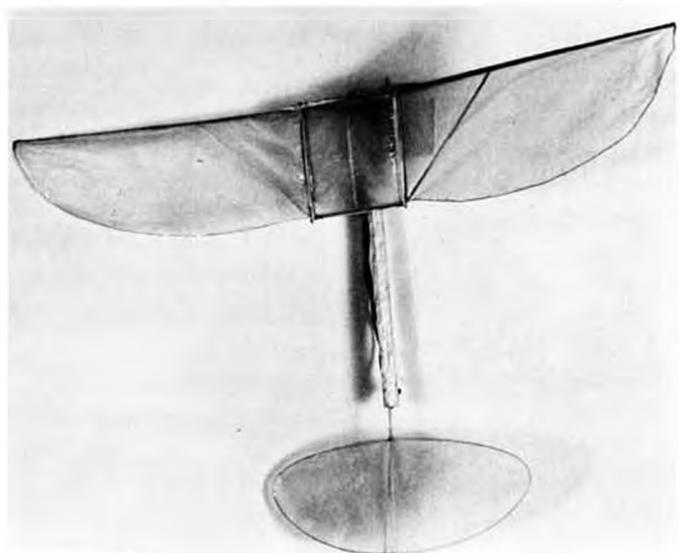
WING

The center section is made from 1/32 sq. stock and with the ribs cut out of 1/32 sheet. The flapper spars are made from 1/16 square tapered to 1/32 round. Be sure they are made from the same

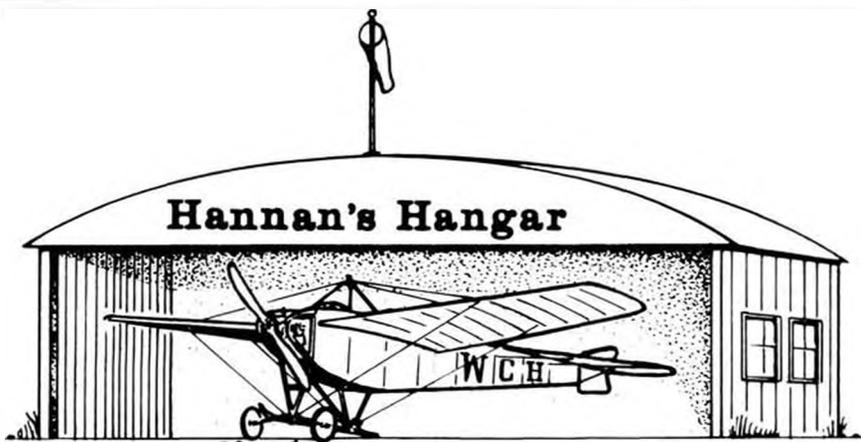
Continued on page 61



The Flapper is structurally very simple. The problem is, however, that the structure is MICROSCOPIC!



If you test fly your Flapper in the house, just make sure the family mouse catcher is outside! It looks and sounds like a bird in flight.



... Being a potpourri of miscellaneous aeronautical ramblings By **BILL HANNAN**

WHAT'S IN A NAME?

● We had been hearing rumors to the effect that Pirelli rubber had a new manufacturer, and now, evidently it is official. The new name is Filati. Rather reminiscent somehow of something from a B grade Hollywood auto racing movie (*You mean, when the hero got a "Filati" tire? Ed.*) At any rate, lets all hope that the quality control improves. **FREE FLIGHT LIVES!**

The doom-sayers who have been proclaiming the demise of free flight modeling might care to reflect on the following statistics: During the recent San Valeers Annual F/F Contest, there were 277 entries, and 1110 flights . . . of which 277 were "Maxes!"

ON THE FLORIDA SCENE

We received a nice letter from Dr. John Martin, of the Miami Indoor Aircraft Model Association, who reports lots of activity in that area, including hand-launched glider, Easy B, Penny Plane, Experimental, Scale, and Peanut Scale. We were especially impressed by

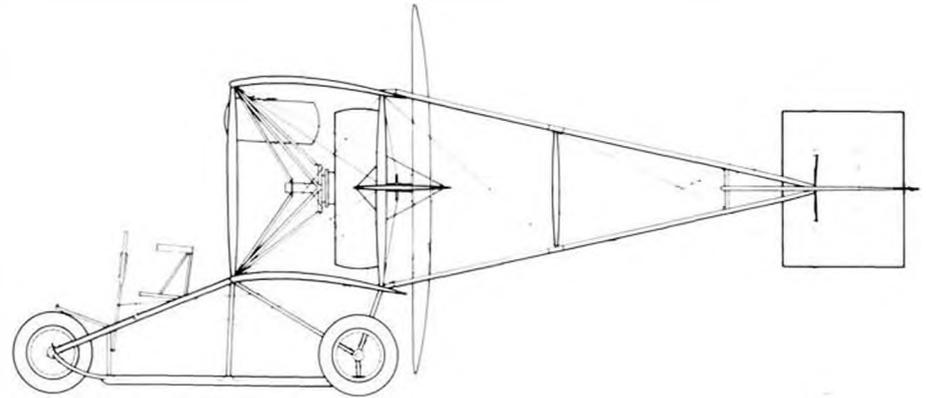
an item on their scale judging sheet which provides bonus points for out-of-the-rut aircraft subjects. Similar to a



Happiness is beating the old man at his own game! Bill Stroman's son Ray picked up a plaque and a Peck Polymers Miles M.18 Peanut kit at the last Flightmasters ROW contest.



MAN's VTO man, Dave Linstrum. We thought you might want to know what he looks like! Ship is an M & P "Midi-Pearl."



Lincoln Beachey's "Little Looper," one of the aerobatic aircraft featured in a new book, "Acrobats In The Sky." See text for more information.

scheme evolved by the Bridgeport, Conn. Flying Aces club, extra marks are awarded as follows: Low-wingers 1; Biplanes 3; Triplanes 5; Autogyros 7; Helicopters 9; Flying Boats or Float types 3. The object is to provide a welcome relief from the usual parade of "safe" but dull Cessna and Piper configurations. The overall spirit of the Miami rules is: "To encourage the building and flying of realistic models of real airplanes that consistently fly well. It must be fun."

MODERNISTIC MODELS

Close on the heels of Mooney's "Bag of Peanuts" plan offering, was the arrival of Hal Swanson's collection of Peanut Scale Plans, which consists of 18 sheets measuring 11 x 17 1/2-inches. Included are such diverse subjects as The
Continued on page 51



PEANUT TRAVELAIR 2000

By DON BUTMAN. Proof that realism doesn't have to suffer as the size gets smaller, this little T-Air has it all. A nice thing for Juniors too; the nearest school yard can be its flying field.

● "bi-plane/'bi-plan/n: An airplane with two main supporting surfaces placed one above the other." So says Merriam Webster's Pocket Dictionary.

This definition is true for the Travelair 2000, but it lacks in expressing the appeal that this airplane has for certain two-winger buffs! This is the 4th Travelair 2000 that I have built from Bill Northrop's plans, though it's the smallest of the lot.

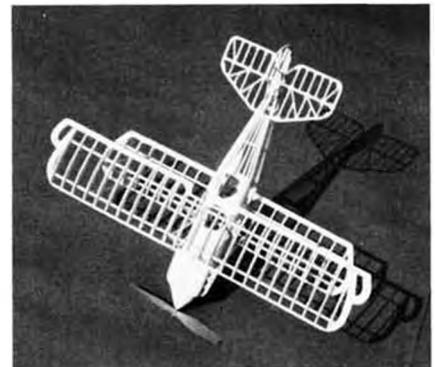
The May 1969 edition of Sport Flying magazine featured Travelairs. This included a story by Max Walton of Wichita, who restored a Travelair 2000 because he needed a test stand for an OX-5 engine! The result was a beeyoutiful blue and silver Travelair 2000 that became a flying test stand. An interesting caption under one of the flying

pictures states "... high (800 ft.) over the Wichita countryside at full throttle, 72 MPH!" This magazine article, plus the re-issuance of Bill's plans in the Model Builder, pushed me into peanut scaling the travelair.

The model is built in the usual fashion . . . 1/16 sq. sides, formers, 1/32 x 1/16 stringers, 1/32 sheet around the nose and cockpits, and a bunch of 1/32 sheet wing ribs. The engine cowling protrusions are shaped blocks and the front and "spinner" are of one piece with the prop 'way out in front. Stickers for fidelity may prefer to move the prop back a 1/4-inch or so and build a spinner around it. Five minute Epoxy works very nicely for securing the landing gear wires and attaching the fairings. Also, a light coat of epoxy on the nose

plug and mating opening in the fuselage will provide tight and durable wearing surfaces to keep the nose plug from falling out after the motor unwinds.

Continued on page 53



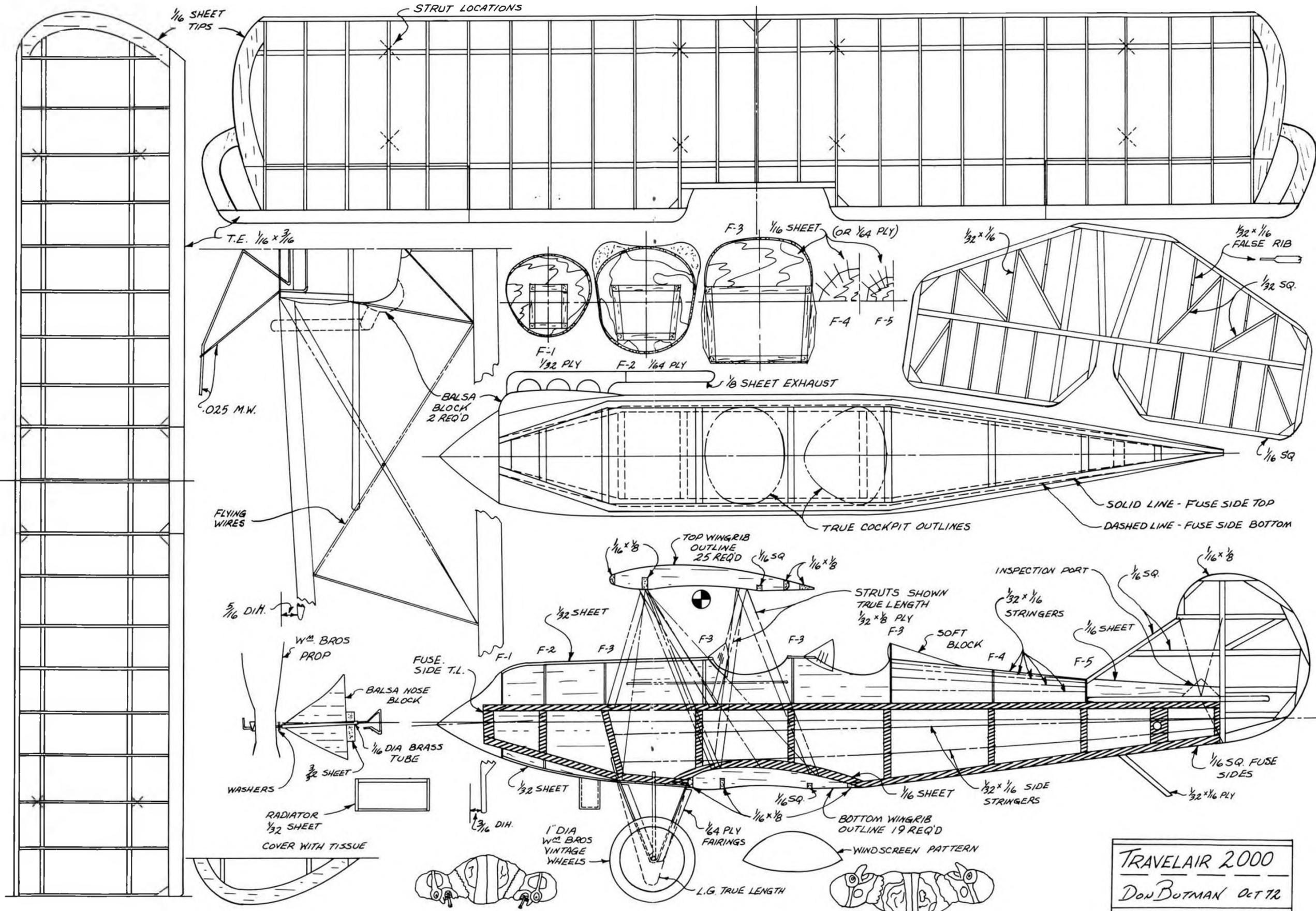
The "bones" of Don's little 13" Travelair. Ribs could be thinned out a little to simplify.



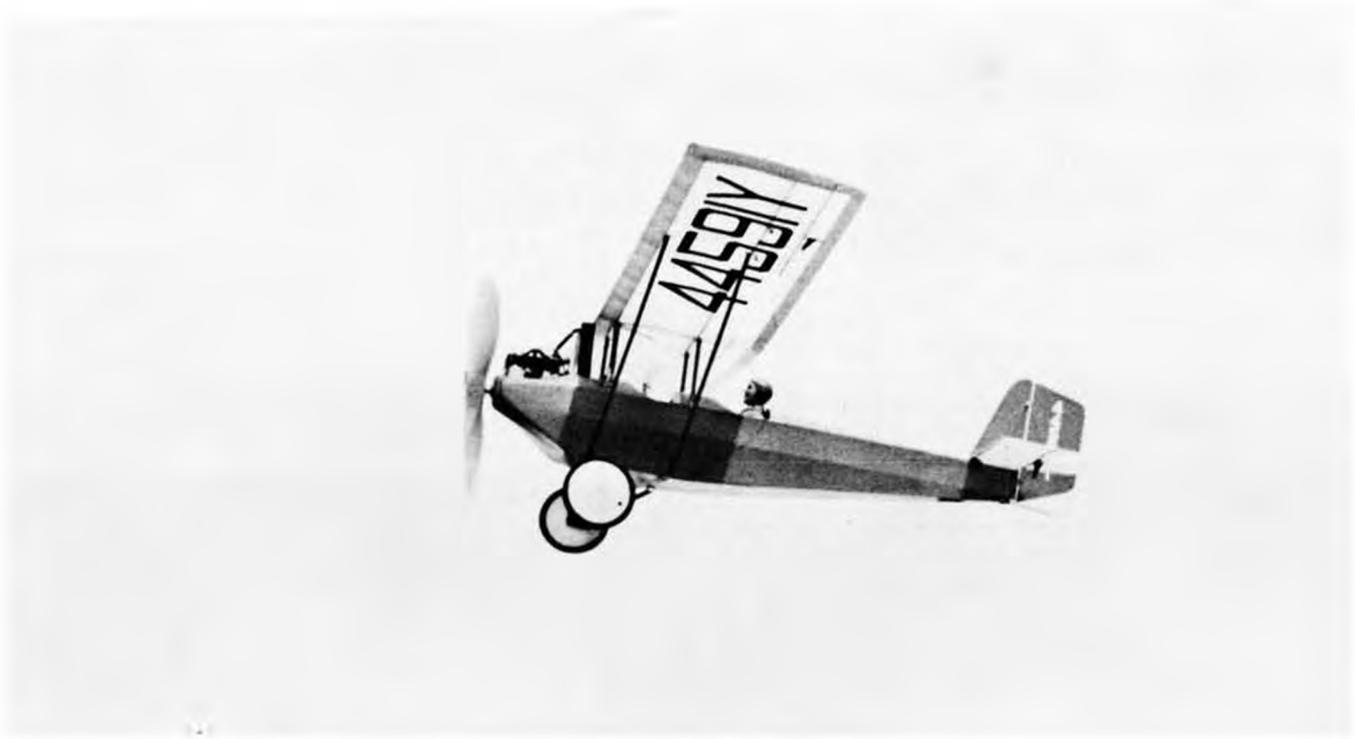
Great shot of the little T-Air climbing out from launch. School yards are big enough.



Don's inspiration for this model came from our 2" scale Travelair, plans for which were published in the July '72 issue of MB. The reduced mag plans were almost Peanut scale!



TRAVELAIR 2000
 DON BUTMAN OCT 72



Putt, putt, putt! Ed Slobod's Jumbo Scale Pietenpol Aircamper takes off for the wild blue yonder. If it wasn't for that big prop

FREE FLIGHT SCALE

By FERNANDO RAMOS

● On December 4th, the N.A.R. Flightmasters held a contest for both Jumbo Rubber Scale and Peanut Scale. Jumbo Scale is a specialized event for rubber scale models having a wingspan of at least 48 inches, and they must carry a pilot. I think you'll agree that this is a pretty fair size model to be powered by rubber, and you won't find a prettier sight than these "biggies" in the air.

Those of you who don't live out on the west coast may wonder why any club would be foolish enough to sponsor a contest in December, however, for the past four years of this contest, the weather could be termed from great to sensational! No doubt, the west coast is the place to be for year around flying. *(Stop rubbing it in, Fernando! WCN)*

As with so many events, Jumbo has had its share of growing pains. It started out to be a type of old timer event where the use of old plans such as Megow, Peerless, et al, was encouraged. The model had to have a pilot, and it was worth 60 of the 100 points allowed for judging (The reason being that judging on each model could be done very quickly). Thirty points was given to craftsmanship/scale and 10 points bonus if an old timer plan was used. Flying points were based on the best of several flights up to a max of three minutes. Three minutes on a scale job is near impossible unless one has a "ghost-type" of scale model, and for the past three years this was the kind of model that was consistently winning Jumbo . . .

doing it in the tradition of a Wakefield ship.

