MODEL BUILDER

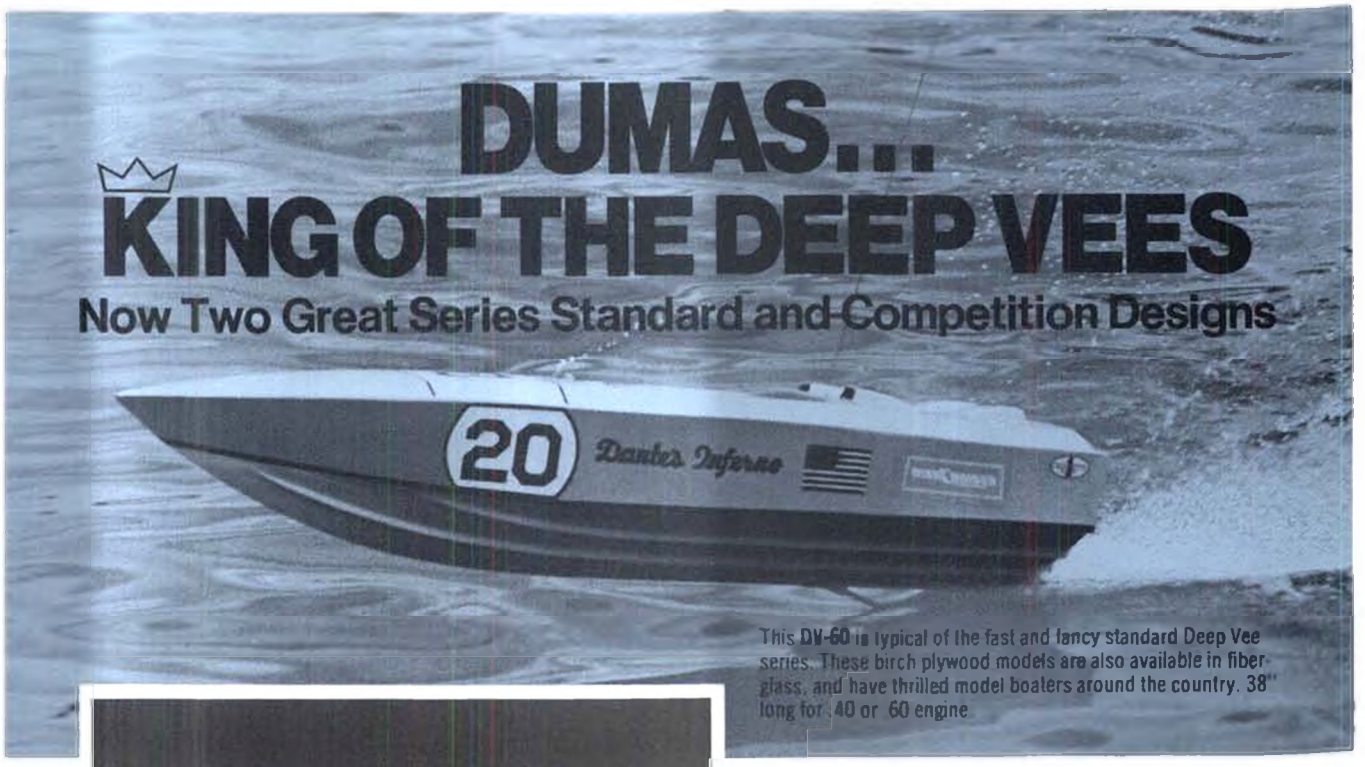
JANUARY 1976

volume 6, number 49

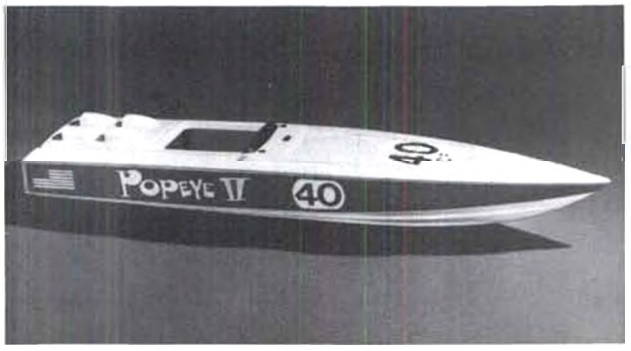
$1.50

DUMAS...
KING OF THE DEEP VEES

Now Two Great Series Standard and Competition Designs

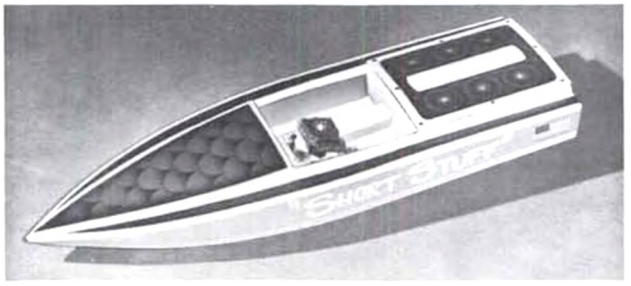


This DV-60 is typical of the fast and fancy standard Deep Vee series. These birch plywood models are also available in fiberglass, and have thrilled model boaters around the country. 38" long for .40 or .60 engine.



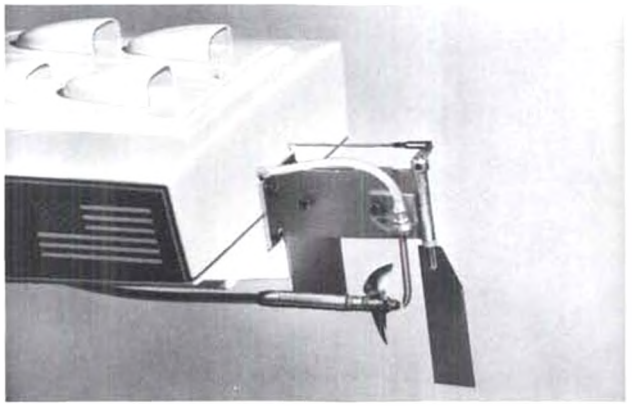
◀ NEW **DEEP VEE 40 CF 40" (for .40 engine)**

The competition series Deep Vees that are the successful result of one year on the toughest racing circuit in the U.S. include this sleek 40 as well as DV 20 CF-30"(for .20 engine); DV-60 CF-45" for (.60 engine). Fiberglass hulls ideal for hottest competition or for fun running. For gas power and radio control. Hull and deck are white so boat can be painted to match the prototype. Racing hardware kit available.



◀ NEW **DEEP VEE 10**

A new addition to the standard series. Designed for .049 to .10 engines. Mahogany plywood and veneer. 18" length, 6-1/2" beam. Uses Dumas hardware kit H-3 not included. The DV-10 is your opportunity to get into R/C Deep Vee running without a big investment.



◀ NEW

Outdrive for Deep Vee 40 and 60 boats (hardware kit H-22). Complete with everything but prop. Features adjustable stainless steel strut with needle bearings. Stainless stub shaft with flexible drive cable for virtually unlimited shaft adjustment. Stainless steel rudder with oilite bearings in stainless steel mount, rudder arm and water pick-up tube. And the price is so right for a super professional rugged unit.

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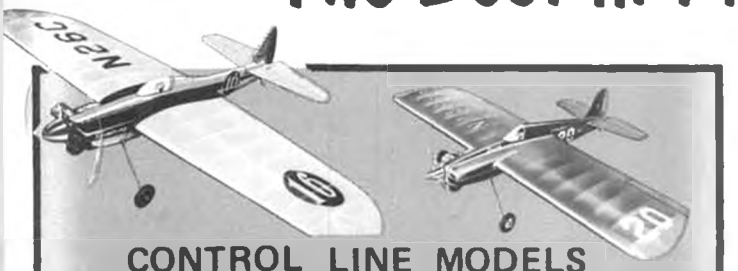
5 RUBBER-POWERED MODELS, so easy to build, such fun to fly!



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SHOESTRING STUNTER—42" Top stunt model for .19-.35 engine. G9 **$11.95**

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LI'L JUMPIN' BEAN—21" span Favorite 1/2A stunt model. For .049 Eng. G8 **$5.50**

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SWORDSMAN 18—Die-cut balsa 18" span, for .020-.049 engine. G3 **$5.50**

P-40 FLYING TIGER—18" span, all balsa pre-fab for .049 engine. G11 **$5.50**

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LI'L SATAN—19" span, 1/2A combat-stunt for .049 engine. G12 **$4.95**

NEW! LONG BOOMS! and NYLON HORN!

VOODOO—36" combat-stunt for .19-.35 engine. Single kit G13 **$6.95** Double kit DG13 **$12.95**

JUNIOR SATAN—29" span, combat-stunt, for .15 to .19 engines. G20 **$5.95**

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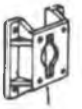

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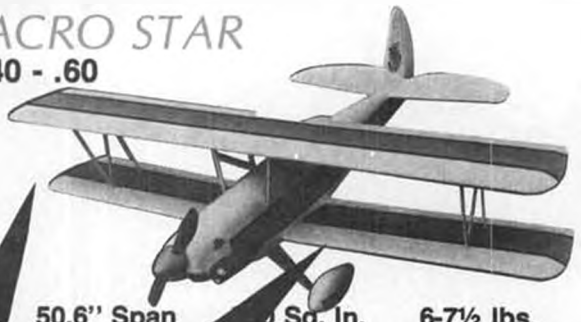

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Send all entries to:

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1105 Spurgeon St., Box 4336,

Santa Ana, California 92702

COLBERT INDUSTRIES, manufacturers of PANA-VISE, the unique hobby vise which turns and tilts to any position, in conjunction with MODEL BUILDER magazine, is sponsoring a design competition for MODEL BUILDER readers.

This monthly contest will be judged for originality and/or craftsmanship for all types of models (excluding plastic static scale). Entries will be judged purely on the basis of photographs and drawings supplied by the builder of the model. Emphasis in judging will be on originality, technical achievement, and craftsmanship, as found in the submitted material.

A MODEL 301 PANA-VISE WILL BE AWARDED EACH MONTH TO THE WINNING ENTRY

Requirements for entries:

1. Any type model may be entered (aircraft, cars, boats, etc.). Kits may be entered if significant modifications have been made to the stock kit.

2. Do not send the actual model. Send only black and white photos, showing at least three views of the model. Include some familiar object in at least one photo to indicate the size of the model. Try to include photos of any significant details.

3. If photos cannot offer sufficient information about the model, the construction drawings may also be submitted. Drawings should be clean, pencil drawings with all pertinent dimensions indicated. A print of the drawing is acceptable.

4. A written description should be included with photos and drawings, explaining in fair detail any unusual features of the design, and explaining any unique technical difficulties that the model may have achieved.

5. Please do not submit any designs that have been accepted for use in another publication. MODEL BUILDER requests first option on publishing any submitted design. Payment for published designs will be at our regular rates. Any prizes awarded do not represent an agreement to publish any design.

6. Entries will be judged by the modelers on MODEL BUILDER's editorial and art staff, and all decisions of the judges will be final.

7. Postage must be furnished if return of submitted entries is desired.

8. Deadline for entries in the first contest of the series is July 1, 1975, and winners will be announced in the September 1975 issue. Subsequent entries will be due the first of each month and winners will be announced the second month following each closing.

This month's winner is CHARLES PALERMO, Houston, Texas. His entry is a Veco .61 powered, 2 inch scale Travel Air 2000, built from Bill Northrup's plans, which first published in M.A.N., and recently in MB (Plan No. 7724, $4.00).

The blue and silver biplane is covered with Silron and finished with butyrate dope. Williams Brothers vintage wheels and EK Logictrol Champion radio complete the equipment. The top-wing-only ailerons are controlled in near-scale fashion. Instead of scale torque rods, two bellcranks are used in each lower wing panel, one mounted horizontally and the other vertically, interconnected with "missing-link" rod-ends.

All-up weight of the model, without fuel, is 8 pounds and 6 ounces. Excellent scale drawings are available from Peter Westburg. See ad on Page 91.

MODEL BUILDER

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1105 SPURGEON, BOX 4336, SANTA ANA, CALIFORNIA 92702 (714) 547-3963

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CONTENTS

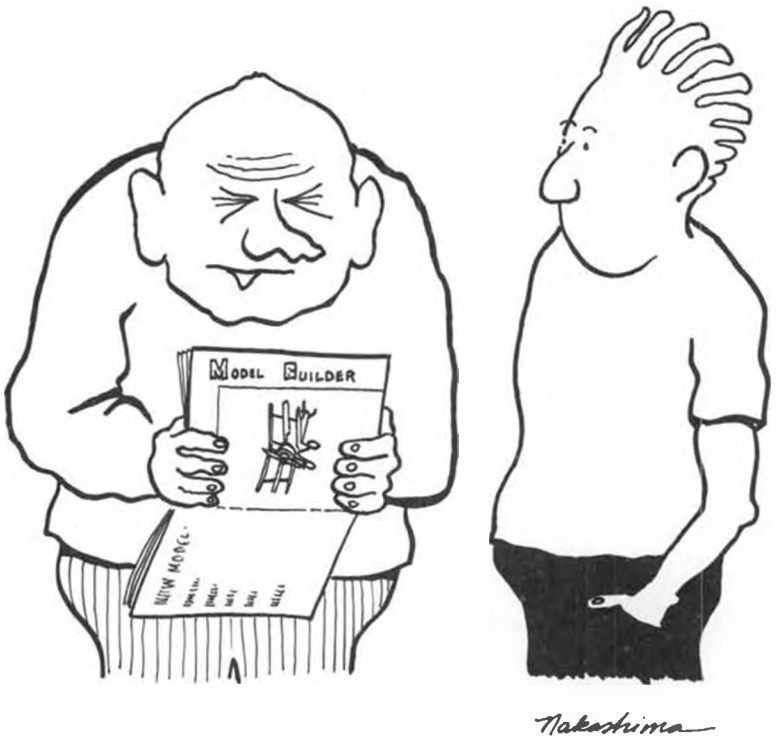
FEATURES

SCALE VIEWS

CONSTRUCTION

Cover: What better background for a well-known model design called the "Texan," than another "Texan," the North American AT-6. The third figure in the picture, however, is 100% Californian! She is Judy Scarborough, whose husband, Jim, created the Texan 750 Class B-C free flight, as featured on page 55. Not to be outdone, Judy created the outfit she is wearing, just for this occasion. The AT-6 belongs to Bob McCoy, and is located at Dennis Buehn's "Warbirds West," Compton Airport, California. Kent Montgomery photo.

from Bill Northrop's workbench



Nakashima

"I remember when rags like this cost only a buck-and-a-half for 12 issues, and you got a free model airplane kit to boot!"

MODEL BUILDER MAGAZINE CONTRIBUTES TO ENERGY CRISIS.

The idea came to us while preparing the full size plans for Tore Paulsen's beautiful pattern Spitfire, featured in this issue. On many occasions, as with the Spitfire plans, only half of a wing or stab may be shown. If it's a straight wing, this doesn't create much of a problem when building the undrawn panel, but a wing like the Spitfire can be quite a problem.

As a new feature of MODEL BUILDER full size plans, starting with this issue, we will include a *reverse* (sometimes known as bass-ackward) print, where needed, of wing and stab drawings, with all future full size plans! This will be included, along with the usual reprint of the construction article O.T. plans) as part of the package, at no extra charge.

What's our contribution to the energy crisis? To build an opposite wing panel, modelers usually turn the plan over and rub oil into the paper, so the drawing comes through in reverse! Like they keep saying on T.V., "If all the modelers in the U.S. stopped oiling their wing plans, they would save enough oil to . . . etc.

OK, Mr Ford, send the citation to 1105 Spurgeon, Santa Ana, California!

WHAT? . . ALREADY?

It had slipped our mind too, until proof reading "Dirty Dan" Rutherford's control line column for this issue . . . but believe it or not, it's rules proposal are *never* out of order, but under the current two-year AMA rules program, we are only 6 months away (June 1976) from the deadline for proposals relating to the rules for 1978-79!

Main reason for the two-year program is to prevent the railroading through of new or revised rules before the membership has had a fair chance to review and comment on the proposals (Considering the relative speed of railroads these days, that's sort of an obsolete expression . . . how about "jetting through"?). However, in spite of the expanded schedule, it still seems like a very short time to see new rules in action before having a chance to propose corrections.

Perhaps we could have our cake and eat it too. In other words, maintain the two-year program now in effect, but in addition, initiate a new 2-year cycle every year. To keep things kosher, new or changed rules must be allowed to stand for a one year period.

It would work this way . . . proposals for 1978 would be made by June of 1976, just as the procedure now stands, except that rules just put into effect as of January 1, 1976, must be left alone. Such proposals then go into the two-year mill, identified as R/C 78-1, 2, 3, 4, etc. Then, with a deadline of June, 1977, proposals would be accepted for 1979. These would also go into a two-year cycle, identified as R/C 79-1, 2, 3, 4, etc. At this time, rules established January 1, 1976 would be vulnerable for change, if needed. At the end of 1979, the R/C 78 proposals will have completed their 2-year cycle, and what's left of them, goes into effect on January 1, 1978 . . . and so on.

To put it simply, if that's possible, the idea is to start a new 2-year proposal series every year. Thus, at any given instant, two series are in some stage of process at the same time. In other words, they overlap by one year. This will allow a steady flow of rules changes and additions.

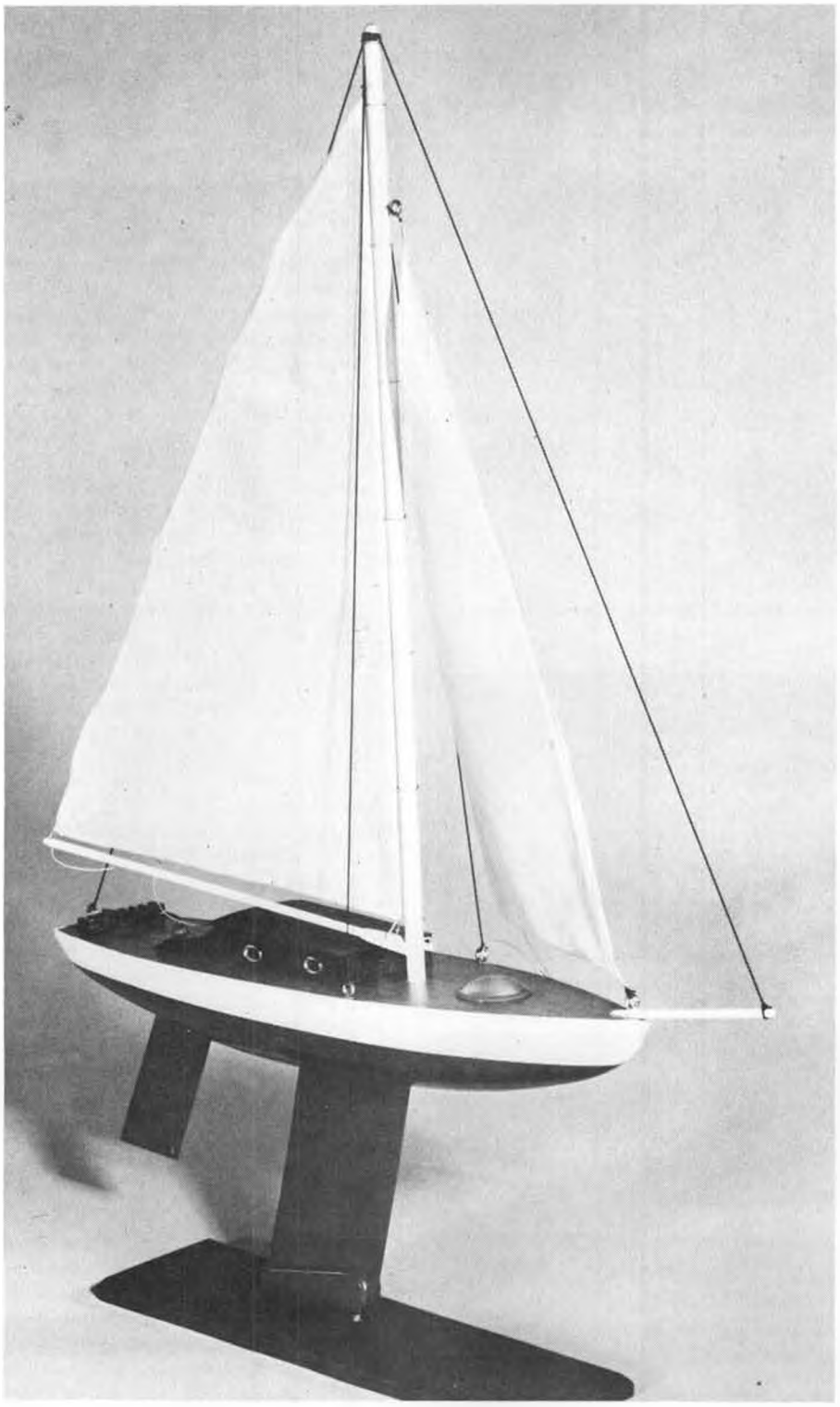
If nothing else, it will give AMA plenty of material for its new 80 page publication!

As far as individual proposals are concerned, the time is sufficient . . . but in recent years, a new and valuable friend of the contest boards has come to life . . . the special interest national organizations. These organizations pull together the best and most active modelers in their special interests, and as such, not only rate full attention of contest board members, but should also be greeted with open arms . . . and minds.

There is, for instance, only one R/C Contest Board . . . and that's the way it should be. All R/C rules matters must funnel through that one group. However, the R/C board, any board, for that matter, cannot consist of 11 Jacks-of-all-trades. They cannot all be pattern experts, plyon experts, and soaring experts. A Board member, to do his (oops, "his or her") job properly, must not have blinders that prevent him . . . or her from seeing the overall picture, and how each new rule or rule change will affect all areas of their concern, and not the one area in which they, as an individual, may excel. These are the coaches, not the specialized players. They must have the ability to react to feedback, and turn information that is brought to them from the field of action into useful advice for the future.

Continued on page 92

OVER THE COUNTER



Sterling Models' 14 inch long Starfish sailboat, for shelf or shore.

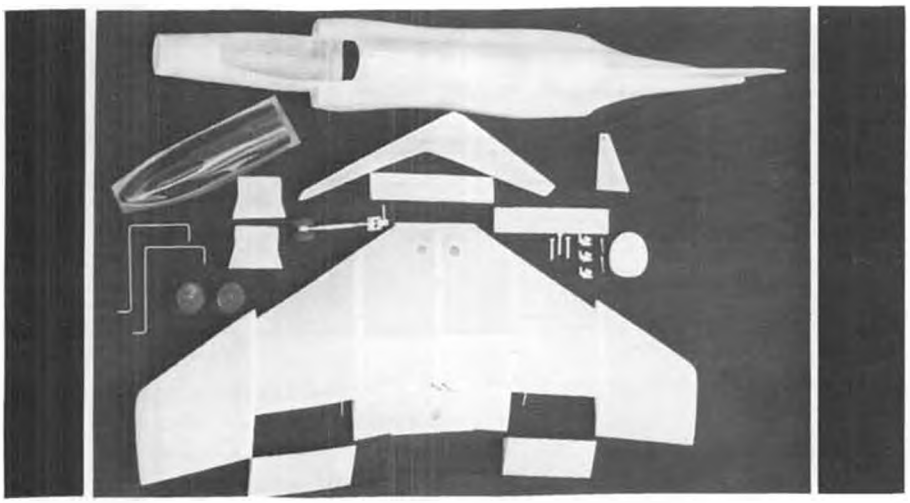
Two new fiberglass Deep Vee boats are being imported from Sweden by Marine Specialties. The Surveyor 16 and the Mirage 20 are manufactured in Stockholm by R/C Båt. The Surveyor 16 is a one-fifth scale replica of a full size off-shore racer. The 36-inch hull comes with two decks, allowing it to be built as a regular 60 class mono, or as completely scale. The fiberglass hull has lap straked planking molded in for high speed and good stability. The Surveyor hull is available by itself for $98.00, or complete with appropriate Marine Specialties hardware for $166.00. The Mirage 20 is a smaller hull designed for .40 power. The hull alone sells for $76.00, or can be ordered complete with hardware package including motor mount, outdrive assembly and flexible shaft drive parts for $142.00. For more information, contact Marine Specialties, P.O. Box 588, Saratoga, California, 95070.

Also from Marine Specialties, there is a new water-cooled head for the K&B 6.5 cc (.40 cu. in.) RC/SRII, and a Strut and Tee Bracket assembly for mid-sized power boats. The head for the new K&B .40 racing engine is a two-piece design, which is specifically engineered for this one engine. The .40KB-SRII head comes complete with water fittings and socket head cap screws. It sells for $11.95.

The Strut and Tee Bracket is intended for .19 to .40 powered boats. For transom mounting, it is ideal for outdrive systems running surface props. The strut is made of high-strength, die-cast aluminum. It is completely adjustable for running depth and angle of thrust, and as with most Marine Specialties hardware, component parts may be purchased separately. So, if one part is broken in the heat of competition, you don't have to buy a whole new assembly to get back into the race . . . Good thinking! The Strut and Tee Bracket are available directly from Marine Specialties for $9.95.

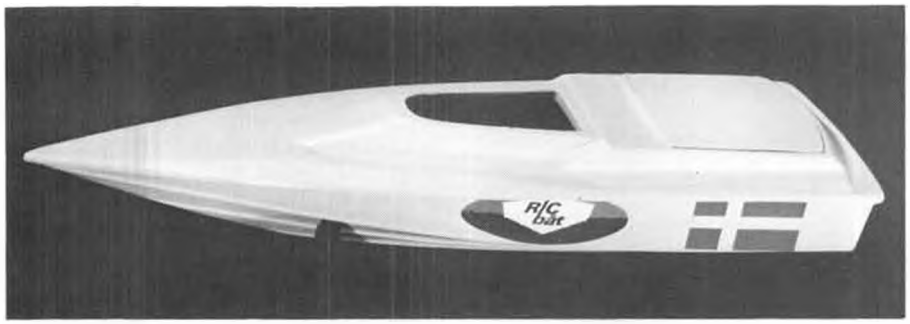
* * *

Remember that neat inline .60 engine that one of the Russians used in his control-line scale ship a couple of years ago? Its low profile allowed it to be used in a tightly cowled, low frontal area model. Wouldn't it be nice to be able to buy one like it? You can now!

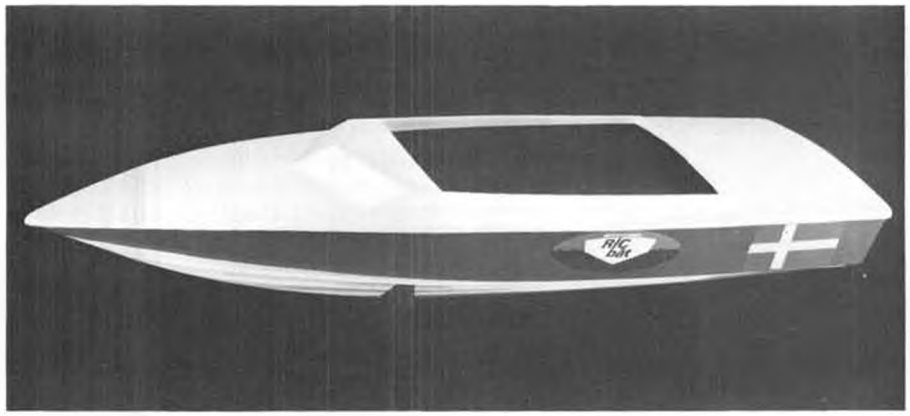


New all fiberglass F4 Phantom by Westcoast R/C Products, for .61 engines.

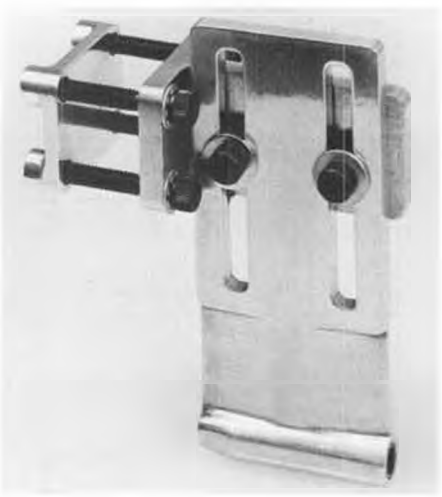
Dodge Challenger and Porsche Turbo-Carrera 1/12 scale bodies by Bo-Link, Kieve Enterprises.



Mirage 20 Deep Vee fiberglass boat by Marine Specialties, imported from Sweden.



Surveyor 16 Deep Vee, from Marine Specialties.



Strut and Tee Bracket for .19 to .40 powered boats, by Marine Specialties.

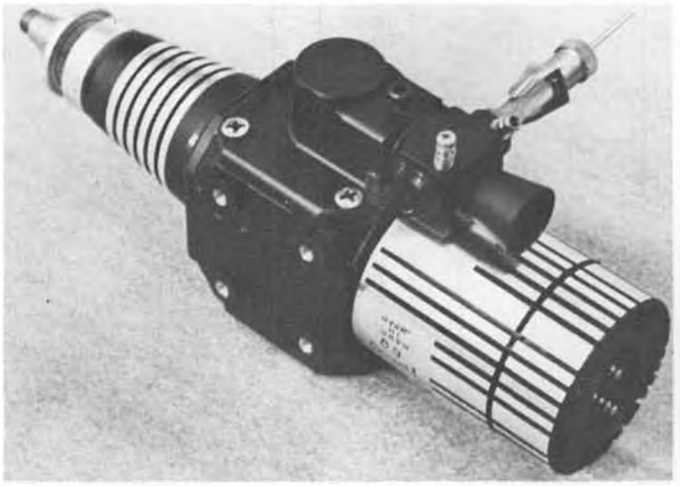
Aristo-Craft Distinctive Miniatures, 314 Fifth Ave., New York, N.Y., 10001, is taking orders for the Arrow engine. This .60 displacement gem is handmade and custom fitted. It features Schneurle 3-way porting with an internal supercharger. It is 7 inches long and measures 2-1/8 by 1-7/8 at its largest dimension. Weight is 26-1/2 ounces. Performance is claimed at 12,000 to 14,000 RPM with an 11-7½ prop. The Arrow engine will be sold through hobby dealers. The price . . . a mere $400.00! But after all, it does have helical gears, all ball bearings, twin glow plugs and a custom-built muffler!

* * *

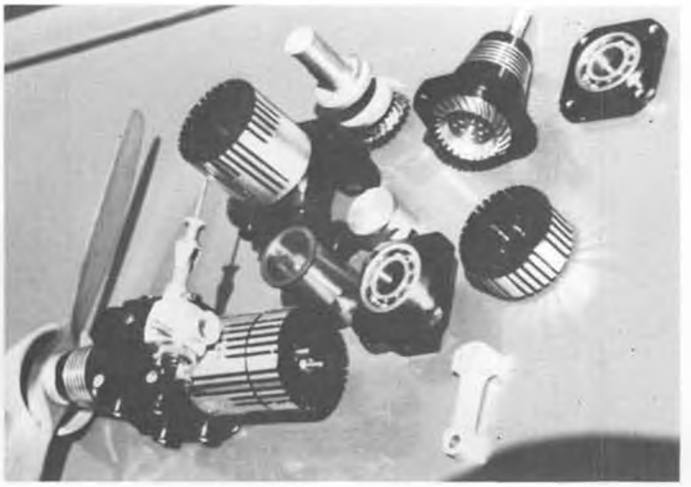
The French Caudron was one of the most sensational of the Thompson Trophy Racers. Now Hal deBolt is offering a limited run of this famous racer in Quarter Midget size. The Caudron kit uses a low drag NACA 65010 airfoil on a 340 square inch wing. The highly prefab wood kit will include all machine finished parts (no die-cutting), finished maple engine and fuselage crutches, finished pressure cowl and pod parts, machined wing ribs and wing jigs, shaped fuselage keels, bulkheads, and formers, and extra thick 5/64 inch balsa wing skins. Also included will be formed wire landing gear, and all necessary hardware. But . . . there will only be 100 of these fine kits made. They will be available direct only, from deBolt Model Engineering for $42.50. Shipping charges are $2.50. Contact Hal deBolt at DMECO 3833 Harlem Rd., Buffalo, New York, 14215. Tel. (716) 836-6860.

* * *

Sterling Models has just released its new Starfish sailboat. This 14 inch long craft can live two lives . . . as a mantelpiece exhibition model, or as an operating craft. The Starfish measures 24-½ inches from the bottom of the keel to the top of the mast. The kit features a molded plastic hull and die-cut mahogany cabin. The deck is die-cut plywood. The metal keep comes complete



Arrow in-line .60 engine, imported by Aristocraft Miniatures.



Disassembled Arrow engine, showing basic components.

with molded lead ballast, and the cloth sail material, rigging cordage, and metal fittings are also provided. Retail price is $6.95. The Starfish is available from hobby dealers, or direct from Sterling Models, 3620 'G' St., Philadelphia, Pa., 19134.

* * *

Williams Bros., 181 Pawnee St., San Marcos, Calif., 92069, is making finely detailed drawings available of the three planes which they produce in plastic 1/72 scale. These drawings can be used as documentation material for modelers who would like to build flying scale models of the Boeing 247, the Martin B-10B, or the Northrop Gamma. The information was gathered in preparation for tooling the plastic static scale kits offered by Williams Brothers, and represents the best available research material from factory and museum sources, as well as private photo archives. The drawings will be marketed by mail only, and are priced at $1.00 each, or the set of three for $2.50, postpaid.

* * *

Bob Rules' Kieve Enterprises has introduced several new products for 1/12 scale R/C car racers. The Bo-Link Drum Brake is a drum type mechanical brake which keys onto the rear axle of a Jerobee car and is actuated by the low throttle position of the throttle servo. The brake uses molded shoes and an aluminum housing, which is easily bolted in place. The BL-05 Drum Brake kit comes with all necessary mounting hardware and sells for $7.50.

Two chassis extension kits are also being offered. The BL-07 Dragster Extension Kit allows adjustable extension of the stock Jerobee chassis up to the 16 inch legal limit for 1/12 dragsters. The BL-08 Funny Car Extension Kit provides for chassis extension up to 10 inches. Other new products include a crystal hold-down clip, which prevents the interchangeable crystals on a Jerobee radio from coming loose because of vibration; a molded Lexan "wing" for use with Trans-Am sports car bodies; and Lexan glue. Another new item is an adjustable tie-rod, which allows adjusting toe-in on Jerobee chassis without any bending of wires. Two new bodies are also being offered by Bo-Link. The Dodge Challenger comes with Bo-Link body mounts, as does the Porsche Turbo-Carrera. Each is available painted, but untrimmed, for $9.95, or trimmed, ready to install, for $12.95.

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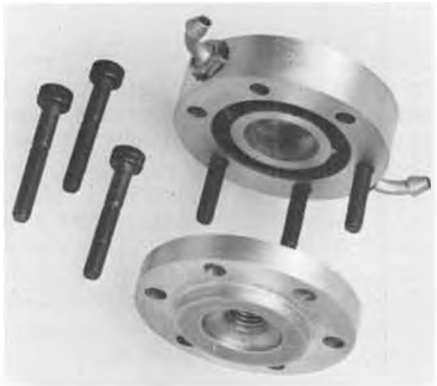
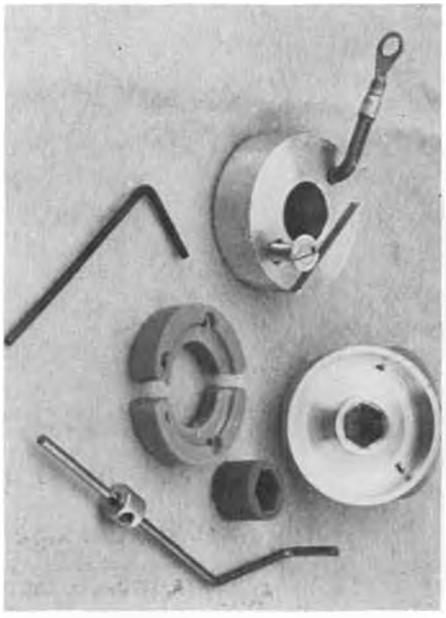
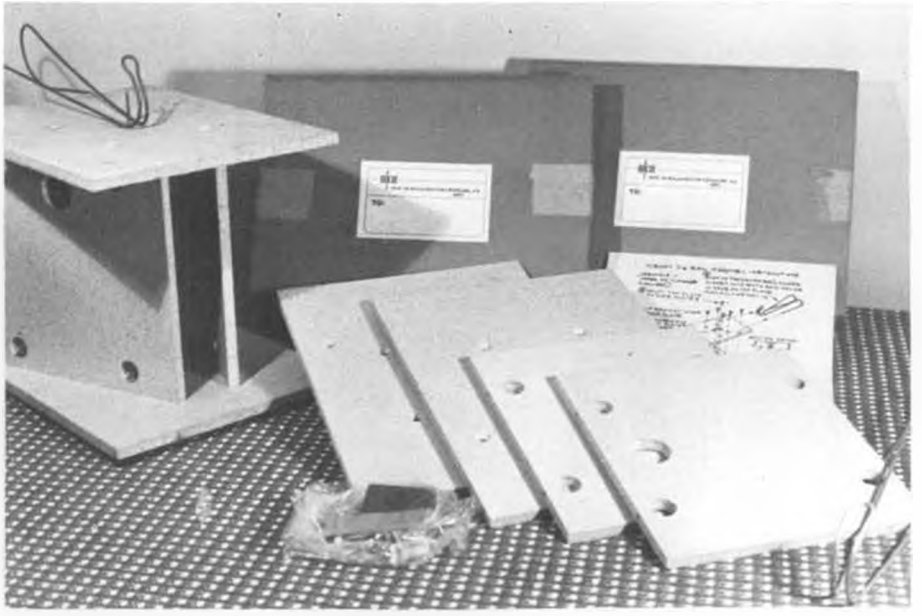
Continued on page 69



Water-cooled head for K&B 40 RC/SRII, by Marine Specialties.