So, for 1972, the rules were changed in order to avoid the same situation that has occurred in the past. This time there was an equal distribution of points between fidelity-to-scale, workmanship, and the pilot. The flying rules were changed so that a model's flying points could not exceed its scale points . . . the same rules that are in the 1972 AMA rule book for indoor scale, page 16. (I personally would like to see these same rules used for outdoor rubber scale.) Out of all the models entered only one had more flying points than scale points.

Very few models are built from old timer plans, but rather, are enlarged



Tom Laurie holds his Bellanca Airbus while Jack Elem tries to see past his cigar to release the winding hook.



The Airbus silently takes off for one of several fine and realistic flights. Scene is Sepulveda Basin, near Los Angeles, California.



This sign depicts the relaxed, good-time atmosphere that is typical of all NAR Flightmaster contests. The name of the game is FUN.



Jumbos line up for static judging after the flying is over. Ray Berens' Skyfarer, foreground, enlarged from Earl Stahl drawings, was winner.



All eyes are on Ray Berens' Skyfarer as he releases it for a winning flight, Vic Castanzo, left, coaching. Well known full scale sailplane photographer, George Uveges, with camera.

from a good 3-view drawing. The scale is better and the flying times are reasonable. Hal Cover, who has dominated this event had the most unusual, beautiful model of a Focke Wulf 152. It had no stringers and was constructed partially of foam with balsa covering.

The model had a camouflage paint scheme with all of the panel separations, and the pilot was something else. He looked as though he belonged to the Jagdstaffel. In order to keep the weight as far forward as possible, Hal used two short rubber motors with return gears. It was a beautiful but complex set-up that worked extremely well. The model would R.O.G. (which is required) like the real plane. However, the 152 just

didn't have the duration to compete with some of the more conventional designs.

The most detailed model was of a Pietenpol Aircamper belonging to Ed Slobod. Ray Berens, who won the event this year, was flying a Skyfarer. This model flew beautifully and also had some rather high times. Jim Adams came in second with a Cessna AW that was feather light and his flight points reflected this. The "old professor," Walt Mooney, was flying an Empanema, which appears to be the Japanese version of Piper's Pawnee; this model took third place. Another unusual plane was that of Tom Laurie's, a Bellanca Airbus. Tom didn't have too much time to get



The Peanuts line up for inspection. The "huge" jumbo in foreground is a Curtiss Robin.

the model completely trimmed out before the contest (sound familiar?) but it was soon putting in some rather realistic flights.

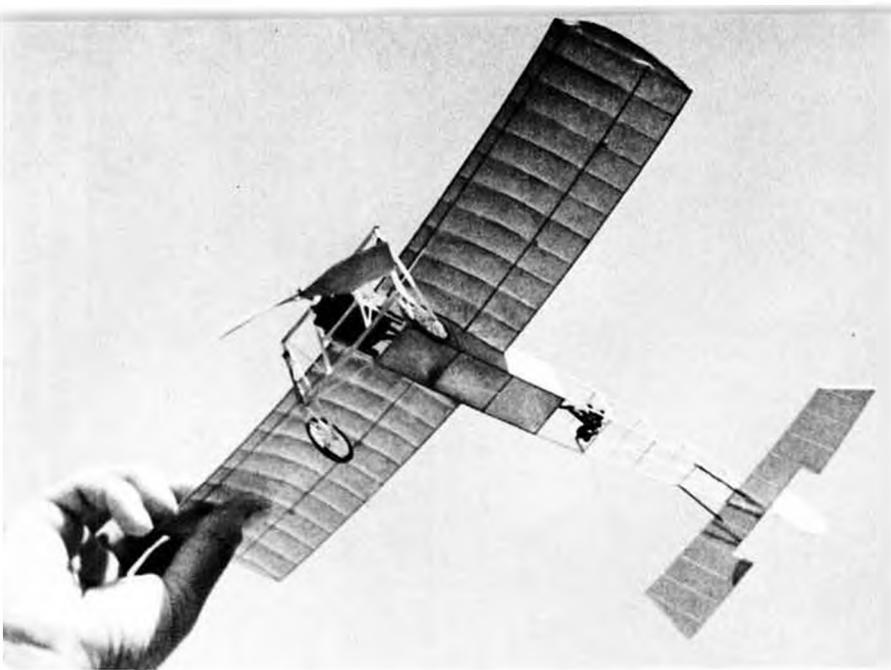
The Peanut event was run at the same time as the Jumbo, and it was something to see the two different classes of models side-by-side; the difference between their rubber motors could certainly be expressed in dollars rather



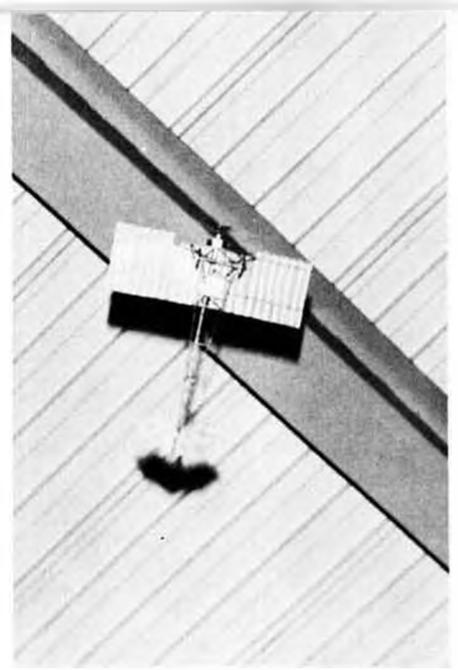
Hal Cover, designer of this month's Flapper, built and flew this beautiful FW 152. Balsa covered foam with stunning paint job.



Come on, Fernando! Jim Adams isn't pulling that hard on the rubber while winding his Cessna AW. Ship is very light and flies well.



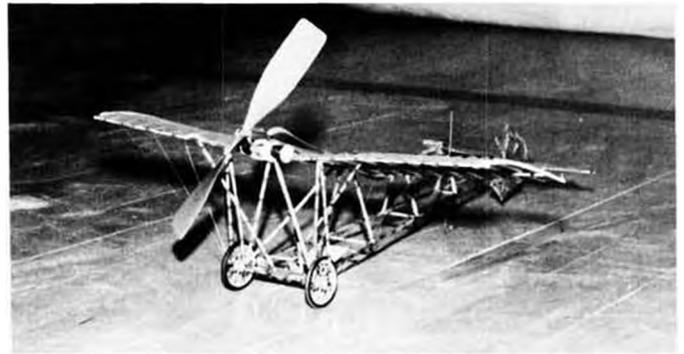
Fernando's well used 1911 Cessna. After winning it's last two in a row, it will now be retired, and reside in Russ Barrera's museum, much to the peace of mind of other Peanut contestants!



Doug Mooney's Demoiselle plays tag with the rafters in Las Vegas school gym. It's a peanut.



Two Bellanca biplanes (Oct. '72 MB) at Las Vegas. Ship on the left belongs to Fernando; other owner not known.



Another look at Doug Mooney's Demoiselle. Plans can be obtained from W.C. Hannan, see ad. FH wheels add a lot to any scale ship.

than cents! Peanut scale has gained national popularity, and for good reason. It is a great starting point for Juniors to be introduced to flying scale with a minimum of effort and expense. They are easy to build and easier to fly, and seldom ever get damaged. And best of all, there are many plans and a few kits for these models available . . . more on this later.

(It's also interesting to note that

Peanut Scale has assumed the duties of "Ambassador of Rubber," not only to Juniors, but to modelers of all ages and interests. Our mail indicates that in particular, many R/Cers who came into the hobby through R/C, are "discovering" what modeling has been all about these many years, and are thoroughly "hooked" on the little beasts. WCN)

The Peanut scale part of the contest went without incident as the sky was

soon crowded with small flying objects. Duration is really the main criteria for Peanut and it's quite amazing how long these models can fly. I was fortunate to come in first with my old and tired 1911 Cessna. Bill Hannan was second with his outstanding Turbo-Porter, and Herb Barsky took third with a Poulin. Everyone had a good time and that's what it's all about!

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On New Years you wear silly hats, right? Bob Haight (lt) and Bill Warner prepare Bob's Waco for a hop. Warner's hat a "regular."



Would you believe a Russian Flying Motorcycle? Bill Stroman's model flew quite well. Would you call it a "tandem biplane?"



Al Vela and John Warren with Vela designed "Super Flies." Three-views of this ship were published in last month's column. Sorry, Al's not letting out plans yet!



By
AL VELA

F/FAI

● Back in 1961 I had a call from Johnny Broadbeck asking me if I would like to try the new K&B .15 engine. It had been designed, engineered and test flown in C/L speed, not only in the American speed circles, but also in Europe. Before going into production, the prototypes of the K&B series 61 had established several world speed records, in the hands of its creator, Bill Wisniewski.

Trials for the semi-finals were close and I was set up with the very dependable Oliver Tigre diesels, but was always searching for more power. The invitation was too tempting to decline, so obviously, I accepted.

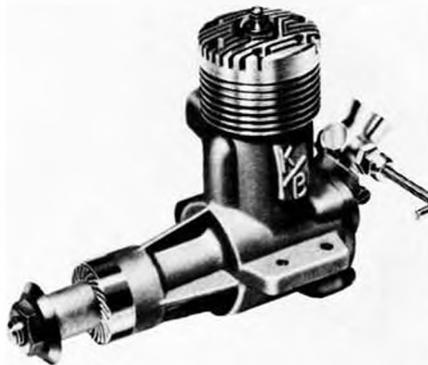
The following Saturday, we met in the field at Chino Airport. Assisted by Wisniewski himself and witnessed by Johnny B., we installed the K&B. The impressive demonstration of power was shocking. My airplane went up with a speed never before experienced by me. This was the first of the new K&B series.

Now, after more than a dozen years, another new K&B has come out of the nest. Again, we had to be the first one in F/F to try this new K&B. We test ran it first on the bench and then flew it in one of my well tried, and tired birds, "The Mole."

After dismantling the engine first to examine the characteristics of timing, the porting, and head combustion cham-

ber, as well as to study the quality of machining, we ran the engine on the official F.A.I. fuel of 75% methanol and 25% castor oil. We used about all of the fiberglass props that are around and ran it until the first piston and sleeve set was worn out. Several plugs were also tested to find out if there could be a possible improvement in R.P.M.'s.

Overall engine performance indicates a very fast engine with easy starting and smooth running. Needle settings are not critical, with only a slight tendency to overlean . . . typical characteristics of the Schneurles! When in full compression, (the engine has become loose but not over the hill) it burned out a plug on every run, with no difference in brands or types. After some 10 minutes



The new K & B schneurle ported 15 engine. FAI version for 75-25 fuel not yet available.



Denmark's Tom Koster demonstrates ballet form as he launches Flapper at World Champs.

of running, plug burning stopped, but compression was by now very low.

Using the Heathkit "Thumb Tach" we got the following figures on 75-25 fuel:

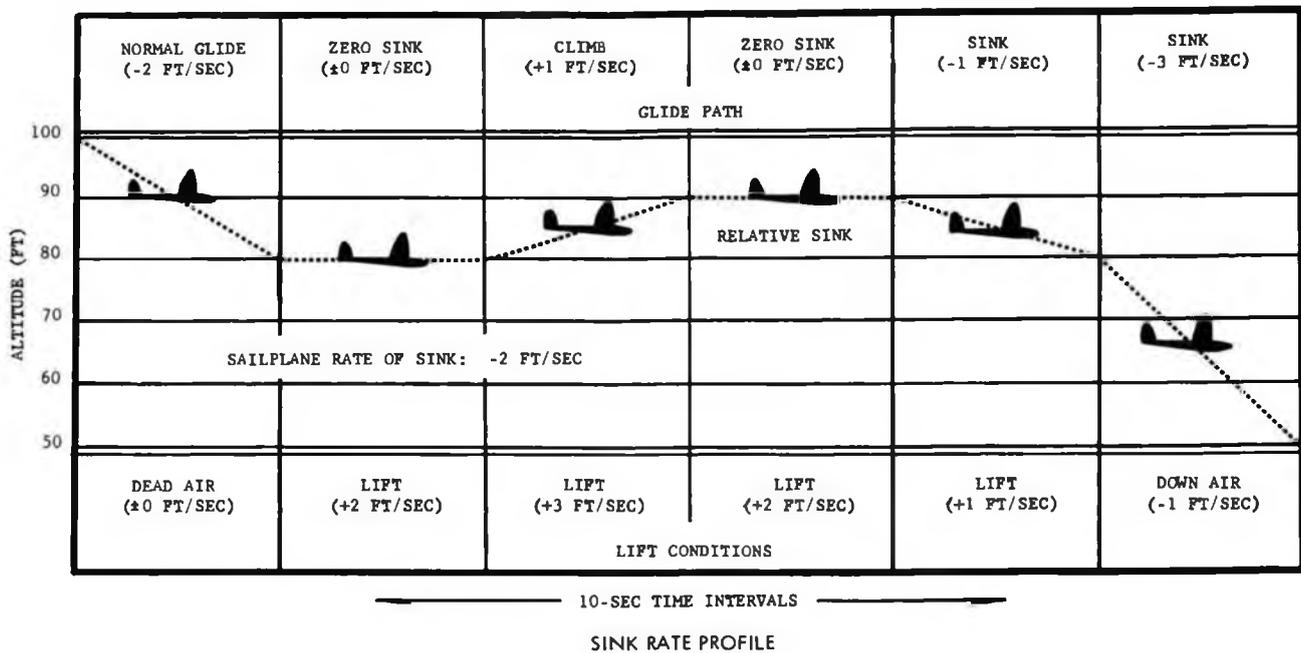
PROP	SIZE	RPM
Bartel's	7 x 3.5	23,000
N.F.F.S.	7 x 3.5	23,200
Van Nest	7 x 3.5	23,200
Vela	7 x 4	22,000

These figures were recorded using the plug for the standard squish band head. The inlays with different chambers were

Continued on page 51



Al Vela flight testing the new K&B 15 in his "Mule."



R/C SOARING

By LE GRAY

THERMAL HUNTING FOR FUN AND PROFIT . . . or . . . All that comes down must go up . . . first . . . OR, 'Tis better to have lift and lost than to never have lift at all . . .

● "Hey, Mac. How ya make it go up?" "Pull back on the stick, Dummy!"

You can learn a lot hanging around a flying field. Watchin' . . . And listenin'. Some of it may even be worthwhile. Like how to soar an R/C sailplane . . . using thermals. The way birds do. But ya gotta know what to look for.

Electronic gadgets that feed airborne intelligence back to the ground-based pilot are becoming more common, but it'll be awhile yet before visual observation is obsolete. If ever. These devices . . . which are really rather sophisticated telecommunication systems . . . can be purchased by anybody with the desire and a bundle - a - bucks. They can be built by those who have the time and talent. And they can be a real help when properly operating and intelligently used.

It may very well be that the age of electronic thermal identification is the coming thing. Certainly the added soaring capability potential with such equipment is intriguing. However, this additional hardware neither guarantees nor is required for sustained flight. As one gentlemen proponent commented, "A thermal sensor won't make a sailplane go up, but it helps you know when you are in lift." Most pilots fly without them . . . if for no other reason than because

not many guys have 'em . . . Yet.

When R/C soaring "au naturel," so to speak . . . without the aid of a thermal sensor . . . the line of communication between man and machine is that of sight. If you can't see it, you can't fly it. In thermal soaring, "seeing" doesn't mean just looking, and "flying" doesn't mean just driving around. In successful R/C thermal soaring, "seeing" means "immediate recognition of min-

ute displacements or speed changes of the sailplane." It requires more than good eyesight. It also takes intense concentration. "Flying" means "sensitive control manipulation in response to observed changes in displacement or speed of the sailplane so as to exploit meteorological phenomenon which are potential advantageous, and to negate deteriorating conditions." How about that jazz?



Annette Faure applies a little "body English" as she brings her Windfree to the spot. Scene is Estancia High School, Costa Mesa, Ca., at monthly Harbor Soaring Soc. contest.

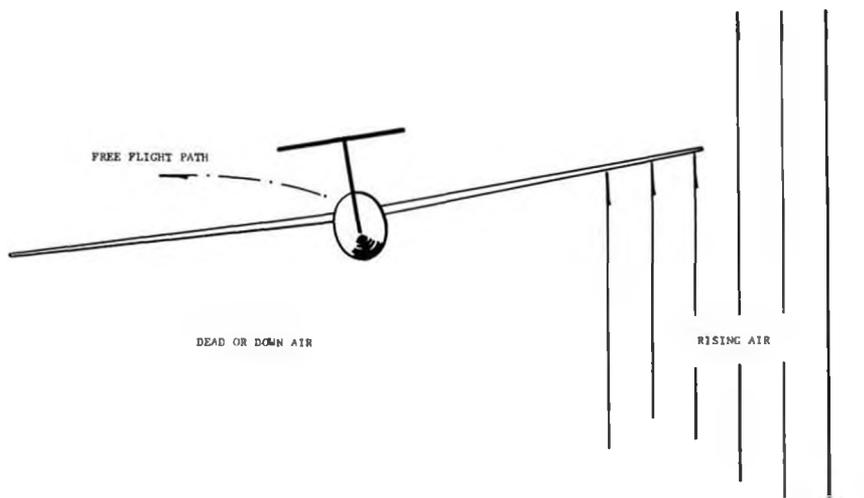
There may be many variations in the technique of R/C soaring, au naturel. It's hard to say. Those guys who really know how make it look so easy. Sometimes it would seem to be all luck . . . no skill involved. However, upon checking average flight times, it becomes immediately evident that these "Thermal Tigers" are consistently lucky . . . week after week. In fact, their good fortune in putting up long flights is such a routine thing that it makes one wonder if they cheat . . . like maybe not depending on blind chance, but actually working the problem.