Bo-Link drum brake kit for 1/12 racers, by Kieve Enterprises.



Craft Jig Saw Table takes sabre saws such as Craftsman, Black & Decker, Rockwell, etc. Can be used to strip wood, cut music wire, make stacked ribs, etc.

Sleek lines of the Spitfire still show through, in spite of the modifications for precision aerobatics in the FAI pattern. Shortened landing gear improves ground handling, a consistent problem for tail-draggers under the present FAI takeoff and landing reguirements.

Pattern Spitfire

By TORE PAULSEN . . . This ship was outstanding at the 1975 World Championships, both in appearance and in performance. Scale-like aircraft in precision pattern is a trend we'd like to encourage.

• Pattern designs have, in my opinion, become very stereotyped. They are all variations on the same theme. I do not agree that it has to be this way, and this Spitfire is an attempt to prove that a semi-scale model can be competitive. A 41st place in the 1975 World Championships does not prove anything, but I blame that more on the pilot than the model design. I feel that if we could see more scale-like models at pattern meets it would be more fun for both competitors and spectators. *(Amen! wcn)*

Anyway, building and flying the Spitfire has given me more fun than I had for a long time. Seeing the Spitfire silhouette pull out of a high split-S and whistle by at a low altitude is really something, because this is not a slow lumbering scale model, but a high speed pattern aircraft with performance to spare.

One of the reasons for choosing the Spitfire for this project is the elliptical wing form. It gives less induced drag than a normal wing and therefore has less tendency to slow down in maneuvers. In designing this model, I used normal pattern parameters, and just drew the Spitfire outline to match. It therefore came out with a longer nose, larger stab and slimmer fuselage than would be scale, or even semi-scale.

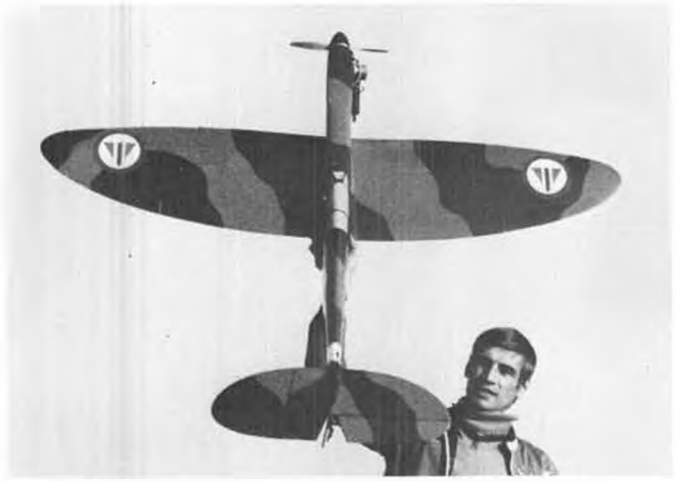
There are, of course, lots of other prop aircrafts to choose from . . . the ME 109 would be a natural. Likewise the Bearcat, Zero, Mustang, and several others.

There is one problem with this type of model, and that is the tail-dragger configuration. No problems on a grass field, but they tend to be tricky on a hard surface. I believe this problem can be solved by experimenting with wheel hardness, tracking, gear positioning, and tail wheel steering accuracy. I found, for example, that putting a slight drag brake on the main wheels improved both take offs and landings, even with uneven brakes. Going to harder wheels also helped. No brake on the tail wheel though, it fouls up the steering.

This Spitfire is a second design, correcting some problems I had on the first one. It is, of course, not the last and ultimate. I guess no design will ever be.

CONSTRUCTION

The elliptical wing might at first sight scare off potential builders, but is

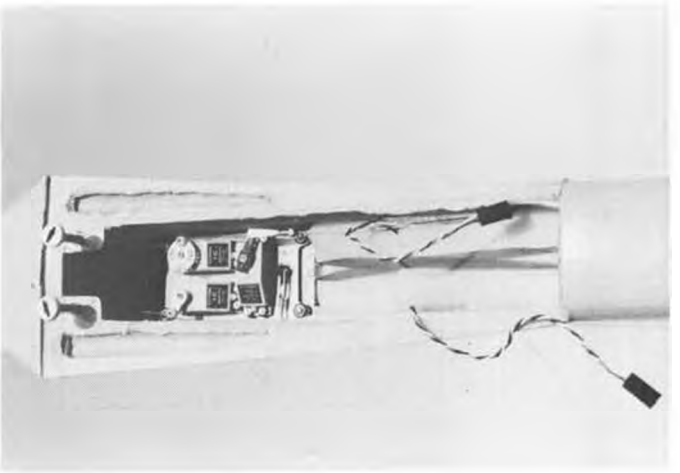


Tore Paulsen, Norwegian airline pilot, displays the most familiar and and most beautiful lines of the Spitfire, the double-elliptical wing.

Would you believe the photographer shot this as the Spit roared over his head just after takeoff? No? Oh well, it was a nice try.

Underside of wing reveals landing gear wells and retracts. Tore explains ways to improve tail-dragger handling in the text.

We agree with Tore that painting a Spitfire with anything but an authentic camouflage design should bring doom upon the builder!



Futaba radio installation is simple and clean. Wing fillets are built up of micro-balloons and epoxy, are hollow to save weight.

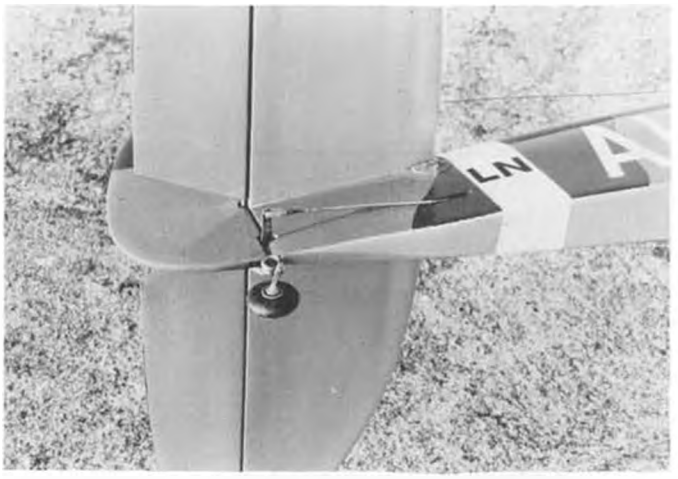
actually not hard to build with the method described. It must be built in one piece, in a suitable jig. If you don't have one, make one up by hinging two building boards together.

Mark down all rib and spar positions and set the board at 3 degrees dihedral. Cut out all ribs as described on plan and glue the jig pieces on the jig.

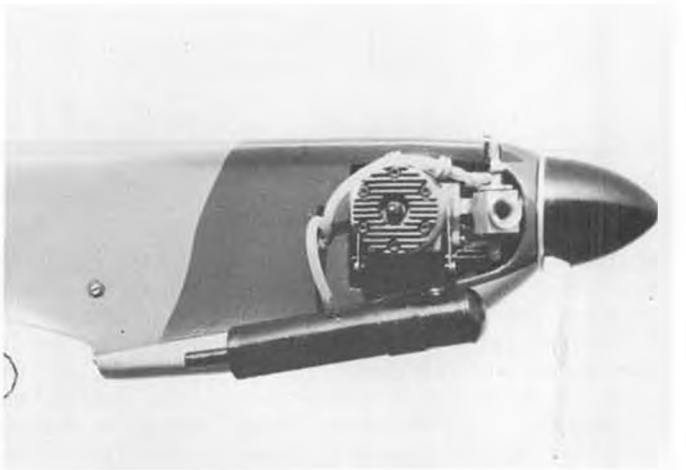
Wet and bend the two spruce spar joiners to dihedral, and when dry, glue them to spars. You now have one upper and one lower full length wing spar. Make a good joint, as the main wing strength comes from these spars.

Prepare ribs for retracts, pushrods, servo installation, etc. Pin down lower spar to jig and glue in all ribs and center section. Next add the preshaped T.E., W-10, and the inner lamination of the L.E. Cut this one slightly oversized and trim to follow rib contour when dry. Glue in upper spar. Bevel the spars at the tips and pull together, to follow the general curve of the wing. Ribs W-7 and 8 must be sanded down smoothly from the spars to meet W-10 in order to have a straight hinge line for the ailerons. Add upper sheeting, and when completely dry, remove wing from jig.

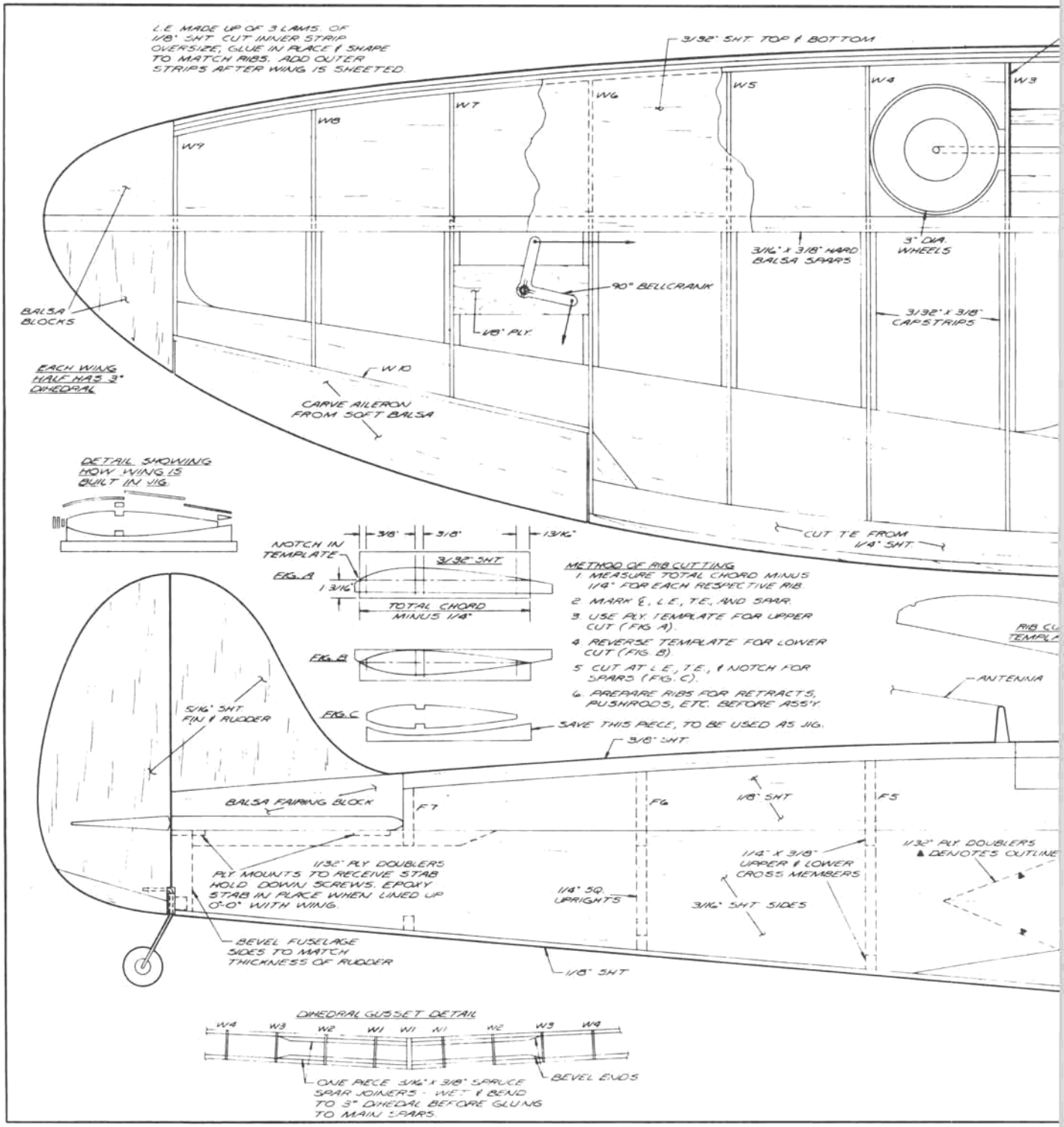
At this time, try your installations for fit. Set jig at 3 degrees anhedral, reverse wing and pin to jig. Trim L.E. and ribs W-7 and W-8 as on upper panel. Add lower sheeting and again, when dry, remove wing from jig. Glue in remaining



The author's tailwheel and rudder horn linkage appears to be a combination production unit. Sheet covered frame tail surfaces.



Webra Speed 61F is equipped with a special HP bucket sized carb, and Minivox Super Silent muffler which supplies fuel pressure.



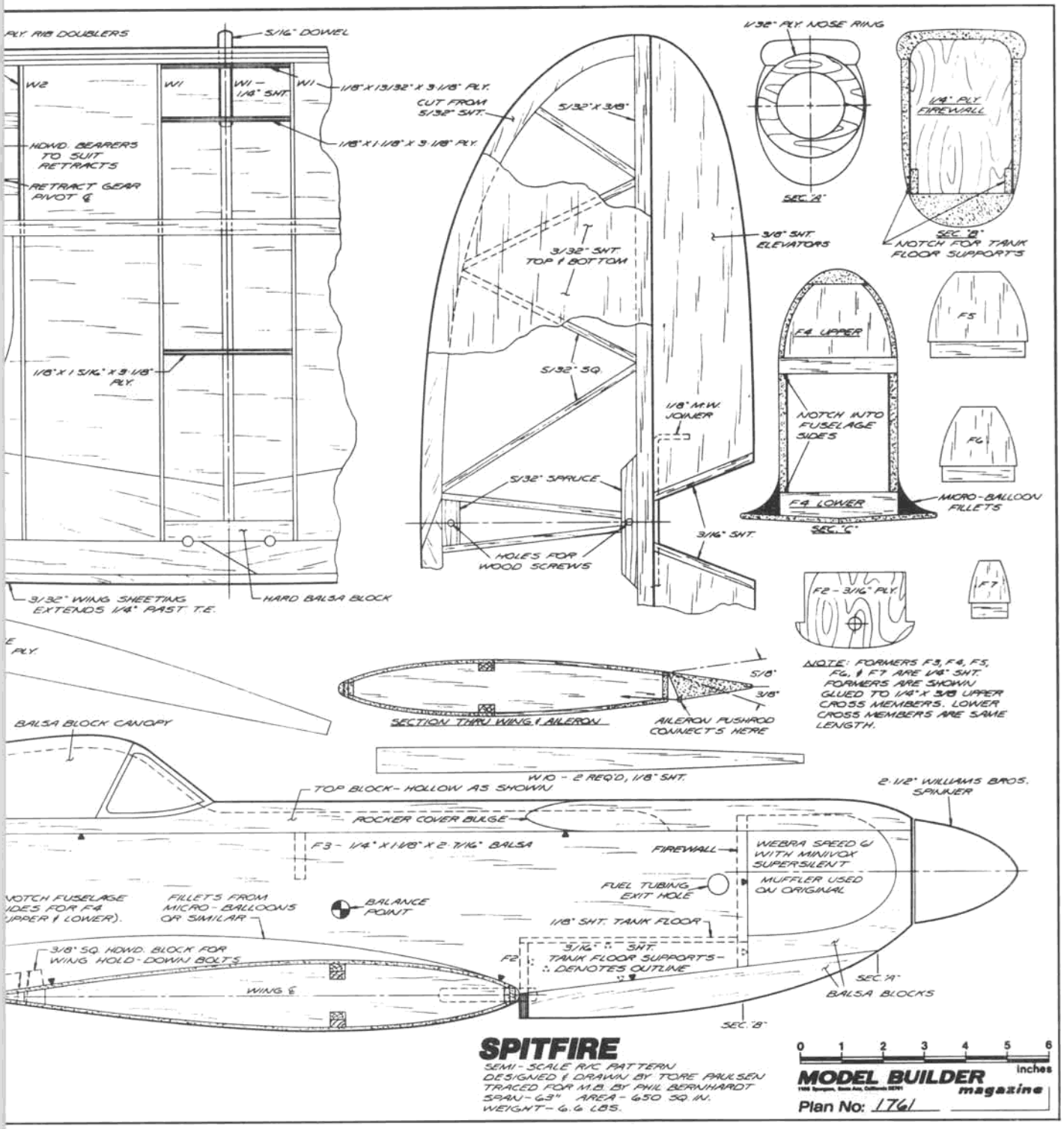
L.E. laminations and wing tips. Sand entire wing. Cut aileron blank from light wood, tack-glue in place and shape to follow wing contour. Finally, cover center section with fiberglass.

The rest of the construction is conventional, and only a few points will be mentioned. Cut out fuselage sides and ply doublers. Glue together with polyester resin. It makes for a good and warp free bond.

Build fuselage upside down on a flat building board. Plan all your installations when the basic box is finished. Next, add nose block, upper block, aft turtle deck and bottom sheeting. Trim fuselage to shape before adding canopy.

Put Saran Wrap on wing center section and bolt to fuselage. Build up wing fillet from micro balloons or similar material. Make stab and bolt to fuselage, while checking for 0 degree incidence in relation to wing. Then epoxy in place. Glue on fin and fair into fuselage and stab with soft balsa.

To avoid flutter make control surfaces light and stiff . . . use straight pushrods and no sloppy linkages. I used nylon cloth hinges on ailerons and klett hinges on rudder and elevator.



FULL SIZE PLANS AVAILABLE — SEE PAGE 94

My engine is a Webra Speed 61 F with a special HP carb. Use a good mount, like Fox, and position the engine as close to the firewall as possible. The RST 12 oz. slant tank is pushed in sideways, right up to the firewall, with the outlet facing the fuel tubing exit hole in fuselage. The vent line is connected to the muffler pressure tap. The tap must be around 3/32 I.D. to give good steady pressure. Use a large volume muffler, at least 100 cc, to reduce back pressure. The Minivox Super Silent is good. Prop and spinner must be balanced. Top Flite 11-7 Super M and Williams 2-1/2 inch spinner works fine.

The conversion from mm to inches on the plan is not always accurate, but this is in places where wood size is not critical.

The original model was finished in WW II camouflage colors, with the markings of the post war 332nd Norwegian Squadron. Refer to literature for this. A Spitfire finished in red will bring doom upon its builder! •

Hanno Prettner of Austria again wins the Las Vegas International! Bill Bennett with trophy, Hanno with plane, and Walt with check.

Rhett Miller III, a close second at Las Vegas and a bit of vindication for the 9th place in Berne, had engine cut in last flyoff flight.

'REMOTELY SPEAKING...

R/C News, by BILL NORTHROP

• Las Vegas, among other things, is the city of instant money . . . big money. Of course, one of those *other things*, is instant empty pockets . . . big, empty pockets!

On the weekend of Nov. 21, 22, and 23, however, 23 of the world's best R/C pattern fliers put their aerobatic skill in the same pot with $21,125 worth of prize money and then did their damndest to rake in as much as they could.

It was the second year of the Annual Tournament of Champions/International Pattern Invitational Sweepstakes (whew!) co-sponsored by the Circus Circus Hotel/Casino/Spa and Model Airplane News.

Hanno "Handy Hands" Prettner repeated last year's feat and raked in the largest portion of the pot, $7,500. In second place, the "Tallahassee Kid," Rhett Miller, picked up $3,000, plus a side bet of $1,000 for the highest qualifying flight score. Dave "Pockets" Brown turned over $2,000 bucks to his moll, Sally, which he won for third place. Wolfgang "The Banker" Matt raked in $1,500 by making his four, and the "Cincinnati Flash," Mark Radcliff, pulled in a grand for drawing a five spot.

The rest of the gang picked up from $750 down to $125, in the following descending order; Phil Kraft, Benito Bertolani (Italy), Steve Helms, Jim Whitley, Don Lowe, Tsugutaka Yoshioka (Japan), Benny Kjellgren (Sweden), Steve Buck, Mike Mueller, Jim Martin, Joe Bridi, Masahiro Kato (Japan), Ivan Kristensen (Canada), Tony Bonetti, Garry Reusch (Canada), John Brink (South Africa), Jeff Tracy (Australia), and Luis Castaneda (Mexico).

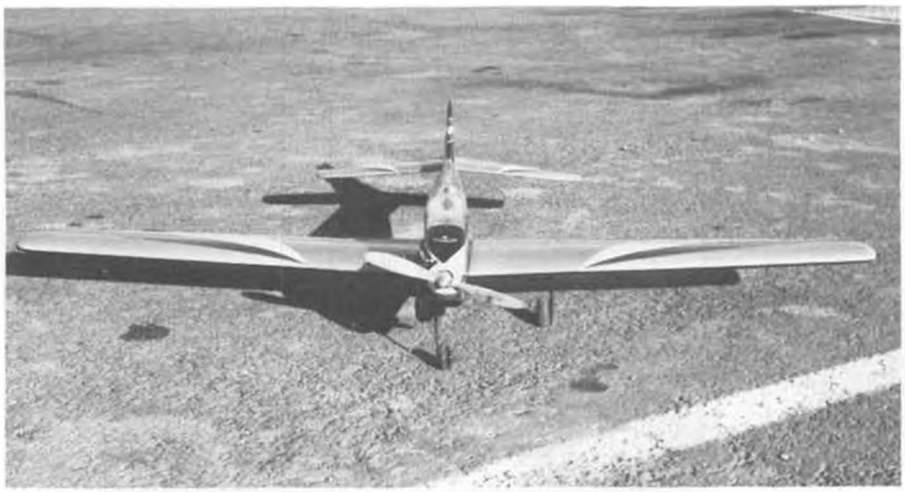
Last year's contest, since it was the first of this hoped-for series, had a few problems . . . the worst one being that there were too many contestants because of the last-minute change to one flight line. This resulted in a simple 3-out-of-4-flights total to determine all placings. However, the number of contestants was pared down to 23 this year, permitting 4 qualification flights for each pilot over Friday and Saturday, with a four-flights-each flyoff on Sunday of the top five qualifiers. It is interesting to note that our U.S. team reasserted itself by taking 2nd, 3rd, and 5th in the finals, with the two top fliers in the world taking first and fourth. Not bad for a country only 200 years old!

Of course, all of the flying was of the highest order, but the finals flyoff on

Dave Brown owns 3rd place; Las Vegas 1974, Berne, and Las Vegas 1975! Battery pack gave out in flyoff flight, almost lost model.

World Champ, Wolfgang Matt, placed 4th, was 2nd last year. Stayed on to take 1st at Tuscon Winternats with borrowed plane and radio!

Mark Radcliff proved that the US team is still in there, taking 5th place. Another nice finish for World Engines radios.



Hanno claims that the anhedral in the stab of his "Curare" takes the wobble out of the stall turns in the Figure "M"... That and some expert stick handling, we'd say.

Hardly visible against the dark background is the Webra tuned muffler. Prettner's father.

Sunday, in our opinion, and in the opinion of several veteran judges of Nationals and Masters Tournament experience, was probably the nearest to perfection that has ever been witnessed. No doubt every judge there (and nearly all of the ten USPJA judges scoring the flights were Level 1 or 2) has toughened up by 1 or 2 points after that session.

Incidentally, USPJA officials were on hand and video-taped all of the flights, including the fantastic finals. Tapes of Prettner's first flight in the finals could just about take the place of the FAI judges/pilots guide. Rhett Miller's landing on his third flight brought tears to this judge's eyes, and if for some reason we had not seen it, the standing ovation from spectators and fliers alike would have convinced us that we could put down nothing but a 10. And if the center spot had only been 3 feet in diameter, he would still have gotten a 15 K factor!

Another point that some of us, as veteran judges agreed on, was the fact that the three hours we put it on Sunday morning had to be the toughest session of judging we had ever been through. At one point, we simply felt as though we were judging the same pilot on flight after flight, and the amount of concentration it took to watch for the minutest flaw was mentally exhausting.

Of course, it's the judge's job to be picky, and we managed, during turnarounds or between flights, to write down a few notes about some of the more obvious errors committed. Most of these occured during the qualifying flights, and some were also noticed in the finals.

Every once in a while it seemed as though a pilot's mind did a quick transition between the Slow Roll and the Four Point Roll. Several times we noticed a slight hesitation at the knife-edge position during a Slow Roll, and conversly, in a few Four Points, the hesitation at the first knife-edge position was so slight as to be barely noticed! This happened particularly with pilots whose roll rate was about the same for both maneuvers.

Apparently very few pilots, or judges, we might add, are aware of the fact that the FAI Top Hat maneuver is now supposed to be square . . . That is, the length across the top and the vertical sides are supposed to be *equal*. Nearly all Top Hats we saw in Berne, and in Las Vegas, even in the finals, were more like an Abe Lincoln "Stove Pipe" hat.

Another consistent error was in the Rectangular Approach. The 1975 FAI Rules book is quite clear in its wording that the model maintains constant altitude throughout the maneuver until it enters the turn into final . . . "the descent to touchdown will commence after the second crosswind leg." This means that descent may occur *during* the turn into final . . . the ship does *not* have to maintain altitude until the turn is completed.

Actually, the Rectangular Approach (we're always tempted to use Don Lowe's name for this maneuver, which sounds like the one hundred and second "position") is nearly always blown by nearly every pilot. They don't descend sharply throughout the maneuver, but they *do* allow the model to lose altitude as it proceeds around the rectangle. Of course, it is realized that after struggling through the more difficult maneuvers, where a slight false move can bring a zero, there is some justification for having a let-down during this relatively simple maneuver. But after all, it has a K-factor value of 10, just like a Cuban Eight, Double Immelman, Three Inside Loops, etc., so it's worthwhile to stay in there and make it pay!

An error that we saw even some of the Las Vegas finalists make, was on the Three Inside Loops . . . more times than on the Outsides. Beginning with the completion of the first loop, the model would be higher at the bottom of the loop than it was at entry. What could fool the judge, and we caught ourselves on this a couple of times, was the fact that the bottom of the second and third loops would be the same as the first,

"Don Quixote" Polish homebuilt, modeled by Miroslav Kvapil, Praha, Czechoslovakia. Span 33"; Cox Pee Wee, single channel pulse, 6-1/2 ounces. Scale views in November '75 MB. Cute!

One of the best looking of the classic biplanes, the Travel Air 2000, as modeled by Charles Palermo, Houston, Texas. Pana-Vise contest winner for this month.

Here you can see why the Travel Air was used as a Fokker D-VII in "Men With Wings." Scale of the model is 2 inches. MB Plan No. 7724. Veco .61, EK Champion radio, Silron, butyrate dope.

Scale acting landing gear with Williams Bros. vintage wheels. More information on model can be found on page 4. Plane has logged more than a hundred flights.

which meant that all 3 were concentric, but higher than the entry altitude. A tough one to catch, but it happens a lot.

Hanno Prettner proved two things with his superior flying. One; it is an old wive's tale that a plane has to wobble slightly when coming out of the Figure "M" stall turns, to prove that it really was stalled. And two; it is quite possible to do a fine Rolling Eight within the 60 degree height angle and without having to move it out to the next county.

As for the stall turns, Hanno gives credit to the anhedral stab for his perfectly straight drop after the stall. We still suspect that there's a lot of fancy stick-work involved. Main thing is, he proved that it can be done without wobble, which means we can downgrade if some is seen.

We neglected to ask Hanno for confirmation, but are pretty sure that he deploys the dive brake flaps when coming "downhill" in the Rolling Eight, which would account for his ability to make the lower loop the same size as the upper one. Most pilots perform a "Snowman" and top off at anywhere from 75 to 85 degrees of angle from the line of vision. Perhaps we'll see more dive brakes in the future.

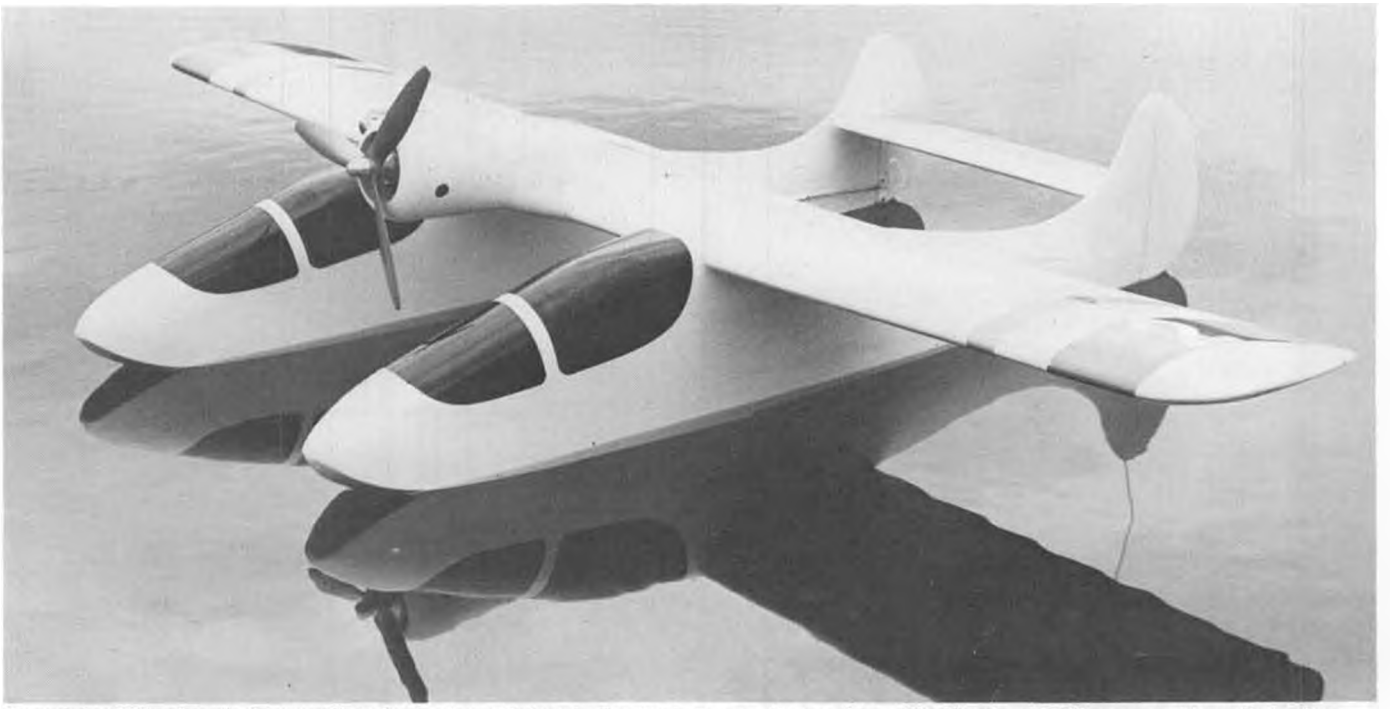
Now we have a question for our readers. Will both of you please give us your opinion on this. The rule book says that on a good takeoff, "The model should lift gently from the ground . . . " We agree that it should not jump off the ground, but we question the fact that the maneuver is not better described.

If you fly or watch full-size aircraft, we're sure you're aware that in the typical trike-geared takeoff, the aircraft first rotates on the main gear, dropping the tail and lifting the nose wheel off the ground. If we are correct in this assumption, then it would seem we should have it in the maneuver description for a trike-geared model.

And of course, this opens up another can of worms . . . Should there then be a proper description for the takeoff of a tail-dragger, which would be different than for a trike? Should some weaving be allowed at the beginning of the takeoff roll? Should the landing also be clarified . . . ie, which is better, a two-point or 3-point landing, or is either acceptable.

Whoops! What happened to the Las Vegas contest? We sorta got overselves side-tracked, but on the other hand, it's competition like this that can raise these types of questions.

Anyhow, plans are already under way for next year's (by the time you see this it will be *this* year's) contest. We'd suggest that if you've ever had a notion to take a vacation and/or visit Las Vegas, plan it around this contest. The Circus Circus is a great hotel for the family. The youngsters will go crazy



Interesting flying boat (catamaran?) design by Jerry Holcomb, Portland, Oregon. Powered by a Wankle, the ship flies reasonably well, but has some yaw instability. One thing sure . . . you can't call it a modified something-or-other!

for the continuous *free* circus acts and the myriad of coin games with sideshow atmosphere. Your wives will love the shops, the one-arm bandits, and the great food. And *you* will see the judges guide acted out in 3-dimension vision and sound by the best R/C pattern pilots in the world. It's truly the best show on earth!

* * *

Before getting entirely off of the maneuvers and rules discussion, we'd like to point again to our comments about proposals in this month's "Workbench" column. Under the current two-year rules program, proposals for new and revised rules for the 1978-79 period are due in by June 1, 1976.

The R/C special interest organizations, NMPRA, NSRCA, and NSS, should immediately, if they haven't already, get into action and solicit membership reaction for any proposals they have in mind for 1978-79. The R/C Contest Board recognizes the value of these organizations, and looks to them for solid advice on rules for the various R/C events. This advice, to be valid, must come not just from the top officers of these organizations, but from the membership as well. Confirmation of this should come through postal opinion polls, and in order to meet September 1st Initial Vote deadline, these should be started soon.

The area of most controversy in R/C is pylon racing, and within pylon racing, the most controversy is in Quarter Midgets . . . and within Quarter Midgets, the most controversy is over engines. We hope that those who have been the most critical of Board decisions on the matter, both verbally and in published print, will be the first ones to come up with solid, workable rules proposals to solve the problems.

The advent of Half-A pylon has brought up several questions in relation to AMA rules . . . and the following conclusions:

1. Half-A R/C pylon racing is not a provisional, supplemental, or official event category, and therefore cannot be covered by the insurance which accompanies a sanctioned contest.

2. To be flown in a sanctioned contest, the Half-A airplanes would have to meet Section 38 specifications for an "R/C Sport Pylon" aircraft, ie, minimum of 200 square inches, 15 percent chord thickness, and minimum of 300 square inches if a delta.

As for Number 1, it would be hypocritical to make Half-A pylon a national event with one set of official rules. The main purpose of national rules is to have consistency throughout the country, should a modeler wish to compete other

Continued on page 76

Slant mounting of HP 60 gives quizzical look to Chuck Blackburn's cleaned-up Ugly-Stik.

A little extra effort can take some of the "ugly" out of a "Stik," as proved by Chuck's version. Extend the sides, add some balsa blocks, and start carving. Then add a dorsal to the fin. Voila!

LONG RANGER PHOTOS BY LARRY BINGHAM

Larry Bingham, Salt Lake City, Utah, scratch-built this Bell "Long Ranger" from Kavan Jet Ranger components. The cabin top and fuselage were cut apart and separated by 3-3/8 inches. Resulting enlargement actually reduced weight because ballast was not needed for proper balance.

CHOPPER CHATTER

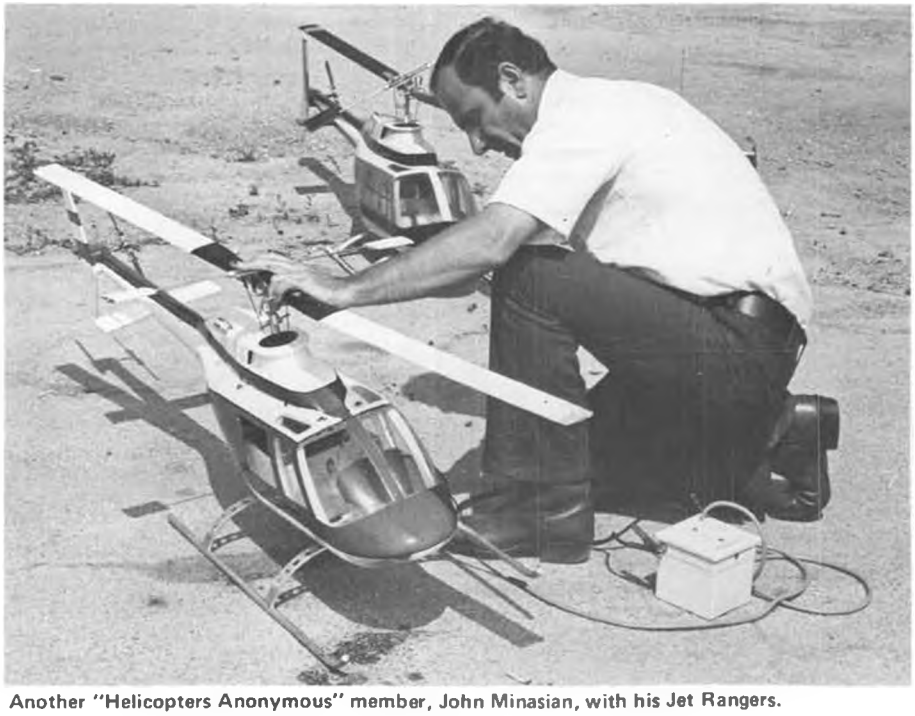
By JOHN TUCKER

HELICOPTERS ANONYMOUS

• One of the nicer modeling things that has happened in Southern California is the formation of a new and informal club which exists solely to promote the learning and safe operation of R/C helicopters. The roots of this club go back over two years, when a small group of model builders determined that they would conquer this new facet of R/C flying, the "Chopper." The group initially consisted of John Minasian, Nate Rambo, and Tino Villanueva . . . from Camerillo and Ventura. They met occasionally on streets and parking lots to learn to fly. Once in a while, Charlie Gilbert and I would host the group down here in Orange County, and we visited them once or twice . . . but the drive was too long (for so early in the morning) and we gradually drifted away.

Soon they were joined by John Gorham, an English/American modeler who had flown R/C in the 1950 British Nationals. At this stage, they christened themselves "Helicopters Anonymous," mainly because each one frequently needed help, by phone or in person, to overcome the very real and onerous obstacles of R/C chopper flying. By the middle of 1974, everyone in the group was a proficient flyer, then, for many personal reasons, Tino gave up

John Gorham, of "Helicopters Anonymous". with his Jet Ranger and Lark choppers.



Another "Helicopters Anonymous" member, John Minasian, with his Jet Rangers.

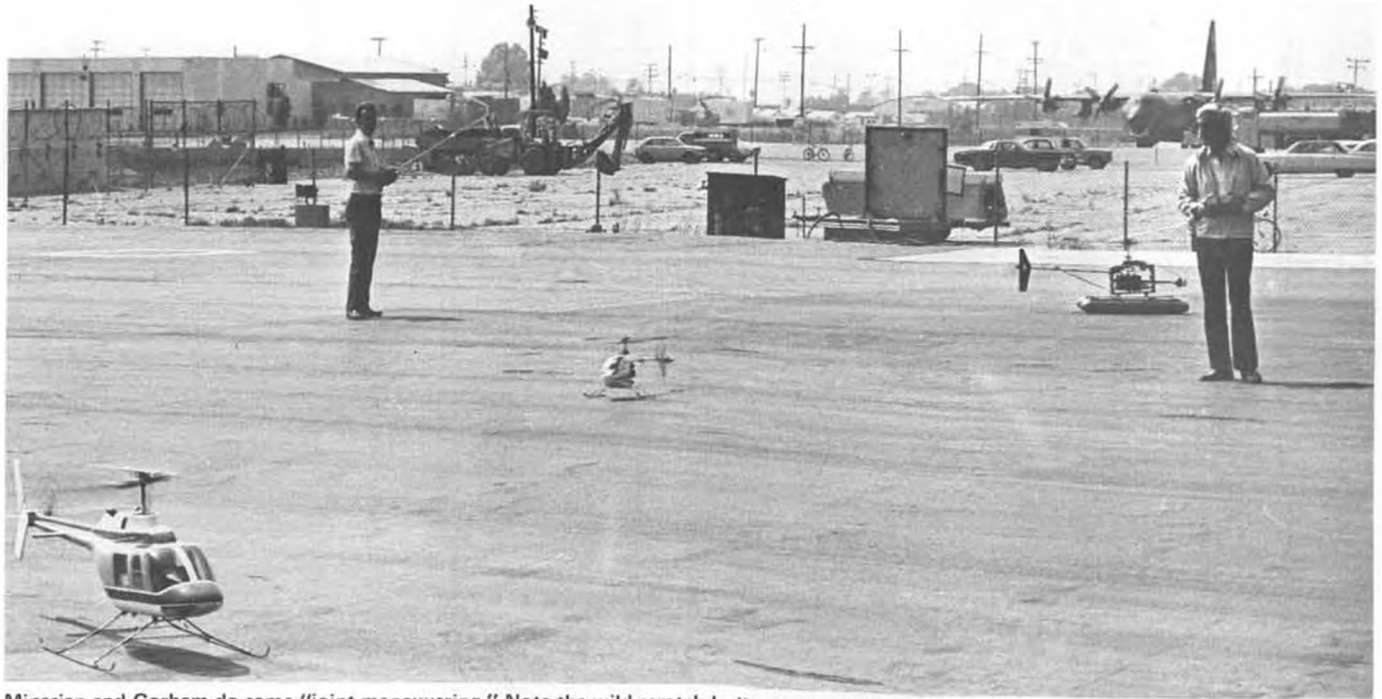
"Helicopters Anonymous" members gather at the Los Angeles City Fire Department Heliport, Van Nuys Airport. John Minasian, Bob Lace, Neil Pedinoff, Stan Norwood, Les Paetz, George Kruska, and John Gorham. Amazing how much that big one looks like a Kavan Jet Ranger!

R/C flying. He was, at that time, probably their most precise flyer, and could make his Huey Cobra fly a traffic pattern that looked like the real thing! The remaining three all entered the Model Builder sponsored 1974 West Coast Helicopter Championships, held at Oxnard Air Force Base, and won 1st, 3rd, and 4th places in the Expert class.

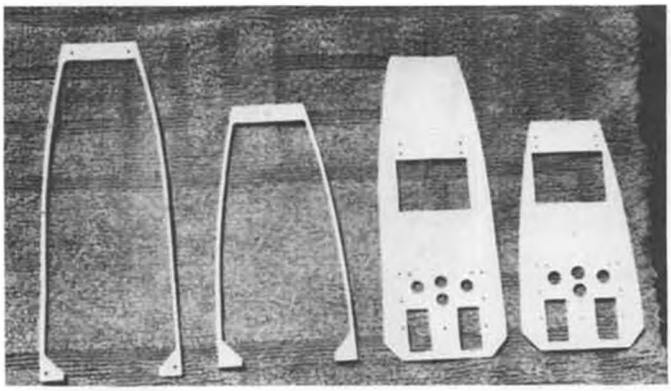
Very shortly after the championships, Nate Rambo discontinued flying choppers (we hope temporarily, Nate?), and this left the two Johns. Both continued flying and helped wherever possible to promote R/C helicopters. Many club meets and air shows hi-lighted the two Johns' flying exhibitions. John Gorham started flying at the Sepulveda Basin every Saturday morning, just to prove to the fixed-wing boys that helicopters could be flown in harmony with the other "winged-creatures." Soon the word spread that beginners could be helped if they turned up on Saturday mornings, and the number of would-be chopper pilots started to increase at an alarming rate. By mutual need, the group decided to commence informal but regular meetings, and to make a firm effort to accelerate the learning process.

One of the prospective R/C flyers was Les Paetz, a Los Angeles Fire Department helicopter pilot, who arranged the first series of meetings at the LAFD Heliport at Van Nuys Airport. Obviously, a great deal of care was taken to avoid interference with LAFD operations, however, a new flying site is being actively sought. Nevertheless, this cooperation by the full-sized chopper pilots has gone a long way to get the group organized.

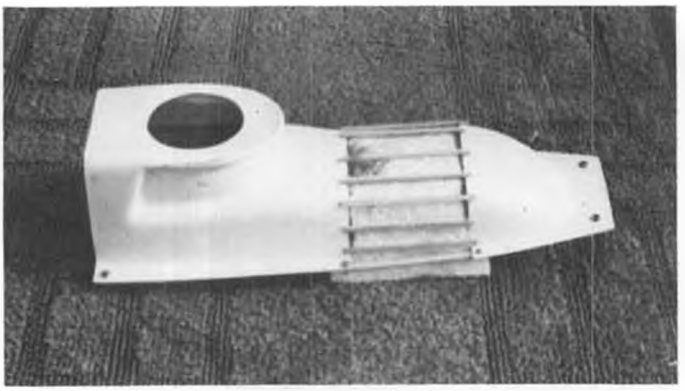
John Minasian is the other club expert, and has been building and flying R/C choppers since day one! John started flying R/C scale in 1965, and has done lots of different things, including oil drilling support, flying back and forth in choppers. His first "helio" was a Huey Cobra, and his latest, a Kavan Jet Ranger, which he zips around the



Minasian and Gorham do some "joint maneuvering." Note the wild scratch-built chopper behind Gorham. Flying area is well away from full size aircraft activity.



"Long Ranger" construction began with cutting of longer bulkheads from 1/8 inch plywood.



Cabin top is cut apart, fastened to board with 3-3/8". Balsa strips hold parts in position while glass cloth is added. Strips then cut off.

sky in a most spectacular manner.

The rest of the group now consists of a varied assortment of professions and degrees of experience in modeling, with perhaps only one element in common . . . a firm determination to master difficult tasks. To illustrate the varying backgrounds, here are a few of the members, and their models:

John Gorham, Aviation Consultant; Heli-Baby/Lark/Jet Ranger. John Minasian, Club Instructor; Jet Ranger. Les Paetz, Helicopter Pilot; Jet Ranger. Neil Pedinoff, Stereo Technician; Kalt/Jet Ranger. Bob Lace, Marketing Consultant: Shark/Jet Ranger. George Kruska, Program Manager; Jet Ranger. Alan Haskell, Engineer. Richard Hoff, Engineering Company; Shark. Charlie Gilbert, Design Engineer; Scratch-Built. Stan Norwood, Mechanical Engineer; Shark.

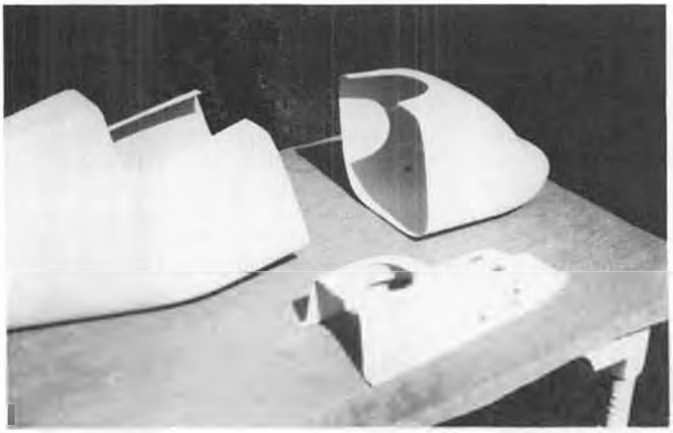
Various teaching techniques have been explored, with the buddy-box achieving limited but positive success. It is believed the buddy-box could be improved by handing the roll and pitch cyclic to the student, while the instructor retains collective (throttle) and yaw. Later, of course, the student could take both sticks. Another finding is that an initial inspection, trimming-out, and flight demonstration by an expert considerably accelerates the learning process. If nothing else, the sight of one's own creation hovering and flying with apparent ease, spurs most red-blooded modelers to do likewise.

The future of this group is as yet undecided; certainly its aims and objectives are worthy ones. The group approach, such as the one adopted by Helicopters Anonymous, may be the only safe and effective way, at least for now. Determination and a little help, practical and moral, is needed. Helicopters Anonymous, at present, offers just that.

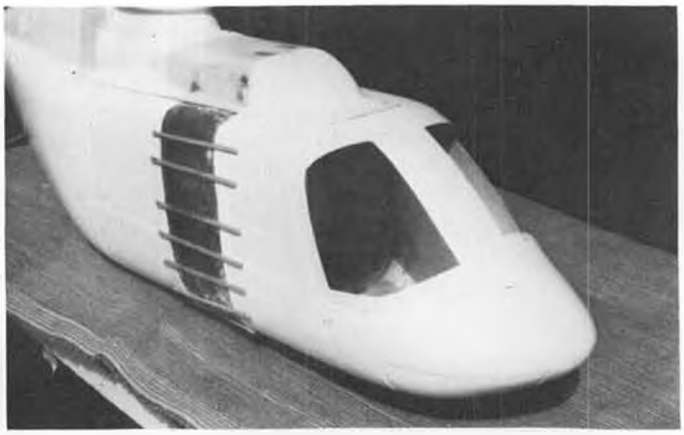
LONG RANGER

Last month, I promised to give you a peek at the construction technique that Larry Bingham, Salt Lake City,

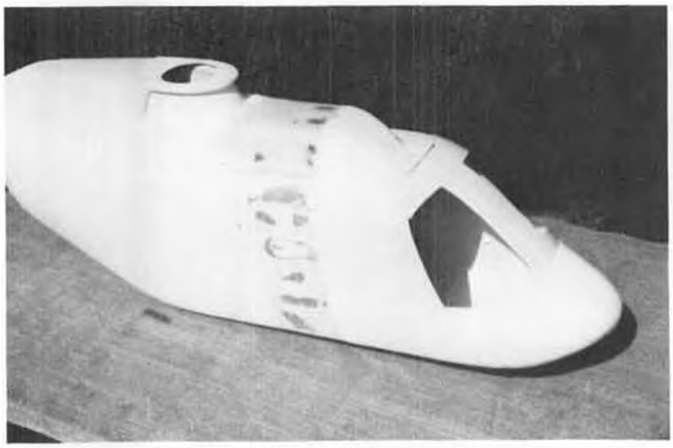
Continued on page 64



Fuselage has been cut apart, ready for "stretching." Cabin top, filled, glassed, and sanded, will be used as guide.



With cabin top holding parts in position, 1/8 square strips are temporarily glued to fuselage parts while glass cloth is added.

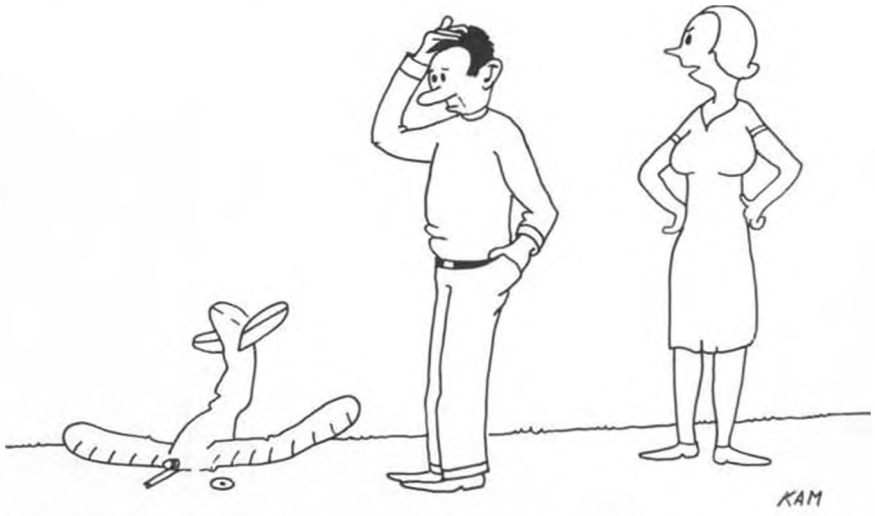


Fuselage is filled, glassed, and sanded, ready for final finish. A spare fuselage, if available, could be cut so that no filling would be required.

The completed "Long Ranger" modification. A nice piece of work, and good for a "double take" at any flying field.

FOR Ms ONLY

(Mrs.) CHAR ROHRING
4494 Tanglewood Trail
Saint Joseph, Mich. 49085



"If you think I'm going to re-cover it for you, forget it! I'm working on my Level IV."

● Have you ever experienced that big down-in-the-dumps feeling called a Blue Funk? I'm having one, and it's an awful way to start the year. My married son hasn't needed me since he got married. My college son asked me to please stay in the house when his ride comes by on Sunday afternoon. My mother-in-law told me I was getting awfully gray. My smart old Auntie said I looked a lot younger with my hair down than up (I wear it up!). My favorite saleslady at the cosmetic counter *gave* me a bottle of Wrinkle Vanish. And to finish me off, Bill put his relative power meter next to me and said I registered "zero."

You can see why my mind hasn't been working on any lovely New Year's resolutions. Why should I try to improve and be nicer? I'm trying to think of ways to make everybody else nicer . . . to me! I do have a big, broad, selfish plan for having fun this year. And I do know that a New Year's resolution is in the category of good advice; it interferes with plans. If you've made some hard and firm resolutions and are sticking by them, you might be cutting out some of your own fun. For example, if you've resolved never to stomp off mad to the movies when your husband's two hour Sunday flying turns into five hours, you might miss three or four good movies this year.

I have a girl friend who has resolved to learn to fly power this year. I could accept her resolution if the wording were slightly more flexible. She should leave herself an out by adding "might" or "should" or "could." This keeps you from feeling like a failure when you can't live up to the promise. Remember the old joke about all resolutions going in one year and out the other? I suppose some of your girls have made a commitment to learn to fly. If you have, then it's my pleasure to share some words of encouragement that have been sent to me by women in the sport.

MARGARET GILL of Illinois: President of WINGS and team member at the Lockport Soaring Nats. Margaret writes about her recent hour-plus thermal flight. "I started my landing approach, threw my hat out for a spot and then landed . . . (I need lots of practice on spot landings.) The watch read one hour and eight minutes, even though it seemed like a whole afternoon's work. Now all I have to do for Level IV of LSF is a Goal-and-Return and another one-hour thermal flight! Grins!! A couple of things I learned: 1. Have several people watch your plane at all times. They can usually see it after you start to go blind. 2. Once you're locked into a thermal, fly by trim alone if possible. 3. Use trim again to bring you down . . . otherwise you could easily tear the wings off your plane by a sudden movement of the stick. 4. Always be open to learning new techniques . . . even from your husband."

BARBARA HENON of California: LSF Vice-President and WINGS team member at the Lockport Soaring Nats. Barb says, ". . . For some reason this sport has not yet attracted the relative number of women that participate in other sports such as tennis, golf, skiing, etc. The reasons for this are difficult to understand. This sport is one that is, above all, esthetically pleasing. Anyone who has launched an R/C sailplane and had the thrill of watching it climb almost out of sight into the clouds would almost have to become "hooked" on this pastime. This is one thrill in the sport which always seems to be just a little different and doesn't lose its excitement. There are other attractions, too. The sport is quiet, usually relaxing, and offers the opportunity to be outdoors and to get a little exercise, as well as meet people."

BARBARA ROBINSON of Michigan: a WINGS member who flew the contests this year on crutches. She says, "... wish you could have been there on Sunday (Suds City Soar-In, Milwaukee, Wis., Aug. 2 and 3) to share in my joy. Taking my first place was quite a thrill. With that win, as of now, (Aug. 26) I have taken four wins this summer: a fourth, a third, a second, and now a first! Helen Olson, from Springfield, Ill. also flew at this contest (Suds City). She is Sec./Treas. of WINGS. The host club honored both of us women pilots with a lovely assortment of scented soaps in recognition and acceptance of the philosophy and goals of our WINGS club. This was most appreciated and the entire WINGS organization is honored by the open-armed acceptance of all women flyers."

LILA STAMM of Missouri: Vice-President of WINGS and team member at the Lockport Soaring Nats. "I became active as a competitor in R/C model soaring about three years ago after being involved in all forms of model aircraft meets for over ten years. I helped out whenever I could, while my husband participated. He has been a competitor for over 40 years. Modeling is a definite part of our family. In private life I have been employed for the last 16 years as a Civil Service secretary. I have a married daughter, and a son living at home. My husband is a Contest Director, and in the hundreds of miles we travel yearly, we promote women flying whenever we can. My husband and I support flying 100% both for women and men. I am a member of AMA, LSF, and NSS . . . I know that each and every one of you women could be flying if you gave yourself the chance. Remember though, don't quit the first time something bad happens. In time to come, you will be surprised how proud your husband will be of you. Flying gives you both something more to have in common."

Thanks for your comments, girls. I know your words will help to encourage some of us.

For the others of us who haven't resolved to learn to fly this year, here is something you might be interested in. I have this superb idea that would allow glider pilots' wives to enjoy the sport more by documenting areas of trials and tediums. Somehow, if we were rewarded concretely for our pa-

Continued on page 85

USAF MUSEUM PHOTO

AC 27-243 was originally the first O-1B, but became the first of 76 A-3 attack planes when the Air Corps decided to replace its aging DH-4's.

CURTISS A-3 FALCON PART ONE

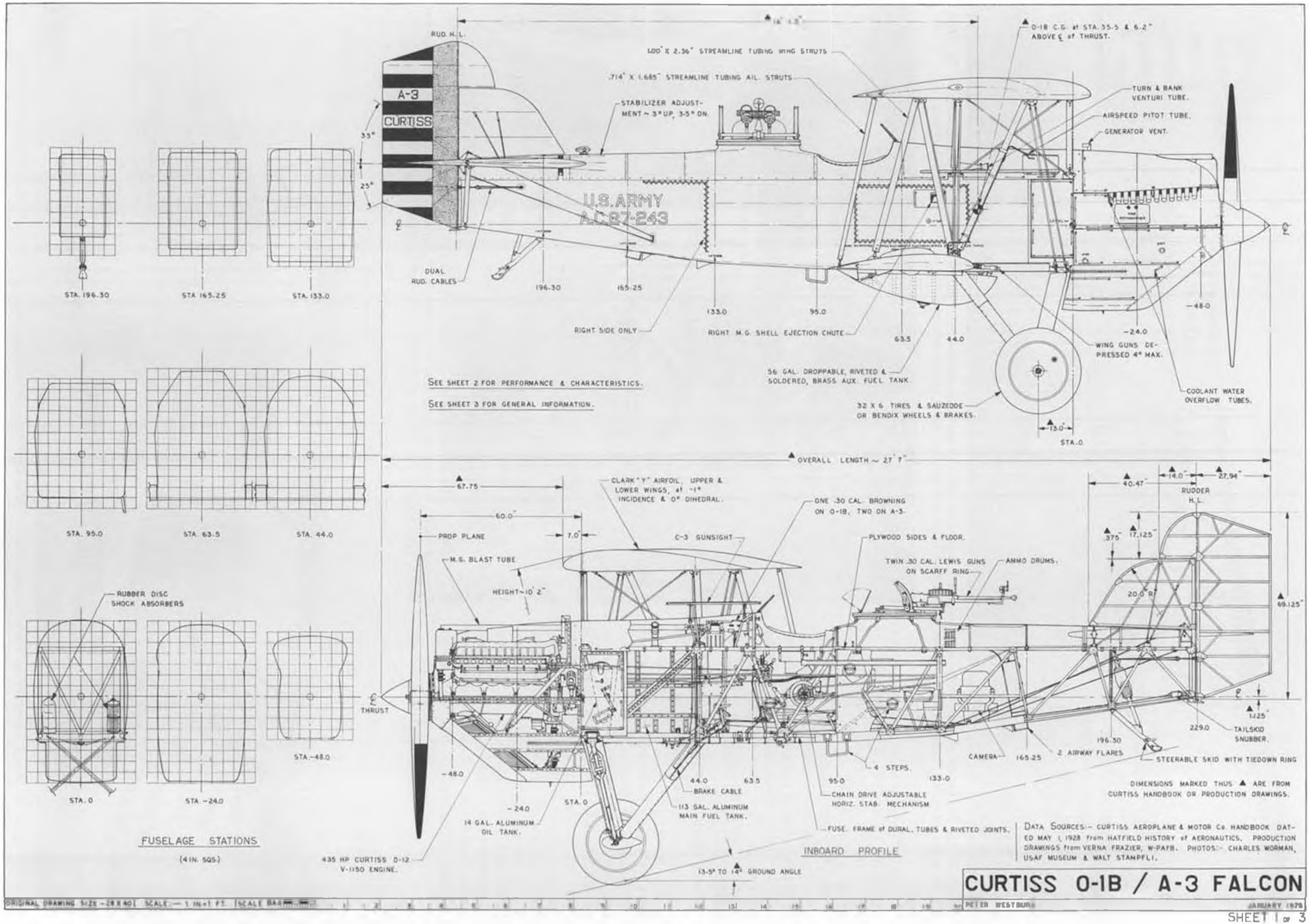
By PETER WESTBURG

• Ask any aeroplanist to name an observation aircraft of the Golden Age and without hesitation, he will say, "Curtiss Falcon." Such was the impact of the famous old swept wing bird on the memory of those who saw it live or in pictures.

The Falcon was the two-seat flying mate of the Curtiss Hawk, and it has been called a development of that well-known airplane. If anything, the Falcon came first by a few months at least. The XO-1 was contracted for in 1923, but lost out in a competition for observation aircraft to the Douglas XO-2, in 1924. A Curtiss fighter, the XPW-8A, with straight wings and a tunnel radiator under its D-12 engine in place of the wing skin radiators of its predecessor, competed in the same year against the Boeing XPW-9. The Curtiss was faster but not as maneuverable; the company was permitted to design a new set of wings for its entry and the rest is history. The new tapered wings enabled the fighter to win a contract for ten airplanes, and the famous Hawk P-1 was

USAF MUSEUM PHOTO

The A-3 was like the O-1B except for the extra fuselage gun for the pilot and two wing guns. Aircraft carried no camera or other observation equipment. Scarff ring is improved model for two Lewis guns. Scale modelers note bulges in metal rear deck covering.



NASM, SMITHSONIAN PHOTO

This O-1E was the fourth of an order for six. Insignia is that of the 99th Observation Squadron at Mitchell Field, Long Island, January 13, 1930. No. 55 is the squadron airplane number. Gun clip on deck is for a single Browning, which was mounted on the ancient Scarff ring.

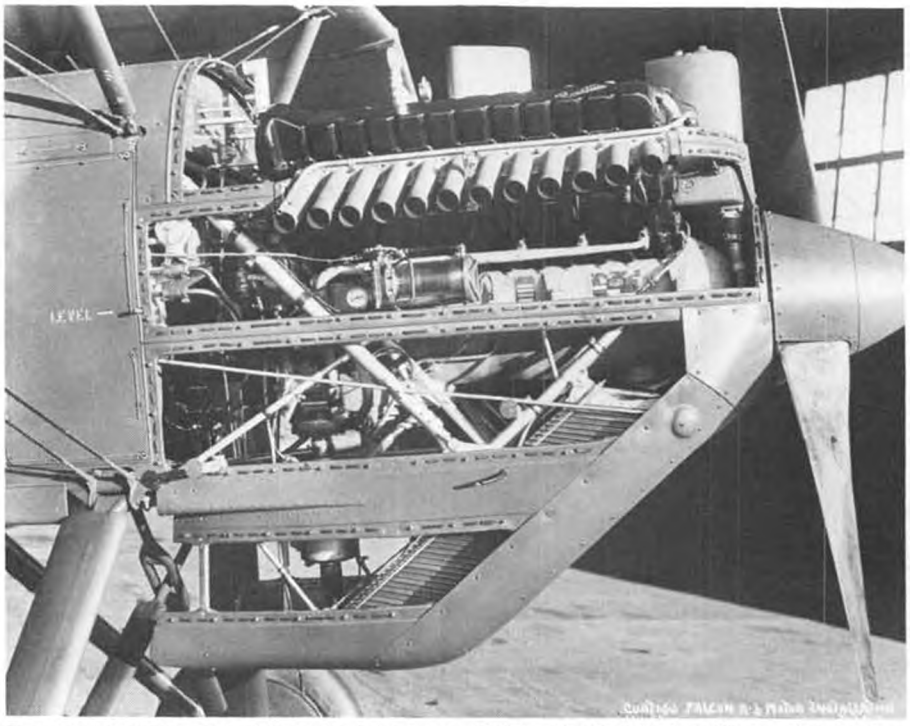
born.

The XPW-8A was not called a Hawk originally; later, Curtiss referred to it as the "straight-wing Hawk", but it was never a true Hawk.

In 1925, the Falcon won a competition for observation airplanes powered by the new Packard engine. Unfortunately, the 510 hp Packard did not come up to expectations and the first ten O-1 Falcons were powered by the D-12 engine of 435 hp.

Proof of the sound design of the Falcon is evident in the great number of different Army, Navy, civilian, and export models that were manufactured. It was successful because its geometry was right; it had good tail moment arms with plenty of rudder area. The swept wing allowed more G. G. variation, which made the airplane stable under a wide range of load conditions. It was so stable that on some versions, beginning with the O-1E and A-3B, the elevator area was increased to provide a quicker response. It also had excellent lateral control with ailerons on both upper and lower wings.

Concluded next month.

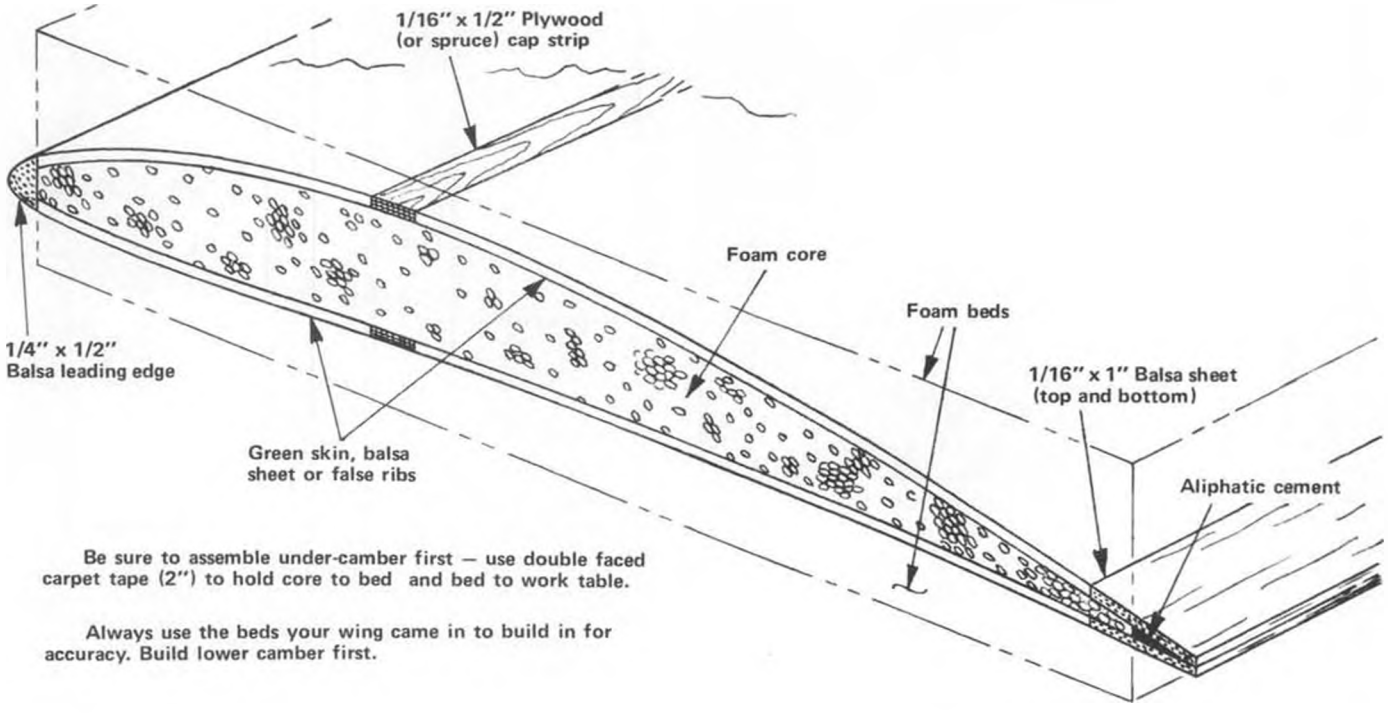


USAF MUSEUM PHOTO

Eat your heart out, scalers! Innards of the Falcon D-12 engine installation. This is what was behind the famous and well-known front end of the Curtiss Hawk P-1 and O-1.

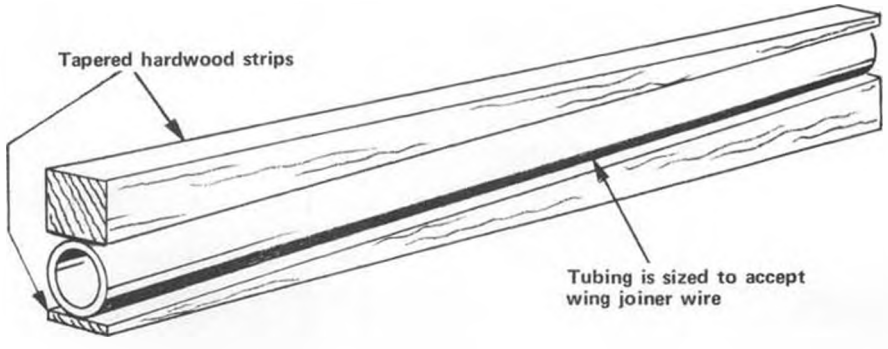
NICK KARSTENS PHOTO

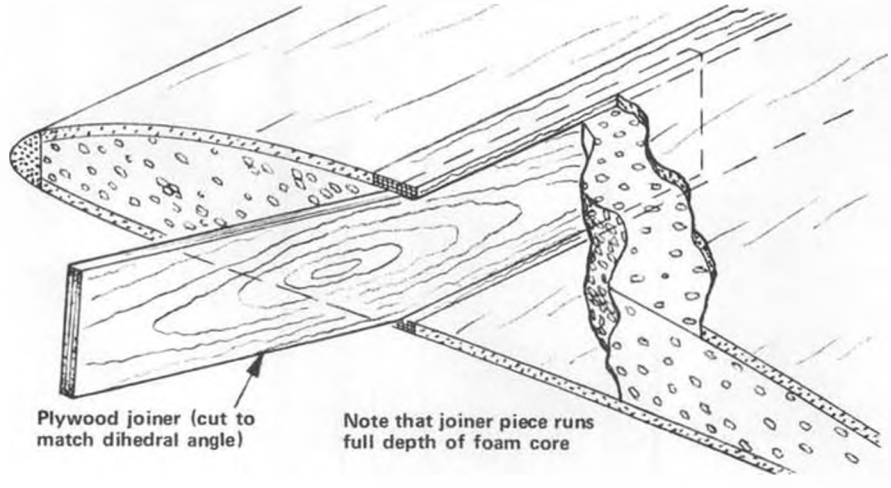
The 90th Attack Squadron was based for a short time at March Field, California. Overhanging elevators of the A-3B and O-1E are clearly visible. Note convenient radio antenna mast, R/C scale modelers.



R/C SOARING

By TAYLOR COLLINS



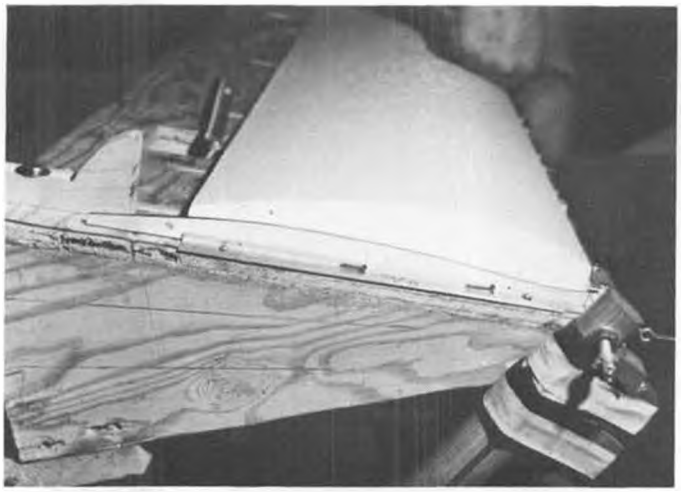


FAI TEAM SELECTION

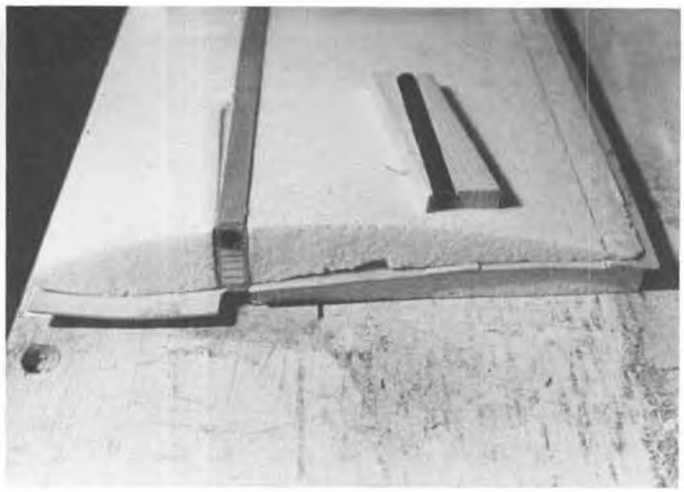
• The team selection method and contest procedures have been finalized for selecting a U.S. R/C soaring team for 1976. Tentatively, pending final approval by the CIAM meeting in early December, the Championships will be held in South Africa.

The team selection process, which is being done under the supervision of the National Soaring Society, will begin with quarter-final contests. These can be held by any interested club. The only requirements are that the contest be held during the month of May, that the contest be sanctioned as a team selection contest by AMA, and that all contestants have 1976 FAI stamps. Entry fee for quarter-finals will be $25.00. This stiff entry fee will be used to generate travel funds to send the selected team to the Championships. Round trip air fare to South Africa is nearly $1,300! Any contestant who finishes with at least 80% of the winner's score is eligible to compete in the semi-final contest of his choice.

Semi-finals will be held in Spokane, Mid-California, Fort Worth, Fort Wayne, Tullahoma (Tenn.), and Elmira, N.Y. There will be no entry fee for the semi-finals, as all contestants will have already paid their $25 at the quarter-finals. AMA will provide the contest directors of the six semi-finals with a list of eligible contestants. If your name is not on the list . . . you won't be allowed to compete. The top six contestants from each of the semi-finals will go on the final team selection contest. Tentative site for the team selection is Albuquerque, N.M., chosen because of its similar altitude (5200 feet) to the South African Championship site.



Hi Johnson's automatic foam cutter at work. Instructions for making templates are available from Hi.



Core resting in form from which it was cut. Bottom sheeting already applied, also spars, center tube, and its tapered support blocks.

If your club is interested in holding a quarter-finals contest, contact Jim Simpson (NSS Vice-President and Team Selection coordinator) for more information. Jim's address is 1437 Norwood St., Hurst, Texas 76053.

FOAM WING CONSTRUCTION (Cont.)

Last month we covered the basics of foam wing construction . . . the why's and wherefore's of what we were after and basically how to get there. In this article we will go into specifics on one method of construction a foam sailplane wing.

The first requirement for building foam wings is to have a set of foam cores. These are available from several different firms around the country. (Since Hi Johnson was kind enough to provide us with much of the technical expertise for this article, we'll give him a free plug . . . Hi Johnson Model Products, 11015 Glenoaks Blvd., Pacoima, Calif. 91331. Hi has one of the most unique foam cutting machines in the country. It is capable of doing all sorts of precise, smooth, accurate cutting. Hi can cut tapered wings, washin, washout, you name it. Since it is automatic, all of the human errors are eliminated. Write to him, and he'll send you a spec sheet on how to make your own templates for whatever wing you want. Then send him the templates and the dimensions for your finished wing and he'll do the rest. End of free plug!). Many modelers have their own foam cutting equipment and should be glad to cut a set of foam cores for you . . . or you can cut your own.

With your smooth, even, precisely cut cores in your hot little mitts . . . sit down and think! Whatever shape the wing is when it is sheeted is how it is going to stay! Foam wings do little or no warping, so you can't build them crooked and then expect to steam the warps out later. It just ain't gonna work! The best way to build a straight set of foam wings is to use as a jig the outer portions of the foam block from which the cores were cut.