Those of lesser ilk undoubtedly can learn by observation and example. We may even change our luck. But there seems to be a "sense" of flight . . . a "feeling" for lift . . . a "hunch" where "up" air can be found. This skill may be imitated on occasion (*In free flight, they call it "Piggybacking."* WCN), or even be learned. Or, it may be a "thing" that either ya got or ya don't got. Sure hope that's not the case.

If you get the opportunity, listen when a Thermal Tiger is coaching a friend. You'll hear things such as "Okey. Next time around, hold it straight for a second. Then start circling again;" or "The lift's over to the right a bit;" or, excitedly, "There it is. Ya got it. See that lift?" While eavesdropping, keep a close eye on the sailplane they're flying. You may not recognize one item of evidence which would be cause for such dialogue. Also, notice the sailplane starting to get smaller as it goes up. It's almost enough to drive one to powered flight . . . but not quite. Have faith . . . maybe we can learn.

Now anyone who tries to bluff his way through in this R/C soaring sport . . . or tries to "fake it" as an expert, either on paper or on the field, has got to be some kinda nut. Therefore . . . accordingly . . . and forthwith, the following discussion is offered as a report of techniques observed during several years hanging 'round the flying fields . . . interspersed with short duration hops to verify the obvious fact that "No, Dummy. You ain't got it yet. Keep watchin'." Of course, we were only shooting landings, anyhow. So what's the big deal?

Now here's a bit of news: a sailplane does not have on-board climb capability. It's fascinating what new worlds of knowledge are opened for us by the printed word. Anyhow, a sailplane has no power of its own, and therefore cannot increase its altitude or even sustain a given altitude without the help of an outside force. Physics is physics, and



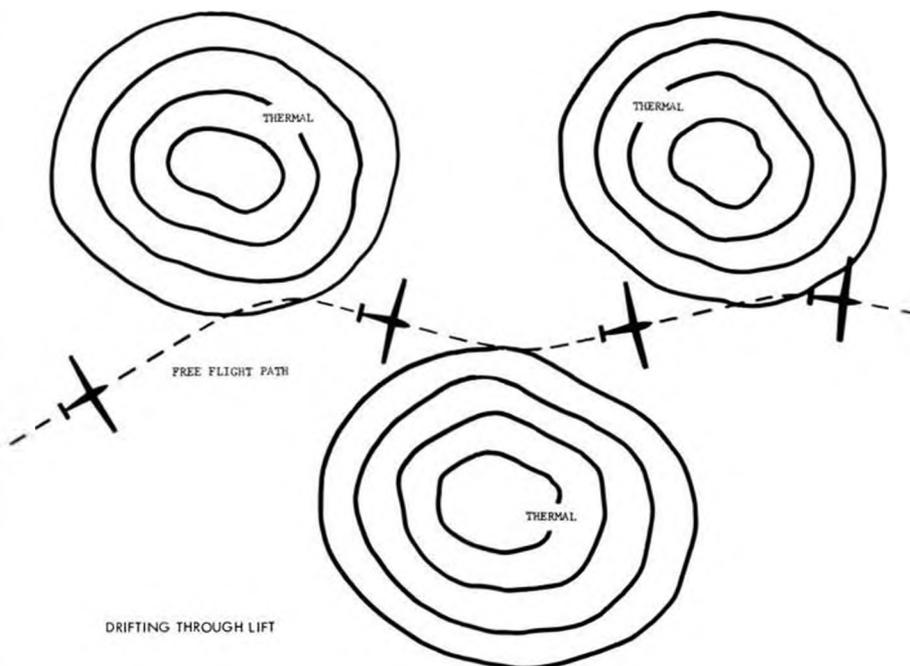
RISING AIR CAN TURN SAILPLANE AWAY FROM LIFT

that's the way it is. A sailplane is always sinking . . . unless parked on the ground . . . or being towed.

The theory and practice of soaring is to seek out and utilize air currents which can carry a sailplane upward. Such currents must rise at a greater velocity . . . measured in feet per minute (fpm) or feet per second (fps) . . . than the sailplane's inherent rate of sink. When this happy situation is encountered, the sailplane can increase its altitude. When the "up" air is equal to . . . that is, has an upward velocity equivalent to . . . the sink rate of the sailplane, the sailplane can sustain its altitude. This condition is called "zero sink" for obvious reasons. When the "up" air has a velocity rate greater than the sink rate of a sailplane, the sailplane can climb. This condition is called "Whoopee." But, in either case, the sail-

plane is still sinking. Honest. But only in relation to the surrounding air . . . not with reference to the ground. So we don't care.

Take an example. Say your latest Aerodynamic Marvel (AM) has a rate of sink of 2 fps in "dead" . . . no lift and no down . . . air. From 100 feet of altitude, it would take 50 seconds to glide to the ground . . . excluding ground effect and other esoteric niceties (*Aw, cut it out, Le! WCN*). Now consider what would happen if, instead of dead air, your AM were gliding through air which was rising at 1 fps. In this situation, the experienced rate of sink has been reduced to 1 fps, and the sailplane takes 100 seconds to come down from the 100 foot height. The inherent rate of sink has not improved from the 2 fps . . . but the upward moving air slowed its descent, in relation to the ground, to



DRIFTING THROUGH LIFT

only 1 fps.

A happier example. Air rising at 2 fps. Same AM sailplane has same 2 fps sink rate. The result is that it holds altitude . . . stays the same distance above the ground. "Zero sink."

Now comes a stronger thermal . . . 5 fps. Fabulous AM sailplane goes up at 3 fps. "Whoopee."

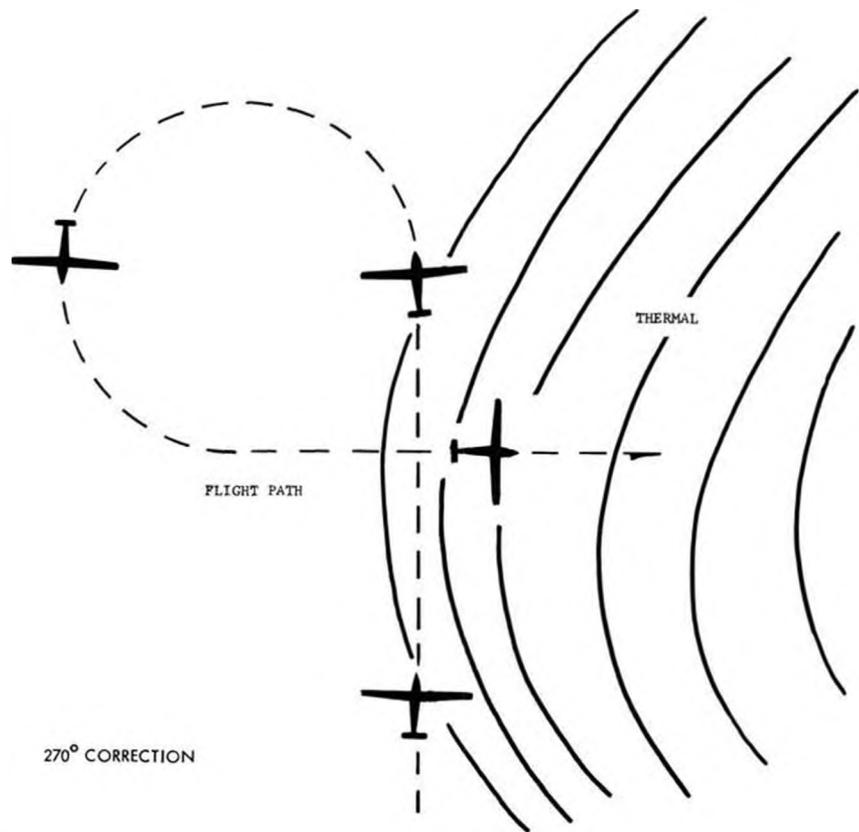
One more. "Down" air at 1 fps. Same old stupid dog of a sailplane sinks to ground at 3 fps like the proverbial rock. This sport is no fun anyhow. Let's go home.

And that's all there is to it. All you gotta keep in mind is to fly only in rising air. If you can't find any, why not just land?

Since we can't push a throttle and go "up," it's only reasonable to assume that we look for some outside help. The answer is this rising air gimmick . . . thermals.

It may sound like a put-on, but the first and certainly most important step to successful thermal soaring is to get a good, high launch release. It's basic. Once the power of the tow . . . be it winch, hi-start or otherwise . . . is gone, that sailplane is on its way down. The higher the release, the more altitude and, thus, the more time available to hunt for lift. Remember, thermals are often kinda like inverted cones . . . wider as they are higher . . . and also stronger at altitude . . . and thereby easier to find and use when you're just off the tow.

How to get high? Avoiding the opportunity to play with words at this juncture (*You beat me to it! WCN*), let it be said that launch technique could well be the subject of another discussion. However, the primary idea is to climb as steeply as possible immediately after takeoff, then to round out and try



for a "floating" release when the towline is about 20 degrees or so short of vertical. A shallow climb . . . or delay in going steep . . . or waiting to release until the towline is vertical with the ground, and you're not getting maximum height.

When on launch, watch for thermals. A rapid increase in rate of climb may indicate that you're flying through lift, or it could just be a wind gust. Which ever, it can add a lot of load to the sailplane's spars. Be alert.

At the Harbor Soaring Society's Western R/C Soaring Championships in 1970, Old Flying Buddy (OFB) Scott Christensen, LSF/001, gave a dramatic demonstration of over-stress. Scott is

an intense competitor, and flies as beautifully as he builds. OFB was well up in the standings on the second contest day, and going for broke . . . as it came to pass . . . on his launch for the last flight round. Nothing particularly unusual . . . steep and getting good altitude. But about half way up, a thermal. The noise sounded quite like a rifle shot . . . quick and sharp . . . and one panel was gone. That was it. No warning. No bend. No bow. One dead bird. Obviously, Scott, as do many strong competitors in any sport, was pushing his machine to the edge. The additional loading imposed for a split instant by that thermal took it over the brink.

But thermals on tow can also present opportunities. Most pilots, grateful for any small bit of luck, will accept the extra umph from a thermal for a slightly higher launch, and fly on to normal release. On the other hand, a real Thermal Tiger will sometimes release . . . that's right, terminate his two . . . at maybe the half-way point or so, to take advantage of a thermal. This takes self-confidence, skill and, as far as we more common types are concerned, courage. It also represents the kinda flying that sorta separates the men from the boys . . . or at least the "front runners," to use a current political phrase, from the "also rans." Perhaps the latter are R/C soaring's "silent majority."

A fantastic example of thermal-on-

Continued on page 54



Roland Boucher, Astro Flite, about to stomp on the winch switch to get his AS-W15 airborne at last summer's LSF tournament. The 132" span ship is company's latest kit.



PLUG SPARKS

By JACK TRANSUE

(To set the mood for this month, we give you the following quote by Dell Rheume, editor of the SCIF's [Southern California Ignition Flyers] newsletter: WCN)

For the first time this year the San Valeers added a full slate of events for Old Time models to their Annual. The experiment was a rousing success, as was their whole meet, despite the bad start. Saturday the winds stopped all flying, but Sunday was a grand day in every way. After they decided to hold the full two-day slate of events on Sunday, but limiting all events to 2 officials instead of 3, the fun began. Some 132 contestants made 365 entries and the air was crowded at times. Old Timer entires made up 12 percent of the total, and the mix of Old Timers and con-tempo planes in the air, as in the Free Flight Champs, was most interesting to all . . . especially when Otto Bernhardt's Lanzo chugged over the flight area, cutting a stately pattern through con-tempo VTO's. All eyes were on it, for it was a slice of history passing overhead, a reminder to all of the breath-taking changes of the past fifty years, but also a rebuke to those who cannot free themselves of the present, who may forget that, as important as today may seem, there is always a beginning, a glorious past that may still be enjoyed.

We've always assumed that anyone who ever built a model aeroplane knew how to wire up an ignition engine. Well, according to the latest independent poll, there are still a number of people out there in hobby land who believe that Ray Arden invented the glow plug for use in the Brown Jr. For these few, and others who may have forgotten, we're including a wiring diagram of a typical model ignition system. As you can see, there was more than just a glow plug and a set of Ma Bells dry cells to furnish motivation to the piston. Take a look and you will see such mysterious objects as a coil, condenser, ignition points, battery box, high tension lead, and spark plug; all necessary until about thirty years ago. With the advent of the glow plug, this system has become all but obsolete. It wasn't until the Old



Moe is telling Hugo Lung, vice president of the SCAMPS, "I think I'd like to 'people' around with these things." Moe's owner, in striped shirt, is St. James Davis.

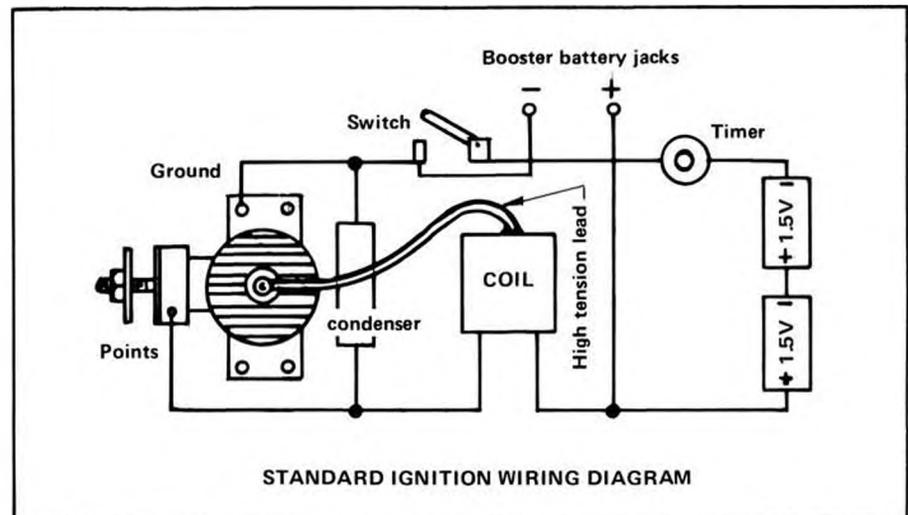
Timer movement began in the early sixties that this ignition system again became a part of model aircraft building and flying.

Now before you go and start ripping the ignition system out of the family auto, I should explain that the coil, points, high tension lead, spark plug, etc. in the diagram were designed specifically for model airplane engines. In the

beginning, a standard automotive condenser was used, but today, most modelers use an ordinary radio or TV condenser. Approx. .047 ohms, 200 V. and 20% tolerance will work as well as anything.

If some of you are new to modeling or just to the old timer movement, and are still in the dark as to where to obtain

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Nice place to go sail a boat! The Newport Harbor Yacht Club, Newport Beach, Ca. R/C yachts are the West Coast 12, a large boat displacing about 40 to 50 pounds. Photo was taken from the outside cocktail and dining deck!

STRICTLY SAIL

ROD CARR

● In October of each calendar year, American Model Yachting Association membership renewals may be sent in. New memberships are still tallied until December 31, but since we are so close to the end of the year a quick look at the class statistics for this rapidly growing organization is in order. The AMYA Secretary's report of 12/2/72 indicates a total vessel registration of 526!!! These registrations are spread over 9 sanctioned classes and 3 others working toward the 20 vessel minimum. In capsule form:

Santa Barbara One-Design	124*
50/800 (Marblehead)	119
East Coast 12-Meter	91*
36/600	50
10-Rater	45
West Coast 12-Meter	22*
Regatta One-Design	22*
Dumas Star "45"	21*
Open Class	21
International A Class	7
American X Class	3
Half Meter	1*

*—Indicates a one-design class.

A quick look at the relative numbers indicates a couple of leading one-designs and the popular 50/800 holding down over 60 percent of all vessels registered. Both of the one-designs are available as kits and new vessels have now started to appear in that form for the 50/800 class also.

Released by AMYA President Don Prough this month was a partial listing of items which will be up for grabs at the annual AMYA raffle. Donated so far are a SOLING Kit by VORTEX MODEL ENGINEERING; a FLYING EAGLE hull by CARR'S BOATYARD; and a complete EC/12 kit made up of HARTMAN hull and accessory fittings, CARR'S BOATYARD sails, and JOHNSON ENGINEERING sail control unit. All of these items will be on view at the AMYA booth during the Toledo Show. Drop by and say hello to the pirates from the Chicago Area Flotilla who will be manning the booth. They're not dangerous . . . just look a little rough!!!

From my vantage point as a mid-Atlantic PR man for AMYA, I'm often the fellow approached by those who want assistance in organizing a local sailing group and applying for AMYA Sanctioned Club status, with the concomitant liability insurance which accompanies such clubs. As such fledgling groups make their presence known I'll try to remember to bring them to your attention, as well as any individuals who contact me with a plea for help in establishing a group. This week was a bumper crop for such activities. First, we heard from Dick Jansson of Wellsley, Mass. He informed us that an organizational meeting was scheduled and a new club was expected for the Greater Bos-

ton Area which was being pushed by both AMYA and MYRAA skippers. The hope was to apply for AMYA sanction, and bring R/C yachting to the excellent facility existing at Storrow Lagoon.

Following Dick, we established communication with Mr. Harold Belknap of Woonsocket, Rhode Island. He armed us with a list of potential skippers from the general area, and we've been assisting him as much as possible from this distance to establish a group. Since Harold is already skippering an EAST COAST 12 hull, we expect that class to be the probable choice.

Since everything comes in threes (or so my Mrs. says) I held my breath, and sure enough, the Greater Hartford Model Boat Club has taken itself by the scruff of the neck and is establishing a sail division. A conversation with Bill Zepp turned up a couple of vessels already in the area, and we convinced him to take this year's C.H. BLACK TROPHY SERIES winner (12US300, MAHALO II) off our hands. I'm awaiting later information from the group who were to undergo their early planning discussions in mid-December.