Fasten the top section of the foam block or "bed" down on your work bench with 2 inch wide, double-stick carpet tape. This material is available from building supply stores for about $2.50 for a 25 yard roll. One strip at the leading edge and one strip at the trailing edge, each running the full span, should be adequate. All that is necessary is to keep the bed from scooting around the table top while you are working on the wing.

Now, using several small pieces of tape (two inch long strips are fine), tape the wing, bottom side up into the bed. Here again, the idea is just to keep things from moving around the shop while you're working.

At this point I should mention a few do's and don'ts about working with styrofoam. Do . . . use epoxies, white glues, aliphatic resin glues. Don't . . . use acetones, M.E.K., model cement (Ambroid, Testors, Aero Gloss, Sig Bond, etc.) cyanoacrylates (Hot Stuff, Zap, Super Glue, Flash, Zip Grip, etc.). If you are in doubt, test a small amount of the glue on a scrap piece of foam. If it melts a hole in the foam . . . Don't

Sheeting and core sprayed with glue simultaneously. Newspaper used for masking.

Sheeting first aligned and pressed into place at center, then work outward. Skin curl is normal.

Sheeting is rubbed down vigorously with a soft cloth.

Sanding leading edge with a large block assures straight surface for final leading edge strip.

Vee-cut blocks support wing while leading edge is glued and taped in place.

use it! We're making wings here, not puddles!

Mark the position for the 1/2 inch wide spar. It is customary to put the spars on the top and bottom at the high point of the wing. The more thickness that you can put between the spars, the stronger the wing will be. Take one of your 1/2 inch plywood spars and coat one side of it liberally with whatever glue you decide to use. On the prototype shown in the photos, we used Wilhold Aliphatic resin. Put the spar in place along the guide lines you drew on the foam core. Use masking tape to hold the spar down securely. When working with foam you can return the straight pins to your wife's sewing basket. For holding things onto foam, pins are useless as . . . well, they don't work too well!

Now that the bottom spars are in place, go watch T.V. for a while. You don't want to disturb them until they are dry. Most of the strength of the wing is achieved in this step. Don't goof it up by being impatient.

When the spar has dried, you are ready to begin applying the sheeting. The same basic technique is used, regardless of the material used. Sheet the leading edge first. Tape newspapers to the spar to cover the wing aft of the spar. This will mask off the areas that are not to be glued at this stage. Cut the sheeting material to be used to shape, allowing a little overhang at the leading edge and ends of the wing panel. Mark the approximate center on sheeting and spar. Then turn the sheet section over (upside down) and pin it in place, even with the edge of the spar. It should be in position as though it were hinged straight back, away from it's final position. With the sheeting in this position, you can spray the leading edge sheeting and the bare foam core at one time.

There are a couple of dozen different types of contact glues on the market which will work with foam. But, since we are very concerned with weight on a glider wing, some are more suitable than others. By spraying the glue, a great deal of weight is saved. Nothing is gained by filling the pores of the foam with glue . . . only weight. Several of the liquid glues can be thinned and sprayed with a spray gun, but this is more trouble than it is worth for no more area than we are concerned with. So this narrows the field down to spray-can adhesives. We have found two that are excellent for the purpose. One is Wilhold's Spray Adhesive 54. The other is 3M 77 Spray Adhesive. Whichever brand you decide to use, make sure that you shake the can vigorously before spraying. It is important that the contents be thoroughly mixed.

Hold the can about six inches away from the foam and sheeting, and apply a light, but even coat. You should be able to see the surfaces getting wet with glue, but not soaked. If the room temperature is 75° or above, wait one minute for the adhesive to set up. If

Continued on page 73

Excess glue wiped from sheeting with damp rag. Makes final sanding a lot easier!

Cross section prior to leading edge shaping. Plywood cap covers center after sanding flush.

STRICTLY SAIL

By ROD CARR

• I have been getting an increasing number of inquiries from skippers who are interested in building boats from plans. At the present time, the only source I know of for such an item is through the English Model Boating magazine. Of course, one is then faced with building an English design. Since I'm a 100% "Buy or Build American" supporter, I feel that there is certainly a market here in the US for new formula class designs. And we have the folks to design them.

Routinely, the fate of a new design includes being raced to a good competition record by the builder or designer, and then immediately being put into production in fiberglass. The American way in operation, I guess. This produced many good boats, such as the Warrior, Bingo, Yankee, Soling, LJ50, and so on. It requires the builder to work from an already completed hull, which nowadays represents a considerable investment. What we need are designers who are allergic to polyester resin, and who are not interested in developing a cottage industry.

So, consider this a call for communication with budding naval architects. I will have the means of publication worked out by the time this column appears in print. But don't get into it thinking that it will be a moneymaking proposition. It will mostly be an ego trip when you see the product of your drawing board published and then built and sailed by modelers across the country.

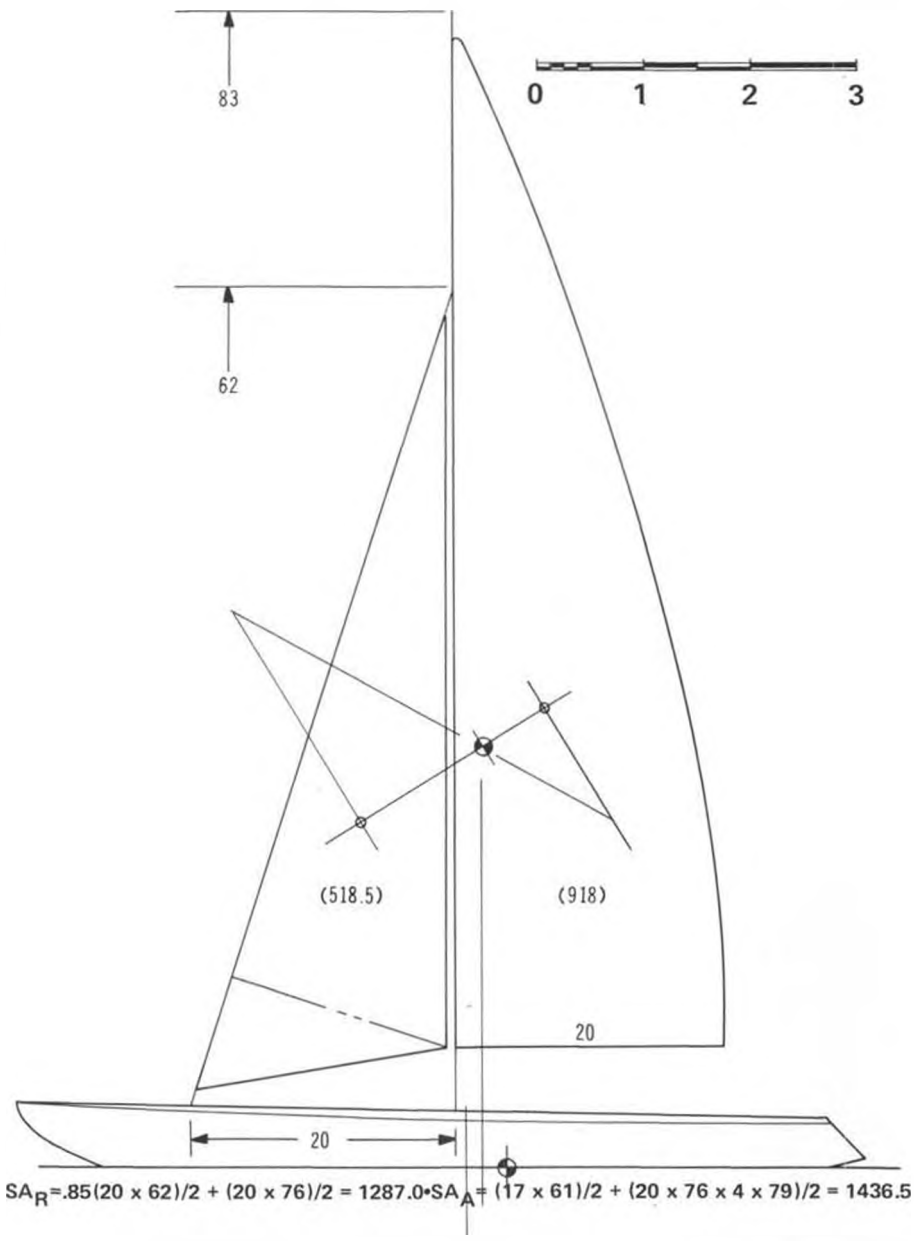
A new design should have been built as a prototype and sailed in comparison with other boats of the class. A few photos would be a welcome addition, as well as the designer's comments as to things that he would change in the next generation of the boat. Hints on construction and materials are helpful to beginners. What we are doing here is providing the basics necessary to help skippers enjoy the building as well as the sailing.

To start the ball rolling, and to break the majority of the ground rules that I just laid down, I have included a new design for the A-class by a predecessor in these pages, Ben Hogensen. The design was done for Rod Adams, of Tasmania, Australia, and I have seen a couple of photos of the fiberglass hull that he has pulled, but no word on sailing characteristics. The size of MINI-MAXI is convenient, being only slightly longer than an East Coast 12-Meter, with a 14 inch beam. Displacement of 40 pounds puts it at the lighter end of the scale for this class, and the designed 54 inch LWL produces a 1400 plus square inch sail plan carried on an 83 inch mast. It calls for 32 of its total 40 pounds to be in fin-keel ballast for a ballast/displacement ratio of 80%, probably a necessity for balancing that tall rig.

The canoe body has a shape reminiscent of the Santa Barbara, with added free-board and tumblehome to the sheer. When heeled, the shape should add LWL length rapidly, increasing potential hull speed.

The A-Class in AMYA has a long way to go. I have yet to get a report from the class secretary on the 1975 ACCR, but rumors have it that AMYA skippers left much to be desired when the final tallies were in. It appears to this writer that there is a place here where skippers from other classes might sidle in and take advantage of their skippering skill to place well in A-events. The MINI-MAXI looks to me as good a place as any to start. It seems to be a conservative approach to model yacht design that has not carried any aspect to a dangerous extreme, and has taken cognizance of the trends in other classes to produce an all-round performer Technical questions should be routed through the designer, Ben Hogensen, Box 218, Greenbelt, Maryland 20770.

I also have on the way the 50/800 design that Forest Godby sailed to 5th place at that class ACCR here in Washington, D.C.. This one has been sailed, and by a good skipper, who was able to evaluate its strengths and weaknesses. We should have an interesting addition to the model yachting literature with Forest's boat. He is recovering from hospitalization, and so I guess we have



$SA_R = .85(20 \times 62)/2 + (20 \times 76)/2 = 1287.0$ • $SA_A = (17 \times 61)/2 + (20 \times 76 \times 4 \times 79)/2 = 1436.5$

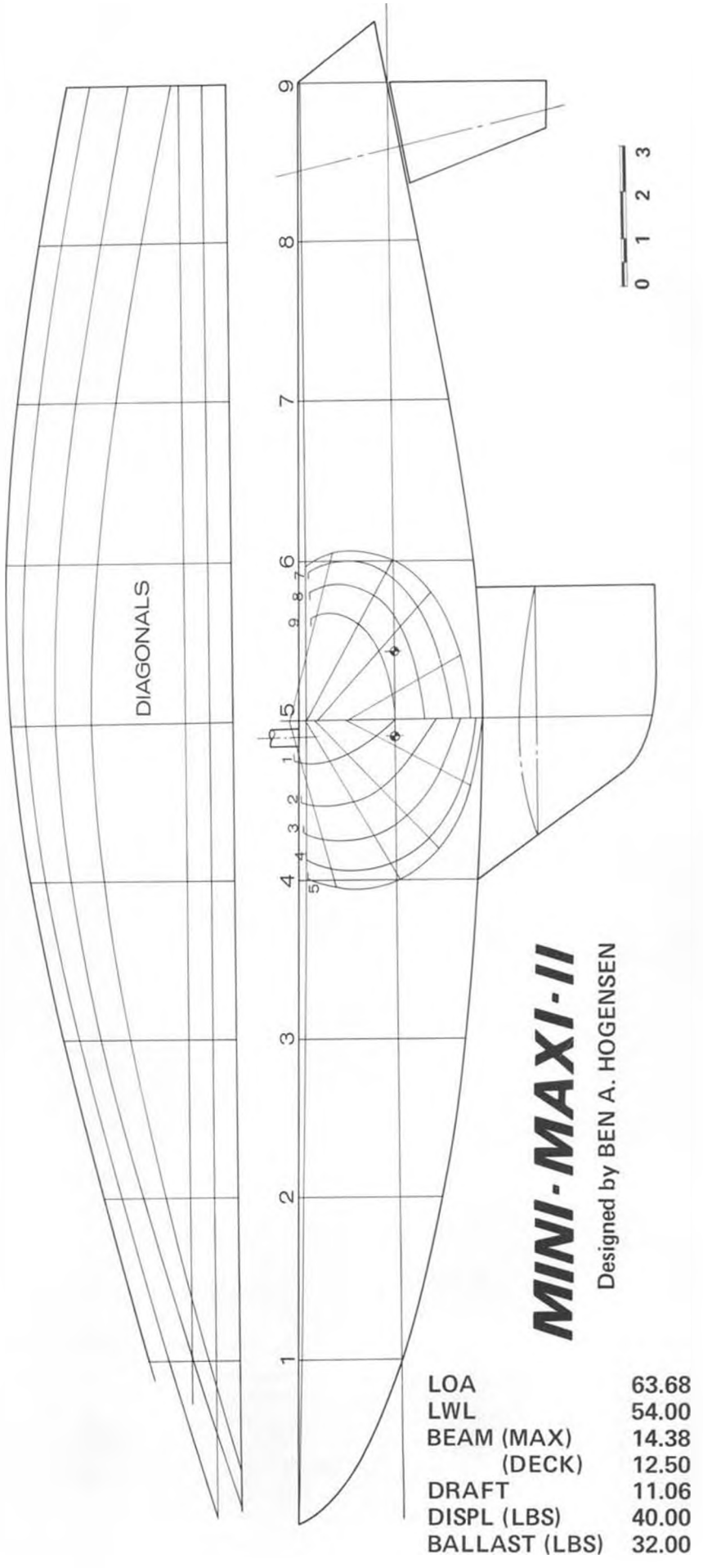
his doctor to thank for providing Forest with a period of enforced laziness, which he filled with the necessary drafting and drawing.

Changing the subject completely, let's talk for a moment about clubs and their activities. A most interesting letter came from Bud Grover, of Roadrunner Trophies, Clovis, New Mexico, reporting on a regatta with 13 boats and 21 skippers!! Needless to say, I slowed up when I read that. Turns out that the club encourages boatless skippers to enter a regatta and use the boat of a club member who agrees to crew for the newcomer. They have found that this is so successful in infecting novices with an itch for the sport that the growth they are experiencing is almost embarassing. Wonder why I never thought of that idea?! With a well tuned-up boat, and an A-1 skipper to help, one tyro came in second for the day and took home a nice trophy for his efforts! This could well be tried in every club.

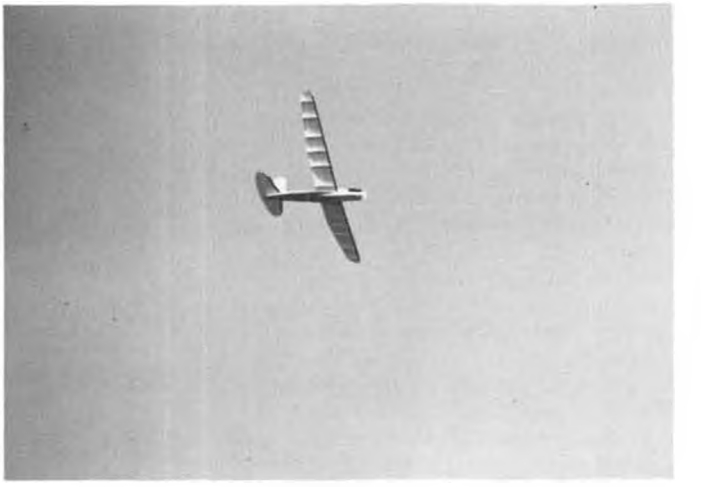
We are in a time of transition in our sport. In the beginning, each yachting center was shepherded by one or two fellows who donated themselves whole hog to get things going. Usually these individuals were somehow involved in supplying materials for the sport, often because there was just no other way to obtain them. As the sport has grown, these fellows have continued to carry the burden of keeping the club active and healthy. But now, the pressure of the business end has begun to overload them. Club members need to step in and shoulder the responsibility of maintaining club solidarity, interacting with nearby clubs and the AMYA, and above all, maintaining growth of the club by adding new members. The latter requires advertising, public relations, and so on.

A case in point is my own local club, in which the Commodore is not only an AMYA Director, but was also serving as a Class Secretary for AMYA. The individual fleet captains, for the different classes, ran the club series in a reasonable manner, but nothing was done to assist the club to get new members. Since we sail in an out-of-the-way place, our public exposure went to zero, and so did the influx of new members, except for those who stumbled upon us through the local hobby shop. No club brochure was available, no notice of our activities, either in modeling magazines or in local event columns of newspapers. No public displays at shopping centers. All these things should have been done, but it took the donation of members' time and that was not forthcoming. What's the answer? Surely not whips and chains, but more probably, a realization in the minds of the club members that natural attrition will eventually see the club die. Teenagers go away to college, little girl skippers discover boys and are whisked away in a cloud of dust, magazine

Continued on page 85



First slope launch of the test model Western Wind, at the popular La Paz Rd. site near Laguna Niguel, California. Taylor Collins flying.



Soaring overhead, the exposed ribs on the single-surface wing are exposed. Slope lift was very light on day of tests.

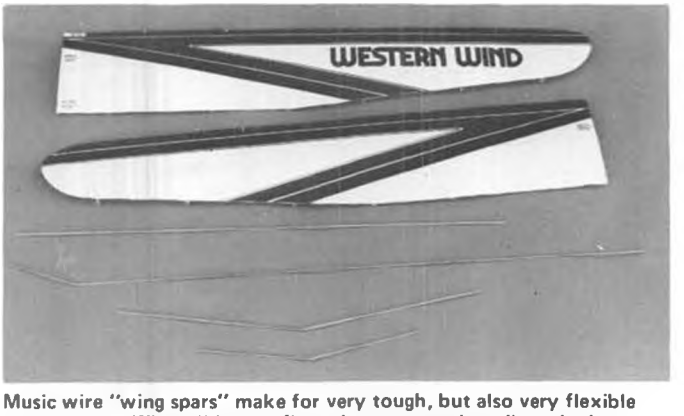
PRODUCT$ IN U$E

By TAYLOR COLLINS

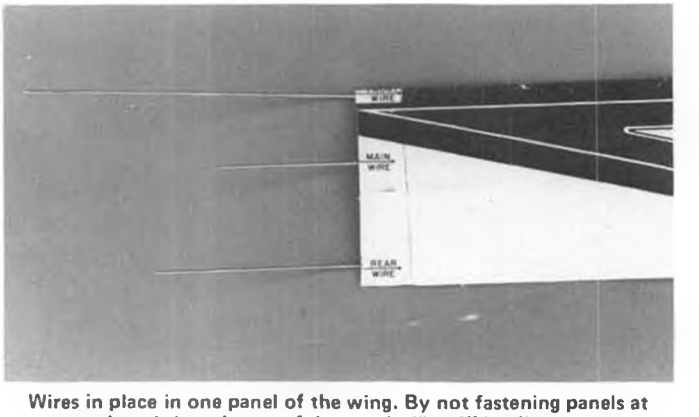
Jef's Friends' "Western Wind."

● What will $12.95 buy in the way of a radio controlled sailplane? Not much, unless it is a Western Wind. This prefabricated cardboard sailplane is by far the most inexpensive way to get into the air. There have been other sailplane kits produced which have sold for $12.95, or even less, but they have required considerably more effort to build, and many additional purchases in order to complete them. Your total cash outlay to complete the Western Wind, other than for the radio system, will not exceed $4.00.

We must admit that we didn't take the first sample kit received too seriously. We gave the kit to a friend and promptly forgot about it. Our interest and curiosity in the Western Wind was revived when we saw the advertisements from Jef's Friends challenging R/C Modeler Magazine's review of the kit. We called our friend and asked about his impressions of it. He was just starting into R/C slope soaring at the time, and told us that he had trouble with the plane 'porpoising'. He had removed his Kraft 'brick' and given the glider to some young boys who were watching the planes at the slope. They put a rock in the nose of the plane and were successfully free flighting the glider off the cliff! Our friend has since gained enough experience at slope soaring to realize that his problem with the Western Wind was the result of its being tail heavy. We don't know whether the boys knew their aerodynamics, or were just lucky.

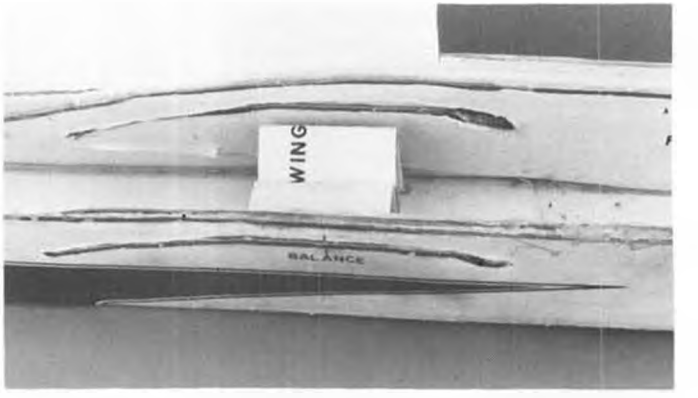


Music wire "wing spars" make for very tough, but also very flexible construction. Wires slide into flutes in corrugated cardboard wing.



Wires in place in one panel of the wing. By not fastening panels at center, there is less chance of damage in "hard" landings.

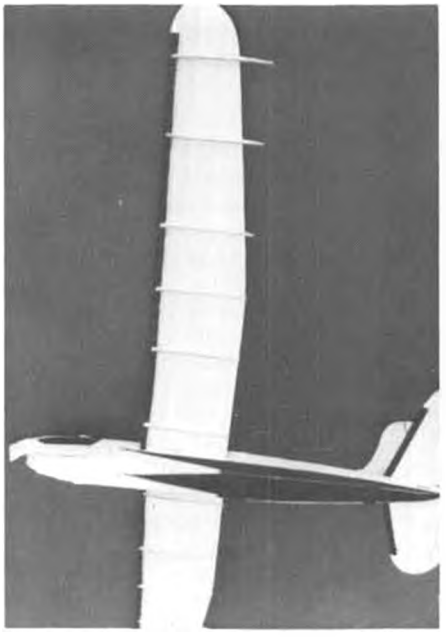
Fuselage is literally a cardboard box! Nyrods would have been lighter, but dowels helped balance heavier radio. Cut hatch in top to suit.



Slots in fuselage allow wing to be slipped into place, also allows wing to shift during a rough landing.

Publicity photo from Western Wind manufacturer, Jef's Friends, shows the flat folded cardboard package which is actually the airplane itself. Extra fold protects parts from postal damage.

Leading edge of wing has doubler, which is folded over and glued and/or stapled.



Wing airfoil is series of spanwise creases. Tip ribs are trimmed after gluing in place.

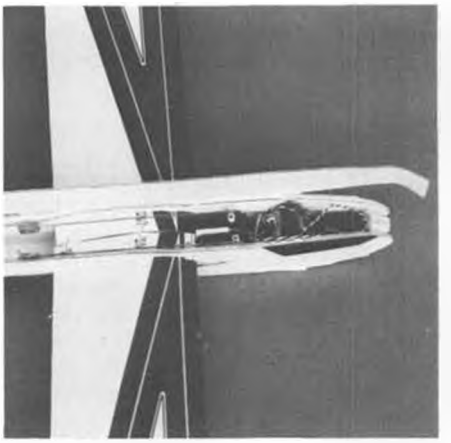
Tail surfaces are single flat sheets. Hinges are back-to-back tape. Hi Johnson horns.

Since that time, we have found that the Western Wind is a simple, easy-to-build aircraft. It is not pretty to look at. Its Jedelsky style cardboard wing (formed over cardboard ribs) is esthetically crude. Its top surface is turbulated by the crease lines in the cardboard skin. The ribs which hold the airfoil shape hand out in the breeze on the bottom. Three pieces of 3/32 inch form the wing spars. These wires are slid into the "flutes" of the corrugated cardboard.

The Western Wind is not at all high performance. It was designed primarily for slope flying. In constant slope lift it will fly fine, and on a hot day, it would probably even stay up in thermal lift. The control surfaces are adequate for driving back and forth along the slope, and the ship will even do a loop after diving to gain speed (you oughtta see the dihedral then! wcn). But the primary purpose of the Western Wind is to serve as a flight trainer.

We feel that there may be an advantage to the "quick and dirty" approach of the Western Wind. Since the ship is not exactly a Concours winner and is very inexpensive, a beginner can throw it off the top of the cliff without being

With some back pressure on the stick, wings take on extra dihedral. Alarming, but safe.

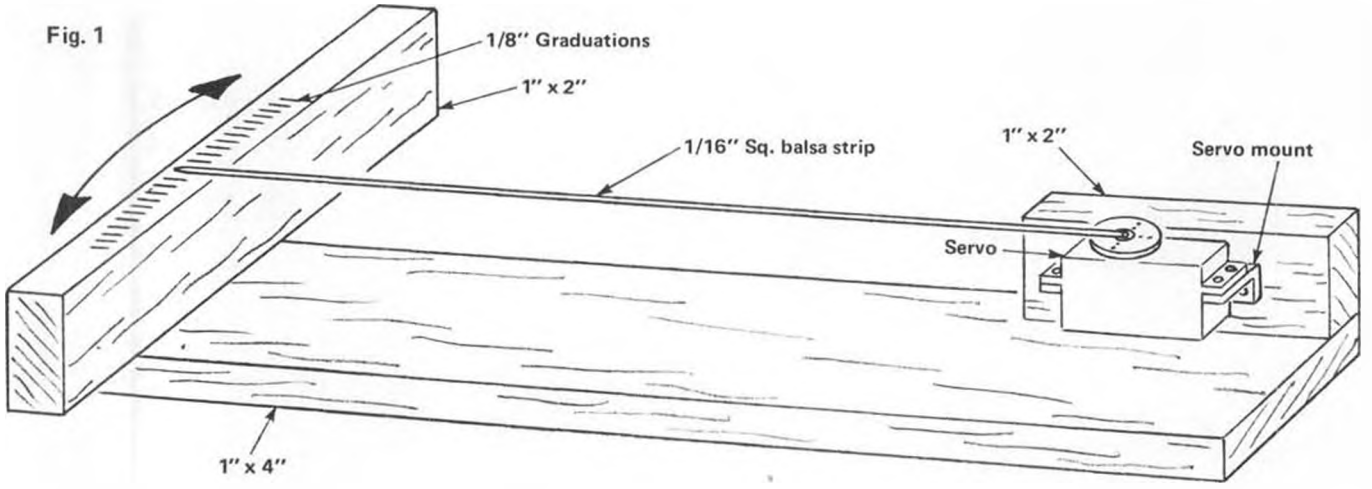


Large servos of MRC radio make space cramped. Pushrods run over top of wing. Servos are double-stick foam taped in place.

terrified at the thought of crashing a creation that took six months to build. As a result, he or she can concentrate on the most important part of learning to fly . . . FLYING! Since slope lift is generally much more dependable than thermal lift, the only limitation on the amount of stick time a beginner can get is his own ability to avoid crashing. With a little assistance from an experi-

Continued on page 69

Oops! This shows why wings should not be fastened at center, to absorb sudden stops.



TROUBLE-FREE R/C

By DAN DOUGHERTY . . . Continuous, trouble-free R/C flying is mostly a matter of systematic maintenance. A few minutes at the workbench could save hours of repair . . . or replacement.

• "If I lose that old piece of trash I haven't lost a thing."

When was the last time you heard a comment like that? It was probably when someone pointed out something wrong with someone else's airplane that might cause them to crash. We have all said something like that at one time or another, but is it really true? Let's stop and analyze it for a second . . . no matter how old and ragged an airplane is, you ARE flying it. If something breaks or comes loose and you crash, can you really afford the repair bill? Even if the radio is not hurt, you have lost an airplane. Setting everything else aside, you have also lost the time it is going to take you to build a replacement. This is especially true if you're a competition flyer. Most of us do our building during the winter and go to contests during the summer. Losing an airplane through a failure that could have been caught on the ground is especially bitter in the middle of the competition season. Even if a back-up airplane is already available, there is certain to be a loss of familiarity. The difference between the really successful competition flyer, whether it be pattern, soaring, helicopter, or racing, is a question of familiarity with equipment. Every airplane, no matter how much like your last one, flies a little different. The secret of perfect execution of any maneuver, whether it be a racing turn or a pattern aerobatic maneuver, is timing. The split second timing that tells the winner from the almost winner, is that "second nature" type of timing that is developed during hours of practice with the same airplane. How much better it will be if we can save our airplanes on the ground!

The beginning flyer has another problem, that preventative maintenance can help. He too, develops a familiarity for his craft, but his most important problem is staying in the air. The beginner's hard won, new skills can be forgotten during days or even weeks of rebuilding from an unnecessary crash. Preventative maintenance doesn't require any flying skill either. The few checks I am going to suggest here can mostly be done at the shop, plus a few quick checks at the field.

"I'm no tinkerer, I'm a flyer!", you may say. The fellows you see tinkering at the field are the fellows whose preventative maintenance came due at the wrong time. The guy who cranks and flies did all of his adjusting and checking at nome, where every screw or tool or part was handy. Ron Chidgey, who was the National Champion two years in a row, flew the same airplane, the *very* same airplane, both years. It was also his practice airplane. No one has luck like that. It is determined effort that keeps an airplane flying for two years.

Let us begin with the thing we probably know the least about, the radio. No matter what brand is your preference, there are three maintenance items common to all radio equipment. These are: nickel cadmium batteries, wires, and servo pots.

NICKEL CADMIUMS

Though experts agree on few things about nickel cadmium batteries, we do know that they have a "discharge memory". If we charge and discharge repeatedly without using most of the charge available, the nickel cadmium will develop a "short memory". This means that the batteries will deliver full power for a shorter time than they are capable of. To extend the memory of these cells, we need to place a load on the cells and run them down to about half of the rated current delivery. For example, a 550 ma. pack should be discharged with the radio manufacturer's load type current meter to approximately 300 ma. The battery pack is then charged again and discharged. Four or five chargings and dischargings should extend the time that the battery will deliver full current. Time each cycle and stop when the length of time does not increase. Transmitter batteries may be discharged similarly by loading the batteries through the charging receptacle or simply by leaving the transmitter on. Note: Some output transistors may be ruined by leaving the transmitter on without the antenna connected. Another method is to use the Super-Cycle. We will mention battery strength later under Pre Flighting Your Airplane.

WIRING

The second item we can all check without being electronic experts, is the wiring. Periodically, check all soldered connections. Most of the type that are soldered can be exposed by gently slipping back the tubing over the connections. Plugs that are of the molded and/or crimped type cannot be checked as easily, but the wiring can be checked for very sharp bends. These may be places where the copper conductor is broken, but the insulation is still intact. Caution: Pulling and tugging may break sound connections, just look very carefully.

SERVOS

The third thing that we can do ourselves is to maintain the moving parts of

Continued on page 78

Art Hemler and his R/C Comet Clipper Mark II. Art sent the picture just to prove that not every Clipper engine goes uncowled!

PLUG SPARKS

By JOHN POND

• Howdja like to go to an old timer radio assist contest just for .020 Replica models? Although the idea of putting radio control in .020 Replica Old Timers is nothing new, the idea of an exclusive contest is. Trust that up-and-coming, active SAM 21 Chapter to start this event.

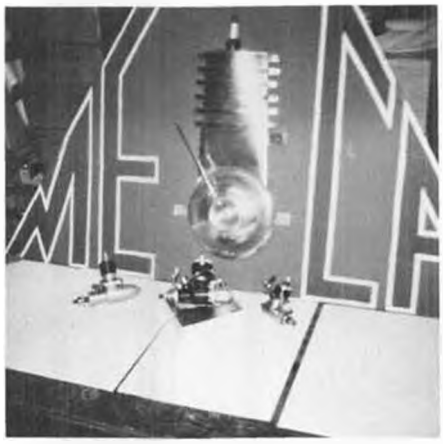
John the Pond with his .020 R/C Replica Record Hound. Morgan Hill flying site.

Before all credit is given away, Jack Jella, proprietor of Air Trails, Inc. in Salinas, is to be commended highly for suggesting the idea and even better yet, sponsoring the meet with three nice trophies. Not content with that, Jack talked to Paul Runge, of Ace R/C, and before you could say Paul Runge, merchandise prizes to fifth were offered by this great guy. With incentives like that, no wonder a good time was had by all.

All week it had rained and wouldn't the luck be that Sunday was excellent, with just a bare trace of wind, featuring big, fleecy cumulus clouds full of "hot" thermals. The Hill Country area, as kindly donated by Irv Perch, owner, was beautifully mown and clean. Almost like going to a picnic!

Flying got started in a hurry, shortly after nine, with Pond posting the first "max" of four minutes. Once the ice had been broken on a "max" flight, the others followed suit. The winner, Bob Lee, employing a Miss America, posted four straight four-minute flights. The runnerup, Don Bekins, was only six seconds behind! To say the least, Jack Jella was greatly pleased with the turnout and flights.

"Buffalo Roy" Edwards really earned his nickname when he let his .020 Clipper get too far down wind. Upon discovering it was in the buffalo compound, Roy risked entering to retrieve the model, which was setting a mere 100 feet away from the barb wire fence. Unfortunately for Roy a mother buffalo, feeling that Roy was after her offspring, promptly charged Roy. Our hero was a real matador. He jumped back as the horns came up and gave the mama buffalo a resounding smack on the nose with his fist. Ray was bruised on one arm and cut superficially on the other, but that sock on the nose did the trick. Whenever mama got ready to charge again, Roy simply raised his arm in a threatening manner. Ole! From



The MECA emblem was prominently displayed at the Sacramento Collectogether.

Hank Hilscher, Dick Dwyer, and Bill Daniels (l to r) discuss future MECA activities . . . and quite possibly the relative merits of a few engines.

now on, you'll know why he is called "Buffalo Roy"!

At the close of the contest, Barnett Kernoff was still trying to get flights out of his Thermal Thumber. However, the model was exhibiting strange tail high climbing behavior. In spite of the fact all downthrust was removed and incidence added, it still climbed in a shallow altitude. After the contest, Barnett made a discovery that most modelers would do well to heed. When building a square-to-triangle fuselage, such as the Thermal Thumber or Albatross, where the triangle point is down, care must be taken to be sure the fuselage does not bend downward, a natural tendency when putting the two halves together. Barnett was still adding incidence to his model at last count!

Based on the startling success of this meet, SAM 21 will stage another .020 meet shortly. Best indications are that it will occur in early spring, so gettum ready, men!

IDENTIFIED!

Just received a letter from friend Al Heinrich, formerly of the Boulder/Denver area (now in Pomona, Ca.), who takes the writer to task for not remembering Rolf Norstag with his Orwick Speedcraft low wing at the Denver Champs. Sorry about that Rolf!

Also the "Zipper" that hit the outhouse being occupied by Wally Leiper was a "Demon" as put together by the originator, Bill Redeker. Well, what the heck, they all look like Zippers to these old tired eyes at that distance.

JIMMY ALLEN CONTEST

As mentioned in this column quite some time ago, the Kansas City, Mo. boys announced they were going to hold a rubber powered contest strictly for old Jimmy Allen model designs.

Just received the most refreshing letter from Bryan Wheeler describing (for a pleasant change) the doings of the BIG Jimmy Allen Contest. As it turned out it was a BIG contest with several competitors coming from Detroit and St. Louis. Wow!

The weatherman forecasted rain for that Sunday, but the K.C. boys lit candles and sure enough, Sunday was a gorgeous day, with one unofficial flight of 23 minutes being registered. Since the timers had to remain on the field, the average model was going out of sight in seven or eight minutes!! Who sez those Jimmy Allen models don't perform?

Skyraiders and Thunderbolts in the Jimmy Allen series of designs were the most prevalent. However, there were Bluebirds and Yellow Jackets also. Surprisingly, no Silver Streaks or Blue Flash designs showed up. Wheeler says he will remedy that next year if he has to build them himself!

The winners were a father and son team, Carl Perkins III taking first, and dad in second. Bill Waite (his model was featured in a column photo), with the same Thunderbolt, came in third. Interestingly enough, the Jimmy Allen

Bob Kautzman's display of "Racing Sixties," shown at the Sacramento Collectogether.

The Jimmy Allen Medallion, as made up by Brian Wheeler, for the J.A. Contest.

Winner of the 1st annual Kansas City Jimmy Allen contest, Carl Perkins, J.A. Thunderbird.

Don Bekins placed second in the SAM 21 .020 Replica R/C contest, using Cannon radio. Missed fourth max by six seconds!

trophy worked out by Bryan and Jim Root featured a bronze medal in relief. The relief sculpture, done by Jim Root's daughter, was taken from a picture of Jimmy Allen in the advertisement appearing in Model Airplane News announcing the original contest!

With first, second, and third place trophies like this, the meet couldn't help be a resounding success. The Kansas City boys have announced they will make this Jimmy Allen contest an annual affair. Perhaps proxy flying will be allowed next time. In any respect, keep your eyes on this column for the next Jimmy Allen contest announcement.

Incidentally, Bryan Wheeler also reports that the Jimmy Allen medallions struck off for this contest are available to all other clubs who would like to stage similar Jimmy Allen contests. These medallions can be affixed to just about any trophy or placque to give the awards the correct air of antiquity and authenticity. Those interested should write to Bryan Wheeler, 7604 Appleton, Raytown, Mo. 64138.

ENGINE OF THE MONTH

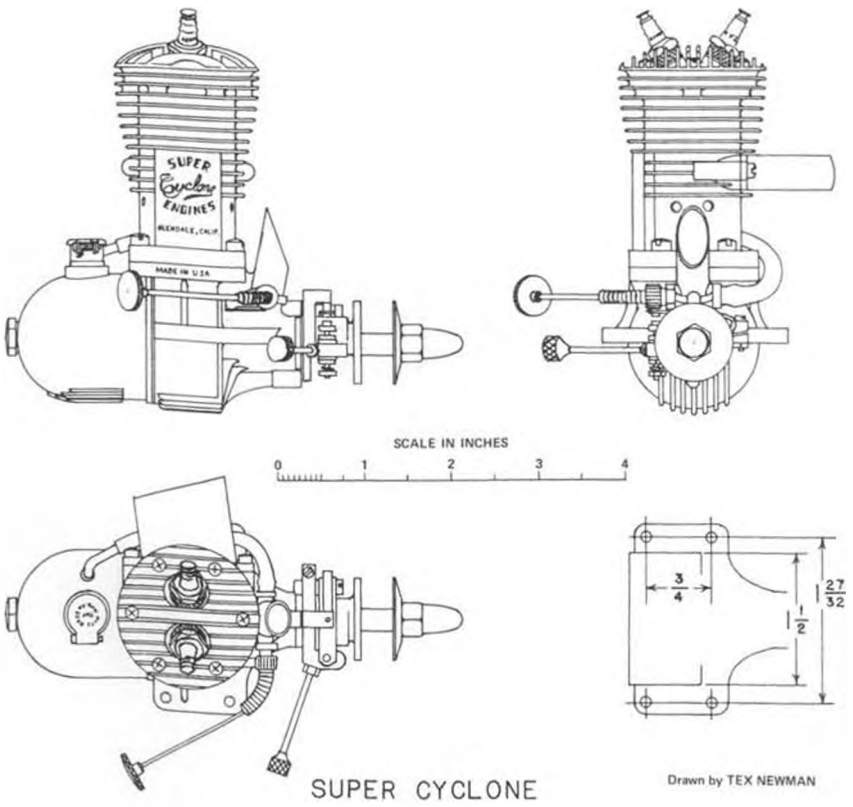
Super Cyclone! What a great name that was in the forties. In spite of the fact the "Cykes" (as they were popularly called) were a direct mail order sale and not handled by hobby dealers, the Model G Super Cyclone was a great seller.

Not many people know that the original Cyke was .64 cu. in. displacement. However, the race car craze was in full swing in Southern California at that time. The rules allowed for a maximum displacement of .604; so quicker that you could say "Super Cyke", Bill Atwood had reduced the displacement to .604. However, after getting into full production, the ironical twist was that the model car racing game collapsed. Atwood was left with a

Continued on page 88

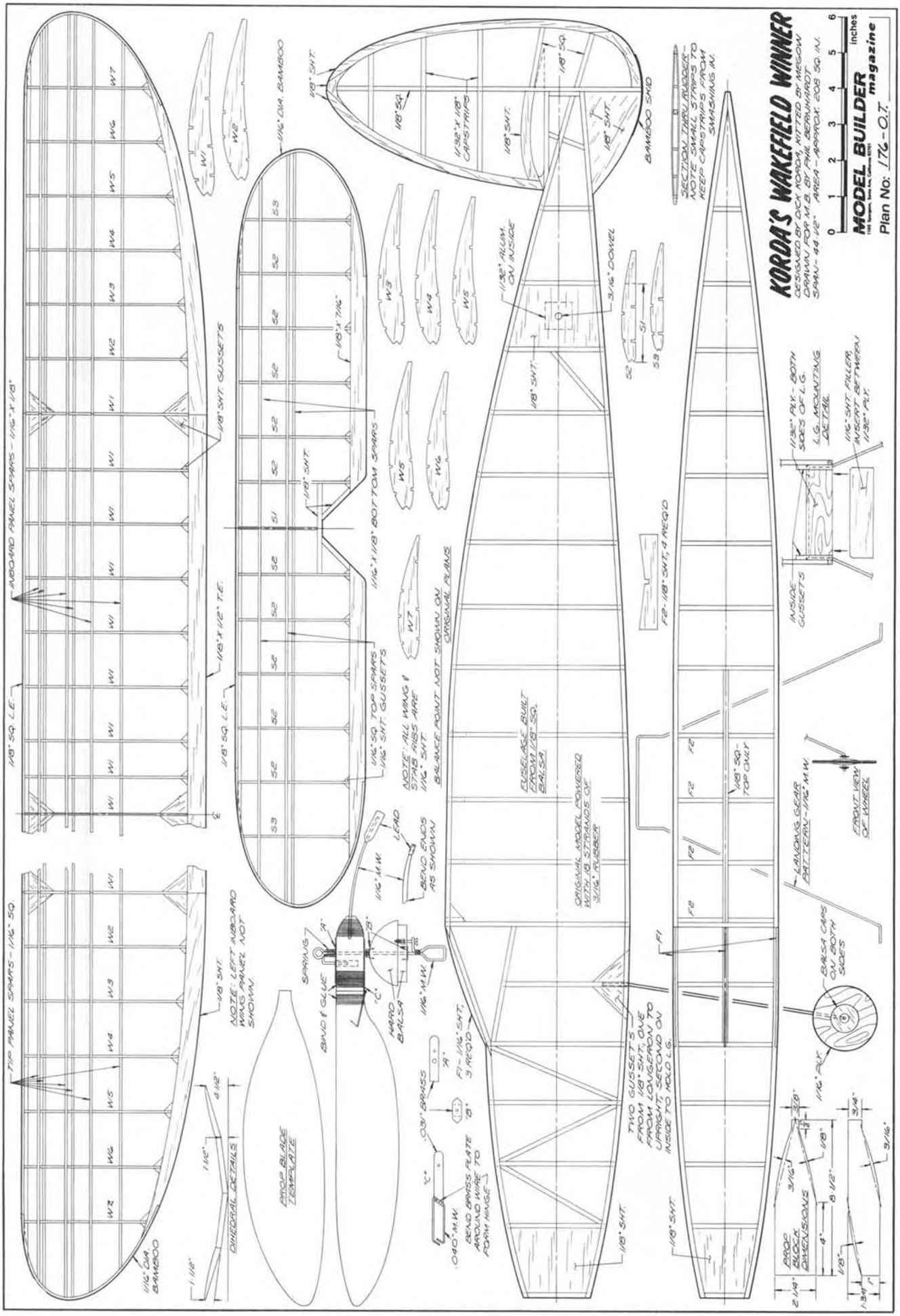
Dick Stamm's J.A. Bluebird makes a pretty outline against the Kansas skyline.

Bruce Chandler and Bill Northrop watch cork max out after Bill's Texaco win at SCIFS test.



SUPER CYCLONE

Drawn by TEX NEWMAN


KORDA'S WAKEFIELD WINNER
DESIGNED BY DICK KORDA, KITTED BY MEGOW
DRAWN FOR M.B. BY PAUL BERNHARDT
SPAN - 44 1/2" AREA - APPROX. 208 SQ. IN.
MODEL BUILDER magazine
Plan No: 176-O.T.
inches
FULL SIZE PLANS AVAILABLE – SEE PAGE 94

OLD TIMER Model of the Month

Korda's Wakefield Winner

Designed by: Dick Korda
Redrawn by: Phil Bernhardt
Text by: Bill Northrop

• Ask anyone who remembers model airplanes from the pre-World War II Golden Era of modeling to name a top competition rubber model, and the odds are that they will say "Dick Korda's Wakefield." To take nothing from Korda, his ship was representative of many rubber jobs out of the 1936-40 Cleveland area, and Chet Lanzo can probably claim equal credit for the design.

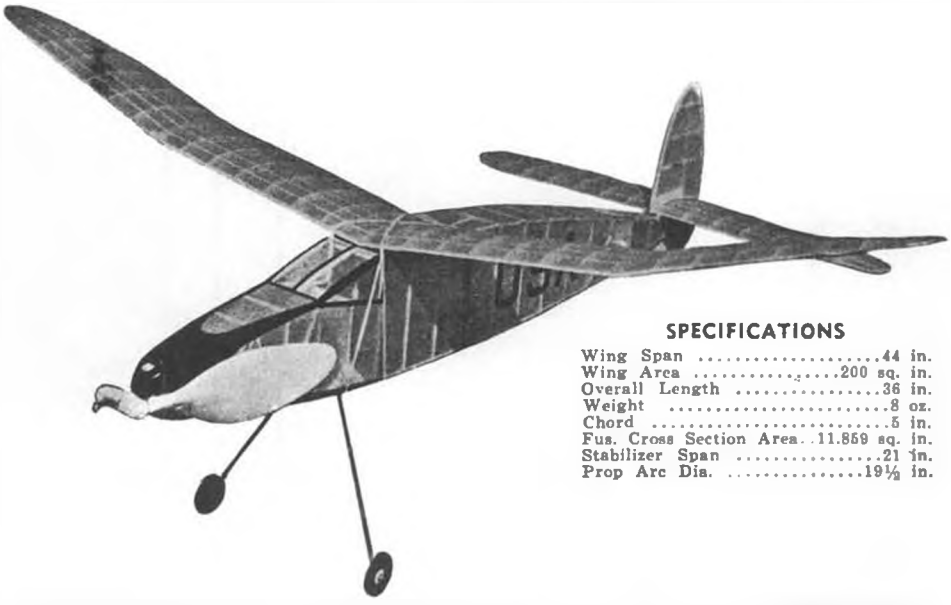
A predecessor to Korda's Wakefield winner was published in the February 1938 issue of Air Trails. This ship, with flat center section and tip dihedral, bamboo landing gear struts, and free-wheeling prop, recorded a 54 minute flight at the 1937 Nationals. It was kitted and sold for as low as . . . are you ready for this . . . 29 cents!

Speaking of this earlier ship, Dick, in a recent letter to MB's editor said, "The ship came in 2nd at the 1936 Nats, 54 minutes o.o.s., and 3rd in the Wakefield elims, 18 minutes o.o.s. The money collected for our trip turned up missing, so I never got to go. Bert Pond was my timer on the 54 minute flight."

When saying "the ship", Dick wasn't necessarily referring to one model, as in those pre-DT days, it was not uncommon to lose several models out-of-sight during a contest season. The 54 minute model was returned just after the '37 contest ended, but not all of them came back.

Our models were sorta knocked out on production at that time. When I see

Continued on page 92



SPECIFICATIONS

Wing Span	44 in.
Wing Area	200 sq. in.
Overall Length	36 in.
Weight	8 oz.
Chord	5 in.
Fus. Cross Section Area	11.859 sq. in.
Stabilizer Span	21 in.
Prop Arc Dia.	19½ in.

Dick Korda and Larry Gehrlein after Dick landed his 1-26 "Have Fun" at Larry's airport, following a 40 mile cross-country flight. That's Korda on the left.

Korda strains in final winds for 43 minute Wakefield flight in '39. John Zaic holding.

From left to right; either Jim Bohash or Ted Just holds Earl Stahl's Wake ship, Korda, Jack Thames, and Ralph Baker. Thames and Baker ships had retracting, single-strut landing gear.

Beautiful F4U Corsair, built by Dr. Jorge Marquez, Puerto Rico. We'll show other views of this model in future issues, as space permits.

Control line

By "DIRTY DAN" RUTHERFORD
PHOTOS BY THE AUTHOR

• Got something here that I really don't know how to handle. Flying toy airplanes is such an "upper", it makes the item presented below quite a shock.

Seems that an acquaintance of Phil Cartier's was helping his nephew fly a C/L plane and they were flying close to some power lines. The youngster was taking the plane off when, evidently, Phil's friend saw that the plane would hit the power lines. He ran out to the center of the circle, grabbed the boy and lifted him off the ground. His actions saved the boy's life, but cost him his own life, as he took most of the shock and was killed instantly. The boy came out with serious burns.

Listen up, people. Don't never, ever fly around power lines. Those lines you're holding onto while flying are capable of passing enough juice to kill ya. You don't even have to have the lines actually touch the power lines. High tension lines can arc across a considerable distance.

If you are one of those who just kind of skim through this column, or you have to read something twice before it sinks in, go back and read the above again. I don't want to ever have to notify the readers of this column about a similar occurrence. 'Nuff said.

I just got the official results back concerning the final ballot on rules for next year. The official results were a shock . . . Everybody on the CLCB voted! And you say, "that's unusual!?" Yes, it is unusual. Even though all CLCB members presumably know the

Paul Moskvin with his Fox .36 Schneurle powered, short-boom Voodoo. Used for sport flying only, it's duded up a little.

A piped HGK .15 powers this scale racer (Goodyear) built by R. G. Meyers. It's only had a few runs so far.

Dan's flying partner, school counselor Gary Stevens, and just a few of his Tyrantulas!

responsibility a spot on the CLCB carries, not all of them get their ballots in at all, let alone on time. A late ballot cannot be counted, by the way.

While it is nice to see that all CLCB members voted, I would suggest that you keep track of the voting record of your representative on the CLCB. If he misses a couple of votes, contact your dist. V.P. and have him put some pressure on the guy.

A quick look at the final ballot indicates that most events came out OK, with no serious problems evident so far. Speed fliers ought to be happy in that they can now either set the needle or fly the plane. Who will be the first to quit building speed planes and start flying them for hire? No exhaust extension of any kind will be allowed in Jr. 1/2A Proto, and all classes of Jr. Speed are limited to constant diameter exhaust extensions, which means that Jr.'s don't have to hassle with pipes anymore.

Mike Thayer in deep concentration, while tuning his Cox powered "Golygeewhiz."

Billie Lee Rutherford flies this Goldberg Jump-in' Bean which "DD" helped her build.

A proposal to include a "standard recommended pylon design" passed, which must put Bill Pardue in quite a bind, as he must now come up with a good, easily-built pylon and then draw it up for the new rulebook. Seems to me that the proposal should have included such a design rather than a mandate for someone to design one if the proposal passed. *(Doesn't sound like a complete proposal. The board should vote on the design, too. Right now, Bill has a signed blank check. He could go ape! wcn)*

The much discussed "groupers", coupled lines . . . whatever, are finally dead and gone, as a proposal to allow them in Speed only was defeated 10 to 1. Some will complain about that, but most are glad to see groupers go away.

Formula X 40 Speed is now an official event, but has been changed slightly in that only constant diameter exhaust extensions are allowed and they can be a maximum of 5 inches long, as measured from engine c/l.

Sport Speed now has a pull test chart (an oversight that could not be corrected two years ago) and ROG and fixed gear are now required.

Several changes in Rat, but I am going to hold on any comments until I see what the rulebook says. In Junior Rat, only profile ships will be allowed. I don't think anybody will complain about that one.

In Mouse Racing (what a terrible name for an event!) the line length has been changed from 35 to 42 feet, which ought to cause a few problems. Going to be lots of 1/2A Racers chasing people around when they come in on take-off, due to the long lines. An .049 can't really hurt anybody, so it ought to mean excitement without the usual danger of planes running-in on you.

Goodyear now has a direct reference to using the same scoring as in Rat, which ought to clear up some problems. A proposal to go to .015 x 52 foot lines (stranded) in Goodyear failed, which is bad. The .012 solids aren't that easy to

M&P Mongoose with Fox 36X BB for Slow Combat, by David Aoyama.

get, and are a little small for the kind of speed G/Y's are going now.

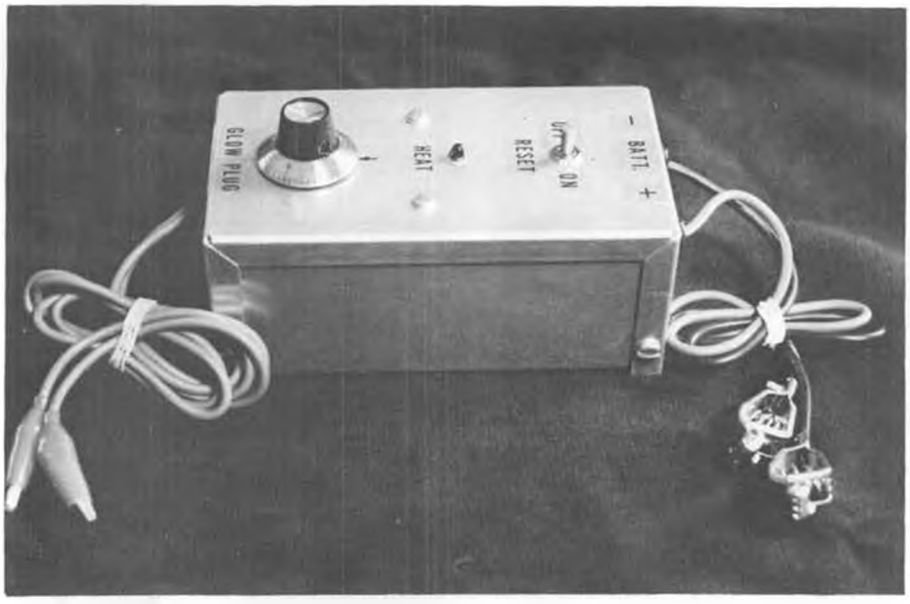
The controversy about Goodyear cheek cowls is not settled as I write this. Nit-picking started the whole thing about G/Y cheek cowls. Why can't people just leave things alone when there is no problem with an event in the first place? *(Hey, Dan . . . have you heard of R/C Pylon Racing? wcn)* To be concerned about the cheek cowl on a profile airplane is just about the silliest thing I have been involved in since first being appointed to the CLCB.

As predicted last month, Slow Rat is going to be most anything besides a slow beginner's event. The event and rules for it, to be published in the rulebook, won't be the event that I think most people wanted, but it will be a start. If you don't like it, fill out a proposal and submit it to the CLCB.

Lots of changes in Carrier. Only two of the Navy Carrier Advisory Commit-

Continued on page 81

Mike Rogan practices stunt with this Midwest G21 ST.35 powered Me 109.



PHOTOS BY THE AUTHOR

GLOW-PLUG DRIVER

By BRIAN ELLIS . . . Here's an inexpensive and easily made unit that will "turn on" your glow plugs, and keep them glowing no matter what!

• Just what is a glow plug driver, and what will it do for me, that a battery won't? If you don't know the answer to that question, don't feel bad, many don't. A glow plug driver is an instrument that senses the temperature of the heating element in a glow plug, and maintains a prescribed temperature. It will solve problem-starting due to cold weather and fuel soaked glow plugs. It will indicate when batteries are weak, leads are shorted, or when you have a faulty glow plug.

Finding parts for this project, should be very easy. All parts used in this glow plug driver can be purchased from Radio Shack and hardware stores. If you have a friend who wants a glow plug driver too, buy parts to make two and save money. It doesn't cost much more to make two, than one. The reason for this is that most of the parts you need come in a package of two or more, when you only need one. If you make two units and sell one, your unit will cost you almost nothing.

If you will study all the diagrams and pictures shown, you will see that there isn't much to putting this glow plug driver together. First, drill holes in the aluminum box, as shown in Figure 1. The holes in the front and back favor the top of the box, so that the wire will have clearance when the electronic board is mounted. Be sure to de-burr all holes after drilling. Clean box and put lettering on, as in Figure 7. Any method of marking is fine. One good method is to use a Sharpie marking pen and then put clear tape over the lettering.

Using a hacksaw, cut off potentiometer (R-10) shaft, so it is 7/16 of an inch long. Mount potentiometer in box, in 3/8 inch hole, with the terminals toward center of box and the 1/2 inch hole at the top, as in Figure 2. When mounting potentiometer to box, put one 3/8 inch nut on threads for inside of box, so that only enough threads protrude through the hole for 3/8 inch nut on outside of box. This way, the dial knob will fit down close to the box.

Install On-Off-Reset switch (SW-1) in 1/4 inch hole, with terminals to the left, as in Figure 2.

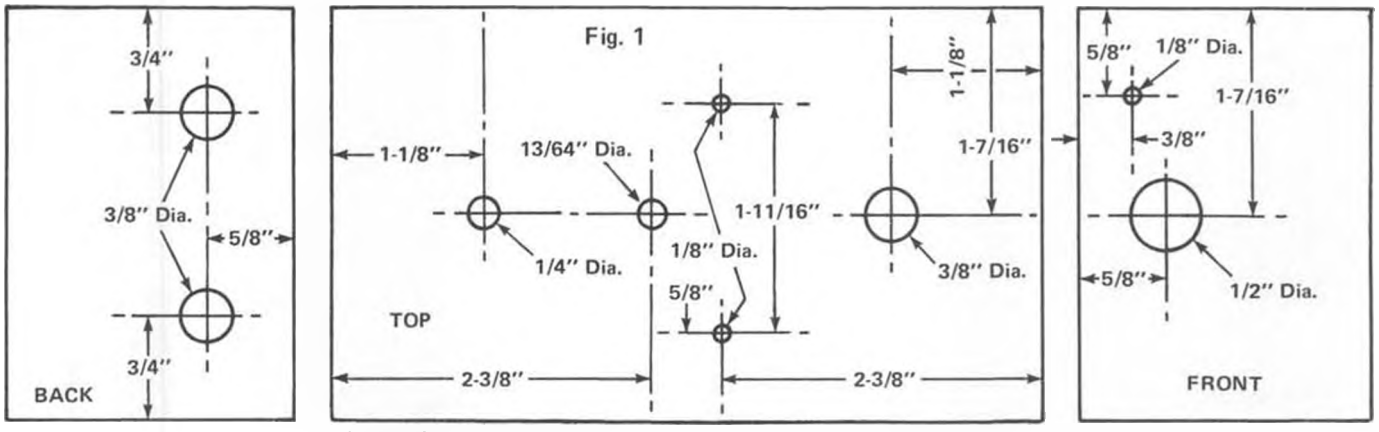
Smear a coating of silicon grease (heat sink compound) on the back of transistor X-1, and mount to the box, as shown in Figure 2.

After taking the light emitting diode (D-4) out of its package, noting instructions with it, bend a small loop in the anode lead. Put a liberal coating of R.T.V. or silicon glue around sides of L.E.D. (D-4) and push D-4 through 13/64 inch hole from inside of box, until D-4 just protrudes through. Set box aside now, and let the glue dry while you are putting the electronic board together.

Using the hacksaw again, cut the perfboard (along the holes) to a size of 4-1/2 x 2-1/2 inches. If you cut the board right, you can get two. If you will look at Figure 3, you will see that if you count 13 holes up from the bottom and 2 holes in from either side, you will see two 4-40 screws. Drill your board in the same places as these screws, using a number 29 drill, or a 1/8 inch drill. Push all perfboard pins in holes (in board), as seen in Figure 3. You can get the perfboard pins in their exact location by counting the holes.

Mount and solder in place the parts on board while referring to Figures 3 and 4. The flat side of all transistors are mounted down, against the board. Any information you need to know about resistors, transistors and diodes are marked on the packages you buy the parts in. Be sure to note which way the plus side goes on capacitor C-2. Also, note which way the cathode goes on D-2 and D-3 when mounted on the board. N-1 has a keyway on it, which must be mounted as shown in Figures 3 and 4.

Now that you have the components mounted on the board, turn the board



Layout for drilling of holes in aluminum case. Note match-up of corners.

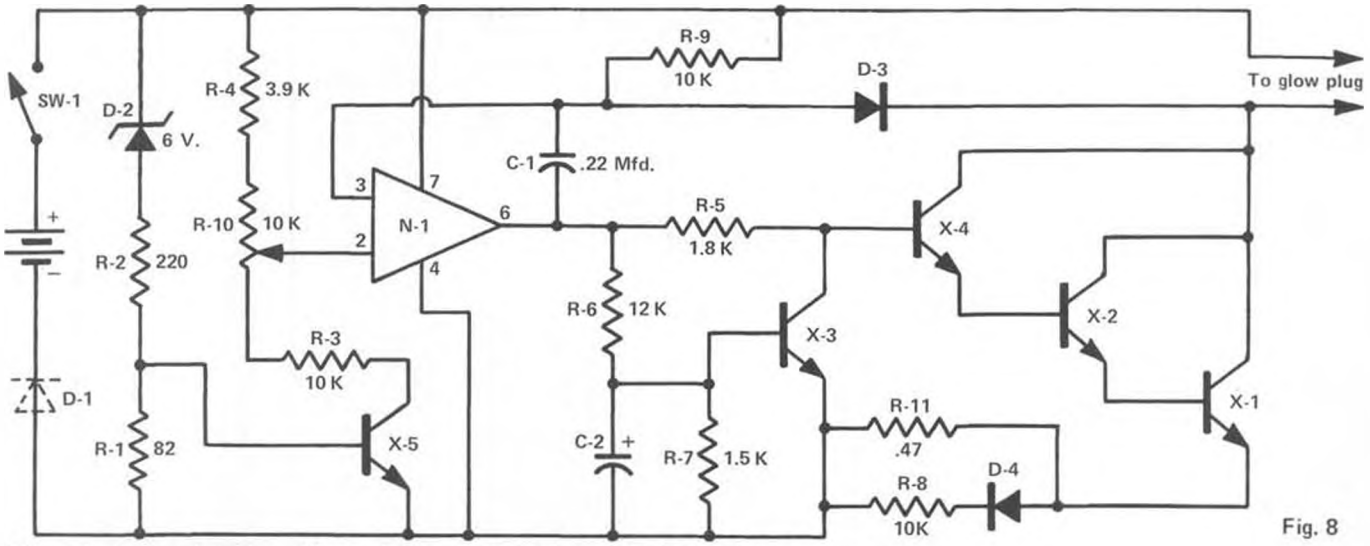


Fig. 8

Schematic of glow plug driver. All parts in list at end of article are Radio Shack Catalog numbered.

over and wire perfboard pins, as shown in Figure 5. Good solder connections can be made when *both* the wire and perfboard pins are made hot enough (at the same time) to make the solder flow. After wiring board like Figure 5, mount the two one inch 4-40 screw stand-offs to the board. Recheck wiring and all solder connections.

Cut one black and one red test probe wire 18 inches long. Cut two red test probe wires 24 inches long. Set these wires aside for now. All board-to-box hook-up instructions will be in reference to Figure 2, with X-1 transistor being at the top and the switch near the bottom.

Connect wire between unwired pin of R-4 and right terminal of R-10.

Connect wire between unwired pin of R-3 and left terminal of R-10.

Connect wire between pin 2 of N-1 and center terminal of R-10.

Connect wire between unwired pin of R-8 and cathode of D-4.

Connect wire between anode of D-4, (pin with loop) and side of R-11 that has one jumper wire.

Connect wire from same side of R-11 that D-4 went to, to left terminal of X-1 (emitter).

Connect wire between center terminal of X-2 and center terminal of X-1.

Connect wire between unwired pin of X-2, to right terminal of X-1.

Connect wire between right terminal of switch and cathode side (white circle side) of D-2.

Pull red 18 inch test probe wire through right bottom hole (plus battery hole) and connect to left terminal of switch.

Pull black 18 inch test probe wire through left bottom hole (minus battery hole) and connect to pin that goes to

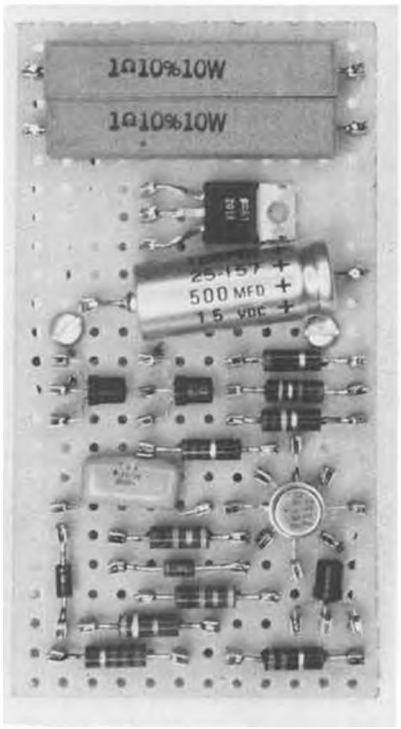


Photo of top side of Perf Board matches full size drawing at right. All parts are placed exactly as shown in the photo. Simplified design keeps cost well below that of commercial units.

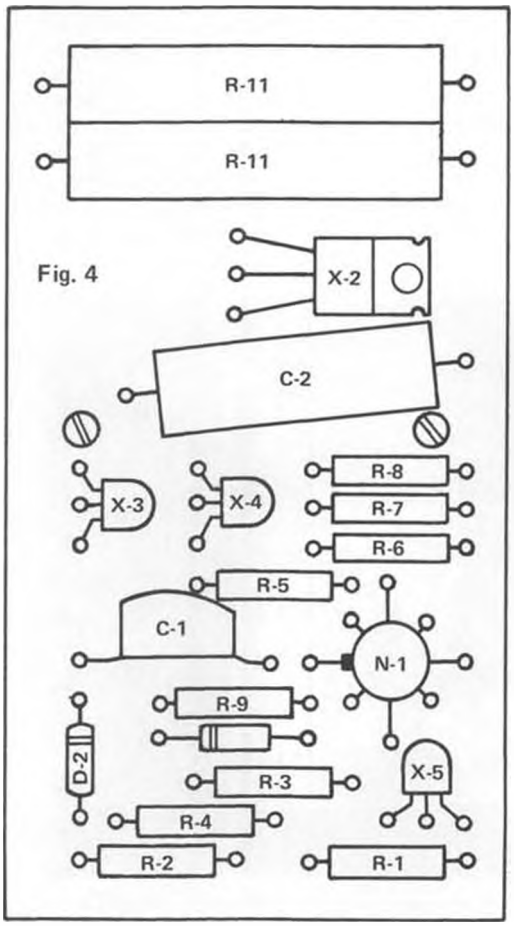
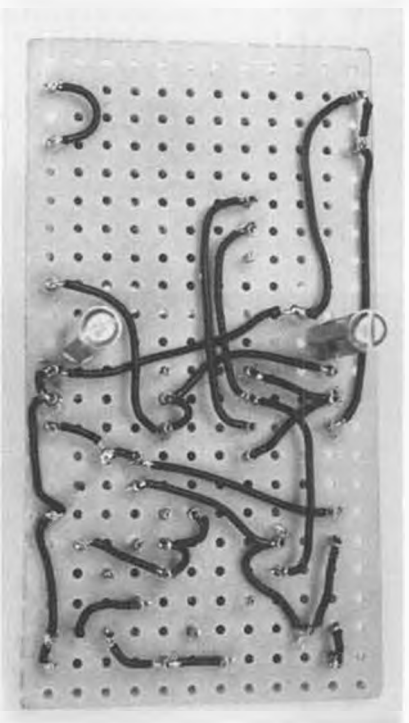


Fig. 4



Under side of Perf Board shows hook-up wire connecting various components. A little mork work in wiring than with a printed circuit board, but a lot less complicated and expensive. Minimum of tools required to complete unit.

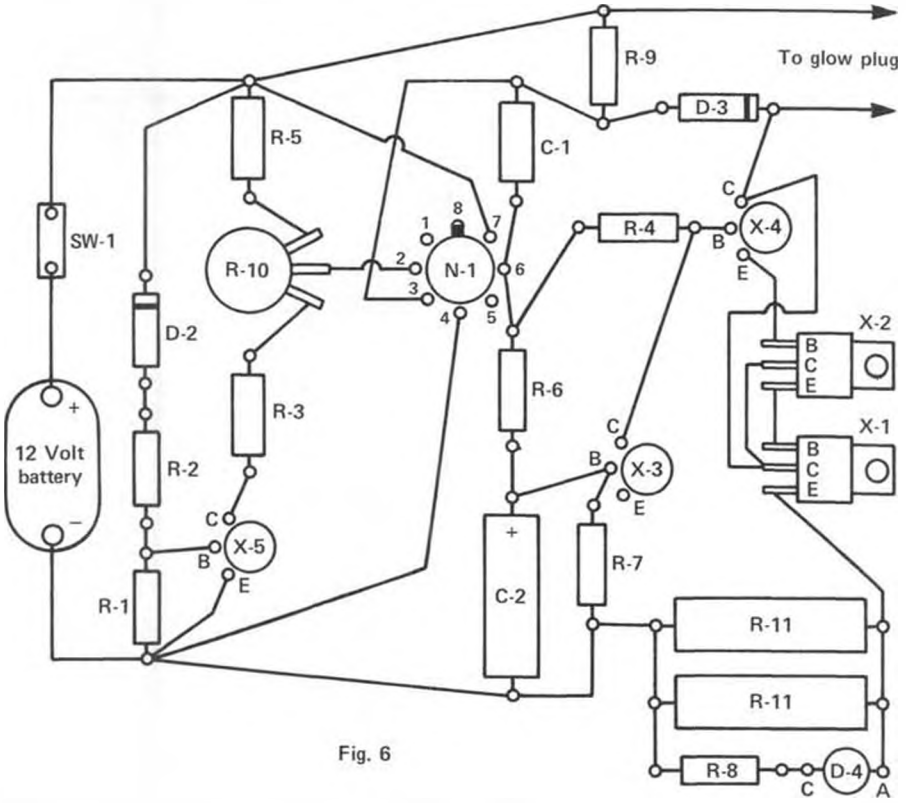
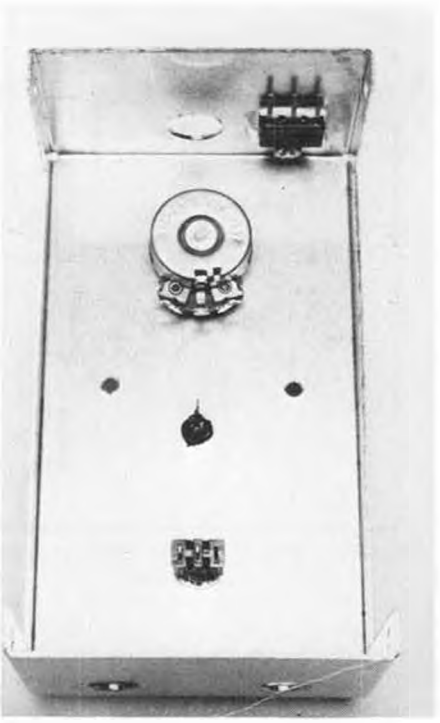


Fig. 6

Wiring diagram for glow plug driver. Use this, along with parts layout diagram on previous page, when making connections to components.



Inside of case top, showing installation of basic components. Note direction of lugs.

R-1, on the side that isn't connected to R-2.

Pull two red 24 inch probe wires through top hole and connect one to the cathode side of D-2. Connect the other one to the center terminal of X-2.

All wires are now connected between the components on the box and the electronic board.

Install the board to the box, using two 4-40 screws. Be careful not to pinch any wires between the box and the two stand-offs. Pull the test probe wires out full length and install the bushings, where the wires go through the holes. Use small bushings where only one wire comes out and the large bushing where two wires come out. Pull test probe wires out on glow plug side and cut off longest wire to same length as shortest wire, then solder and crimp alligator clips to wires. Pull test probe wires out on battery side and cut off longest wire to same length as shortest wire, then solder and crimp battery clips to wires. Figure 6 shows how all components should be physically connected. Turn potentiometer (R-10) all the way counter-clockwise. Install knob on R-10 with zero (on knob) lined up with the arrow on top of box.

If all wires are connected properly and all the parts are good, your unit should work now. To check your unit out, follow the check-out instructions. Turn power switch off and dial knob to zero. Connect battery, red to positive side on battery and black to negative side on battery. Connect the two red glow plug wires to the glow plug. Turn the power switch on and notice that the heat indicator is lit and that the glow plug is not lit, (or barely lit). Turn the dial knob up slowly and notice that brightness of glow plug increases. After setting proper glow on glow plug, immerse glow plug into a glass of water and notice that glow on glow plug doesn't go out. When testing glow plug driver, use old glow plugs in case something doesn't work properly. If you have problems, recheck all wiring very carefully. When you are satisfied everything is working properly, install bottom cover, using four screws supplied.

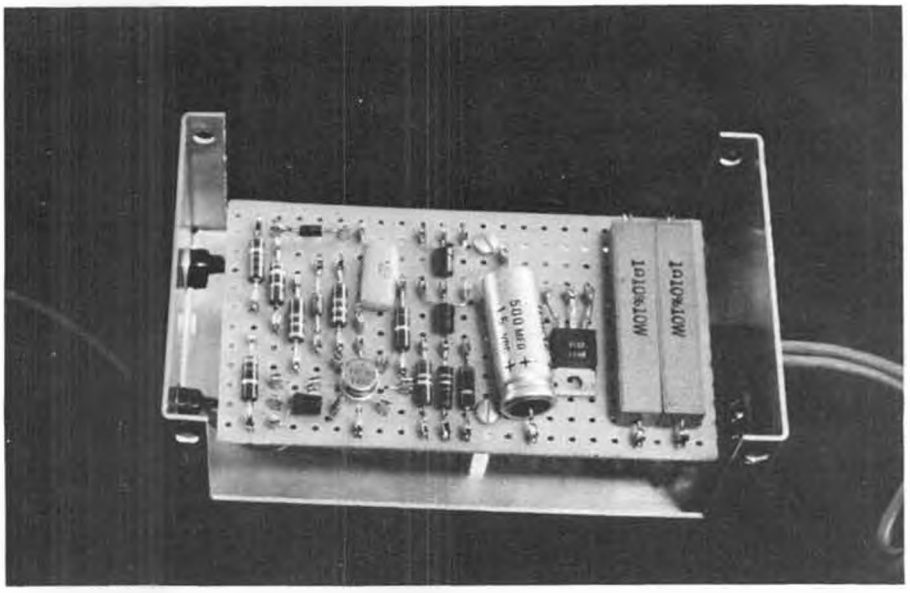


Photo of completed unit as seen with the bottom of case removed. Perf Board is mounted to case top with long bolts and stand-offs. Electronic genious not required to build this one!