We've finally heard from the CENTRAL PARK MODEL YACHT CLUB. Mr. L.V. Goodrich was kind enough to contact us, after we had tried unsuccessfully for a year to obtain a response

Continued on page 53

FIBERGLASS GLIDER KITS

ASW-15 1/6 SCALE / \$ 30.00
 DIAMANT 1/6 SCALE / \$ 30.00
 HP-14 2 1/4 SCALE / \$ 35.00
 kits include fuse, canopy, plans & ribs

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did it again. Dave Saks, flying his Poulin was a close second, followed by Herb Barsky with his Poulin. In the Junior division, Doug Mooney won with a beautiful, weathered Demoiselle, while Kenny Hannan took second with an Antoinette, and third went to John West with a Miles M18. In the Profile event, Warner won with his Valkyrie, and Bill Hannan came in second with a profile of a Hughes helicopter. Larry Vance took third, but I was not able to find out the name of the model. In CO₂, Doug Mooney showed everyone how to fly by putting up some good flights with his Miles M.18. Bill Stroman was second, flying a Fokker D-VI, and behind him was Bill Warner with an Eastbourne. In Antique, the 1911 Cessna won again . . . it has been officially retired. Doug Mooney placed second with his Demoiselle, and third to Bill Warner and his Valkyrie. There weren't enough jets to make it a contest.

The 5th Las Vegas Vultures Peanut Scale Contest is now history, but the memory will last forever, and I can only say that I will be looking forward to the one next year. My family and I left for home the same day of the contest, so we were pretty happy but tired when we pulled in the driveway. There is no doubt that building and flying scale models with some of the best people you'll find anywhere has to be the best thing going!

There are a whole list of items that I want to cover this month as space provides. Bob Holman, P.O. Box 741, San Bernardino, California 92402, is now carrying many of the AEROMODELLER'S flying scale plans. He is planning to carry the entire line as well as their excellent 3-views. Mailing to England for these will no longer be necessary.

Hal Swanson, of Modernistic Models, P.O. Box 6932, Burbank, CA 91505, has

come out with 18 flying scale Peanut models in the form of a plan packet which is available for \$13.95 for all 18, or \$1.00 per plan. The list includes: Fairchild KR-21, Mr. Mulligan, Hughes HI, Avia B-534 IV, Waco 220, Beech Bonanza, Page Racer, Allenbaugh's "Gray Ghost," P-51B, Chester "Goon," P-51D, Stinson Reliant SR-8, Howard DGA-15, Vought OS2U-3 Kingfisher, Stearman PT-17, Chester's "Jeep," Cosmic Wind, and Corben Ace.

Walt Mooney also has a plan packet for Peanut scales which includes many fine flying models that have been featured in model magazines in the past. The cost of his plans are a flat \$5.00. Walt's address is 2912 Cabrillo Mesa Dr., San Diego, CA 92123.

Another plan that might interest some of you is that of a shrunken down version of the Miss America (about 30-inch span) ideal for the Brown CO₂. This one is available from Ralph Dods-worth, 437 Ave. U South, Saskatoon, Sask, Canada, for a mere 50 cents to cover the cost of mailing and handling. Neat deal, eh?

Those of you who have been looking for basswood in longer lengths than normally found in model railroad supplies will not have to look any longer. VK Model Aircraft Co., 12072 Main Rd., Akron, New York 14001 is now carrying the following sizes in 36-inch lengths: 1/32 x 1/8 - 6 cents ea., 1/32 x 3/16 - 7 cents ea., 1/32 x 1/4 - 8 cents ea. These are ideal for your larger models, and including R/C.

Last but not least is the new kit put out by Peck-Polymers, P.O. Box 2498, La Mesa, CA 92041. This is the Druiene Turbulent that was designed and drawn especially for Bob Peck by Bill Hannan. It is a model of the version especially prepared for the Duke of Edinburgh. The model is very detailed and has the special markings of the Tiger Club and

Duke's Crest. As per usual for these kits, it features top grade wood, proof-of-scale 3-views, step-by-step construction photos, nylon thrust bearing, plastic propeller, and wheels. The cost of the kit is \$2.49.

Many modelers may not be familiar with another railroad product called Solvaset. (Someone may take offense at my calling Solvaset a railroad product, but it was used by model railroaders long before being adopted by the plastic model fraternity.) Solvaset is used for the application of decals. What it does is to soften the decal so that it will snuggle down to the exact contour of the surface, without any distortion. There are other, similar products on the market, but I have personally had the best results with Solvaset. It certainly makes decal application easier and the result more realistic in appearance. Follow-up with a spray application of Testor's Dull-Cote. This will take away the shine of the decal.

Here's a hint that may help you when you cover your next model with Japanese tissue. Usually, when you use balsa sheet to represent metal covering, such as for cowls, turtle-decks etc., it sometimes becomes a tedious task as you dope the tissue down using brush and fingers. The better way to do it is to put the tissue down and tack it with dope or thinned out white glue, only on the outer most edges of the surface to be covered. Then water shrink. When the tissue dries you will find that it has drawn tight over the curved sheet surface, so that doping now becomes an easy task. ●

Workbench . . . Continued from page 4 told to "take it to a hobby shop." (Don't laugh . . . it happens every day!) Or . . . and here's the danger . . . the customer storms out, muttering words like "Those s&%*!@! kits of XYZ Co. don't fly worth a damn anyway!" The word gets around that your kits/engines/transmitters, etc., are Lemons. Sales drop. Hobby shops fold. Modelers quit in disgust. Far out? 2001? Think about it! Then go to your local hobby shop and buy something.

P.S. This writer neither owns, nor has any financial interest in any hobby

MANY FLYING SITE PROBLEMS ARE SOLVED BY AMA'S CLUB PROGRAM

shop. Just a lot of thanks that they're there!"

Any comments dealers, distributors, manufacturers, discount houses?

NOTICIA

A Nuestros Lectores en America Latina.

Nosotros aqui el Model Builder pensamos que nuestros amigos en Centro Y Sur America han sido un poco olvidados por la prensa aeromodelista.

Estamos seguros que mucho digno de noticia esta pasando en America Latina, y que seria de interes a nuestros lectores sobre todo el mundo.

Favor de mandarnos noticias y fotos de Usted, sus amigos, o su club. Qualquier desarrollo nuevo, resultados de competencias, aun una foto de su ultima creacion, sea radio control, vuelo libre, U-control, o OVNI es de interes.

Correspondencia en Espanol es aceptable, y debe ser dirigida directamente a nuestro Contribuidor para America Latina: Eloy Marez, 2217 So. Doreen Way, Santa Ana, CA 92705.

Si Usted esta de paso por Los Angeles, puede llamar a Eloy a Orbit Electronics, 714-540-1404.

NOTICE

To our Latin American Readers.

We at the Model Builder feel that our friends in Central and South America have been somewhat neglected by the model press.

We feel sure that much is taking place in Latin America that is worthy of notice, and that would be of interest to our world-wide readership.

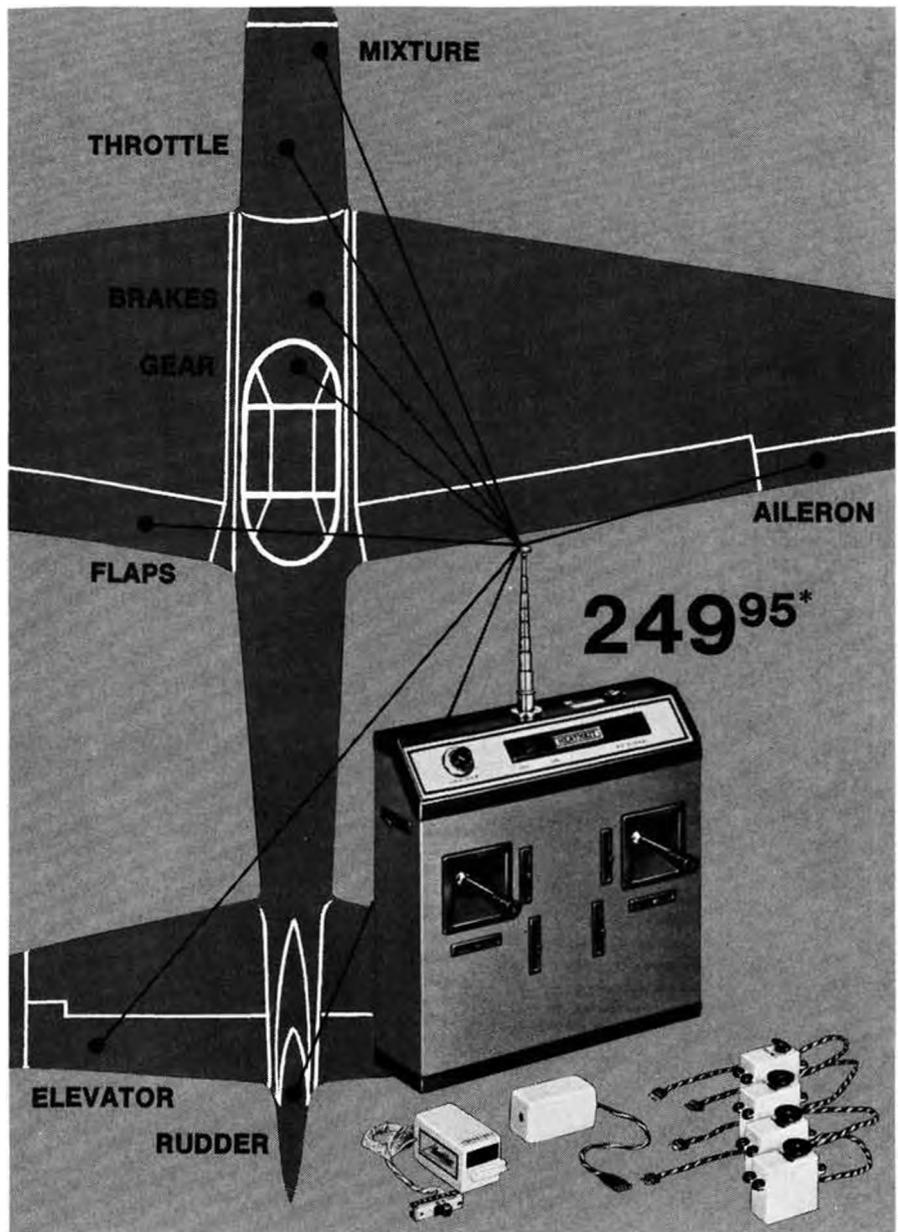
Please send us your news and photos of yourself, your friends, and your club. Any new developments, contest results, original designs, or even a picture of your latest creation, be it R/C, free flight, U-control, or UFO, are of interest.

Spanish material is acceptable and should go directly to our Contributor for Latin America: Eloy Marez, 2217 So. Doreen Way, Santa Ana, CA 92705

If you are in Los Angeles on a visit, you may call Eloy at Orbit Electronics, 714-540-1404.



R/C Report . . . Continued from page 15 just punch a hole in the side of the plane and run it through. Others get it out behind the wing and tie it anywhere that is convenient. What you should watch for is to see that the antenna is free and clear of the servos and battery pack and that you inspect it from time to time. Often, people will tie the end to the tail surfaces with a small rubber



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KIT G2 — Length 11"

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Plying the Spanish Main, the Galleons carried the treasures of the New World back to Spain. Outfitted with cannon they were used both as merchant men and warships . . . The Blazing Guns of the *Constitution* helped to establish our Nation. Now enshrined in Boston Harbor, it is the oldest commissioned vessel in the U.S. Navy . . . Built by Angus L. Walters the *Bluenose* was one of the finest Schooners to take the water. It came to world-wide fame racing against the *Gertrude L. Thebaud*. *Bluenose* captured the hearts of U.S. and Canada to such an extent, that today it is on the back of every Canadian Dime.

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Span 54" Area 415 sq. in. Length 36" For Engines .23 to .35 Scale: 1.61" Equals 12.0"

SPECIAL THANKS

The beautiful Citabria is manufactured by one of the oldest and respected names in American Aviation, The Bellanca Corporation, who so graciously provided us with the plans, photos and details of the full size aircraft. With this illustrious lineage, it is not surprising that the Citabria is just about unbeatable as a fun plane. Primary trainer, or for Aerobatics.

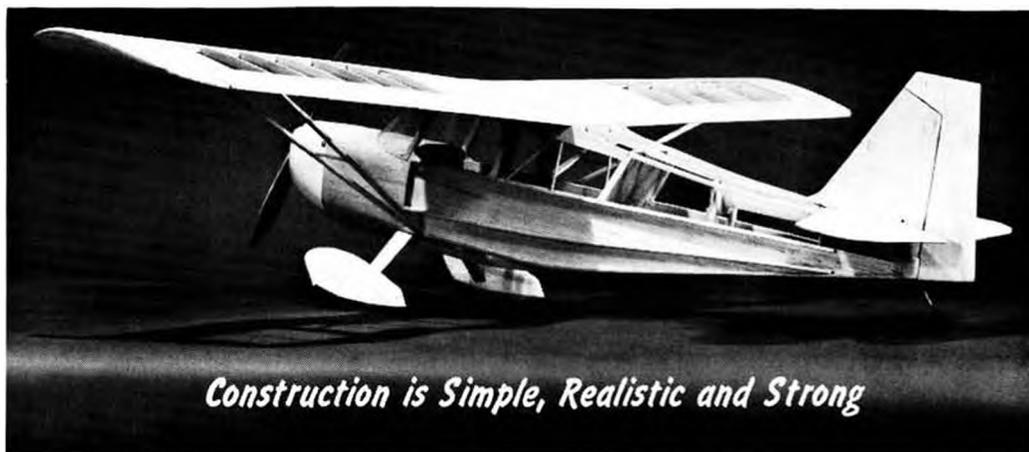
CITABRIA IS FOR YOU

If you're a Sport Flier, if you have a feeling for Scale, if you love R/C*, then this is your ship. It's a beautiful machine that builds easy—goes together fast—plenty of room for any equipment—rugged for hard use—flies great—and is just about the right size.

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ABOUT THE KIT ITSELF

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Construction is Simple, Realistic and Strong

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Complete wing is built on work bench without having to remove it—so it's flat and warp-free. Parts are die cut and carved. Balsa sheet cover makes for tough wing. Wing is installed like it ought to be—with dowel pins and nylon screw in wood nut-block. No unsightly rubber bands to deteriorate, break or slip. Rudder and Stab are die cut sheet for simplicity and no warp. Included is all the linkage hardware: pushrods, aileron and elevator horns, bellcranks, clevis, connectors, etc., plus giant authentic decals, plastic windows, etc., etc.

THE FUSELAGE

Fuselage sides are die cut full length. Cabin sides and inner doublers are plywood as are the firewall and landing gear bulkheads. It's easily assembled with die cut balsa bulkheads, nose block, formed music wire landing gear, custom dural engine mounts, etc. Cowling and wheel pants are rugged plastic.

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band (this is OK), but they make no provisions for strain relief at the point where it exits the fuselage, and the wire often will break or become frayed. The antenna you get with your receiver is the correct length, incidentally, please don't try to shorten or lengthen it. I have included some sketches of what I like to do with an antenna installation and I cannot understand why some manufacturer of small goodies doesn't think this out and make some antenna exit and tie-down gimmicks.

I sent my sketches to Charlie Chambers of Rocket City Products, but he *always never* likes my ideas . . . in fact, he says (right to my face, yet) that I'm crazy. However he did like one idea and made a little streamlined fairing along with a piece of Velcro sticky stuff to tie down the end of the antenna. I like the fairing OK but yechhh on the Velcro sticky stuff. (Charlie will probably stomp on me for that, too). I suggest a piece of a control horn or bellcrank, modified as shown and in the sketch, secured in the fin. You can slip a rubber band in and tie the end of the antenna to keep it from flapping around. Makes a neat arrangement. Then you can take a piece of scrap as shown and make a strain relief gimmick as shown. I'd like to see somebody make an antenna exit gadget as I've drawn it, I think it would be handy and neaten up some planes that are perfect except for the antenna installation. It should be made of plastic that glue will stick to so you could fasten it to the side of the plane, or the top or wherever you will.

Didn't mean to get technical but wanted to get those ideas across. Not much new across my desk from the manufacturers. One interesting item is that World Engines is developing what looks like an "expendable" type foam airplane for engines in the .35 to .40 class. You can get it in the air with a minimum of fuss and it doesn't even require wheels, just belly it in. You could put a skid on it, I guess. And, of course, you hand launch it . . . that means give it a good toss. Plane is called the "Half Diamond" and when I get more poop on it, I'll pass it on.

Speaking of hand launches, I have to tell you this story. Back fifteen years or more when R/C was really in its infancy, we always had to hand-launch the planes. We didn't think of tricycle landing gears and the planes were always tail draggers. Planes were mostly high wing cabin types and pretty stable. Control was mostly single channel and you had rudder control only. Many free flight type big planes were modified and flown

as R/C.

This concerns a fellow who used to live here and lives now in California. His name is Beverly Gooch. Beverly is a self taught electronics engineer. He's a genius, too. Long before anyone thought of it he devised a method of putting a television picture on tape. Regular tape like you use on your tape recorder . . . the small stuff. Not so great you say? Well, he made the equipment to do this, too . . . all the machinery . . . all by himself and at that time he was just out of his teens!

Well, back to the story, we all love Beverly. He is quiet and easy to get along with, but very much an individualist. He had this big six foot span free flight that he had converted to R/C. Now Beverly, back then, was quite skinny and about six feet tall. He always wore one of those Bombardier or Pilot's caps that had a *very* long bill. Nobody else at the field had one.

Beverly would start his engine, check his equipment and off he went. With hand-held single channel transmitter in his left hand and plane, engine screaming, in his right, over his head, he would start to run into the wind. Everyone stopped to watch. He would run, faster and faster . . . when he reached the right speed the wind would get under the bill of his cap. It would blow off. Then, Beverly would *stop dead* in his tracks and with a mighty heave the plane would be airborne! We all used to fall over laughing. Beverly, we miss you, old buddy! Sometimes, when Beverly visits his family in Nashville, he drops by to see me. Last time he told me he was flying R/C gliders. I wonder if he still launches them the same way.

Until next time . . . ●

Yugoslavia . . . *Continued from page 15*

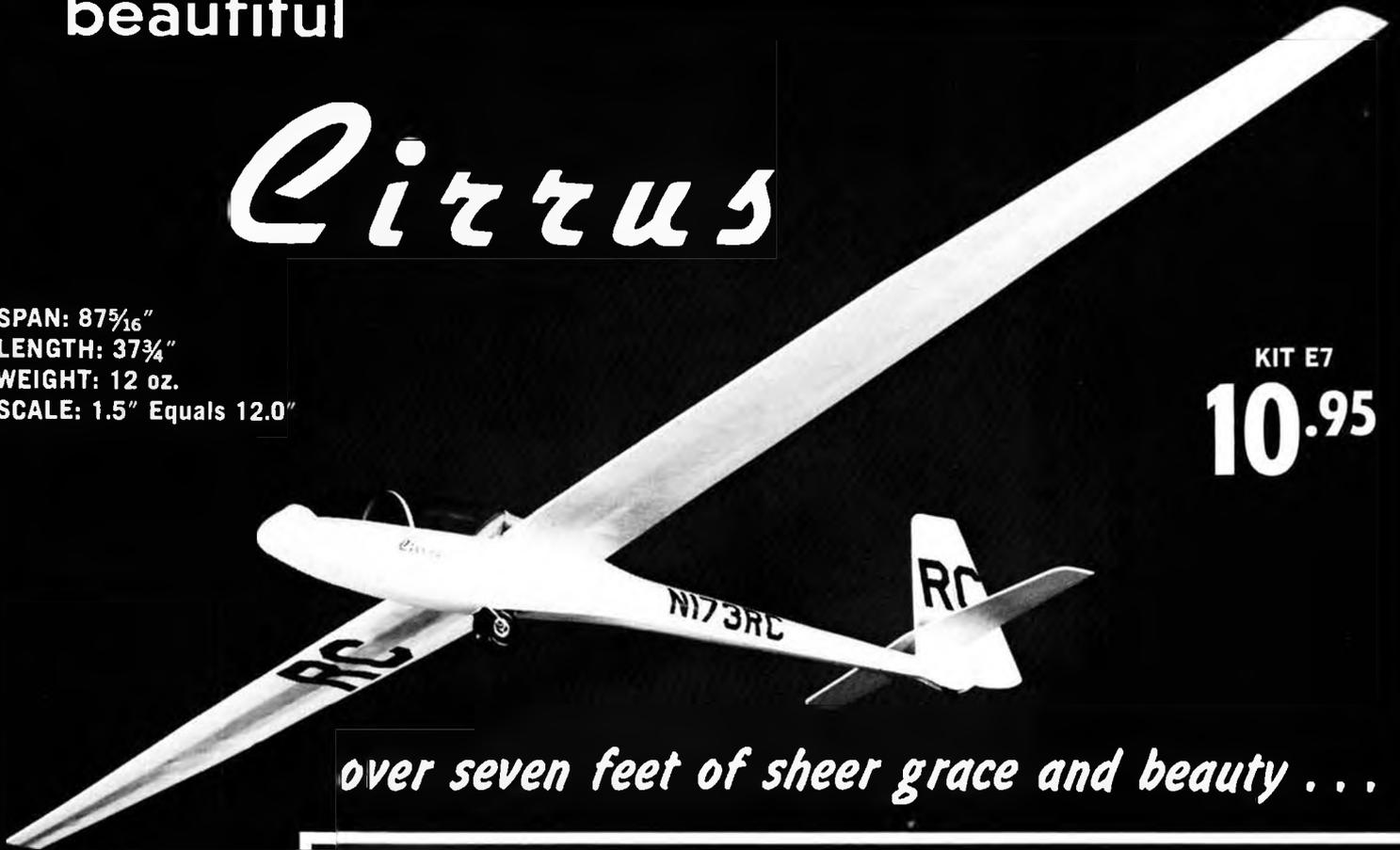
The first round began punctually at 9 o'clock. Giezendanner flew in his usual style. Only at the points of intersection of the Eights he flew slightly unclean and also the three quick rolls were not his best. He scored 4290 points. Matt flew next to last in the first half. He did not have his usual dash and energy, probably because his engine did not run full speed. With 4280 points, Matt scored 10 points less than Giezendanner. There was great excitement after lunch, when Hanno Prettnner opened the second half of the first round. He flew very well and placed his figures exactly in the flying sector. For his faultless flight he scored 4560 points. Thus Prettnner was leading Giezendanner and Matt. Fourth was Gunter Hoppe,

beautiful

Cirrus

SPAN: 87 $\frac{1}{16}$ "
LENGTH: 37 $\frac{3}{4}$ "
WEIGHT: 12 oz.
SCALE: 1.5" Equals 12.0"

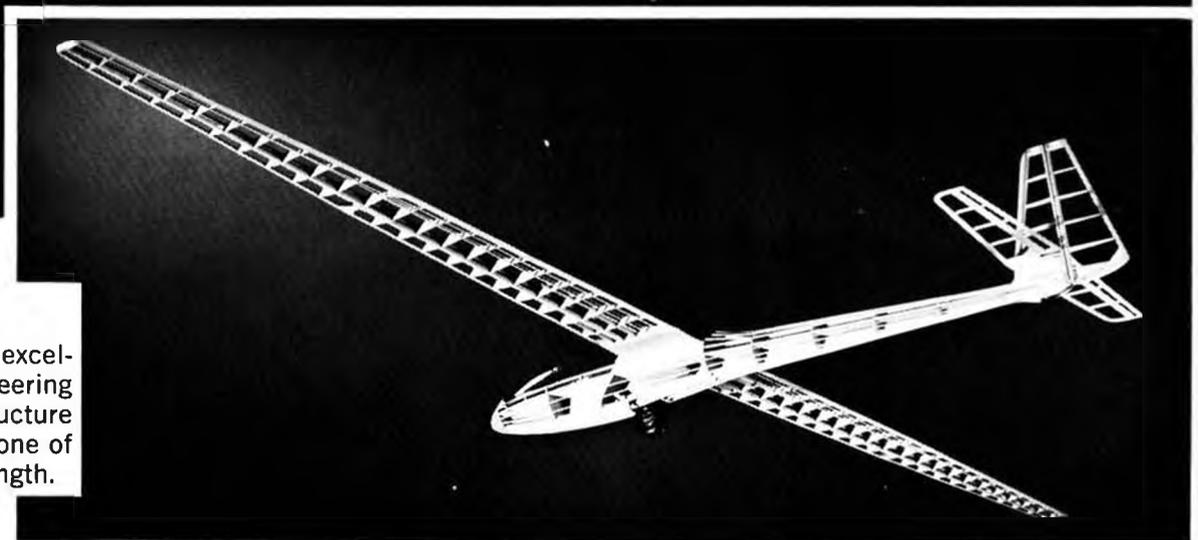
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All indicators point to the **New VECO .61R/C** as the pattern engine to watch in '73! It is proving its worth by challenging the imports for the top places. Thus, more and more pattern flyers are switching to the **New VECO .61R/C** when they see and hear its amazing performance. A case in point, one of those who made the switch, is Bill Salkowski. It paid off. He took first in Class C Expert at the Winter Nationals in Tucson, November 24th, 25th, and 26th.

Muffled against noise and engineered for performance, the **New VECO .61R/C** includes a specially designed F-L-O-W T-H-R-U muffler that does not inhibit its performance. It is rugged in construction, contemporary in design and fitted with a pressure tap.

The engine features new improved head, piston, by-pass, port timing, rod, ring, and cylinder, plus a beefed up housing.

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the most steady German pilot, but he is not a member of the team for the world championship. Neckar Harald, Wolfgang Schwarze, and Rudolf Godel occupied the next places. The German champion, Kurt Matke, was only eighth.

Prettner caused the first excitement of the 2nd round. Starting last before lunch, he had to fly with a gusty side wind but this did not disturb Hanno and he flew in his exact and fluent style. He lost a few points on his landing when a gust pushed his wing sideways. In the early afternoon, Matt started with his program. The wind was still blowing with unreduced force. Wolfgang flew

clean, though he dropped off at the end of the Four Point Roll, and because of the wind he landed in the larger circle. Giezendanner was last in the second round. He flew after sunset, but with the sun, the wind had gone too. Under these conditions Bruno was flying very steady and balanced, result: highest score of this heat. After two rounds, Hanno was leading with 9025 points in front of Giezendanner (8845), and Wolfgang Matt (8575), Neckar (8280) came in front of Hoppe (8130), and Matke improved and was 6th with 7985 points.

Considering the best round for each

pilot, one could see that Prettner was leading with 5 (!) points more than Giezendanner. Matt was well behind them by 265 points. Everything depended now on the decisive 3rd round and one could be anxiously awaiting the result of this fight of nerves. Then it started! Hanno Prettner had to fly first in the 3rd round. It was a pleasure to watch the flight. It seemed that Hanno had forgotten about his nerves. His roll figures were masterly, especially the Slow Roll, where Prettner's "Super-Sicroly" seemed to turn in slow motion on a string around its long axis. The same held for the Four Point Roll, with exact, sustained knife-edge flight and fluent quarter-rolls in between. Appropriate to the flight was the valuation of the 5 referees: 4710 points. World champion Giezendanner would need 4720 points to win. The weather did not change on Sunday and so all participants had the same conditions. Giezendanner was the first to fly after lunch. The ground was deathly silent and this time his slow roll was very good. The landing was exact and the great numbers of spectators were anxiously awaiting the result. Giezendanner got 4615 points. This was not enough and Hanno Prettner was leading with an advantage of 100 points. Matt, third of the leading three, but without any chance to win, got 4715 points for his best flight. The final results were as follows:

Hanno Prettner won the Bled Cup (9270). World champion Giezendanner was second (9170) in front of Matt (9010). Fourth was Gunter Hoppe (8325). The next three were Schniffner Ernst (8205), Kurt Matke (8170), and Duponchel from Belgium (8130). Ninth was Budy Harald (8075) before Marenbach Gunter (7995).

About the style of flying, it can be said that the trend to a faster and more fluent flying style is still persisting and extremely slow flying is hardly in use any more. The winner of this meeting, Hanno Prettner, once again flew his long tried "Super Sicroly" with Simprop Alpha 7, which he had already used in Gorizia in the first "competition of giants" of this year. Bruno Giezendanner also stayed with his "Marabu" and Digi-Fly. Wolfgang Matt piloted his "Super Star" with a Simprop Alpha 7. It is no longer remarkable that the first 8 models were equipped with retractable landing-gears.

The winners ceremony took place during a public banquet at the hotel Graiski Dvor, where wine, music, and dancing helped to form many new

friendships. Once again we want to say that the organizers of the Bled Cup took great pains to carry out the traditional competition to everyone's satisfaction.

(In a separate note, Fritz informed us that Hanno Prettner was unfortunate in having a fire in his workshop just as the 1972 season was to begin. As a result, his two Doylestown planes, and two new ships under construction, were destroyed. He campaigned throughout the season with one airplane (a Super-Sicoly), but has two more that will be ready for the W/C in Gorizia, Italy, this coming September. Ed.)

F/FAI Continued from page 37

tried. Also, various head depths gave increases as much as 500 to 1000 R.P.M.'s, but this would not be credited to a standard engine.

This is a good time to say that modelers who have the facilities for reworking, and the knowledge to do so, will find plenty of room in this particular engine for modifying.

Next month we will report on what we have tried in the way of reworking thus far, and will make some recommendations on this subject.

Hannan Continued from page 30
Fairchild KR-21, Hughes Racer, Waco Taper Wing, Bonanza, Mustang, "Goon" Racer, Corben "Super Ace" and many more. A complete list of these and other plans is available by sending a stamped self-addressed envelope to: MODERNISTIC MODELS, P.O. Box 6932, Burbank, CA 91505.

LAS VEGAS SHELL GAME

We just returned from a "gamboling" expedition to Nevada . . . with a difference: The stakes were plaques and merchandise prizes, and the "dice" were Peanut Scale models! The occasion was the 5th Annual Vegas Vultures contest, held each New Years. Fernando Ramos will have more details in his column, but here are a few observations from the old ackemma. The entire pervading atmosphere was one of low-pressure. Humor reigns supreme and the losers have almost as much fun as the winners. Host Bob Haight announced "All bowl games are pre-empted by the Peanut Scale event." He might have included sleeping among the pre-empted also, since a steady procession of movies, slides, and plain old bull sessions were virtually non-stop. The conversation was top-notch, with such raconteurs as Walt Mooney, Bill Warner, Tom Atkinson

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- 6-1/4 Lbs. with fixed gear
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1611 E. Sandison St. Wilmington, Calif. 90744

and Chuck West on hand.

The contest itself was an indoor affair, and included classes for regulation Peanuts, Profile scale and CO2. Several Micro-Jet Models participated in the latter category, highlighted by the strictly-sclae non-landing of Bill Stroman's Japanese Kamikaze Baka Bomb. Sump-tious food for the always-hundry troops was provided by Doris Haight, Dixie West, Ginger Warner and other volunteers. The Ms. set was also ably represented in the contest action by Carole Mooney, Chrislea Bee Mooney, and the feminine heir to the Warner fortune.

In addition to the unique willow wood plaques crafted in the shape of the state of Nevada, merchandise prizes were provided by The Model Builder, The Williams Brothers, John Pond, Russ-Craft, Modernistic Models, Hannan Graphics, Marlow Engineering, Walt Mooney, Bill Stroman, and John W. Caler Publications. Every entrant received some tangible reminder of participation. Which all goes to show it is still possible to have fun with low-cost aircraft.

ACROBATS IN THE SKY is the title of a brand-new book by lightplane authority John Underwood. A "natural" for model builders, this publication fea-

tures hundreds of outstanding photographs of aerobatic aircraft flown during almost the entire history of aviation, from the early 1900's through the present. Of special interest are the crisp 3-view drawings of subjects which almost cry out to be converted to models. You biplane fans (are you listening WCN?) will really find enticement within the pages of this volume! Priced at \$4.95, "Acrobats" may be ordered by mail from: Heritage Press, Box 167, Glendale, CA 91209.

NOSTALIGA REVISITED

Jonas "Bud" Josselson, of Huntington Beach, California, has gone most of the other old-timer enthusiasts one better. Seems that he plays old radio programs recording during building sessions, to heighten the effect of the fondly-recalled days of his youth. Perhaps, after all, there IS a time machine!

Plug Sparks . . . Continued from page 41

the necessary components to completely set up an ignition system, Polks Hobby in New York has all the parts you need, as does Bill's Mail Order Hobby, 503 West Astor, Lee's Summit, Missouri 64063. Send Bill \$5.00 (and your name and address, of course) and he will send

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SANTA BARBARA ONE DESIGN. More than five hundred sold — and \approx 10 can still beat \approx 500! Length 70 in., mast 72 in., sail area 1100 sq. in., displacement 28 lb. Prefinished fiberglass hull, deck, cabin and keel \$165.00

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you a monthly news bulletin with a listing of over 1,000 engines and accessories. We had a chance to talk to Bill on the phone a short time ago, and he informed us that his supply and turnover of engines has been so great that he has even had to publish a bi-monthly listing on several occasions. Bill also said that he is manufacturing the famous Y&O propellers, and for only 95 cents. For the uninformed, this was, and in our own opinion, still is, one of the most efficient ignition engine props ever designed.

As long as we're on the subject of engines, I received a copy of a brochure put out by REPLICAS ENGINES, 14600 Ramstad Dr., San Jose, CA 95127. The ad was for a replica of Jack Keener's HEX HEAD BRAT, designed in 1937. According to the information received with the ad, the engine is of approximately .140 displacement and sells for \$49.95, including a copy of the original Brat brochure. Dick Dwyer, who also lives in San Jose, sent some additional information on the engine.

According to Dick, though the engine looks the same as the original Brat on the outside, the insides have been brought up to date as far as modern techniques go. Thus, even though the new engine is being manufactured prim-

arily for the collector rather than the flyer, Dick goes on to say, it would have more than enough power for any class A Old Timer model. For more information on this engine and several others that are in the works, write to the above address for their ad and brochures. I have been promised one of these engines for testing, and as soon as possible will pass on my findings to you.

Dick Dwyer himself has some items on the market that might be of interest. He has formed his own company, RAMPCO, which stands for Replica Antique Motor Parts Co. Some of the goodies now on the shelf are, Arden 099 and 199 timer housings with moving point post installed (less points), \$4.50 P.P. This unit can also be bought as an unfinished casting, with machine drawings and instructions for \$2.95 P.P. Dick says that these parts are currently made of aluminum, but he hopes to be able to offer magnesium at a later date.