To understand how your glow plug driver works, refer to Figure 8, while reading the explanation. The same current flows through R-11 and X-1 that flows through the glow plug. When this current flows through R-11, it produces a voltage across it, which causes D-4 (the heat indicator) to light up. When this current flows through the glow plug, because of the resistance in the heating element, a voltage is developed across it too. As the heating element heats up, the resistance in the wire increases, which causes the voltage across the glow plug to increase. Pin 3 of N-1 senses this voltage developed across the glow plug element and switches off when this voltage reaches the same voltage that is at the wiper arm (center

Continued on page 75

ANNOUNCING!

MODEL BUILDER magazine's

SECOND ANNUAL INTERNATIONAL

Parcel Post Proxy Peanut RUBBER SCALE CONTEST!

EVERY PEANUT MODEL, FROM NEAR OR FAR, WILL BE PROXY FLOWN, INDOORS, BY SOME OF THE U.S.A.'S BEST RUBBER SCALE FLYERS INCLUDING WALT MOONEY, BILL HANNAN, CLARENCE MATHER, BOB PECK, FERNANDO RAMOS, BILL WARNER, AND MANY OTHERS.

LOCAL MODELERS WILL BE ALLOWED TO ENTER, BUT THEIR PLANES MUST ALSO BE PROXY FLOWN, AND NO VERBAL OR PHYSICAL HELP WILL BE ALLOWED FROM THE OWNER . . . ONLY WRITTEN INSTRUCTIONS TO THE PROXY FLIER, AS ALLOWED FOR ALL ENTRIES.

Open to modelers from all parts of the world... any nationality... any age... any sex... come one, come all!

AWARDS to include TROPHIES and MERCHANDISE . . . ALSO, a KRAFT RADIO SYSTEM to the

GRAND PEANUT of 1976!

(HIGHEST OVERALL COMBINED STATIC AND FLIGHT SCORE)

Other prizes include such items as; Peanut Scale kits and materials, Astro Flight and VL Products electric motors, Brown Jr. twin and single cylinder CO_2 engines, Uber Skiver knives and sets, and much more!

Contest Director: CARL HATRAK

Competition will be divided into five (5) classes: Pioneer, World War I, Golden Age, World War II, and Modern. There will also be individual awards such as; most distant entry, best shipping container, entry most damaged in shipping (Don't try hard for that one!), best entry built from Walt Mooney plans, best model by a female, best entry by any modeler under 15 years of age, oldest qualifying contestant, youngest qualifying contestant, best biplane (Big John Award!), best entry built from a Peck-Polymers kit, longest flight, most static points, plus a few surprises.

Chief Static Judge: RUSS BARRERA

Scoring will be based on the total of each entry's static scale points (100 maximum) and flight points (100 maximum). Static judging will be according to AMA Indoor Rubber Scale rules. Flight points will be the average of the two best flights out of four official flights (10 seconds minimum, 100 seconds maximum). Ties will be broken by highest single score, or a fly-off. Number of attempts to be limited, subject to size of total entry. DO NOT SEND UNTESTED MODELS! *A three-man jury will preside over all decisions.*

SCHEDULE: Register by mail on or before February 1, 1976.
Models to be on hand on or before April 1, 1976.
Contest to be held approximately April 15 to May 1, 1976.

Send in now for your registration form, which includes an entry blank, a complete set of rules, and other particulars. Write to:

MODEL BUILDER PROXY PEANUT CONTEST
P. O. Box 4336
Santa Ana, California 92702
USA

This Peanut Zlin Akrobat was built by Peter Janousek, a junior modeler with a club in Praha, Czechoslovakia. The model weighs only 9 grams. Photo by Miroslav Kvapil.

FREE FLIGHT SCALE

By FERNANDO RAMOS

• This month's column will start out with a survey. After thinking about some of the remarks I made last month regarding the possibility of an International F/F scale competition, I have one other remark to make . . . something I have had in the back of my mind for some time now, but didn't let it materialize until I got some prodding from my good friend in Dallas, Bill Caldwell. And that is, how about if we scale modelers started our own National F/F Scale Organization? R/C has numerous organizations, and understandably so. Each in its way is a special interest group, which can determine the rules and regulations governing the modeling area it enjoys most.

The advantages should be obvious. Those who build and fly F/F scale models, whether peanut or gas, or anything in between, ought to be the ones to decide what the events, rules, and scoring for judging, etc., should be. Many of you may say, "That's why we have the AMA!" True, but let me try and explain how this system works. Each AMA district has its own scale representative, ours in District X is Russ Barrera. Let's say, for example, that some modeler is disenchanted with a particular rule in rubber scale. He writes his feelings down, and suggests a rule change to the AMA *(It must be on an official proposal form. wcn)*. This in turn is sent to the district scale representatives, and the information is printed in the Competition Newsletter for other AMA members to read. Unless other members write in and voice their opinion to their respective district representatives, the rule could then become a permanent rule change for two years, whether it is a good one or not. Voting only takes place every two years, so if the rule was a bad one, we would have to live with it for that period of time.

What happens, more often that not, is that there is usually little feedback to the district representatives from the members, therefore the district representative votes according to his own judgment. We, in District X have been fortunate in the respect that Russ Barrera is a F/F scale modeler. He understands our problems and can vote with the majority of F/F scale modelers in mind. This is not true in all districts. Most are R/C oriented, and they do not always understand some of the problems

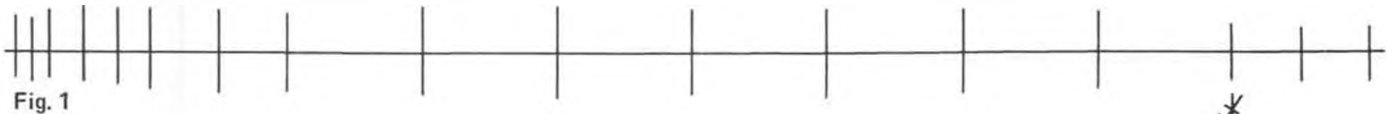


Fig. 1

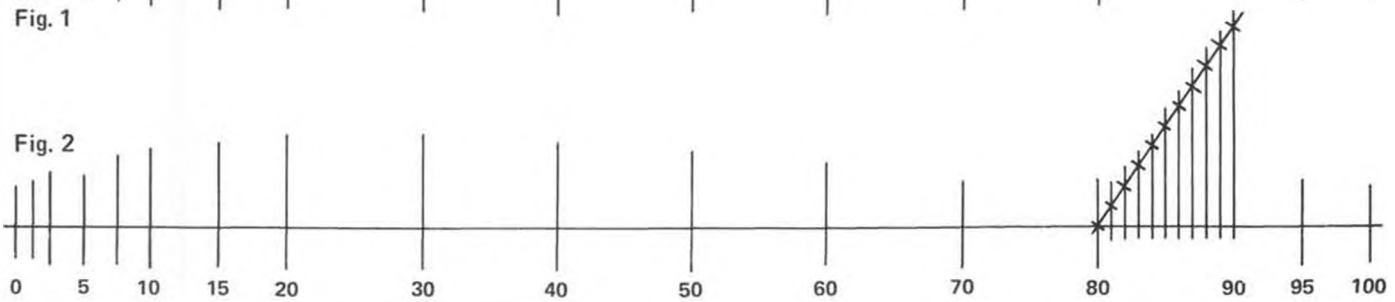


Fig. 2

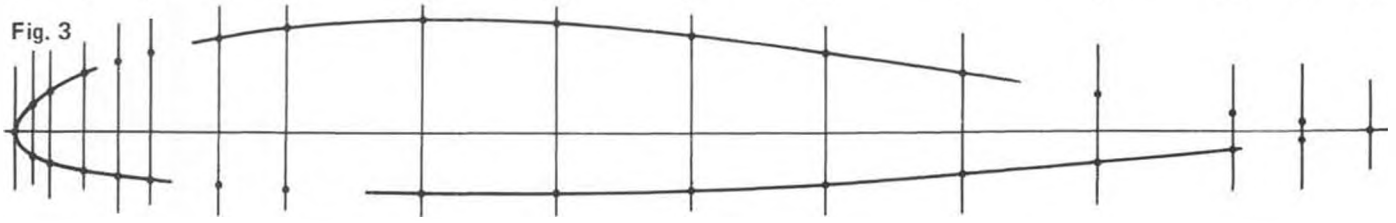


Fig. 3

peculiar to F/F scale.

With the AMA getting larger and larger, and with its primary emphasis in R/C, I think we need a governing body that will take care of, and oversee our own modeling interest. Then this governing body can report back to the AMA its particular wishes, rule recommendations, etc. In reality, even the National Free Flight Society doesn't understand our needs or desires. F/F Scale modeling is growing more and more, and we need fair and knowledgeable representation.

OK, now to the survey. Do you feel that we need a National Scale F/F Organization? If so, please fill out the coupon questionnaire, or copy it on a sheet of paper, and let your feelings be known. If the response is favorable, and there is substantial response, then the wheels can be put into motion and further details will be forthcoming. Let me state that this is not planned to be a West Coast operation . . . this is for F/F scale modelers everywhere in this country!

* * *

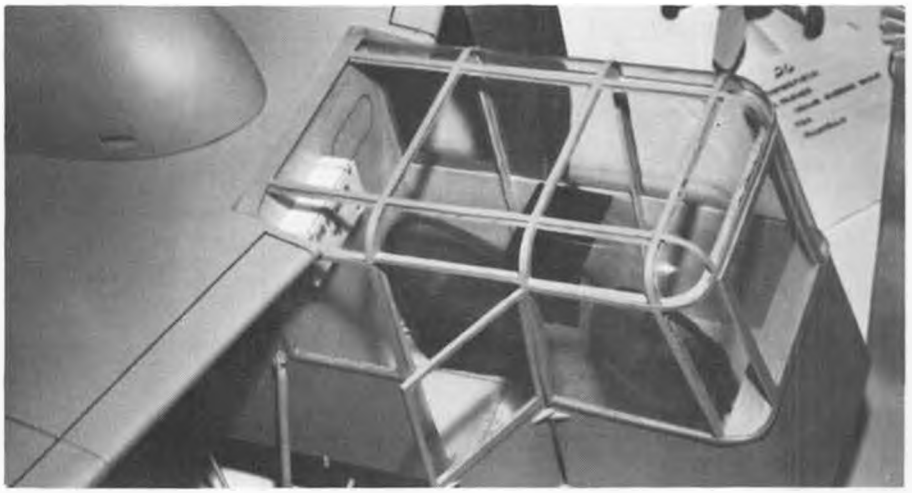
It occurred to me the other day that possibly there are several neophyte scale modelers who do not know how to plot an airfoil. After recommending a specific airfoil, it wouldn't be much good to you unless you knew how to plot it. In the past, I have seen various articles on how plotting an airfoil was done, but the technical explanations always left me cold! Finally, one day, Tom Laurie showed me how to do it, and to my astonishment, it was extremely easy! It can be done for any size chord you want.

Let's get started, step-by-step, using the coordinates for the RAF 34 airfoil as an example *(These were published on page 40 of the November '75 issue of MB. wcn).*

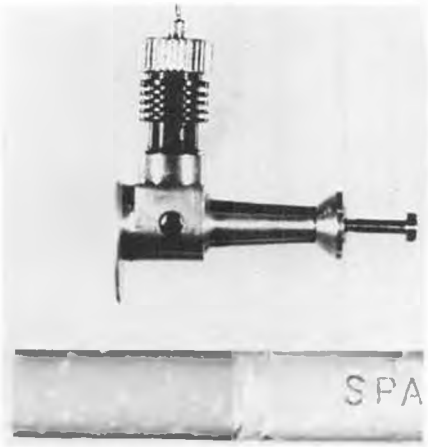
1) Equipment:
   a. Straight edge or T-Square
   b. right triangle
   c. decimal ruler or scale ruler
   d. dividers
   e. sharp no. 3 or no. 4 pencil
   f. graph paper with 1/10 inch grid
   g. several French curves

2) Draw a horizontal line a little longer than the chord of the wing. (The illustration used will be a seven inch chord.) Figure 1.
   a. divide the 7 inch chord line into ten equal spaces (7 inches divided by 10 = .7 inches, which equals 10%)
   b. draw vertical lines through each of these ten equal spaces
   c. divide the first 10th (or 10%) into four equal spaces (.175 inch or 2.5%) followed by dividing the first of these .175 inch spaces into halves (or 1.25%)
   d. divide the second 10th into halves (.35 inch or 5%)
   e. divide the last 10th into halves also.

Continued on page 76



Overall and close-up photos of Robert Parker's Siebel Si 201. MB has plans for a profile free flight model of this unusual design.



This .002 CO_2 engine may be the smallest in the world! Built by Stefan Gasparin of Nore Mesto, Czechoslovakia, it is 4/5 of an inch high . . . smaller than this photo!

DON'T YOU DARE CUT UP THIS PAGE !!

Trace or Xerox it! (Fill it out *now* and send it in . . .

A survey to see whether or not there is sufficient interest to start a National SCALE Free-Flight organization. Please fill out and send to Model Builder . . . or Fernando Ramos . . .

Name _____

Address _____

City _____ State _____ Zip _____

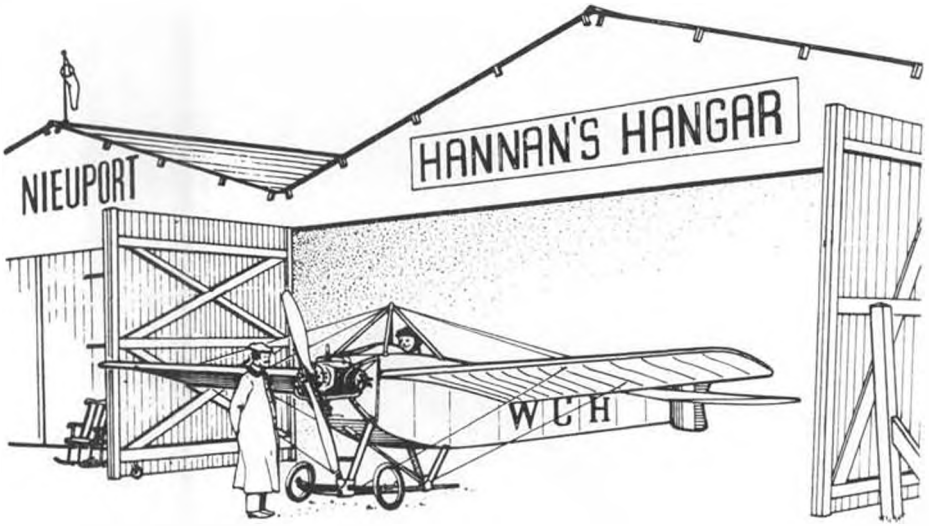
Scale model interest

gas	rubber	electric	CO_2	peanut
☐	☐	☐	☐	☐

I would like to see a SCALE F/F organization started ____ ☐ YES ☐ NO

Should membership in AMA be a requirement? ____ ☐ YES ☐ NO

Comments . . . _____



. . . being sort of an aero enthusiast's clipping service . . .

Actual size photo of helicopter model built and flown by Ken Hannan. See text.

HELP BEN CELEBRATE!

• Ben Franklin, that is, and appropriately enough, his birthday will be recognized with a kite contest, according to "THE WINDY NOTICE" newsletter. Scheduled for January 17, 1976, the event will be held at Independence Hall in Philadelphia, 11 a.m. to 1 p.m. Featured will be ol' Ben "in person", many prizes, and hot refreshments. Admission will be free, and categories will include most original, best decorated, and highest-flying kites, with classes for children, teenagers and adults.

By coincidence or design, another contest will take place the same date in Sarasota, Florida, at the Sheraton Sandcastle Resort, Lido Beach, on Benjamin Franklin Drive. Let's all pay tribute to one of the few truly innovative statesmen!

AND SPEAKING OF CONTESTS

We liked the tone of the rules for the Flying Aces meet held in Connecticut during October. Quoting from the contest advert: "These meets are not high pressure with a lot of 'no-nos', but a lot of 'why nots' to add to the fun of flying models together."

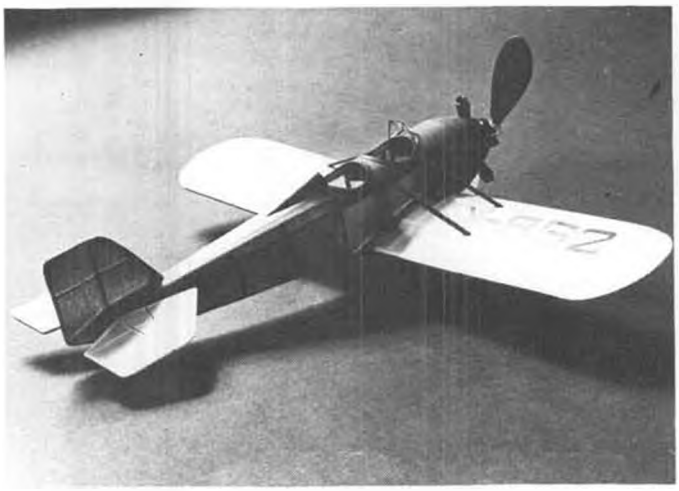
MODELS GOING TO THE DOGS

An interesting story accompanied the Nieuport 12 C2 model shown in one of this month's photos. Seems that the bird was originally constructed by Bob Gable, of Pennsylvania, from Karlstrom 3-views. After flying the model a few times, he placed it in the back of his Vega station wagon. Whereupon, his overly enthusiastic Husky dog, Lara, bounded over the seat and made a spot landing on the little two-winger, exceeding the design stress limits, and demolishing the right half of the model.

Some months passed, and Bob presented the remains of the aircraft to Charlie Roth, of McLean, Virginia, who proceeded to rebuild it. The addition of a Cannon two-channel rig and an .051 glo engine put the machine back in action, and now it is flying

Continued on page 71

R/C Nieuport 12 C2, constructed by Bob Gable, partially destroyed by Bob's dog, and rebuilt by Charles Roth (see text). Now has Cannon radio.



John Oldenkamp's Okay Peanut. A coincidence. See text. Photo by Oldenkamp.

Allan Schanzle and Hurst Bowers (of Flyline), hard at work judging Peanut Scale models using Walt Mooney rules. John Preston photo.

Long fuselage of the Davis allows plenty of room for rubber power. Canopy is simply bent from flat sheet plastic.

A good looking plane that flies to match its appearance. Trike gear is nice for ROG's.

PHOTOS BY FUDO TAKAGI

Peanut DAVIS DA-5A

By WALT MOONEY . . . Not quite the av-er-age Peanut this time! It's low-winged, Vee-tailed and trike geared. With that long rubber motor, however, it's above average in the flying department.

• As an old peanut enthusiast, I am always on the lookout for a new configuration. In the November 1975 issue of Air Progress, I came upon a three-view and an article on this one. The three-view has some differences from the real plane, but there are enough photos to enable a modeler to build a good replica of Mr. Davis' little jewel.

The model in the photos is a nice stable flyer, but it weighs 3/4 of an ounce and is therefore quite a bit heavier than some of the Cougars and Laceys that are around. This one has done 25 seconds indoors. By using lighter wood, thinner sheet, and super-fine tissue, it could be built to less than 1/2 ounce with a potential for much higher flight times.

At the last Flightmasters indoor scale meet, it got whipped by a couple of Cougars and a Lacey, but otherwise held its own. It is quite strong, and is an interesting new shape to model.

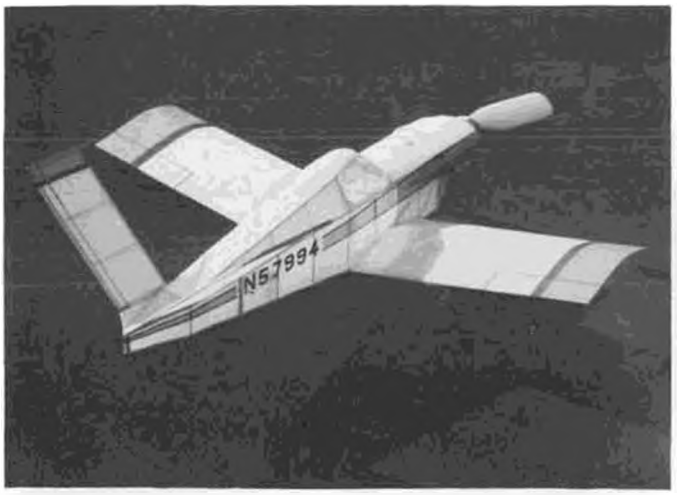
The wing and tail structure is perfectly common, so no further comment need be made about them. However, the fuselage has several interesting innovations that are worth talking about. The designer of the real airplane is a very clever designer of simple, easy-to-make sheet metal airplanes. The DA-5A is a great example of this talent. With the exception of the spinner, and possibly the nose cowl, no piece of aircraft skin has a compound curve. All of them are either flat or simply wrapped curves. Nevertheless the DA-5A is very well streamlined.

Start the fuselage in the conventional manner, by building two fuselage side frames over the plan. Note that the side frame is hatched, and that the frames are built just a little longer than the side view of the airplane to account for the sharp taper in the plan view of the aft end. Note also, that at the nose of the model, the frames are only the height of the engine cheek cowls.

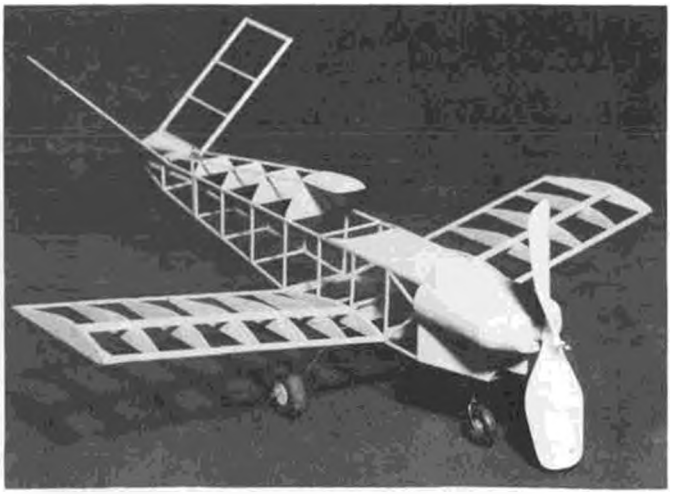
Build up the main fuselage box by adding the cross pieces at each upright, using the top view to determine the correct body width. It will be necessary to crack the longerons at the back of the cabin and the bay near the leading edge of the tail to obtain the straight-line taper shown. Add the formers from "A" to "H", and then the two top stringers aft of the cabin.

Cover the top of the fuselage from "A" to a point half way between "C" and "D", with thin sheet balsa. Cut out the half circle for the front of the cabin as shown in the top view. Carve a cabin top out of soft balsa block and

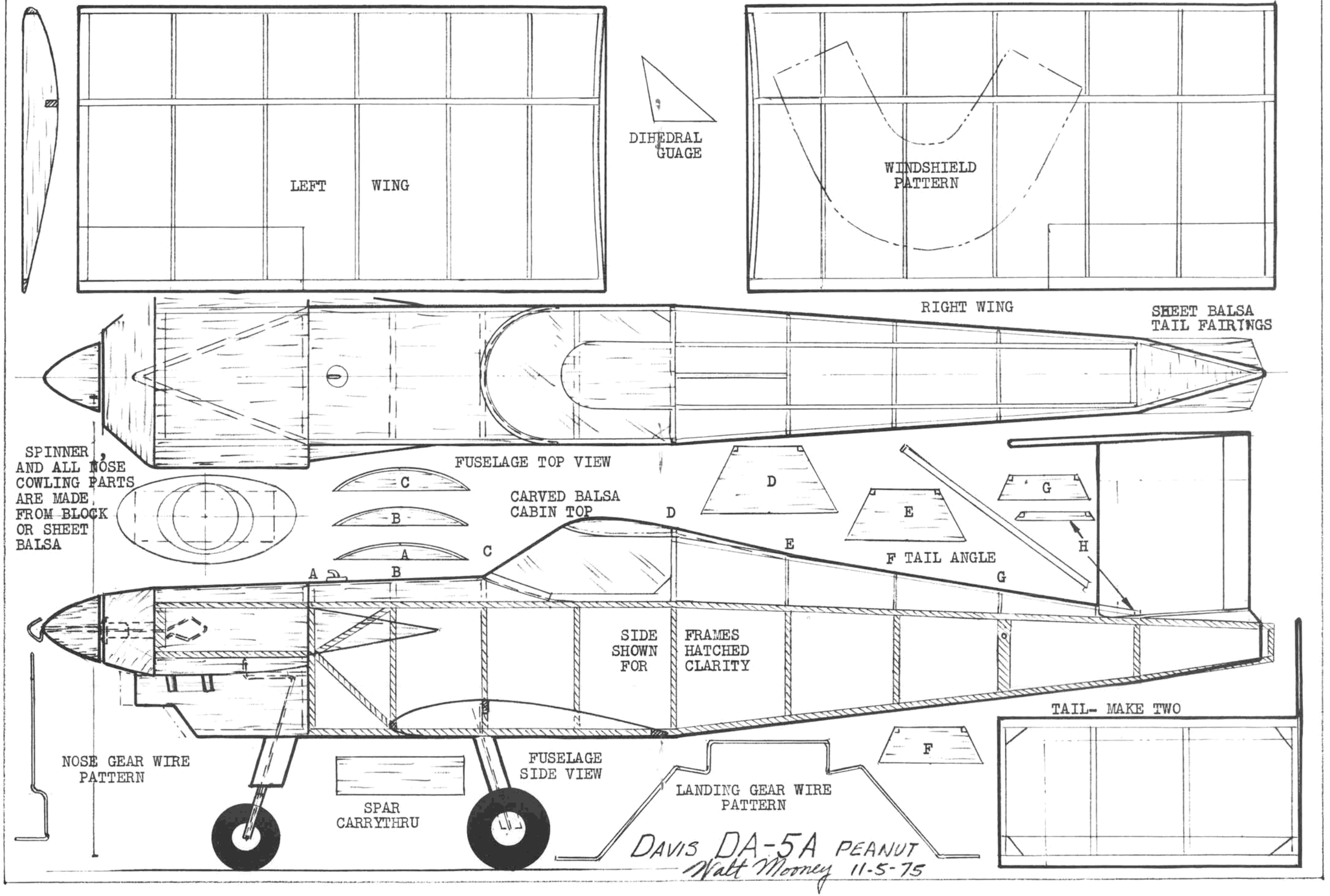
Continued on page 64



Plenty of wing area within the 13 inch span and a nice long tail moment make this a stable flier. Squarish lines simplify building.



The Davis in "bone" form. Prop is modified from a Tern Aero plastic unit.


LEFT WING
DIHEDRAL GUAGE
WINDSHIELD PATTERN
RIGHT WING
SHEET BALSA TAIL FAIRINGS
SPINNER AND ALL NOSE COWLING PARTS ARE MADE FROM BLOCK OR SHEET BALSA
FUSELAGE TOP VIEW
CARVED BALSA CABIN TOP
SIDE SHOWN FOR FRAMES HATCHED CLARITY
F TAIL ANGLE
TAIL- MAKE TWO
NOSE GEAR WIRE PATTERN
SPAR CARRYTHRU
FUSELAGE SIDE VIEW
LANDING GEAR WIRE PATTERN
DAVIS DA-5A PEANUT
Walt Mooney 11-5-75

The 1975 U.S. Free Flight Championships Sweepstakes winner, Jim Haught, and father, Bill, hiding behind Chuck Broadhurst Trophy.

Jim Haught's main source of inspiration, Lisa Heath, holding the Sweeps award plaque, and his OD 1/2A design, "Candle in the Wind."

FREE FLIGHT

By BOB STALICK

• It doesn't seem like it. Proving once again that time really flies when you are having fun. Two years ago, Bill Northrop asked me to write this column. Two years ago, I said "Yes." All of that must prove something, other than the fact that 24 months have gone by.

So much else has gone by, too. The VTO rule has just been eliminated. Bob White has placed high again at the World Champs. Two AMA Nationals have come and gone. Non-free flight modelers have discovered Hot Stuff. We've discovered prop brakes, perfected (some say) circle towing, and ended up with a 7 second power run in FAI Power. What all of this shows is that we can expect to see similar changes in our sport in the next two years.

On occasion, in the past, magazines have featured predictive articles about what flying and modeling may be like ten years from now. Pictures of jet powered ships have accompanied these articles . . . so have electric powered models. The electrics are here now, but I still don't see the jets. Maybe it's about time for someone to run another predictive article for about five or ten years from now. If you've got some ideas, jot 'em down. Send 'em to Bill. Let's predict.

DARNED GOOD AIRFOILS – Shoaf 4738 DF

Harry Shoaf, writing in the 1964-1965 Model Aeronautic Year Book, by Frank Zaic, produced this month's Darned Good Airfoil, which has some wind tunnel experimentation to enhance its design. Although thick as far as current foils go, and featuring a high point which is further back on the top camber in comparison to other in-vogue sections, this one would tend to delay separation of the airflow until a later point. In turn, it would make for a more efficient section, with some critical adjusting necessary relative to angles of attack. I would suggest that it could find use in such ships as cargo and windy-weather A/2 gliders, since it is a high-lift design. Some thinning out of the thickness of the foil could be accomplished to bring it down into the 9% range or so, in which case it could prove useful in other applications, such as general duty A/2, A/1, R/C Gliders and the like. Worth a try.

JANUARY MYSTERY MODEL

Got a giant for you this month. For any of you larger-the-better freaks, this one might ring a bell. Intended for the K&B 45 under the old 20 second engine run rule, this one should weigh in somewhere between an FAI Power ship and an ignition powered KG. But if it ever got some altitude, it should glide for a long time! MVA wing airfoil and a Goldberg G-610 stab would see to that. If you know what it is . . . or if you have built one, drop a note to Bill at MODEL BUILDER. Earliest postmark gets a goody.

Paul Marchal, of Dickinson, Texas was first to correctly identify Dick Everett's "Pine Needle" as the October Mystery Model.

Quite a few readers recognized the "Nor'east'er", an A/2 design by Jim Daley, which was the Mystery Model for November. Many answers came from modelers who had built and flown this ship. First correct answer came from Eugene Jensen, Gresham, Oregon.

The "Pendy Wing" was designed by Ray Booth, published in the Dec. 1952 issue of Flying Models, and first identified as December's Mystery Model by Rudy Kluiber, Lakewood, Ohio.

JANUARY THREE-VIEW – Giggle A/1

From across the ocean in Jolly Old England came this month's offering. Since A/1 tends to be a semi-forgotten event, and since good A/1 gliders are hard to find, this one should fill the bill, particularly in some of the small field events which are being held in the more populous parts of the country. The Giggle is a ship which tows up nicely (not all A/1's do) and glides well. These two characteristics make for a good ship. Building is simple, too. Square box fuselage and constant chord surfaces do help. If you are looking for a good A/1, here's the one! Seven or eight of them have been built by modelers in the Cleveland area with considerable success.

THE V.T.O. THING

Once upon a time, in John Pond's days *(He's still having his "days"! wcn)*, all models had to R.O.G. Hand launching was out. With more powerful engines, engine runs were cut down, and finally hand launching of ships became accept-

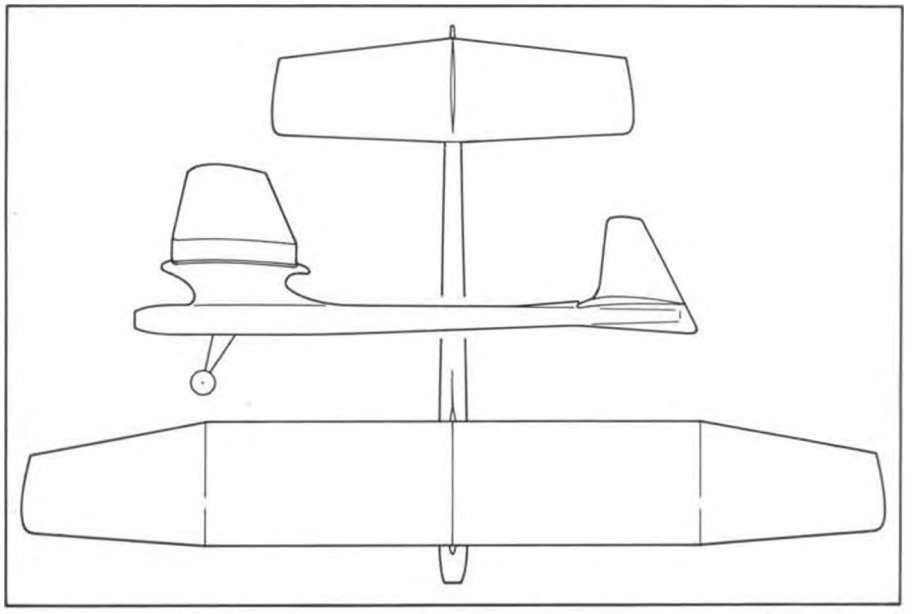
able. Engines became even more powerful and models became more efficient. The power loadings and wing loadings and cross sectional rules went out the window. Vestiges of the past said that although the new models didn't have wheels, they still should be able to take off from the ground. Thus came V.T.O. Since, as the story goes, it took longer for a plane to get off the ground under V.T.O. than from hand launching, an additional few seconds was allowed the V.T.O.er. Usually, the additional time was 5 seconds. Then came category I and II. Times for Cat. II went to 9 seconds hand launch and 11 seconds V.T.O. Now, by recent action of the Free Flight Contest Board, and by a vote of 7 for and 4 against, V.T.O. is no more.

Technically, the V.T.O. can still be with us, but the flier can not expect to get his additional seconds of time, since the times for engine runs are now set at 9 seconds for Cat II, and 12 seconds for Cat I. The style of launch is immaterial. The intent and the effect of this vote is to ban V.T.O. Why?

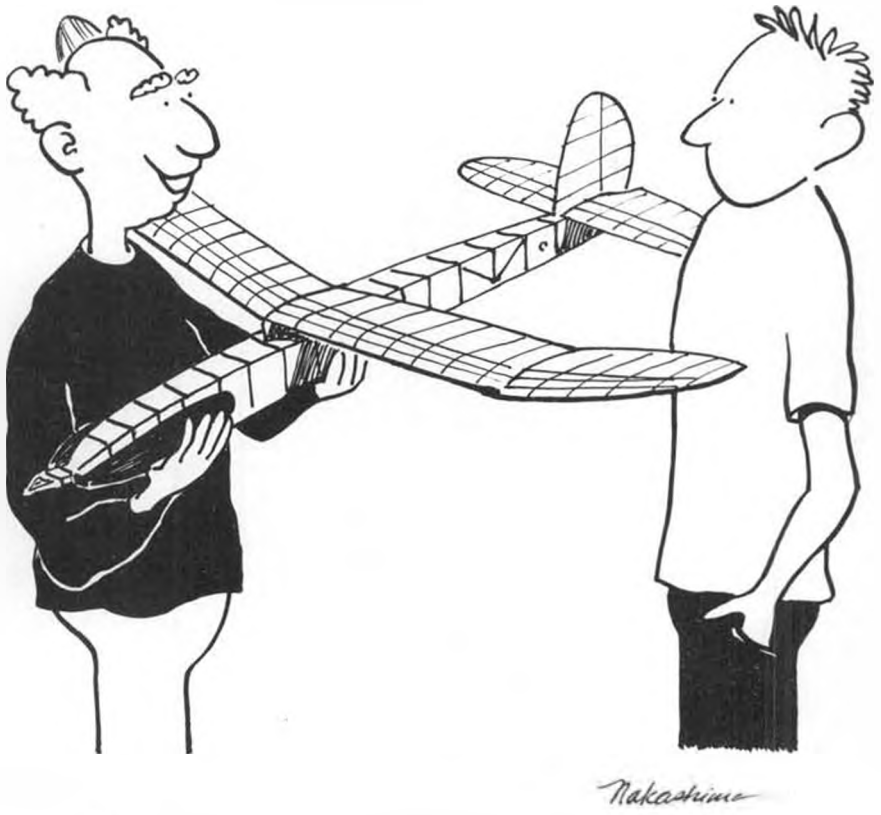
The argument is based on the safety issue. Since I have seen no documentation of the number of injuries, accidents, or near-accidents which have been caused by V.T.O., I can only assume that the F.F.C.B. has voted primarily in accord with their own biases. I know that the California newsletter presses have been banging this back and forth for awhile . . . pro and con. I can only say that in my experience, which covers 16 years of contest going . . . including the Nationals and numerous meets up and down the coast, I am not aware of any such accidents. I have personally viewed, however, a number of accidents and near-accidents as a result of poorly trimmed or trimmed-at-the-meet models; I have seen accidents or near-accidents caused by allowing models to be flown from a line of cars; I have seen accidents or near-accidents caused by non-enforcement of current AMA Safety Rules.

Maybe our next legislation through the FFCB should be to eliminate the above conditions. I would propose the following:

1. A separate and special location on the field at all contests should be

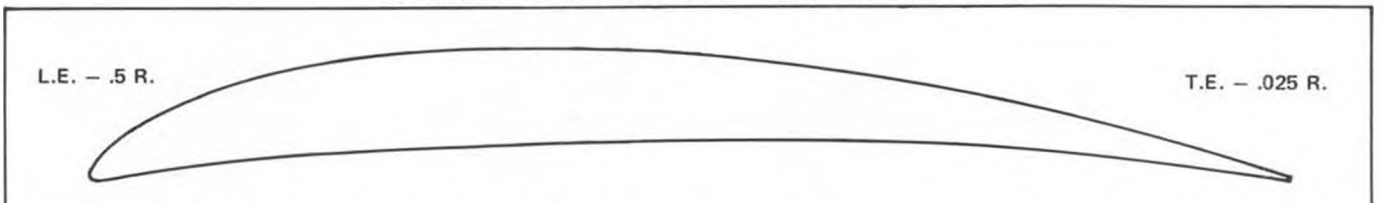


JANUARY'S MYSTERY MODEL



"Fields are shrinking. Flights are shortening. Pleasure's still growing."