Other Replica items on the drawing board are, Baby Cyclone crankcases and timer castings, Bunch timer castings, Rogers/Syncro B-30 type timer castings, and Thunderbird tank and timer castings. Whew, this man might just try and take on Mount Everest for a coffee break! And who said people

didn't want to get involved anymore? If you would care to write Dick for more details as to what he plans to manufacture, the address is Dick Dwyer, 1837 Flood Dr., San Jose, CA 95124.

Dick also passed on some information to us that may be of interest to engine collectors. We've always wondered what the difference was between a replica and a reproduction engine. Well, here is Dick's explanation. A reproduction is an exact copy of any given item, whether it be an engine or an oil painting. A replica is, in essence, a reproduction with the difference being that the replica parts only have to look like the original and have the same useful function. Kind of like stand-off scale wouldn't you say? (*Bet we'll get some letters on that. WCN*)

Another new item that has just appeared on the market is a dry cell battery called Lithicell. According to the article we read, this battery could possibly replace all other batteries that are presently being used by modelers. We don't claim to be an expert on this type of item, but even with our limited knowledge we can see where this battery could possibly be the most revolutionary one to come along in the past decade. Here are the advertised specifications so you may judge for yourself.

These batteries may be stored in excess of ten years with a capacity loss of just 20%. At down to -40 degrees F, cells will produce up to 60% of capacity. Cells produce twice the voltage of other dry cell systems; and energy density exceeds others by as much as 400%. Weight is 20% less than mercury batteries, yet watt/hour capacity is triple. With these specs and a decent price, the Lithicell may be the modeling battery of the future. We'll have a full report on these batteries as soon as we've had a chance to evaluate them.

Now would be as good a time as any to look back on 1972, and ahead for 1973. Out here in beautiful, smog-free (?) southern California, 1972 was a bumper year for old time free flying. There were a total of thirteen contests in which old timers could participate, or better than one a month. We are blessed out here with having three good contest sites for holding our various meets. The closest one is Sepulveda Basin, which is almost in the heart of the San Fernando Valley, north of Los Angeles. The second is Lake Elsinore, an almost desert-like area located approximately 60 miles south east of L.A., in Riverside County. Our third site is three miles east of Taft, California and even though we have placed it

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number three, it has to be the number one free flight area in the U.S.A. . . . There have been several contests reported in MB which were held at Taft, but until you have the opportunity to come and see the area you'll just have to take our word for it, Taft is truly the free fliers Mecca.

Possibly, 1973 could be the year that old time free flying gets its best kick in the pants. Looking over the coming contest schedule for the Southern California area, we count 16 meets with old timer events added. Of course, the big one will be held in June, and that is the S.A.M. Old Time Championships. We'll give you a complete schedule of events, plus rules, in next month's column. Also, if you have any big contests coming up in your part of the country, send us a dope sheet and we'll pass it on to MB readers. Incidentally, if you have *any* information or news pertaining to old time free flying, send it to us. Also, send us any old pictures that you feel would be of interest to others. If and after using them, we can return them in perfect condition.

We suppose the phrase "Old Timer" conjures up images of old men, bent and wrinkled, and barely able to stand on their own two legs . . . Different persons, different meanings . . . With modern day man so indoctrinated into a fast moving society, it is really hard to believe that there is still a sport that has all the speed, thrills, and excitement of a championship turtle race. But there is . . . It's an old time free flight contest . . . There is only one word that can truly describe such a meet . . . Relaxed.

Back in the thirties when all of this started, the general atmosphere was one of relaxation and low pressure. Over the last decade, I have seen modern-day free flight become an almost dog-eat-dog kind of competition. Go to any jointly held modern-day and old timer free flight contest, and the difference in tempo becomes readily evident. At most of the old timer contests in which we competed this year, we were amazed at the number of wives that were present. Even old-timer club meetings, such as those of the SCAMPS, have become more of a family affair, and one fellow club member, who shall remain anonymous, even brings his dog "Sam" to the contests . . . Maybe those were the "good old days" after all. ●

Counter *Continued from page 7*
cranks, and over-ride R/C throttle pushrod (Full to idle without moving servo arm), auto-balance spinner (!), a 3 ounce vinyl fuel bulb, miniature rod ends (Great for swash plate control on helicopters, also the ultimate in bell-crank and pushrod fittings. You gotta see these to appreciate the possibilities in many areas of use.), and .040 buterate canopies in many sizes (including replacements for Cirrus, Nimbus, ASW-15, Duster, and Sigma type sailplanes). ●

Strictly Sail . . . *Continued from page 42*
from their Secretary. Though initially a vane club, they will be going into R/C 50/800 activity next year, with interest also being expressed in the AMERICAN X class. We've urged them to affiliate with AMYA and are looking forward

to seeing them added to the competition schedule. Should you be on your way to "fun city," drop me a postcard for additional details. Notable individual looking for potential fleet members is Jim Foote of Hopkins, Minnesota. Jim has an interest in 10-Rater or Santa Barbara activity, but I'm sure he would sail just about anything to see some active racing start in the Land o'Lakes.

Are you a lone wolf looking for somebody to match race? The best way to identify nearby skippers is to join AMYA and ask the Secretary to provide you with your neighbor's names when he sends your Constitution and registration packet. The Central Illinois Flotilla has members who live no closer than 50 miles to one another, yet they were able to pull together, obtain AMYA sanctioned club status, and hold one of the most enjoyable regattas I've ever attended. You can do it too. Don't sit and wring your hands, winter is a wonderful time for the administrative baloney it takes to start a club. Do it now and don't waste sunny, breezy days next summer.

Questions on any phase of R/C MODEL SAIL YACHTING? Drop me a line, Rod Carr, 2713 Blain Drive, Chevy Chase, Md. 20015. ●

Peanut T-Air . . . *Continued from page 31*

Colored Japanese tissue, plus a few thinned coats of clear dope are used for covering the model. A small amount of nose weight was required for a flat glide. So far, the flights have been relatively short, but it certainly looks good up there in the sky - - - complete with

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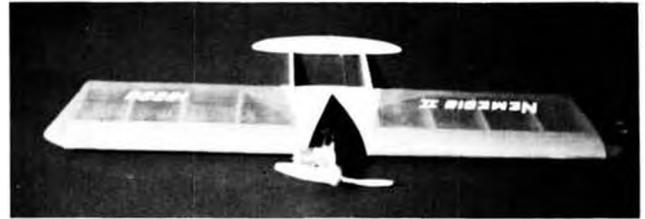
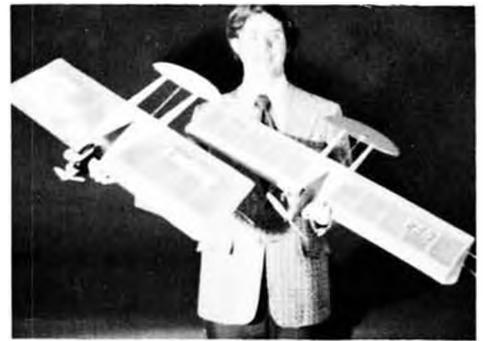
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R/C Soaring . . . Continued from page 40

tow was observed at the LSF 1971 RC Soaring Tournament at Livermore, CA. Lift encountered at the normal release point was of such strength that when winch power was stopped, the tow lines actually unreeled from the upward pull of the sailplanes. Flight after flight. These conditions were so extreme that they made it all but impossible to release from the line . . . and required a diving maneuver to over-fly the tow ring. Sailplanes were almost out of sight, straight up, in about 3 minutes. A practical demonstration of "Whoopee."

So, work the tow to get good height. Then the hunt begins. We're looking for help and the only indicator that it has arrived is the reaction of the sailplane. To the experienced pilot, it's all that's needed.

The appropriate flying speed for thermal hunting is . . . as with most things related to R/C soaring . . . a matter of conjecture, personal theories, and existing conditions. One school of "thought" recommends maximum utilization of available time and altitude by flying the sailplane at that speed which provides minimum sink, V_{ms} . This speed is just a hair short of "mushing" which, in turn, is just a smidgen above stall speed. It's not the best L/D . . . efficiency . . . speed, and is no good to cover distance. V_{ms} gives the slowest return to the ground, and the longest flight time for the hunt . . . within a

limited area.

A second school advocates thermal stalking at the best L/D speed. This is about 20 to 30 per cent faster than V_{ms} . . . is the sailplane's most efficient trim . . . and provides the greatest distance over the ground for the amount of altitude lost. This best L/D speed lets the pilot extend his search over a wider area . . . further from the point of release . . . and thereby explore more potential thermal sources.

There are good arguments for both cases . . . and times when each should be used. The judgment is the pilot's. So take your pick. Enroll in the school of your choice. Or better yet, try and use both at various times.

Under either philosophy of hunting speed, upon release from the tow line, fly either a straight path directly into the wind, or turn 90 degrees and track crosswind. Do not turn 180 degrees and head downwind, unless to a known lift area. The idea here is to stay upwind as much as possible, drifting downwind only when climbing in lift. In this way, there should always be altitude to trade for the speed/penetration necessary to drive back into the wind to reach the landing area.

A cardinal rule: when thermal hunting, do not let the sailplane take its own heading. As opposed to a free-flight model which is trimmed to circle, an R/C sailplane is trimmed for straight flight. If left to "drift" on its own course, an R/C sailplane will often work its way through areas of lift . . . like dodging mine fields . . . and soon be safely back on the ground. The pilot must be in control and direct the course of flight. Strange as it may seem, this appears to be a great part of the secret

to success.

When a sailplane flies near a mass of rising air, the vertical movement of that air will cause the wing closest to it to rock upward. If the rising air is to the right of the sailplane, the right wing will be pushed up. When this happens, that stupid sailplane . . . left to its own devices . . . thinks it's in a bank and turns to the left. Away from the thermal. It will take and remain on this new heading until a similar situation gives it another shove.

Obviously, it's important to fly the machine rather than just watch it free-flight while you lovingly cradle that multi-buck electronic box. Stop loving and start flying. It's work, but concentrate on holding a given heading. Don't let the sailplane fly you . . . so to speak. Then, when lift pushes a wing up, or the sailplane seems to be fighting the course you're trying to hold, slam the rudder stick over and turn immediately toward the high wing . . . or in the direction opposite the way the sailplane seems to want to go.

Now most thermals won't be so obvious as to roll the sailplane up to any 45 degrees. They're usually much more subtle . . . and sort of a rocking motion is more likely. Maybe 5 or 10 degrees . . . or less. This will vary, of course, in several ways: with the strength and size of the thermal, how close the sailplane is to the thermal's center, and the lateral stability characteristics of the design. Just be in control of the sailplane . . . and be watching . . . so you'll know what to do when you get a bump. Otherwise, you may turn the wrong way . . . away from the lift . . . and have the opportunity to practice your landing approach one more time. Quick.

Or is that "quickly?" (How about "almost immediately?" WCN)

Now if what was observed as an indication of lift was for real, turning toward the high wing should drive the sailplane into the lift area. After turning into the lift, a circular flight path should be initiated. Whether the circle should be started into the wind or with the wind, left or right, is anybody's guess. Chances are into the wind is best. If for no other reason, in order to maintain an upwind flight zone.

In really strong lift, the sailplane may be difficult to turn in the desired direction. The reason is simple enough. The upsetting force . . . that is, the lift . . . is trying to push the sailplane away. This force is opposing the desired turn, and can easily be stronger than the turning power of the model . . . so the model doesn't respond to the pilot's control input. Or at least doesn't respond promptly. In a case such as this, don't fight it by continuing the "frontal" attack. Rather, turn with the opposing force . . . that is, away from the lift . . . through 270 degrees, and then fly straight in to the lift area. After all, it stands to reason that any sailplane can penetrate with more power flying "straight on" than when in a turn. Once you're in the lift, start the circling bit, as described earlier.

Now if what was observed as an indication of lift was for real, turning toward the high wing should drive the sailplane into the lift area. After turning into the lift, a circular flight path should be initiated. Whether the circle should be started into the wind or with the wind is anybody's guess, but chances are into the wind is the best bet. If for no other reason, in order to maintain an upwind flight area.

Assuming that the lift is there, the original circular flight path probably will not be "centered." That is, lift will likely be stronger in one part of the circle than in others. If for no other reason, because the thermal probably won't be round anyhow. But the idea is to move the flight path . . . and to keep it simple, let's keep it a circular flight path, at least for now . . . so that the sailplane is always in the strongest lift area of the thermal. This is called "centering."

Here's where precision piloting pays off. The smoother, more accurate and consistent the circular flight path, the easier it is to identify thermal-caused flight variances. Try and set a fixed angle of bank and a fixed pitch trim. When watching a sailplane at a slant angle . . . anytime the sailplane is not



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almost directly overhead . . . it is all but impossible to judge and fly a perfect circle. But, the bank angle can be seen easily, and a constant bank results in a perfect circle . . . through the air, not necessarily over the ground.

An example of this is flying a "standard" turn in a man-carrying powered plane by holding a constant rate of bank and speed . . . and feeling the bumps from your own prop wash as the plane tracks in its own path. It works.

It's quite probable that the first circles in the elusive lift will be so far . . . or so displaced . . . from the center that the rising air will try to push the sailplane away. Just as before. The wing nearest the strong stuff goes up . . . increasing rate of bank . . . and moving the path of flight away from the desired course. When this happens, the pilot should plan to elongate the circle the next time around in order to drive further into the lift area. Then, set up a constant rate of bank again.

During this "centering" activity . . . or in the original hunt, as far as that goes . . . the sailplane might be turned in a direction away from the strong lift. Such a mistake can be identified by either subtle or intense increase in rate of sink. Depends on whether you're livin' right or not. But, no matter. The

important thing is to correct the immediate situation. How you spend your Saturday nights is your business.

The quickest way to get back in the lift you just lost is to use the "270 degree correction." It may even work. The principle is to continue circling in what you have realized is the wrong direction for three-quarters . . . 27 degrees . . . of a full circle. At the 270 degree point, roll out and fly straight for a couple of seconds or so, then start circling again. You should be back in the lift area anyhow, even if not centered up.

Once centered in lift . . . whether by blind luck or supreme skill . . . don't fight the sailplane to stay in the same place in the sky. Remember, a thermal is sorta like a big, invisible bubble that drifts with the wind. If you're going to stay with it, you too must drift. So, hold a nice, steady bank and chances are you'll hang right in there. Forget about the sailplane's track over the ground. It's got nothing to do with nothing. Think "up."

Oh, it's quite a battle. Plan now on losing . . . often. But when you do win . . . if even for a little bit . . . it makes it all worthwhile.

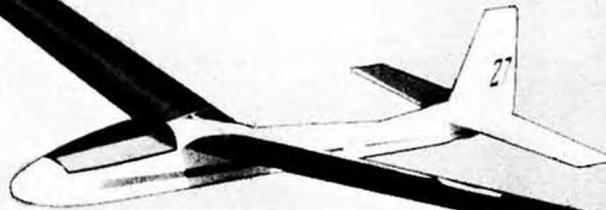
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not sinking, and that means you're gaining flight time if not altitude. Also, you may be in an area that's "building," and may soon provide good, solid "up" air.

As long as you are able to at least sustain, might as well explore a little and see if you can improve the situation. The obvious thing to do is to change the angle of bank . . . and therefore the size of circle. Keep a close eye for an indication of stronger lift as well as sink. If better "up" air is indicated, try working to center in it for best climb. Should you start losing altitude, hurry back to where you were before . . . if you can find it. Some of the Hot Shots build sort of a mental picture of the area they're working. Helps 'em stay in lift . . . and also to better visualize where stronger conditions might be. Sounds like a good idea, if you can do it. Takes practice . . . and concentration.

When you hit sink during your thermal hunts, get out of the area. Fast. There's nothing to gain by hanging around. Get the nose down to speed up and cover ground. How come you're losing all of a sudden? Any one or a combination of reasons. Like ya lost the thermal . . . or you reached the top of the thermal . . . or the thermal reached its top . . . or the thermal died its natural death, or weakened to the point of uselessness . . . or ya slipped outside of the "up" air in to the "down" stuff. The main thing is that where you happen to be is no good . . . so get out of there, and look for something better.

Start flying the "straight and narrow" again. Head upwind or toward areas

suspected to be lift generators . . . like parking lots, or open fields, or roof tops, or wherever you may have gotten bumps before. Chances are that there will be a little wind slant, so allow for it rather than flying directly above the suspected thermal source.

If you wanta be a winner, never stop working. The guys who usually take home the hardware will work any kind of a bump that isn't followed by a grind. It's absolutely ridiculous what some guys will do . . . it's also absolutely amazing. And disheartening . . . if you can't do it.

Many a long, high flight has started . . . or restarted . . . from lower than light pole level. Some smart alecks have been seen working tender little bubbles no more than 10 or 15 feet off the ground. It's disgraceful . . . if not immoral. But perhaps the final insult is the guy with such audacity . . . okay, so it's talent . . . that he hand-launches his sailplane, seriously looking for lift. Oftimes these clowns can squeeze out two or three circles before landing. And sometimes more . . . much more. Like several minutes. Or like Old Flying Buddy (OFB) Bill Watson a couple weeks ago . . . 27 minutes! From a hand launch. Can you imagine? But I don't care, I'm still not going to sell my sailplanes.

Clouds can indicate lift areas. The pretty, puffy little white ones called "Cumulus" are much like corks on top of a column of lift. If the clouds are building, it's because air . . . moist air . . . is flowing upward to them. Might as well get on the elevator if you can.

In many areas of the country . . . particularly the West and Southwest . . .

cloud lift may be beyond the reach of most R/C sailplane activity. But if you can reach it . . . why not? The source will be upwind . . . due to wind slant.