DARNED GOOD AIRFOIL – SHOAF 4738 DF

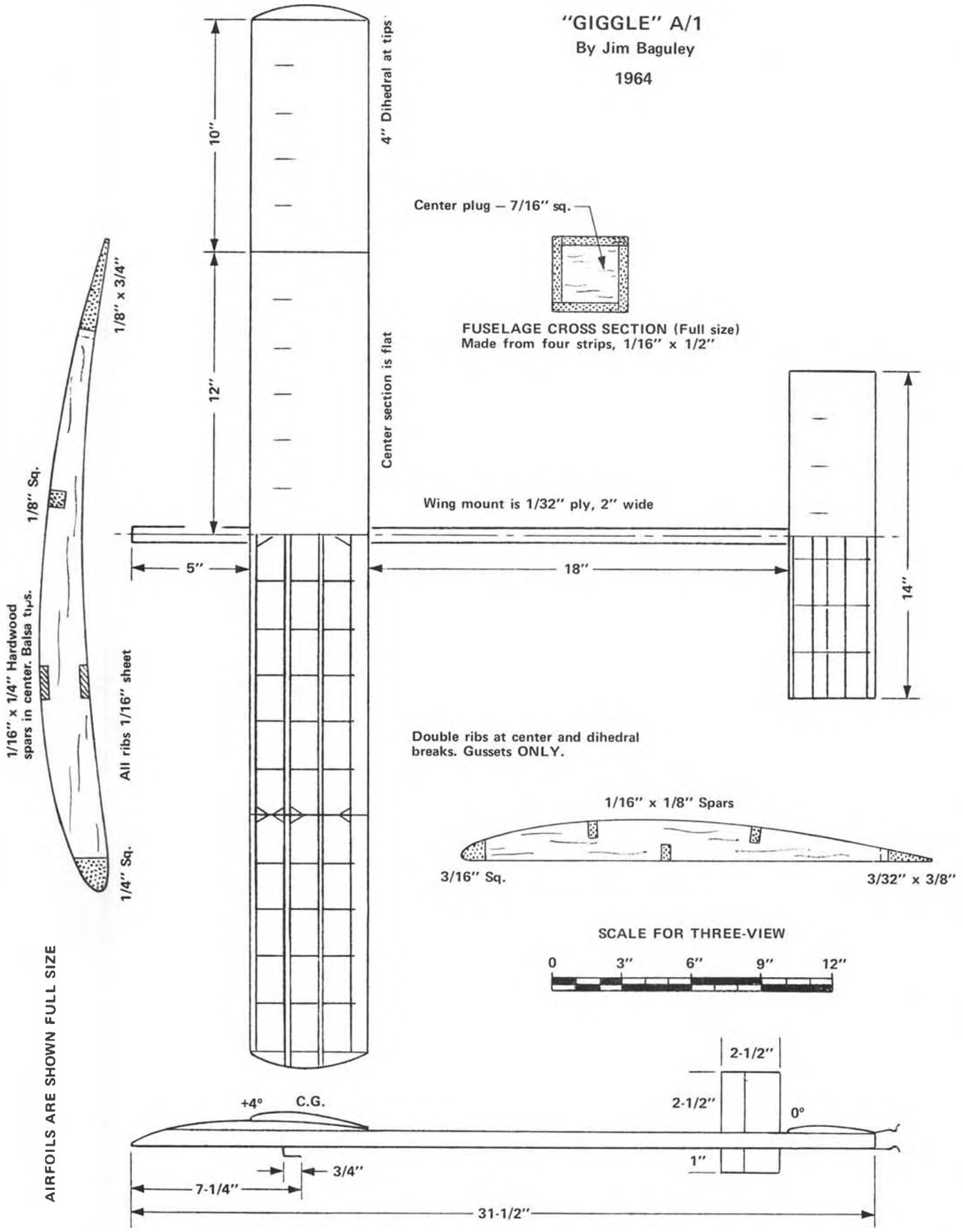


STATION	0	2.5	5	10	20	30	40	50	60	70	80	90	100
UPPER	.90	3.43	5.09	7.27	9.81	10.90	10.90	10.50	9.40	8.00	6.00	3.50	.30
LOWER	.30	.45	.90	1.45	2.36	2.70	3.09	3.27	3.60	3.27	2.70	1.45	0

"GIGGLE" A/1

By Jim Baguley

1964



AIRFOILS ARE SHOWN FULL SIZE

established for the testing and trimming of new and un-trimmed models. Such a site must be at least 100 yards away from the designated official flight area. Enforcement would be by either impounding of the offending model or disqualification of the contestant. Flagrant offenders could have their AMA license lifted.

2. Enforcement of the current AMA safety rules regarding flying from a line of cars or from any location not designated as the official flight areas. Enforcement would be by impounding of the model or disqualification of the contestant.

If the C.D. refuses to do his job, three contestants or active AMA members could file a complaint which would override the C.D. and force him to enforce the rules. (It's called a Writ of Mandamus in legal parlance).

My point is this: If safety is the reason, let's clean up the really flagrant offenders, of which V.T.O. is only one miniscule part.

In case you haven't guessed yet, I favor the retention of V.T.O., but it now appears to be a thing of the past, and that's too bad. Now, let's get onto taking care of some of the more important things regarding safety. What say, FFCB? Are you up to it, or is the safety issue only a coverup for your own biases?

NOW CATEGORY III

It's been off again and on again. Now, It's on. The Flying Bucks MAC of Levittown, PA., are promoting a Cat. III event, which would feature 2 minute maxes and 7 second engine runs (hand launched, of course). Since there is a diminishing number of suitable sites for Cat. II flying in large parts of this country, such a move would appear to be necessary for the overall health of free flight. I remember the big fights which preceded the establishing of Category II. The effect has been that the 3 minute max is not encouraging the demise of free flight, but does provide recognition where it is due and in areas of the country where it was never possible before. Now, it is time to consider the 3rd category. Let your AMA V.P. know your feelings.

Ray Chalker with his 900 Starduster covered with psychodelic nylon purchased from a yard goods store. Angle of photo doesn't show wild design on material.

NFFS SYMPOSIUM FOR 1976

It seems only a couple of months ago that we were prepping the readership for contributions for the 1975 Ten Models of the Year Competition. It's time for 1976. If you have a suggestion for such a model, send it in. It would be very helpful if you would include the following information: data on the model, contest record, reasons for nomination. Do it soon. Send them off to Robert P. Dodds, P.O. Box 436, Rancho Santa Fe, CA. 92067. Bob is serving as this year's editor of the Ten Models feature.

MAXAID CIRCLE TOWHOOK KIT

After the big buildup given to the do-it-yourself twang-type towhook in last month's MODEL BUILDER Free Flight, now comes the information that Elton Drew is producing a similar gadget which you can purchase directly from NFFS Supplies % Joanne Meuser, 4200 Gregory St., Oakland, CA. 94619. This is a unit that you can practically drop into the present A/2 you are flying. See sketches and pix for more details. It's a good buy at $8.50.

While you're sending your money to NFFS Supplies, you might order some of the coiled landing gear skids which they market. These skids come in 1/8 inch diameter. NFFS is also test marketing some new sizes. They are 3/32 and 5/32 diameter music wire. With this new range of skids, you can buy whatever you need for that new ship . . . whether it's an A ship or a D ship or anything in between, for that matter.

HINTS AND KINKS AND OTHER NEAT THINGS

Tired of lighting d.t. fuse? Always running out of fuse at the field? Tired of having the fuse burn a hole in your pants? Some of us have been using a converted bandaid can to hold the fuse and put it out when we drop it on the ground shortly before launching. Nick Rankin uses something called Mosquito Coil. It's sold in most hardware and variety stores and is produced by several different manufacturers. It's a very slow burning, fuse-like substance

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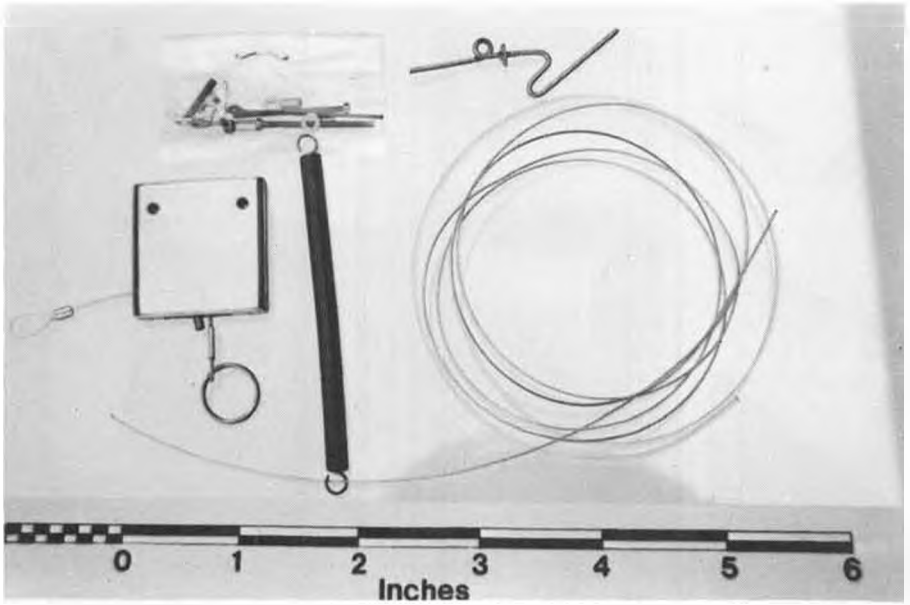
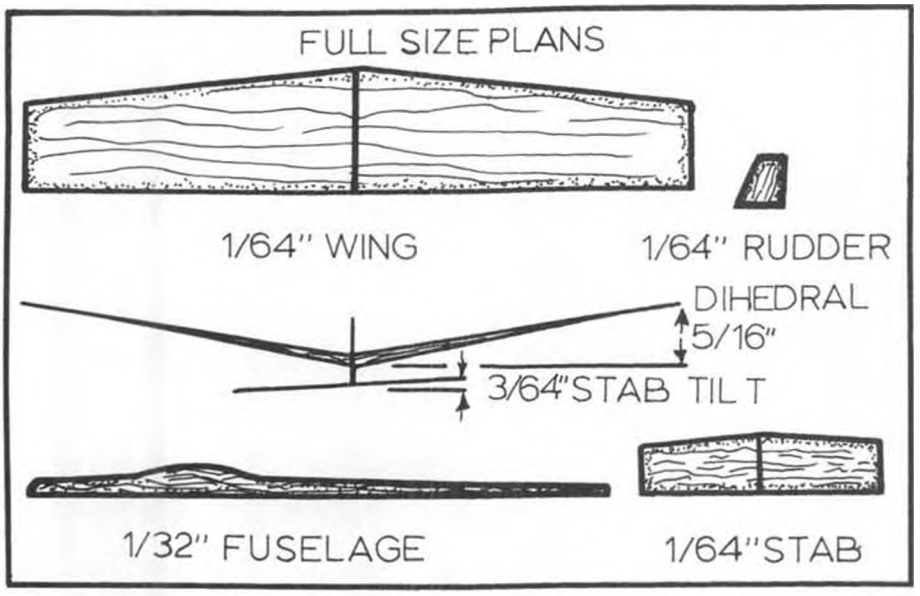


Elton Drew's MAXAID Towhook kit for Nordic gliders. Unit is marketed by the National Free Flight Society.



PHOTOS BY THE AUTHOR

Randy's grandfather gives the familiar "that-a-way" sign to help you find the pocket glider.

THE BACK-POCKET PLANE

by
RANDY WALLINGFORD

• Recent trends in indoor craft seem to be toward ultra-large aircraft. For example, the Big "D" by Al Rohrbaugh and the "Monster" by Erv Rodemsky.

Being a deviant sort of person, I decided to take a step in the other direction. I came up with this; my back-pocket plane, after many seconds of deep thought.

I drew the plans on the wall in order to get the right perspective in space. I then transferred them to paper, which I promptly cut up and used for a template.

I had just finished cutting it out and glueing it together so it could dry in peace on my workbench, when my mother cleaned my room and threw it out!

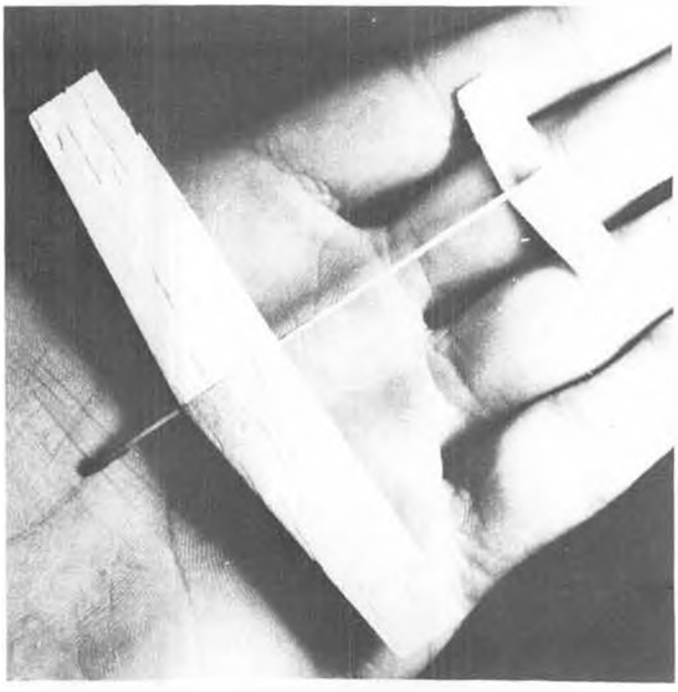
The second plane was a complete success, requiring only 16 flights to get trimmed to perfection, except for this funny spiral dive in the glide, which was fixed on the 17th flight.

I think this is about as small as you can get and still have a decent glide with the ability to gain enough altitude to fly in competition. About 20 feet seems to be maximum altitude without folding the wings. This is a perfect plane for those low ceilinged school gyms.

Send $.40 to Oldtimer Models, P.O. Box 18002, Milwaukee, Wi. 53218 and order a sheet of .015 (1/64) x 2 x 18 inch indoor balsa.

Cut out the wing, stabilizer, and rudder from the sheet of .015 and sand the wing and stabilizer to an airfoil. Cut out the fuselage from 1/32 and round the corners slightly, except where wing and stabilizer mount. Breathe on the wing and shape it with the fingers to a little more undercamber than the plans show, as the wood will tend to spring back some. Cut the dihedral joint and sand it to a bevel so that it mates properly when raised to the proper dihedral of 5/16 inch under each tip. Glue it in this position. Glue the wing to the fuselage. Glue the stabilizer on with one side blocked up 3/64 inch. The plane will turn toward the high side, so block up the right side to turn right

Continued on page 81



Careful, it may bite! If fields get any smaller, this may become the first Cat. VIII HLG! This is an exact size photo, in Randy's hand.

Safely stored in this metal candy tin, you can stuff the BPPHLG in your back pocket and take it to any contest.

The author, Jim Scarborough, Dist. X Associate Vice President, with his Texan 750. Modifications to the original design include reduced stab area, longer tail moment, and higher pylon.

PHOTOS BY KENT MONTGOMERY

THE TEXAN 750

By JIM SCARBOROUGH . . . There's nothing so consistent as a well-tried design that has been continuously modified and updated over a period of 10 years. Here is the latest version of a veteran design.

• The Texan was designed in early 1952. Ed Miller and Jimmy Summersett (of San Antonio, Texas) designed and built the first versions. Since then, model engines have increased tremendously in power and engine runs have been reduced. In order to stay competitive with the Texan, I've made numerous modifications since I started flying them in 1962. The stab area has been reduced, tail moment increased, pylon raised and fuselage lines have been cleaned up, among other things.

The model has evolved with consistency in mind. I for one dislike test flying. Once the model has aged three or four months, it should not be necessary to test fly it any more. I go to a contest, and though the model may not have been used for several months, the first flight of the meet is usually made by my 750, and is a max at that! Ample decalage, rigid wing, and pylon height, all contribute to an inherently stable, forgiving design.

The construction of the 750 is very conventional and simple. Once all the ribs are cut out, you'll be pleased the way it seems to fall together. Carefully select your wood, with strength and weight in mind, but above all, keep the stab and wing tips light. I like to start by building the wing and stab first. Make rib templates from 1/16 plywood. The diagonal ribs in the wing are oversize to allow for sanding to size in place. They are also made long and are to be cut to length at assembly. All ribs are 1/16 contest balsa. Stack them to cut spar slots and for sanding.

Starting with the right wing, notch trailing edge (or cut 1/16 off all ribs) and pin in place. Pin down leading edge and both spars.

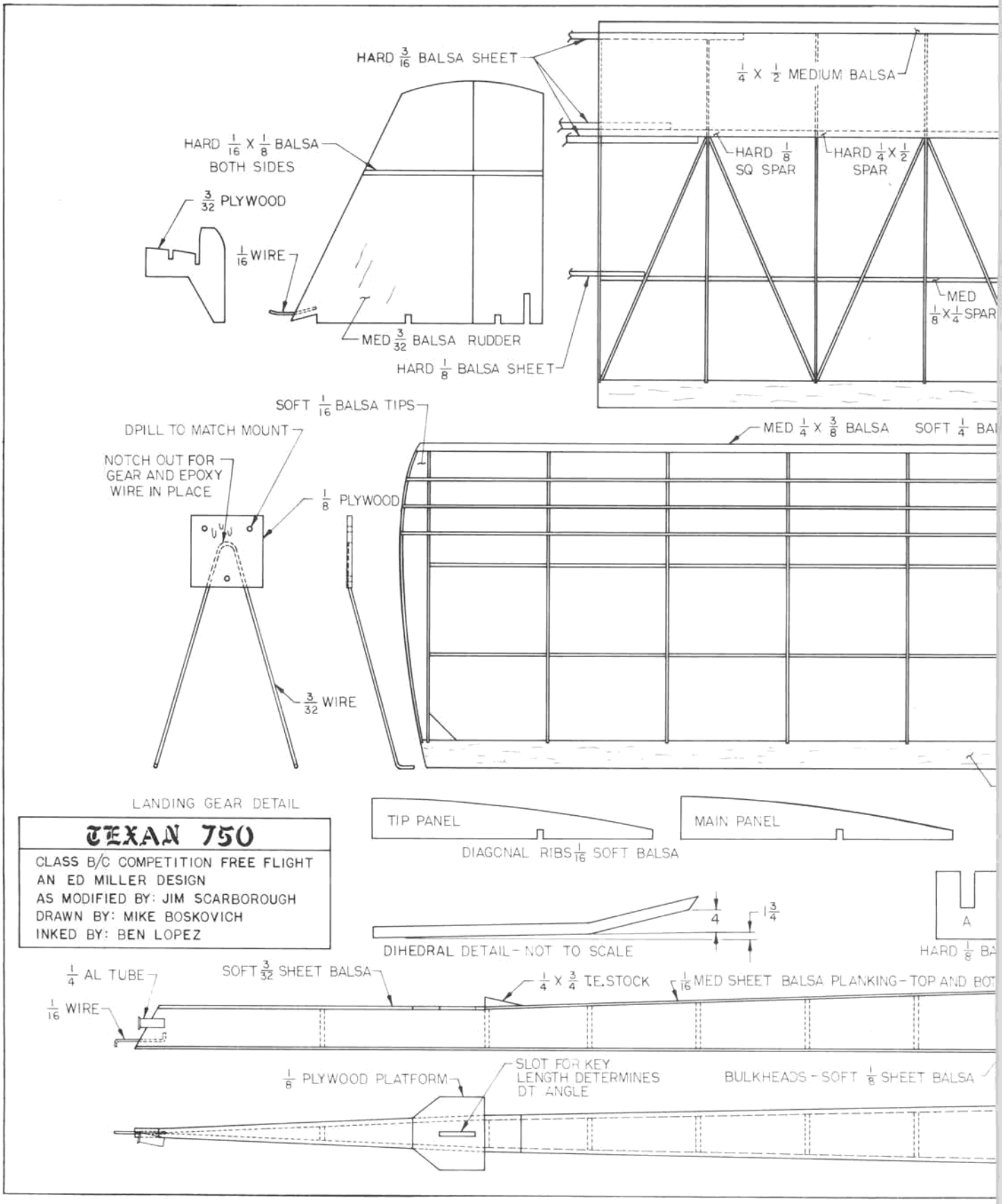
Glue in all ribs, except the ones at the dihedral joints. On the right main panel, leave the diagonal ribs out until the assembly is dry. Un-pin this panel from the board and prop up the leading edge 1/4 inch at the polyhedral break, while keeping the trailing edge pinned down. Now install the diagonal ribs. This will build and lock in the correct amount of wash-in.

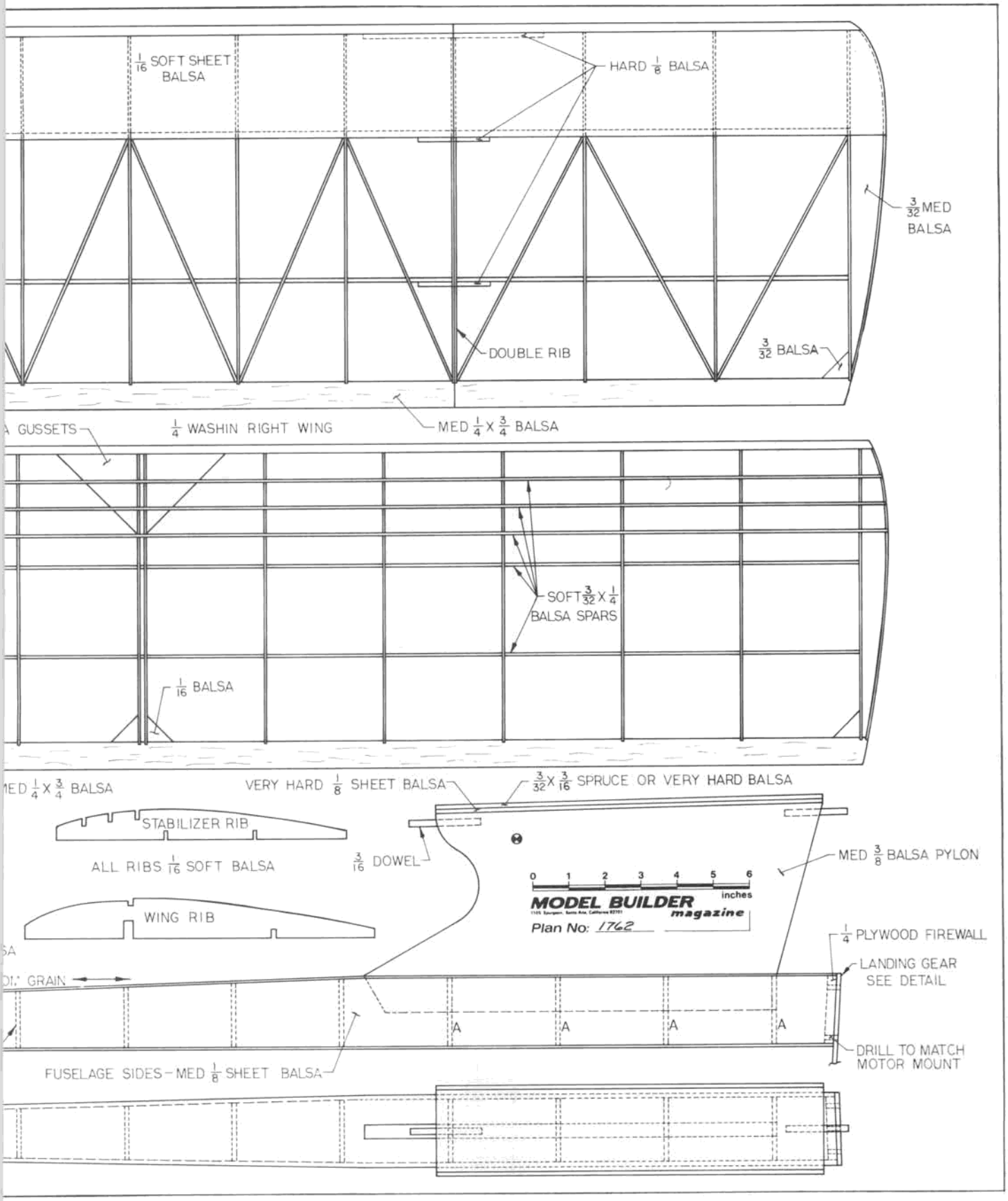
Bevel a light piece of 3/32 sheet balsa and glue it on at a 45 degree angle for the wing tip. Do not install the top spar at this time.

After the wing is dry, remove it from the plan and mark the rib curvature on the tip, using a straight edge laid on top of the ribs. Carve and sand to the correct contour. Don't forget to relieve the forward portion for the 1/16 planking.

Rub the plan with cooking oil to make it translucent. Turn the plan over to build the left wing in the same manner as the right wing, except the wash-in is omitted. When dry, install tip dihedral, hard balsa dihedral braces and ribs. Then join the center panels at the proper dihedral angle, install hard balsa braces and ribs. Now install the top spar. Butt-glue the 1/16 soft planking to the leading edge, to all ribs, and the top spar. Pin down until dry. Use care to get good glue joints, as this planking adds a lot of strength to the wing.

Carve the leading edge to match the


HARD 3/16 BALSA SHEET
1/4 X 1/2 MEDIUM BALSA
HARD 1/16 X 1/8 BALSA BOTH SIDES
HARD 1/8 SQ SPAR
HARD 1/4 X 1/2 SPAR
3/32 PLYWOOD
1/16 WIRE
MED 1/8 X 1/4 SPAR
MED 3/32 BALSA RUDDER
HARD 1/8 BALSA SHEET
SOFT 1/16 BALSA TIPS
DPILL TO MATCH MOUNT
MED 1/4 X 3/8 BALSA
SOFT 1/4 BA
NOTCH OUT FOR GEAR AND EPOXY WIRE IN PLACE
1/8 PLYWOOD
3/32 WIRE
LANDING GEAR DETAIL
TIP PANEL
MAIN PANEL
DIAGONAL RIBS 1/16 SOFT BALSA
TEXAN 750
CLASS B/C COMPETITION FREE FLIGHT
AN ED MILLER DESIGN
AS MODIFIED BY: JIM SCARBOROUGH
DRAWN BY: MIKE BOSKOVICH
INKED BY: BEN LOPEZ
4
1 3/4
DIHEDRAL DETAIL - NOT TO SCALE
A
HARD 1/8 BA
1/4 AL TUBE
SOFT 3/32 SHEET BALSA
1/4 X 3/4 TE STOCK
1/16 MED SHEET BALSA PLANKING - TOP AND BOT
1/16 WIRE
1/8 PLYWOOD PLATFORM
SLOT FOR KEY LENGTH DETERMINES DT ANGLE
BULKHEADS - SOFT 1/8 SHEET BALSA



FULL SIZE PLANS AVAILABLE – SEE PAGE 94

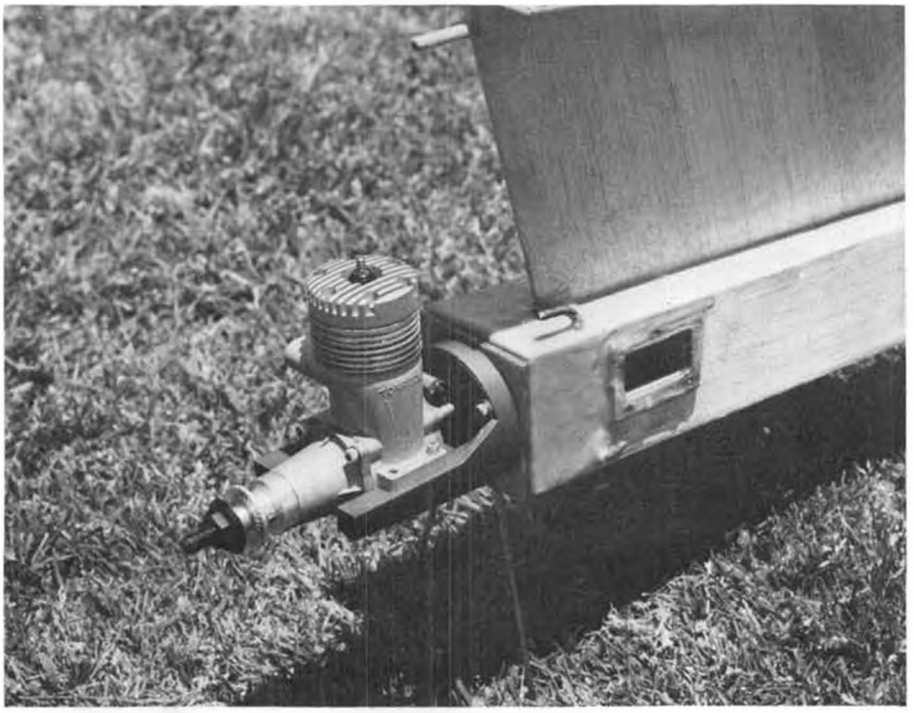
contour of the planking. Round the bottom of the leading edge upwards approximately 3/32 inch (no knife edge). Sand the entire wing carefully. Apply three coats of dope, sanding lightly between coats.

The stab is constructed in much the same manner as the wing. On later versions, I have been making a smaller stab by reducing each tip by one inch. You may build either version, though I recommend the smaller stab.

All ribs are soft 1/16 sheet, except the center two, which are hard 1/8 sheet. Stack the ribs, sand, and cut the spar slots. The spars, and leading and trailing edges, will have to be spliced, unless you have 48 inch wood.

Notch the trailing edge (or cut 1/16 off ribs) and pin down. Pin down the spars and leading edge. Put in all the ribs. Glue pieces of 1/16 sheet in place at a 45 degree angle for the tips. When dry, put the top spars in. Remove from the board and carve the stab tips to shape as done with the wing tip assembly. Carve the leading edge to shape. Round the bottom up about 1/16. Sand the entire stab carefully and give three coats of dope.

No matter from what angle, covered or uncovered, the Texan looks a heck of a lot better when it's being held by Jim's wife, Judy, as seen on the cover. Sorry 'bout that, Jim!



Close-up of front end, showing K&B 40 RR on Kraft/Hayes radial mount. Note plywood timer mount and fuel line outlet tubes. Pylon is 3/8 sheet balsa.

Cut the stab key/pull-up from 3/32 plywood and epoxy into place. The rudder is cut from medium 3/32 sheet. Glue the anti-warp strips in place and sand to a streamline section. Cut out the slots for stab spars. The bottom of the rudder should be flush with the bottom of the stab ribs. The rudder may be glued in place now, or after covering the stab.

Before covering the wing, check it for balance. Pick it up between the forefingers at the center section. It should hang level. Trim wood from the heavy tip or add dope to the light tip 'till it balances. Cover the surfaces with tissue and water shrink. Apply five coats of dope to the stab and seven to the wing. Use plasticized butyrate dope thinned about 50-50. Cut out any decoration desired from tissue and apply, using thinner.

After a few days of curing, warps may be removed over a toaster. All surfaces should be flat, except the right main panel which should have 1/4 inch wash-in.

Now that the flying surfaces are out of the way, the fuselage may be constructed. Cut two sides from hard 1/8 sheet. Again, 48 inch wood is desirable. Use straight-grained balsa, preferably from the same sheet. Cut out the pylon bulkheads and glue to sides. Maintain trueness of sides during this operation. When dry, pull the tail end together and glue. Install the rest of the bulkheads. Cut a firewall from 1/4 plywood and drill holes for your favorite motor mount. Press in blind nuts and epoxy it into place. Don't forget the left and down thrust. If a rear rotor engine is used, move firewall back 1-1/8 inch from where shown on the plans.

Cut a pylon from medium 3/8 sheet. Drill 3/16 holes for the wing hold-down dowels. Sand to shape and epoxy into place, being careful it is true in all directions. Maintain the incidence angle shown on plans.

Cut the stab platform from 1/8 plywood and glue in place.

Install a hard tank or pen bladder, and cut a hole for the timer. The tank shouldn't be over one ounce capacity. In case of a timer malfunction, you'll appreciate the smaller volume. Put 1/16 medium sheet planking on the top and bottom of the fuselage. Use straight grained wood with the grain running fore and aft.

Make a false firewall from 1/8 plywood and carve a groove into it for the 3/32 wire gear. Epoxy the gear into it and drill holes to match the firewall. This removeable gear is quite handy if you want to put floats on the model.

Put a piece of glass cloth and resin around the front end for added strength. Glue a piece of trailing edge stock at the front of the stab platform. Put in the

wing hold-down dowels. Cut the wing platform from very hard 1/8 sheet and epoxy to the pylon. Put the stab hold-down wires on the rudder and the rear of the fuselage. The snuffer tube can go on at this time. Glue the 3/32 x 3/16 spruce rails on the wing platform to make a cradle for the wing.

Sand the fuselage complete, keeping the corners square and sharp. Apply seven or eight coats of butyrate dope and a coat of your favorite fuel proofer. I still use Fuller's Plast.

Put the wing and stab on the fuselage. Ensure that they are perpendicular to the fuselage center line and key them in place.

Attach the engine mount and gear. Install your favorite engine and timer. Plumb up the system, using a fuel filter ahead of the needle valve. Reinstall the wing and stab. Check the CG. It should fall as indicated on the plans. Add nose or tail weight until it does!

Flying. Once more, check all surfaces. They should all be flat, except for 1/4 inch wash-in on the right wing. The rudder should be flat and on the center line of the fuselage.

Hand glide the model. Remember, the CG is fixed. If it dives, add shims under the trailing edge of the stab. If it stalls, add shims under the trailing edge of the wing. Glue them in! It is most embarrassing for them to fall out when the engine is started.

The model should be made to glide to the right. Shim up the right side of the stab until a circle of about 200 foot diameter is obtained.

Start the engine. Lean it out 'till it is just starting to come in. Launch the model nose up and banked slightly to the right. Use about a 5 second engine run. The model should go out to the right in a climbing turn.

If it is too tight to the right, or wants to go to the left (a no-no), add a piece of trailing edge stock to the rudder (on the left side for too tight right and vice versa). The use of trailing edge stock is far better than bending a tab as it can't be accidentally hit or broken off. If you add too much, you can easily trim it down. Gradually increase power until full power is reached. The ship should make two to three full turns going up and transition into the glide without any hesitation. A right-left pattern may be used, but I feel there is too much of a chance for the transition to be loused up by rough air or what have you. This way, it pops out at the top right in the thermal you were after.

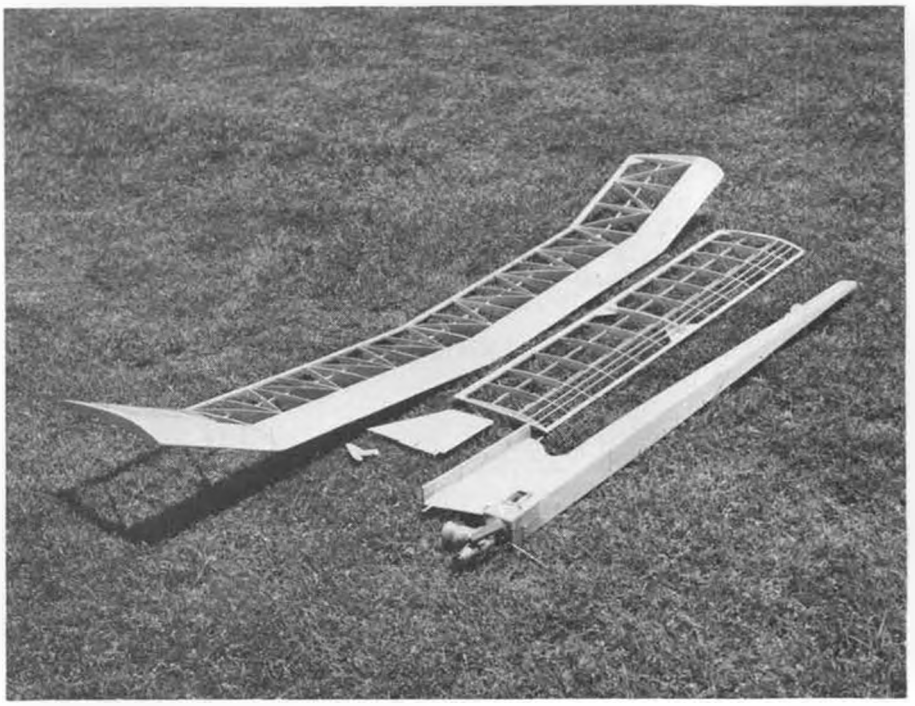
This is a good contest model and should win you many first place awards. I will be glad to personally answer any questions concerning this model. I can be reached at: Box 393, Lawndale, California 90260. Thermals! •

Flying Near Airports? Be Careful!

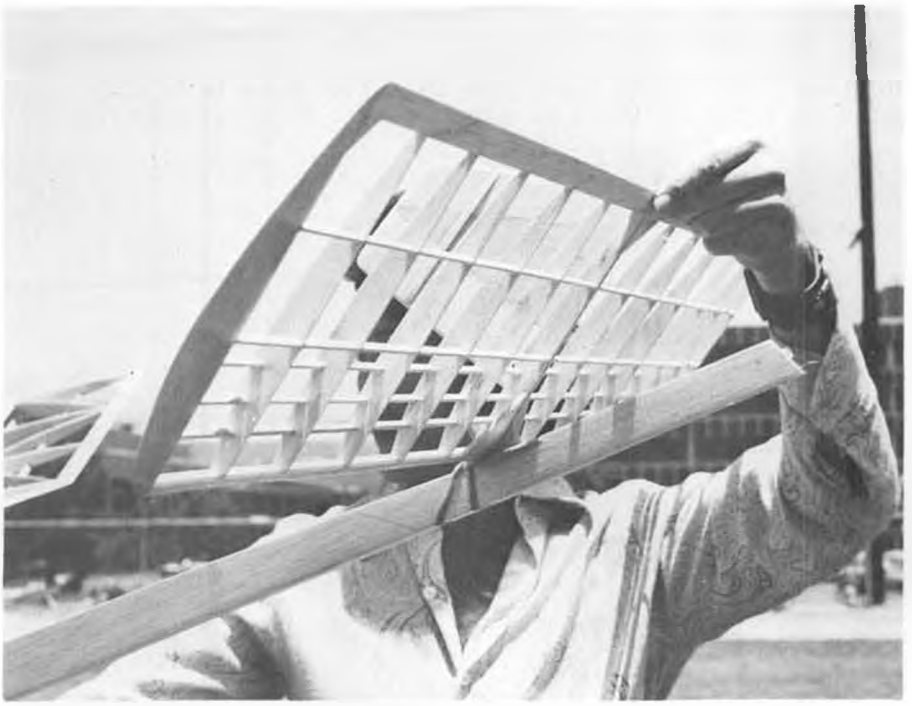
Free Flight or Radio Control flying near airports, or in any situation which might involve the possibility of models being in the vicinity of full-scale aircraft operations, must be avoided—or conducted so as to eliminate any dangerous situations. Models should not be flown in the proximity of full-scale aircraft operations unless the flyer has someone else with him for the sole purpose of watching for full-scale aircraft and supervising the flying so as to prevent accident possibilities.