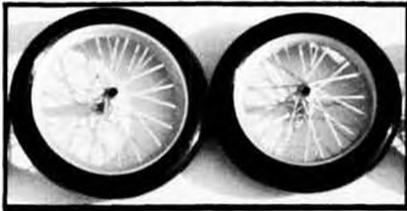
A couple of things to keep in mind when monkeying around with clouds. It can be a rough ride as the turbulence may get rather violent . . . for a model. Also, stay clear of the cloud proper . . . far enough below the base so that you don't get sucked in. That's a real good way to lose a sailplane . . . either broken up by rough air . . . or a fly away because you can't see it anymore, 'cause it's inside the cloud.

If you get up in the cloud region, keep an alert eye and ear for full-scale craft. If one should appear, take immediate, evasive action. That is, turn in whatever direction required to get horizontal separation. Don't try to judge vertical separation unless it is truly obvious that there is no potential hazard.

The hunt and capture routine discussed earlier is still valid if you're flying a cumulus sky. Fly straight and watch for a wing to point at the lift.

Now some wise guy is about to comment, "Sure, but what if you hit rising air with both wings at the same time. Like straight on, Man."

In such a case, the wings may not wiggle. Probably won't. But, as noted several paragraphs back, we're looking for either "displacements or speed changes." The displacements are the wing-up bounces. Should you hit lift dead on the nose, the sailplane slows down. Why? Because when entering rising air, the sailplane gets a vertical push up which increases the angle of attack and thus slows forward speed. I



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guess.

Or maybe it's just a matter of penetrating this vertical air, and the sailplane effectively hits resistance to its forward progress. Or both. No matter. It'll slow down. Maybe just a little . . . maybe so little you'll not notice. Many times, though, it will appear to have hit a brick wall. Even go into a big, hairy stall . . . as if ya got glitched. If this happens, get the nose down hard and fast to increase flying speed so as to have the power to literally force your way into the lift. Some thermals are strong enough to "spit" a sailplane right back out . . . but it's worth the fight. Once you break into it, start circling routine to center up. And smile. Cause this is what it's all about.

Another way to recognize lift is to realize that the sailplane is increasing it's distance above the Earth. Brilliant. But, really that statement isn't a put-on. Being able to "see" a sailplane rise . . . without reference to the ground . . . takes a trained or wide-angled eyeball: And when viewed against a solid field of blue or gray sky, there is no point of reference. The ability to see this action seems to come only with experience. Don't press.

When you're in a thermal, and either holding or increasing altitude, stay with it until you're ready to land . . . or getting too high to maintain visual contact . . . or are drifting downwind beyond where you can return to the flying field. But don't leave one thermal that's working for ya for another that may not even exist. Chances are you're going to lose. Has something to do with "a bird in the hand."

Most guys . . . and gals . . . involved in the League of Silent Flight have stories to tell about leaving a thermal early . . . and ending up on the ground just a few seconds short of a desired flight time. When you're looking for a thirty minute ride and touch down at



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29:45, it hurts. Harley Michaelis, up in Walla Walla, Washington, left a thermal at near out-of-sight altitude when the clock read 27:00. He was on the ground at 29:50. A real cliff hanger.

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Seems like when you want it the worst, you just can't get it. Bob Andris, past-President of the LSF, thought he was hexed a coupla summers ago. Flight after flight over 25 but under 30 minutes for the better part of the season. Finally, he had to have Celia sew a cover over the Level III insignia on his new flight jacket before he went to the Nationals.

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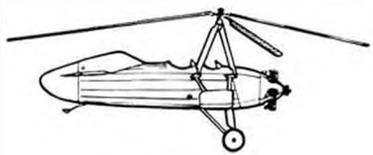
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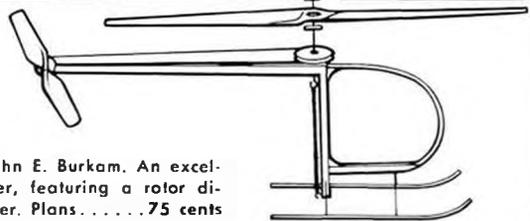
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Satan Continued from page 25
sketch on the plans. The 1/16 ply has 2-56 blind mounting nuts epoxied in place for Allen-head screws to mount the timer, and the proper size hole cut into the doublers to fit the timer. Also, don't forget the 4-40 blind mounting nuts in the firewall to fit the motor mount.

The doublers in the nose section take some time to fit up properly, so that the 1/8 square spruce longerons will fit all the way up the body to the firewall. The effort is worthwhile, as a very strong front end is achieved in this manner.

Still, after all the sheeting is in place on the top and bottom, epoxy and light fiberglass or nylon tape is placed over the firewall and front end back to the second former.

Leave the fuselage pinned down to the center line after the formers and doublers are in place, cut the 1/8 notches in them, if not already done, and fit in the spruce longerons. They should be tapered and fit all the way to the tail end. After drying, sand down any rough edges, and place the 1/16 diagonal sheeting all the way to the tail end.

Wait for all of this to dry well overnight and then pull it up. The result is a very straight body that will stay straight while you do the work from the top side. Knock out the pieces in the pylon formers, and see that a piece of quarter inch stock will fit properly into the all.

Next, locate the position for the ply stab platform, and lay a straightedge across. Trim down the side of the fuselage slightly, until stab tilt is as shown on the plans. Your Satan may require more or less stab tilt to achieve the proper left glide circle, depending on several factors, including how tight a glide circle you like. If a large circle is used, it will hunt out thermals and tighten up into them when it finds one. Windier conditions and small field sizes dictate tighter glide circles.

Now cut the notches in the top of

the formers for the spruce longerons, and glue them in. Pass the spruce just under the cut for the stab tilt, and later, when the cement is dry, block sand the top so that it is flush with the spruce. The fuselage then has a very slight dip on one side that no one will notice . . . unless you tell 'em . . . so don't! Go ahead and put on the top sheeting, with the grain diagonally opposite to that on the bottom, stopping at a point just behind the pylon, and just ahead of the stab platform location. Glue the platform on now, and put the 1/8-inch cross-grain sheeting from the aft side of the platform back to the tail end. After this is all dry, trim all overhanging sheeting down flush to the sides.

Cut out the fin and sub fin, including the spruce on the sub fin. These must fit very well, as they are

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butt glued to the body. I leave mine unfinished until they are glued in place on the fuselage. This way you can actually align the fin with the pylon, and be sure it is straight. I use a piece of thread pulled taught and laid from the inside edge of the forward pylon notch and laid against the fin. Check the other side and when the exact center is found, mark the fin and fuselage with a very sharp pencil. Glue securely. With Titebond, the butt joint is plenty strong . . . I've never broken one loose.

If you prefer to cut out grooves for the fins, be sure to extend the fins by the depth you drop them in . . . the fin area on this airplane is very near the critical point, and any off-handed whacking off of fin area will result in a nifty zero-stability barrel roll just before your new Satan self-destructs! The fin is intentionally at the near critical point so that the airplane will turn into lift easily in the glide. A too large amount of fin area can result in an aircraft that will actually turn away from lift when it gets near it! Walt Mooney had an airplane that did just that at one time. It flew fine, but never thermalled. Then one time when it and another model were up at the same time, and very close, he saw the one turn into a boomer, and his own turn the other way. Too big a rudder was the conclusion, and after some surgery, the problem was solved . . . So much for fin areas.

When the fin and sub fin are in place and dry, sand to a streamlined shape. A line drawn down the center of the trailing edge of the fin is a great help when sanding, to ensure that you don't sand the fin to one side, rendering useless all your efforts to make sure it was straight to begin with.

If you have not built the pylon by now, do so. Before cementing into place, check the C.G. as discussed previously, then go ahead and finish the sheeting around the pylon, and finish

the fuselage up. On smaller models such as this one, I like to tissue the entire body, and then finish it up with either clear or color epoxy. If you use the pacifier fuel system, it is most advisable to pour some Super-Poxy into the cavity for it, and slosh it all around to thoroughly fuel proof the inside in case of pacifier breakage. I hope your formers fit well inside, or you'll have epoxy running all over the place!

You can build the landing gear in behind the firewall, but I think the type shown has several advantages. For one, if it breaks, it is very easily replaced. For another, and more important, it makes conversion to floats for ROW a snap.

A note in passing on finishes. We are in an age where miracle finishes are available from several sources, such as Monokote and Solarfilm. They are great from several points of view; super fast covering and finishing time, and very puncture proof, bright, non-fading colors, water and fuel proof. These covering materials *do* have some disadvantages that should be considered before use though. In hot, dry weather they loosen up (Top Flite says the structure shrinks . . . and it does, but the net result is the same . . . the covering is a bit loose). On a very light structure such as a competition free flight, this can be disastrous, as flutter will set in and the wing will literally explode, or wash out one or more of the panels at high velocities, ending in a crashed airplane. A super-duty structure helps, but any slight, covering-induced warps will be lost or at least change when the covering goes loose (even just a little that you cannot detect) and will cause serious trim changes from one flight to the next. I have a Ram Rod 600 with a film finish, powered by a very hot Super Tigre .29, and if the motor is run on anything much hotter than peanut oil, the wing does a kind of Irish jig on the way up . . . and then down. I've retired

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it until it can be re-covered. My own recommendation for covering is good ol' Japanese tissue. Double-cover if your normal flying site is hard on airplanes. Use TCP in your dope to stabilize the shrinking, and let your flying surfaces cure, checking them carefully before each flying session for at least several weeks.

FLYING

Key the wing and stab now. To check squareness I use a piece of thread tied around a pin, stuck in the very end of the fuselage, pulled taught and touched from tip to tip, to see that it is keyed properly. If not, trim out the key slot in the wing saddle until alignment is true and then fill in the side of the slot with card stock or whatever needed to fit the key in place so the wing will not shift. Do the same with stab.

Now you're ready to see if it glides.. Run down to the nearest field with tall grass (Hmmm), and hand glide. If the model hits you on the foot, it may be nose heavy. If it does a gigantic stall and crashes into that tall grass, it may be tail heavy. In either case, check that the C.G. is in the right place (3/8-inch forward of the very trailing edge). If the C.G. is right, the fuselage may be bowed up or down. If so, shim accordingly until some semblance of a glide is

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obtained. You can't tell much from handgliding, so if it shows no radical tendencies, start power testing.

If the C.G. is right, *incidence* is right, the *fin* is *on straight*, with the right *stab tilt* and *wash-in* and *wash-out*, *down thrust* as shown, and *side-thrust* as shown (DON'T forget the sidethrust!), it'll fly. How well is up to you from this point. Use about a 4 second motor run, at nearly full power (just crack it over to a two-cycle, but don't lean it down). No, don't put the prop on backwards . . . that's only asking for trouble. With the short, near-full power run, the model should get the nose up good, and be starting into its right climb, accelerating rapidly. If the glide is O.K., go to full power, short run, and fly it again. Make adjustments as necessary, one at a time, and in small increments. Use very short fuses, to eliminate chasing as much as possible.

Some notes on trimming are in order, especially if you're new at competition free-flights. Remember that for the glide, stab tilt shimming under one side of the stab platform for more or less glide turn will tend to decrease the climb angle somewhat. If the climb is too steep, and more or less glide turn is desired, this can be used to advantage. Also, tightening the glide turn will take



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out slight stalling tendencies, and opening the turn may induce a slight stalling tendency.

In any event, make small changes *one at a time*. I use match book covers or card stock for small shims a lot of the time. C.G. changes will have no effect on the power if they are not accompanied by incidence changes, and can be used if necessary to trim the glide.

Changes in thrust will have no effect on the glide at all. Remember that for the most part, thrust adjustments have their greatest effect initially, before the airplane builds up speed. I use 8 degrees down and 4 degrees left thrust. The left thrust takes effect right away, and keeps the airplane going nearly straight, until other forces take effect and pull it into the right climb.

The wash-in in the right panel keeps the wing up under power. If your Satan has *any* hard-right tendencies prior to getting the nose up, it needs a bit more left thrust. This is essential, and must be delt with as a first priority!

Then get the right power pattern with power tab. Make power tabs with pieces of 1/16 or 1/32 sheet, 1/4 wide, and as long as needed to do the job. Cut them diagonally, like T.E. stock. Glue them on as needed to make adjustments. DON'T cut a tab in the fin thinking you'll just move it and pin it in place, or glue it. There is no way to tell precisely how much you change the tab from one flight to another.

Any really hot pylon ship is very sensitive to adjustments. To give you an idea of this so you'll have a starting point, mine went from a straight up, slightly left (dangerous!) pattern at full power, to a bit too hard to the right with a tab 1/16 x 1/4 x 5/8-inch glued on the right side of the fin, 3/4 of the way up to the top of it. Cutting the tab down to about 1/2-inch produced the perfect pattern. Remember too, that

power tabs will effect not only the turn under power, but the climb angle as well. If you put on more tab to get more turn, the climb angle will lessen, and if you open up the power turn, the climb angle will be steeper. When the power pattern is *very* close, use card stock glued to the fin on top of the tab. High powered airplanes respond quickly to very slight adjustments, so take it a little at a time.

Hot pylon ships can be a challenge at times, even in experienced hands. One change at a time is a good general rule . . . that sometimes needs to be broken. Only experience can tell you when it should be broken. Watch every flight carefully, and keep your thinking cap on. If the ship does something squirrely, think it through, right when it happens, to be sure of what it did, so that thought-out adjustments can be made.

I get a very steep rolling climb of about 3 turns at full run, with the airplane flipping out on the top with no loss in altitude. If the pacifier system is new to you, *do* give it a try. It really works well, and is much simpler than the conventional pressure systems. I use a simple Tatone pinch-off timer. A flood-off can be rigged with a T fitting, but I have found it unnecessary. With the pacifier, the needle is so close to shut off already (mine runs full bore at about 1/2 turn open) that when the timer hits the tubing, the motor stops very quickly.

The pacifier requires some practice to use without problems. A syringe is needed to fill it. Know how much fuel your engine requires for your normal settings, to give a full run without running out. Then mark the syringe, and alter every flight, empty the pacifier, and refill to the proper amount. Remember, it is inside the fuselage, so you need to refill it to know how much is in it. Pinch the tubing off with your finger

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when holding the model to start it. Prime the motor, connect the leads, and crank it up. Release the tube the instant the motor fires. After a short while you'll get the hang of it, and it becomes almost automatic.

The more you fly and practice with the systems (like the motor/pacifier, D.T.), and so on, the more your chances of success. Form good habits and practice as if every flight was the one you need to get the record. Don't do something one way one time, and another way another time. You'll forget something once, and there won't be a next time until you build another airplane!

I hope these comments are of value to those of you who are new to pylon style competition free flights. Any comments or suggestions would be appreciated, and can be sent directly to me, Bob Beecroft, 4475 Utah St., San Diego, California 92116. ●

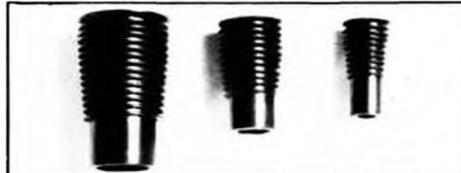
Flapper Continued from page 29
stock so the flexibility is equal. The flat rib and the diagonal brace are made from 1/32 square. The flapper arm is made from 1/16 sheet and the connecting arm from 1/16 square. They are shaped as shown on the plans.
FUSELAGE

The fuselage is made from a piece of 1/64 or 1/100 balsa sheet, 5/8 by 4 inches, and is formed in the following manner. Take a piece of silk span about 5 inches and 6 inches long, wet it and lay it on a clean, flat surface. Then place an 8 inch long piece of 3/16 diameter dowel on one end of the silk span. Roll the silk span up on the rod until there is about 2 turns on the dowel. Place the fuselage sheet, which has been soaked for about 10 minutes in water, on the unrolled portion of the silkspan and carefully line it up with the dowel. Now tightly roll it up on the dowel. Continue the roll until all silkspan is rolled on. Place in an oven and bake at

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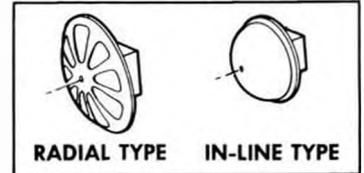


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250 degrees for 10-15 minutes. Remove from the form and cement the tube seam carefully, making sure it stays straight and has no twist. This can best be accomplished by starting the cementing in the middle and working both directions, short sections at a time. Cement the 1/64 sheet internal braces and the 1/32 nose sheet in place as shown. The latter may be formed in a similar manner to the fuselage tube.

TAIL SURFACES

Make an outline of the tail surface from 1/16 sheet. Then cut a 1/32 sq. strip long enough to go around the form and soak in water for 10 minutes. Take the strip and tape one end onto the former at the center, using a piece of masking tape 1/8 x 1 inch. A minimum width of tape should be used in order to minimize the wood sticking to it too firmly. Gently pull the wood around the form until it is past the starting point and tape down. Always maintain a "pull" on the wood to avoid buckling. Bake in an oven for 10-15 minutes. When dry, remove carefully, and splice and glue at the center. The rudder is made similarly, using a section of the stab form.

COVERING AND ASSEMBLY

The surfaces are covered with condenser paper or super-line tissue. Once dry and trimmed of excess tissue, cement the hinges (A) and wires (B,C & D) in place with several light coats of glue. The center section is then cemented to the fuselage using 1/32 sq. posts. With the shaft in place in the thrust bearing, carefully form the final two bends making sure they are of proper length. The

flappers are then put in place and the washers glued on the trailing edge of shaft B. Next, the connecting arms are put in place and similar washers glued in place. Now glue the tailboom, stab, rudder, and rear hook in place. Last, using a very minimum amount of glue (use thinned dope) attach a fine thread to the trailing edge of the flapper covering. This eliminates tearing the flapper covering, but if too much glue is used it adversely affects the flapper and performance is decreased.

FLYING

Flying is easiest of all. Place a 5 to 6 inch loop of 1 mm Pirelli rubber on the ship, balance to the proper CG as shown on the plans. (Trailing edge of wing). Adjust the stab incidence up or down as required until a normal glide is obtained. If everything is lined up and glued securely, it should fly like a "bird."

After some time you will note the performance decrease. This is caused by the wing covering losing its stiffness and stretching. When this happens, just recover the flapping surfaces. ●

Corsair Continued from page 17

little kingdom, cut the fuselage from medium 1/2-inch balsa. Cut the upper part of the fuselage (cockpit) from the scrap that is left, but don't glue it into place yet as you use the top for alignment of the wing. Install motor mounts.

Next, cut the body doublers from 1/16-inch plywood, along with the openings for the leading edge and bellerank. Glue doublers into place on each side of the fuselage.



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Now cut the wing spars from 1/4-inch balsa, making the outboard 1-inch shorter. Lay out the 1/16-inch ply doublers and glue them on the wing spar, making one complete spar. Cut the two wing angle formers from 1/4-inch balsa and the two tip formers from 1/8-inch balsa. Turn the fuselage upside-down on a flat surface and slide the spar into place. Slide the angle formers into position along with the tip formers. Slip the 1/4 x 1/2-inch leading and trailing edges into position and pin. Align all this stuff and glue everything down . . . Not to the bench, dummy!

Now sandwich between the templates enough pieces of 3/32-inch sheet balsa for the ribs. Only do enough for the ribs from the angle to the tip. The rest of the ribs in the center section are all the same size. The ribs that mount next to the fuselage are cut from 1/4 inch balsa.

At this time, cut out the area for the bellcrank and floor, and install them. The fun comes when you install the pushrods to the two flap horns that are cut so they will fit. The pushrod on the right goes directly to the flap horn that is anchored in the fuselage by the spring that comes with it. The left pushrod has to bend in such a fashion that it can be wrapped with copper wire and soldered to the right pushrod and still connect with the left and flap horn. Confused? Well, think about it a minute and you will see it's not really that bad.

Before final hook up of the pushrods to the flap horns, install the two 1/4-inch ribs on each side of the fuselage. Install the rest of the ribs, leaving the two next-to-the-fuse ribs out, in order to install the leadouts. Install the 1/8-inch plywood landing gear floors, splitting one rib to do so. Now bend the 1/8-inch landing gears and install them, using J-bolts. Trim the tip formers and angle formers to the outline of

the ribs adjoining them, and plank the entire wing with 1/16-inch light contest balsa. While this is drying, cut the stab, elevators and rudder from 1/4-inch balsa. Plane and sand them to shape, join the rudder halves, and hinge the elevators, installing the control horn at this time. Cut the false ailerons from 1/4 inch balsa stock and sand them to shape.

Shape the wing tips and glue them onto the wings. Hinge and install the flaps. Align and install the false ailerons, aligning them with the flaps. Install the stab and elevators now, along with the pushrod. Glue the top section of the body into place, also the rudder. Now cut the false cowling pieces from 1/4 inch balsa and glue them into place. After this mess has dried, final shape all parts of the ship with coarse and fine grained sandpaper.

Because of the shorter outboard wing, the model will probably not balance around the centerline. Add weight inside the hollow wing tip until ship balances then glue firmly in place.

While on the subject of flight trimming, be sure to install one washer under the front end of each motor mount flange for right thrust.

Cover the whole model with SGM silkspan. The entire model was painted in Navy blue, trimmed in white and black. There are many variations of colors the ship could be painted, so check your color photo files and be our guest.

Good luck and happy flying. ●

Products Continued from page 21 during landing, and when the glider settles on one wing, the stab is actually bent up by the weight of the plane. We bent to shape and attached an 1/8 inch brass tube skid to the fuselage.

Installation of the Orbit radio was quite easy. The "2 by 1" servo tray was screwed to hardwood bearers mounted across the fuselage. Notched-out

balsa "sills" lock the bearers in firm epoxied position. Nyrods were installed for transferring motion from servo to surface, and a third tube, an "outside" Kavan control tube, was installed to carry the receiver antenna. This method provides a straight-line inside antenna location that makes removal and replacement quite easy, and avoids the usual unsightly canopy-to-lin rigging.

The ship, with radio installed, ready to hook on the winch, came out at exactly 3 pounds, on the button, and was actually nose heavy until the brass tube skid was added. That's pretty light for a sailplane of this size. The loading figures out to approximately 7-1/2 ounces to the square foot, yet the thin wing section allows the Dart to move along quite rapidly when the nose is tipped down slightly.

On the second test flight, we hooked a pretty good riser and found that it was possible to just about pivot the ship on one wing tip. Within a few minutes the Dart II was getting mighty small and we were darn glad that the bottom of the wing and tail were covered in black Monokote.

What can we say about the Orbit radio? In this day and age, proportional R/C systems have become like automobiles for reliability and similarity. The difference is really only in the stability and dependability of the manufacturer. When Charles Speer literally rescued Orbit from the obscurity it was rushing toward just a couple of years ago, "black boxes" were about as scarce at the flying field as a dull day at the Ponderosa. However, stability and dependability has been building steadily since Speer brought his management knowledge into the Orbit picture, and it is reflected in the much-improved quality and reliability of the Orbit line of radios.

The single stick transmitter which we are using with the Dart II, and will be testing with a power ship soon, has a significant departure from the usual configuration. Elevator, aileron, and rudder, of course, are on the 3-axis stick, but the 4th channel, for throttle, is located on the left side of the front face. Thus, when used with a conventional full-house aircraft, the transmitter will not be cradled in the traditional S/S fashion, but instead will be held somewhat by both hands, with the left thumb operating the throttle lever. It seems awkward at first, but we're willing to bet it won't take long to adapt to the system.

Further reports on this and other Orbit systems will be forthcoming in

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future Products in Use articles. Of particular interest are some beautifully *machined* open gimbal sticks that will soon be available.

It is good to see the Orbit name, one of the oldest in R/C, in the lime-light once again. Just keep it away from tree stumps and magazine covers! ●

Free flight Continued from page 27 and it looks like his efforts will pay off. In January, Cox is expected to come out with a Tee Dee that won't look too different from the present ones, but the changes to be made should boost performance of the average engine to the level of the best custom-tuned versions. The changes reflect Dale's experience with tuning and fitting .49's for 1/2 A Proto Speed, but I'm sure we free fliers won't turn our noses at an extra 1000 or so rpm.

Most important changes will happen to the cylinder. The intake ports will be milled out deeper (using a wider cutter to avoid dull tools messing up the cylinder) and higher (to keep the intake ports open for a longer time). Pistons and cylinders will be fit a bit more loosely to ease break-in.

Present crankshafts tend to be out-of-round, so the new version will use a slightly smaller diameter. Timing will be slightly changed, so the port opens earlier and closes later. The crankcase cover will fit a bit deeper in the case to increase pumping action. The venturi will be covered by screen to keep out the dirt, and the holes in the needle valve body will be larger to eliminate blocking of jets. Another big change will be in the glow head. It will fit deeper into the cylinder, increasing compression.

Two different size gaskets will be fitted, to permit a variation of compression ratio, and the plug is designed to be used without a gasket for higher performance.

The new Tee Dees will be recognizable by the screen in the venturi, and a different label on the box, reflecting the corporate image change (it's now a subsidiary of Leisure Dynamics). Watch for them at your local hobby shop . . . Cox has a history of producing their best engines in the first batch of a new design. If you've still got a stock of old engines, you should be able to improve their performance by using some of the new parts. Keep the old crankcase assembly, then add a new piston/cylinder, crankcase cover, glow head and needle valve assembly. Or better yet, buy about 3 of the new piston/cylinder assemblies, and juggle parts till you get the best results.

I REMEMBER OCIE

Ocie Randall was a familiar figure to most West Coast free fliers, and his recent demise saddened us all a bit. I first met him in 1963, when I traveled up to the Fresno Annual for the first time. It was apparent from the first that Ocie was the heart and soul of the Fresno group, and his presence gave this contest the unique atmosphere which kept bringing all us Southern Californians up to Fresno every year. For the rest of the time, we were always reminded of his presence by the regular-as-clock-work appearance of the Fresno club's newsletters, which never missed a publication deadline. This is even more remarkable when you realize that he edited that newsletter for over 30

years (only a club newsletter editor can have the proper appreciation for that fact . . . it's a longevity record rivaling Lou Gehrig's consecutive game streak).

My favorite memory of Ocie was at the first US Free Flight Championships. The occasion was used to award him an AMA fellowship, which he gratefully accepted. Then, while he had the spotlight and microphone, he led us all in answering the rhetorical question, "Is Free Flight Dead?" . . . so loudly that Bill Winter must have felt his ears burning at that very moment. We're going to miss him. ●

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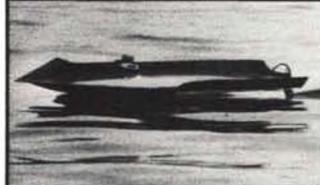
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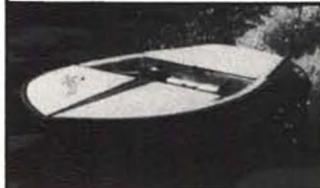
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Putt, putt, putt! Ed Slobod's Jumbo Scale Pietenpol Aircamper takes off for the wild blue yonder. If it wasn't for that big prop

FREE FLIGHT SCALE

By FERNANDO RAMOS

● On December 4th, the N.A.R. Flightmasters held a contest for both Jumbo Rubber Scale and Peanut Scale. Jumbo Scale is a specialized event for rubber scale models having a wingspan of at least 48 inches, and they must carry a pilot. I think you'll agree that this is a pretty fair size model to be powered by rubber, and you won't find a prettier sight than these "biggies" in the air.

Those of you who don't live out on the west coast may wonder why any club would be foolish enough to sponsor a contest in December, however, for the past four years of this contest, the weather could be termed from great to sensational! No doubt, the west coast is the place to be for year around flying. (Stop rubbing it in, Fernando! WCN)

As with so many events, Jumbo has had its share of growing pains. It started out to be a type of old timer event where the use of old plans such as Megow, Peerless, et al, was encouraged. The model had to have a pilot, and it was worth 60 of the 100 points allowed for judging (The reason being that judging on each model could be done very quickly). Thirty points was given to craftsmanship/scale and 10 points bonus if an old timer plan was used. Flying points were based on the best of several flights up to a max of three minutes. Three minutes on a scale job is near impossible unless one has a "ghost-type" of scale model, and for the past three years this was the kind of model that was consistently winning Jumbo . . .

doing it in the tradition of a Wakefield ship.

So, for 1972, the rules were changed in order to avoid the same situation that has occurred in the past. This time there was an equal distribution of points between fidelity-to-scale, workmanship, and the pilot. The flying rules were changed so that a model's flying points could not exceed its scale points . . . the same rules that are in the 1972 AMA rule book for indoor scale, page 16. (I personally would like to see these same rules used for outdoor rubber scale.) Out of all the models entered only one had more flying points than scale points.

Very few models are built from old timer plans, but rather, are enlarged



Tom Laurie holds his Bellanca Airbus while Jack Elem tries to see past his cigar to release the winding hook.



The Airbus silently takes off for one of several fine and realistic flights. Scene is Sepulveda Basin, near Los Angeles, California.



PEANUT TRAVELAIR 2000

By DON BUTMAN. Proof that realism doesn't have to suffer as the size gets smaller, this little T-Air has it all. A nice thing for Juniors too; the nearest school yard can be its flying field.

● "bi-plane/'bi-,plan/n: An airplane with two main supporting surfaces placed one above the other." So says Merriam Webster's Pocket Dictionary.

This definition is true for the Travelair 2000, but it lacks in expressing the appeal that this airplane has for certain two-winger buffs! This is the 4th Travelair 2000 that I have built from Bill Northrop's plans, though it's the smallest of the lot.

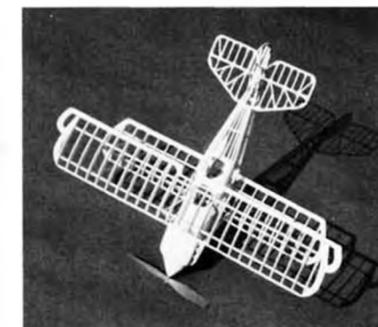
The May 1969 edition of Sport Flying magazine featured Travelairs. This included a story by Max Walton of Wichita, who restored a Travelair 2000 because he needed a test stand for an OX-5 engine! The result was a beeyoutiful blue and silver Travelair 2000 that became a flying test stand. An interesting caption under one of the flying

pictures states ". . . high (800 ft.) over the Wichita countryside at full throttle, 72 MPH!" This magazine article, plus the re-issuance of Bill's plans in the Model Builder, pushed me into peanut scaling the travelair.

The model is built in the usual fashion . . . 1/16 sq. sides, formers, 1/32 x 1/16 stringers, 1/32 sheet around the nose and cockpits, and a bunch of 1/32 sheet wing ribs. The engine cowling protrusions are shaped blocks and the front and "spinner" are of one piece with the prop 'way out in front. Sticklers for fidelity may prefer to move the prop back a 1/4-inch or so and build a spinner around it. Five minute Epoxy works very nicely for securing the landing gear wires and attaching the fairings. Also, a light coat of epoxy on the nose

plug and mating opening in the fuselage will provide tight and durable wearing surfaces to keep the nose plug from falling out after the motor unwinds.

Continued on page 53



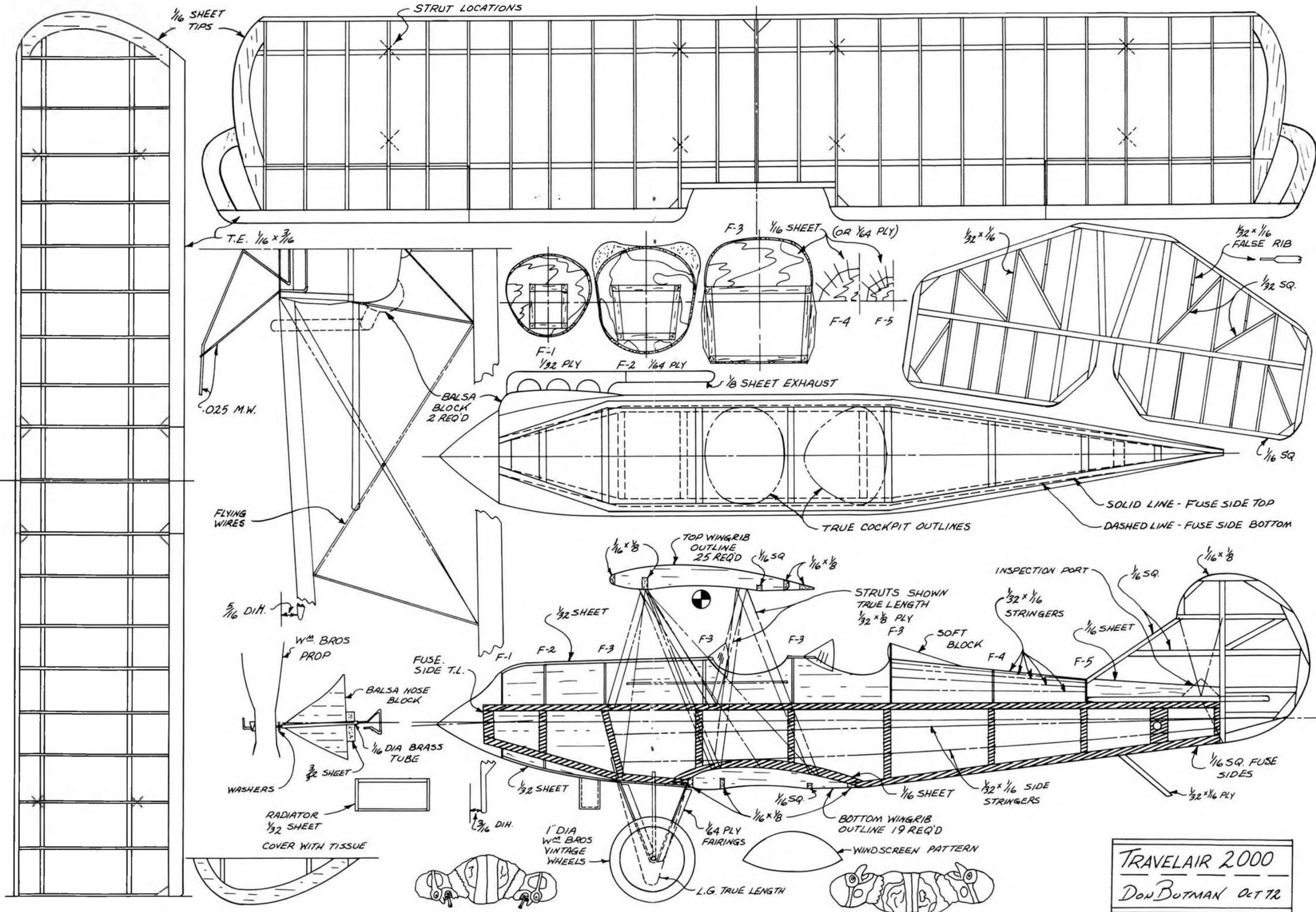
The "bones" of Don's little 13" Travelair. Ribs could be thinned out a little to simplify.



Great shot of the little T-Air climbing out from launch. School yards are big enough.



Don's inspiration for this model came from our 2" scale Travelair, plans for which were published in the July '72 issue of MB. The reduced mag plans were almost Peanut scale!



TRAVELAIR 2000
 DON BUTMAN OCT 72