PROTECT YOUR RIGHT TO FLY!

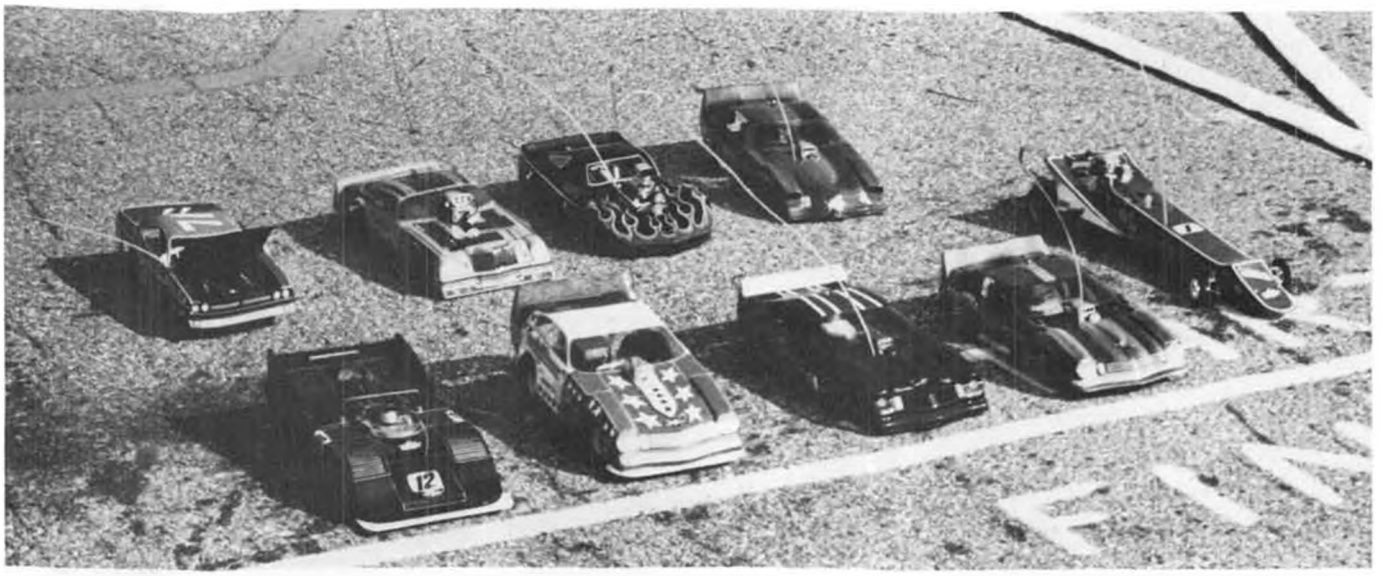
Safe Flying Is No Accident!



Completed framework, ready for covering.



Vertical plywood 'fin' through center of stab keeps it lined up properly when in the DT position. Note grain directions in 3-piece rudder.



Outstanding line up of Concourse cars. No. 12, the car at front left, was the winner.

PHOTOS BY JOHN POOLE & DON McKAY

R/C AUTO NEWS

By CHUCK HALLUM

Guest contributors ROBERTA MOODY and DON McKAY report on "The Biggest, Most Prestigious 1/12 Scale Race of the Year.

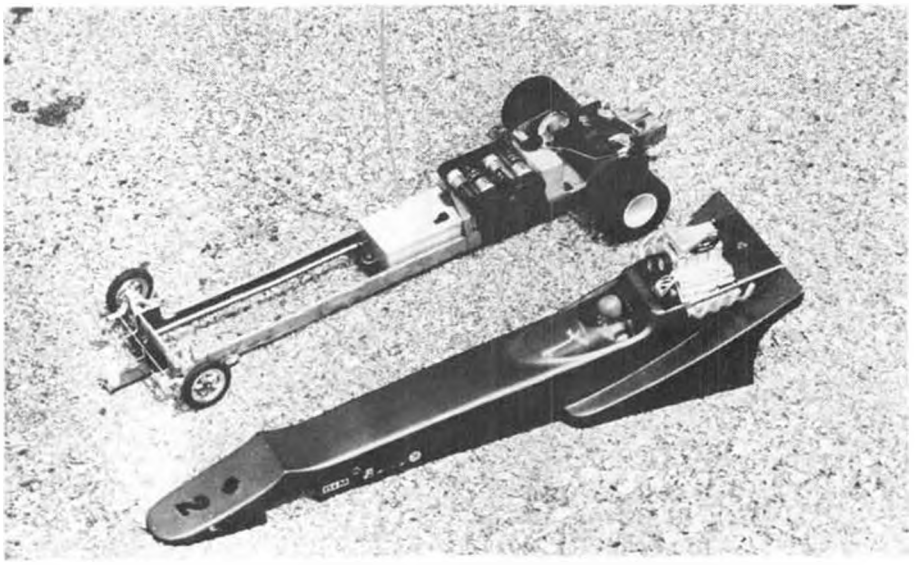
• Each year, the Nationals are in a different part of the country. Last year, the 1/8 and 1/12 Scale Nationals were in California, sponsored by the RAM's. This year it was decided to split up the two scales. I believe a split Nationals is a mistake, as last year, 17 out of 31 of the 1/12 scale contestants also entered 1/8 scale. This year, only three people entered both . . . Roy Moody, Bill Coalson, and myself.

The Mississippi Valley R/C Car Club was chosen to sponsor this year's 1/12 scale events at their famous K-Mart race track. As always, the tire traction at the K-Mart was exceptionally good and the Road course track very tight, with four-5 foot and four-20 foot radius right hand turns, and four-5 foot radius left hand turns. The combination of good traction and tight turns created so much centrifugal force that tires, if not properly glued, would peel off wheels. The centrifugal force also caused trouble for Class B Tee Dee powered cars with tanks mounted on one side or another. In the corners, these cars would tend to run over-lean going one way, or get rich running turns in the other direction.

The only car able to run effectively in Class B Road was that of Bill Coalson, the ultimate winner. Bill, through a lot of testing, went to a Chicken Hopper, negative-pressure tank mounted right behind the engine in the center of the car. Most of the cars had to run fairly rich to keep from dying by leaning out in some corners, therefore, they ran slow on the straight and had no acceleration coming out of half of the corners where the centrifugal force was richening the engine even more. Bill Coalson's car never had this problem, as his engine ran consistent all the time. Roy Moody and Roger Cope also had their cars set up with center mounted tanks and it showed in the qualifying (list elsewhere).

August is a hot month, and it was certainly that in East Alton, Illinois, site of the K-Mart parking lot. Heat and humidity seemed to cause as much trouble for Class A reed valve engines as the centrifugal force did for B cars. I brought a humidity gauge and found

Bill Prehn and his winning Class A and 2nd place B Road cars. Both are stock set ups.



The Drag Class was well attended this year. Shown is Steve Emerson's dragster, which was runner-up to the Top E.T. time of 3.59.

it would jump from 40% to 90% in less than an hour. Reed valve engines are hard to adjust correctly and over-heat when the humidity goes over 80%. The track barricade caused a lot of problems for some cars, as it was nailed down fire hose, and if you think fire hose is soft, tell it to all the broken spindles.

The 1/12 Nationals was well attended, with entries from Texas, Washington, Missouri, and Illinois. Joe Poole did a fine job as race director, with the help of his brother John, and sister-in-law. Even with the heat, tight track, and general problems, everyone had a good time.

RESULTS

Concourse d'Elegance

1. Tom Wilson	64
2. Henry Price	62
3. John Sodovic	58
4. Gary Hodges	56
5. Ken Wilson	54
6. Rich LaBeau	51

This was the finest line-up of 1/12 scale cars I've ever seen. Some cars even had full scale engines, and as you can see, the scores were close.

Drags Funny Car

Top Qualifier: Steve Emerson – 3.60

1. John Hunt
2. Don McKay
3. Bill Prehn
4. Steve Wipfler
5. Steve Emerson
6. Gary Hodges

Drags, Rail

Top Qualifier: John Hunt – 3.55

1. John Hunt
2. Joe Dryer
3. Rich LaBeau
4. Jack Hunt
5. Steve Emerson
6. Carl Brandenberg, Jr.

Class A Stock Oval – 19 entries

1. Roger Cope	100 laps
2. Don McKay	97 laps
3. Bob Fredriks	73 laps
4. Steve Wipfler	70 laps
5. Mark Kearny	68 laps
6. Bill Prehn	59 laps

Bob Fredriks went to the lead early, with Don McKay taking the lead by lap ten. Three-quarters of the way through the race, McKay had established a ten lap lead over the rest of the field due to the other cars breaking down, but then disaster struck. McKay had his frequency jammed by a C.B.'er operating on his frequency, channel 23, 27.255. Bob Fredriks, having engine trouble, loaned his crystals to McKay and he got back out on the track about five laps down from Cope, but couldn't catch up.

Class B Modified Oval – 18 entries

1. Bill Coalson	100 laps
2. Don McKay	95 laps
3. Roy Moody	53 laps
4. Bob Fredriks	53 laps
5. Roger Cope	52 laps
6. Jeff Davis	46 laps
7. Bill Prehn	25 laps

Top Qualifier: Bob Fredriks: 262 sec.

Don McKay again got ahead in the first lap, and lead the race for the first half until trouble struck again, with two straight flame-outs due to a loose glow plug. Bill Coalson, who was following close behind, took over the lead and never let it go. All the other racers had real problems and were left behind.

Class A Stock Road

1.	Bill Prehn	50 laps
2.	Don McKay	42 laps
3.	Carl Brandenberg Sr.	40 laps
4.	Bob Fredriks	36 laps
5.	Steve Emerson	36 laps
6.	Jeff Davis	34 laps

Top Qualifier: Don McKay

McKay and Fredriks led on the first few laps, with Emerson a lap down. About lap 8, Fredriks passed McKay. Fredriks was about to pass Jeff Davis when his car flipped over. Fredriks lapped McKay on lap 11. Bill Prehn was in second place, a quarter lap ahead of McKay about lap 12, Prehn led about lap 15; McKay completed 15 laps next. Brandenberg was third. McKay and Prehn traded leads at about the 20 lap point. At about 25 laps, McKay and Fredriks were trading for 2nd place. At 30 laps it was Prehn, Fredriks, McKay, Brandenberg, Davis, and Emerson. McKay then took over 2nd place about half a lap back from Prehn. Brandenberg was in 3rd place. At 35 laps Prehn led; McKay had 33 laps and his engine died. Then the 2nd, 3rd, and 4th place cars were in the pits. McKay was back in the race and in 2nd place by 40 laps. Bill Prehn lapped 4th place Fredriks.

Class B Modified Road

1.	Bill Coalson	50 laps
2.	Bill Prehn	47 laps
3.	Roy Moody	43 laps
4.	Roger Cope	35 laps
5.	Bob Fredriks	35 laps
6.	Jeff Davis	31 laps
7.	Gary Hodges	21 laps

Top Qualifier: Bill Coalson — 420 sec.

As explained earlier in the text, tank placement was critical in this event. Bill Coalson took the lead at the start, with Prehn the only racer giving him a run. On about lap 35, Coalson flamed out, allowing Prehn to take the lead for a few laps. Coalson's overwhelming speed allowed him to quickly regain the lead after a very fast pit stop. A few laps later, Prehn also flamed out. Moody held down 3rd place most of the race. The rest of the racers were pretty well out of it from the start.

* * *

The restricted horsepower class rules proposal for 1/8 scale R/C cars is coming along. I thought our readers might want a progress report. Currently, it appears that the rules proposal for the new class will be completed in time for consideration by the ROAR Rules Committee for possible use in 1976.

It's really been quite a bit of tail-chasing, sometimes only to arrive where you started. Basically, the class is for existing and new racers who do not have an unlimited amount of time and money to keep changing equipment to remain competitive with all of the super-go engines and goodies that keep coming along. The objective of the class is not necessarily to reduce horsepower, but to stabilize it at some point.

My intent initially was to keep the rules very simple. The proposed rules are a little more complicated than I'd like, but several things were suggested that will (would) probably keep costs lower and competition more uniform. This class is not intended (nor could it) to solve all 1/8 scale car problems such as; attracting new racers, reducing costs to 1/12 scale levels, making everybody a winner or making all cars perform identically. It is an attempt to give current ROAR racers a choice, so that there is a class where they can be competitive even if they race only once every few months. If the current ROAR members are happier, new and more racers will be attracted and stay in the sport.

Where do the rules proposals now stand? Well, first it looks like some kind of carburetor restriction is a necessity. It is one of the simplest, cheapest and most easily checked devices that can limit horsepower. Fuel will probably be restricted to about 10% nitro. The fuel restriction is primarily to give engine longevity and reliability, hence reduce overall engine costs as well as fuel costs. Weight limit will probably be increased to 5½ or 6 lb. Most cars built come in at around 5½ lb, so this will reduce time required to cut out weight, allow more bullet proofing or use of

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Special Swap Shop Note

Over the past few years, the Swap Shop has been inundated with built-up models making it extremely difficult to fairly display them all. To provide maximum exposure of each built up model on display in the Swap Shop, *1976 Swap Shop Registration for complete models and airframes will be limited to one per registrant.*

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more scale appearing items. Also, there may be an engine restriction to cross-flow porting only, no Schneurle ported engines or liners allowed. This last item is mainly to keep the costs down, but the Schneurle ported engine may also have a performance advantage, at an increased cost.

The restrictions of the proposed class should accomplish and encourage several things . . . closer competition, reduced preparation time, reduced total costs, improved car driveability, reduced car destruction, reduced speeds (some), and improved safety. It would also allow more bullet proofing or scale appearance within the weight limit, and improve the fun aspect of the 1/8 scale R/C car hobby.

Some of these items may be questionable, and there are probably more favorable ones. Because of some of the foregoing statements, I thought a proper name for the new class might be the HOBBY CLASS. This name is used by regional stock car racing organizations for 6 cylinder modified street cars, not the super stockers. Hobby Class seems to impart the real intent of the proposed class. Other names that have been suggested are "Pro Stock," "Sportsman," and "Restricted." Do you have a name suggestion or preference? Let me know, quick!

If you have any comments or questions related to R/C cars drop me a line, c/o Model Builder Magazine, or c/o HRE Inc., P.O. Box 4658, Irvine, CA. 92716. Thanks for reading and for your support. Hope to see some racing in the new class in 1976. •

Davis . . . . . *Continued from page 47*

cement it in place on the top of former "D". Add the center stringer between "D" and "E". Cover the top and bottom of the fuselage box structure between the nose block and "A" with 1/4 thick balsa block and add side cheek blocks of the same thickness on each side. When this is dry, carve the blocks to the shape shown for the nose. Install a crosspiece between the uprights at the bottom of station "C", where the wing spar meets the fuselage.

Now bend the landing gear wires and install the main gear. Install the nose gear after filling in station "A" below the cheeks with a sheet bulkhead. Add a sheet balsa brace between the wire and the bulkhead.

Now complete the bottom of the engine cowl. This consists of two side pieces and a bottom. The bottom is a triangle as indicated by the inner dotted lines in the top view. The sides are shaped according to the side view. Note that their true length is indicated by phantom lines which account for the foreshortening in the side view due to their angle.

Carve a noseblock to match the shape of the cowl front. Exhaust stacks are short lengths of dowel or aluminum tube. The propeller is modified from a plastic propeller. I used one of the Tern props obtainable from Vintage Aero. I carved a hard balsa spinner, cut the blades off of the prop and epoxied them in place on the spinner. You can also use the prop as is, and split and fit the spinner to the prop in two halves.

Use thin sheet balsa to fill in between the top longerons at the tail, and add the triangular tail fairings, angling them up to match the tail dihedral.

Cover the model with white tissue. After the tissue has been shrunk with a "fog" of water, assemble the component parts onto the fuselage. Then give all parts a coat of thin dope. Give the fuselage a second coat of dope. Now carve the streamline cheek fairings and cement them in place on the sides of the fuselage behind the cowl cheeks.

Cut out the windshield from thin plastic and fit it in place. Use the pattern as a guide; the pattern shown was drawn directly off my windshield but you may find that it needs a slight adjustment.

The color scheme of the Davis is overall white with blue tips on the wings and tail, and a blue stripe on the fuselage. Black pin stripes are used on both sides of the fuselage trim and inside of the surface trim. The registration number is black. The correct size for these is 1/2 inch tall. On my model they are only 3/8 . . . (complete out of scale). My only excuse is that they were put on in a hurry and that was the only size decals I had.

Add the gas tank cover on the top of the fuselage just behind "A". Use india ink, or black thinline felt pen to detail the control surface outlines. Use flat toothpicks to make the tail counterbalance booms.

The model shown tended to turn very sharply to the left, and required about an eighth of an inch of right thrust adjustment under the side of the noseblock for successful flights. •

Choppers . . . . . *Continued from page 20*

used in converting his stock Kavan Jet Ranger to the very latest "Long Ranger" model 206L. The finished product is not only "one of a kind," it is a truly beautiful machine. First of all, Larry explains that the biggest advantage in making the Jet Ranger longer is that the 206L is approximately 8 ounces lighter! He figures that by extending the distance of the nose from the center of gravity allows him to use less weight in the nose for balance . . . all he added was the battery pack. Final all-up flying weight of the Long Ranger is 12-3/4 lbs.

As close as can be determined, the added weight in the conversion is about 4 ounces, and consists of glass mat, micro-balloons, resin, and longer wood formers No. 8, 9 and 9A. The formers were first drawn on a sheet of paper,

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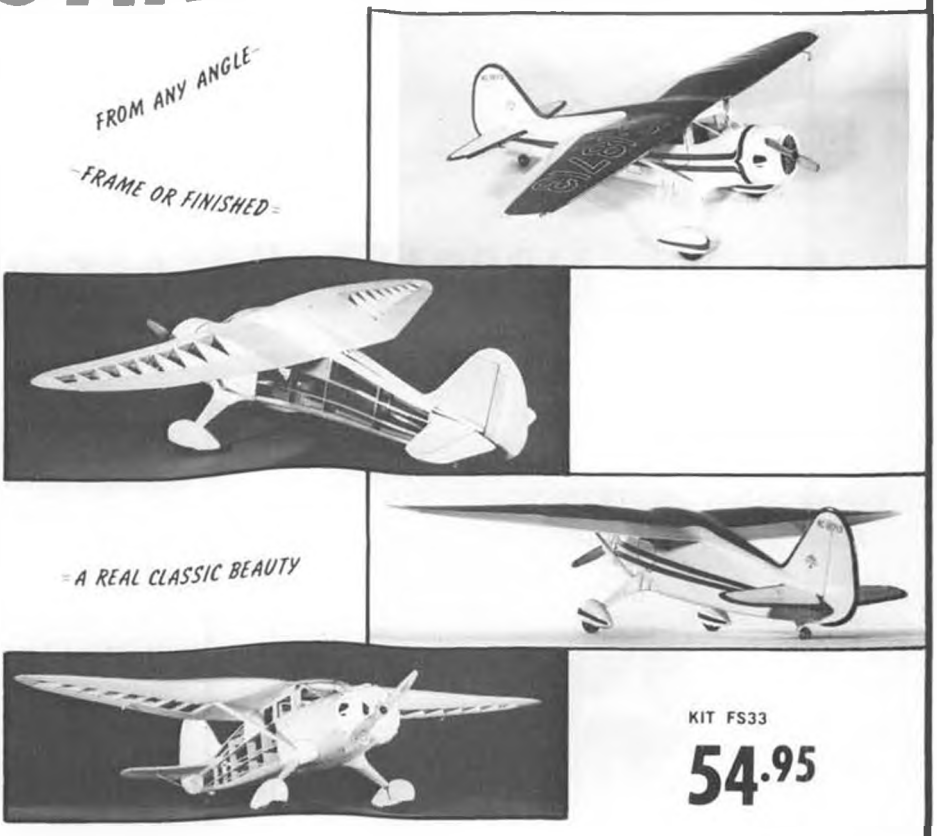

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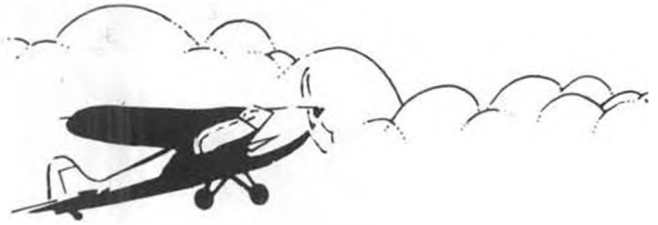


MODEL AIRCRAFT OPERATING STANDARDS

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

1. PURPOSE

This advisory circular outlines safety standards for operators of model aircraft, and encourages voluntary compliance with these standards.

2. BACKGROUND

Attention has been drawn to the increase in model aircraft operations, and the need for added caution in the case of free-flight and radio-controlled types to avoid creating a noise nuisance or a potential hazard to full-scale aircraft and persons and property on the surface.

3. OPERATING STANDARDS

Modelers, generally, are concerned about safety and do exercise good judgment when flying model aircraft. However, in the interest of avoiding undue criticism from affected communities and airspace users, compliance with the following standards is encouraged by operators of radio-controlled and free-flight models.

a. Exercise vigilance for full-scale aircraft (get other people to help if possible) so as not to create a collision hazard.

b. Select an operating site at a sufficient distance from populated areas to avoid creating a noise problem or a potential hazard.

c. Do not fly higher than 400 feet above the surface.

d. Do not operate closer than three miles from the boundary of an airport unless permitted to do so by the appropriate air traffic control facility in the case of an airport for which a control zone has been designated, or by the airport manager in the case of other airports.

e. Do not hesitate to ask for assistance in complying with these guidelines at the airport traffic control tower, or air route traffic control center nearest the site of the proposed operations.

William M. Flener
William M. Flener
Director, Air Traffic Service

then extended 3-3/8 inches to provide the proper length. When satisfied with the curves, the drawing was transferred to 1/8 inch plywood and cut to fit. All other formers remain original.

By following the details in the photos, you can see the construction was begun by cutting the fiberglass cabin-top crosswise, then securing the two pieces to a flat piece of plywood. The original mounting holes are used for this purpose. After the proper spacing is obtained, alignment is assured by spot gluing 1/8 inch balsa strips between the two sections. The assembly may now be removed from the plywood board and glass mat applied to the inside surface and resined in place to fill the gap. The cabin top is then re-attached to the plywood board and the balsa strips cut-off. All that remains is to fill-in the assembly with micro-balloons and sand the top smooth.

The fuselage is next cut in half, following the lines between the side-windows as a guide. The cabin top is now bolted to the fuselage sections to get the proper length for the body. Carefully align the fuselage and again use 1/8 inch balsa strips, spot glued, to hold the fuselage sections in alignment. These balsa strips all around the body really make a very strong temporary bond of the two sections.

If you haven't already done so, cut out the main windshield openings so you can work inside the body. Glass mat is then resined inside the fuselage in the same fashion as the cabin-top. After the resin has set-up, the balsa strips may be cut-off and the area filled with micro-balloons. Sand it down smoothly before cutting out your new windows. The rest of the construction is per the regular kit plans. There you have it! Lots of luck!

One last idea; if you can afford another fuselage shell, or perhaps know the whereabouts of a "cracked-up" Jet Ranger, you can cut the two shells in such a manner that doesn't require "filling the gap." Even the windows will be outlined for you if the two sections are married in the proper manner.

Larry, thanks much for the data and the photos . . . you've done a fine job on it!

ROTOR BLADE FORCES

Have you ever wondered how much your rotor blades really weigh due to the centrifugal force acting on them while rotating? The answer below was supplied by Ray Foote, an R/C chopper flyer, who did an article for his clubs' newsletter, "RAMS-HORN" (Radio Aero Modelers of Seattle).

F = WRC

where

F = centrifugal force, in pounds
W = weight of blade, in pounds
R = mean radius of weight, in inches
C = constant figure for various RPM's.

Now, in detail . . . weigh the rotor blade with attachment fittings in place. Your weight will probably be in ounces, so divide by 16 to get pounds. You now have "W." To find "R," place the rotor blade on the edge of a ruler and find the balance point. Install the blade on rotor head and measure the distance between the balance point and the center of rotor shaft. Next, calculate RPM, or tach the rotor and select a "C" value from the following list:

RPM	VALUE OF "C"
800	18.186
900	23.017
1000	28.416
1100	34.383
1200	40.919
1300	48.023
1400	55.695
1500	63.936

For "in-between" RPM's, estimate the value of "C" as closely as possible. Now for an example:

DuBro Hughes 300

W = 5-1/4 ounces, or .328 lbs.
R = 13 inches
C = 28.416 @ 1000 RPM
WRC = .328 x 13 x 28.416 = 121 pounds!!

It can be easily seen that the rotor head, blades, and attachment fittings are

no place to "skimp" at the expense of structural strength! Thanks Roy, for the rundown.

FINAL APPROACH

It looks as though my next year's vacation will take me to Japan, if its R/C model helicopter industry keeps on going in the same direction as it has in the past year. I've never seen a country, or people, take to a hobby as fast as they have taken to choppers. I'll give you a quick run-down on some late developments, or kits that are now on the Japanese market, so you'll see what I mean.

1. Rabbit 300S, a sharp looking conventional chopper for any engine from .40 to .60.

2. The Micro-Mold Lark is being produced and sold under the name of "Dove."

3. Hughes 250, very sexy looking machine for .19 to .25 engines. Utilizes Bell stabilizer system, should be very easy to convert to collective pitch by sliding the swash-plate.

4. Gazelle SA-341G by Hirobo, features ducted-fan 6 bladed tail rotor (Fenestron).

5. Scorpion, looks exactly like my "Super-Cobra," except it has an aluminum tube instead of fiberglass rear fuselage.

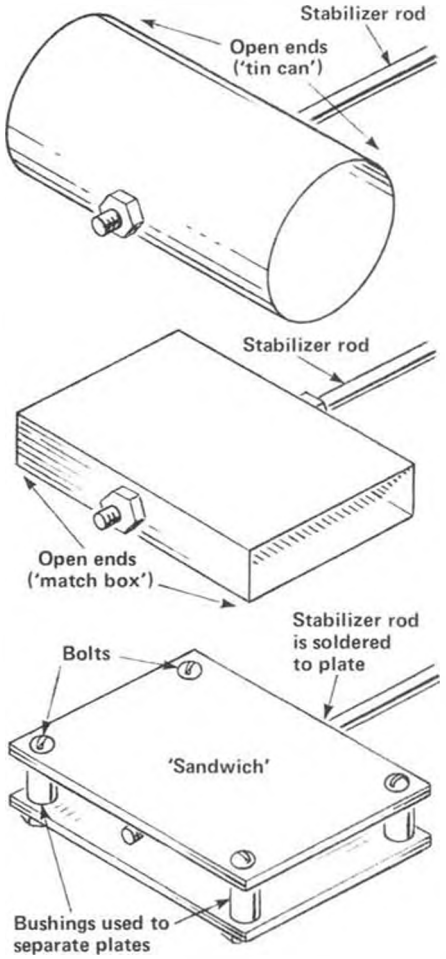
6. Kalt Fairchild Hiller FH 1100, for .40 to .60 engines. Equipped with new main rotor head.

7. Gyrocopter .40, a 3 or 4 channel "Bensen" style autogyro.

8. Tom Bo, four different sizes of same chopper to fit .19, .29-.35, .40-.45, .60 and up.

9. Humming TH-20, cute little .19 to .25 quick-built chopper. Belly starter (ala Kavan) and plastic body shell (ala Tri-Star). Cardon rotor head.

And many, many more whose names and/or data I couldn't make out (I don't do too well in Japanese either. Ha!).



Before closing the shop doors, have you ever thought about using "tin cans" on the ends of your stabilizer rod, instead of the conventional wood or aluminum paddles? Well, this is the very latest idea in Japan, and they claim it works wonders for stability and maneuverability. Most any round, hollow tube up to about 1-1/2 inches diameter may be used for a .60 powered chopper. Mount to suit, with the open ends facing the plane of rotation. The air flow "through" the cans does the work in the same fashion as it does "around" the paddles. "Box-Kite" shaped metal plates and metal "match box" devices are also used with success. I haven't tried them yet but am anxious to see how and what . . . maybe next week-end. BCNU next month. •

F/F . . . . . *Continued from page 53*

that literally burns for days. It also comes with its own "snuffer-stand." At a cost of about a dollar a package, it is the equivalent of about 100 feet of d.t. fuse. Besides, it should keep the mosquitoes away from your flying site.

Looking for a covering material that is tougher than tissue? How about silk? Ever price that stuff these days? Ray Chalker located some light weight nylon in a local yard goods store and bought it for about $1.50 per yard or so. Say it's tougher than silk, covers better and doesn't take as much dope. Only problem is that the stuff he found is in a psychedelic print. If you don't mind having a model that looks like the Flying Hippie, why not? Scrounge around in your local yard goods shop. *(Take it from your old R/C buddy who was using nylon for covering as far back as 1954, it's rough on tender frameworks, such as most free flight structure. It expands when water soaked and returns to its former size as it dries . . . and lets* nothing *get in its way during the process! Check into the polyester lining material mentioned by Pond in "Plug Sparks" December 75, or acetate sheath in "Plug Sparks" May 75. wcn)*

That just about wraps it up for January. Next month, some indoor materials for your consideration and building board. Stay tuned and keep me informed what's going on in your free flight life. All letters and cards will be answered, just keep 'em coming. •

Counter . . . . . *Continued from page 9*

The new Craft Jig Saw Table, from MKM Design, will convert most small, low cost, sabre saws into a handy bench-top table jig saw. The kit contains precision cut, high density particle board parts which can be assembled, with the screws and hardware provided, to make a strong, durable table. A formed wire blade guard/pressure foot is included, as well as four self-adhesive rubber feet. Most available sabre saws, including Craftsman, Rockwell, Black & Decker, and others can be adapted to the Craft Jig Saw Table.

With the variety of blades that are available for sabre saws, almost any material can be cut. With the use of a hack saw blade, even music wire as thick as 1/4 inch can be cut to length. The MKM Craft Jig Saw Table is available direct from MKM Design, Box 106, Washington Crossing, Pa., 18977. Reteail price is $12.95 postpaid.

* * *

Westcoast R/C Products is now producing all an fiberglass version of its F4 Phantom. This large R/C scale jet spans only 44 inches, yet has 500 square inches of area on its semi-delta wing. All-up weight is 6-1/2 lbs., and near scale speeds can be had with .60 power. The all fiberglass construction is highly prefabricated, and requires only eight hours of assembly work to be ready for paint. The one-piece wing has the aileron torque rods installed, and the ailerons are cut out and finished. The horizontal stab is assembled in one piece, with the proper anhedral (droop!). The scale suspension nose gear with tandem wheels is supplied, as well as the canopy, control horns, nylon bolts, exhaust tubes, and firewall. This very complete R/C Phantom kit retails for $189.95. The Phantom wing can be supplied with cutouts molded for retractible landing gear. This, plus a retractible scale nose gear, sells for an additional $15.00. Available from Westcoast R/C Products, 4887 Ronson Ct. Suite H, San Diego, Calif., 92111. •

Western Wind . *Continued from page 31*

enced flier, a novice should be able to get a lot of stick time in short order.

The key to the Western Wind's structural design is strength through flexibility. There is nothing on the glider that will shatter. Generally, the structure will spring back to its original shape. Severe impact will tear the cardboard, but it is easily repaired with five-minute epoxy.

Construction of the Western Wind is easily completed in two to three hours. We followed the manufacturers recommendation, and used a hot glue gun for

assembly. This type gun is available from hardware and discount department stores for under ten dollars, and is very handy around the house. In fact, this type of adhesive deserves further consideration by modelers. It is fast and flexible. One fourteen stick package of USM brand Thermo-Grip glue was more than enough to do the entire airplane.

The cardboard pieces are die-cut, except for small tabs which are left uncut to hold the pieces together on the large sheet. These "tabs" are easily cut with an Uber Skiver. The stabilizer and wing leading edges are folded double for extra strength. Rather than use the hot glue for these joints, we used white glue, and held the joint together with staples from a standard desk stapler. After the glue has dried, the staples can be removed or left in, builder's choice.

The radio gear is installed before the fuselage top is glued down. We used an MRC 765 radio system. A complete review of this unit will be in a future issue of MODEL BUILDER. Peyton Products servo tape squares was used to hold the rudder and elevator servos to the fuselage sides and bottom (We put a piece of masking tape on the servo first, and then stick the servo tape onto the masking tape. This makes it much easier to remove later.). We built the pushrods from 3/16 birch dowels. Goldberg pushrod connectors were used to secure the wires to the servos, and Du-Bro clevises attached to Hi Johnson Hi-Loc control horns were used at the control surfaces. With the servos in place, hooked up and working, the received and battery pack position can be adjusted to establish the proper balance point. The receiver is then wrapped in foam, the switch installed through the side of the fuselage, and the top of the fuse is glued in place. When the glue has set (cooled?) a hatch can be cut in the top of the fuselage for access to the radio. Though we were able to cram in the standard size MRC equipment. Subminiature or "brick" systems would be easier to install.

The Western Wind can be very easily assembled by anyone with a limited amount of modeling experience, and a person with no modeling know-how should encounter very little difficulty. One criticism we might offer is the lack of detailed instructions on the radio installation. The builder is told to "Run the push rods from the servos to the horns . . ." with no explanation of how to build proper push rods. If the Western Wind is aimed at a completely novice market, as we believe it is, this sort of thing should be carefully explained in the instructions.

In the booklet that accompanies the Western Wind Kit there are several claims made for the design. We have found most all of these claims to be accurate. The plane spans 64 inches, with an area of 330 inches. The manufacturer's recommended flying weight is 24 ounces, which gives a wing loading of 8.4 ounces per square foot. Our test model weighed 28 ounces (with 9 ounces of radio gear), boosting the wind loading to 12.1 ounces per square foot. Even at this higher wing loading, the Western Wind was able to fly in light slope lift.

With its high wing loading, our test ship glides fairly fast, and has a high sink rate in dead air. With its 18° total dihedral, the rudder is quite responsive. Elevator response is adequate for normal flying, and can be reduced for training purposes.

The only real difficulty we had with flying the Western Wind was with the wing attachment, or rather the lack of it. The instructions recommend that the wings *not* be joined at the center. This allows them to swing forward on impact. While we agree that this probably will protect the wings, the force exerted by hand launching the plane from the top of a slope swings the wings back, thus in effect moving the center of gravity forward. We feel that the wings should be at least taped together at the center, if not glued. This would allow separation on hard impact, but would keep the wings in proper alignment on launch.

As claimed in the latest ad, the Jef's Friends Western Wind is a slope soaring trainer. We agree. "Engineered to be the strongest, least expensive, and easiest flying craft possible". While we don't like superlatives in advertising, we will agree that the Western Wind is tough. You will probably never break one . . . bend it, tear it, crumple it, flex it, yes, but not break. The corrugated cardboard construction is very flexible, as are the 3/32 wire wing spar/dihedral braces. This provides a built-in shock absorber which very effectively keeps the plane in one piece. After prolonged flying the cardboard will get very "ratty" . . . dirty, creased, and crumpled (now it's "crudeboard!" wcn) but it will stay flyable. And a flyable airplane is what is necessary to learn to fly. Once you've learned . . . start a fire to roast hot dogs with the Western Wind (or better yet, stick a rock in it and give it to some youngsters) and go home and start building a "for real sailplane".

P.S. – You "experts" might want a Western Wind too . . . it would be ideal for teaching your kids or your spouse to fly. Or you might want to try a one-design combat match on the slope . . . last plane to remain in the air is the winner! Consecutive touch-and-go contests are fun too! For $12.95, what have you got to lose? •

Hannan . . . . . *Continued from page 46*

better than ever.

DECORATION IDEAS

Ralph Prey, editor of "THE SATELLITE", newsletter of the San Valeers club, offers this: "Here in Southern California, we free flight modelers seem to go in heavy for decorating our models. Each modeler has his own style of decorating, and it is interesting to examine the various styles. Often, you will see a modeler who is a novice to the fine art of lettering and design, and to these persons, here are a few helpful hints.

"1. Keep your eye out for letters and numbers on such common articles as cardboard boxes used to package apples, oranges, and different fruits and vegetables. This is an excellent source of large letters and numbers. Also, page through some magazines featuring real airplanes. I have found some really striking letters in the advertisements.

"2. Watch the newspaper ads for pictures of birds, etc. that can be used on your model . . . for example, I found a large ad in the Wall Street Journal about Wild Turkey booze, with a turkey in flight attitude. It is now on the wing of my Buzzard Bombshell."

QUOTE WITHOUT COMMENT

Reported by the Times-Advocate newspaper of October 30, 1975, was a San Marcos, California city council meeting regarding a proposed anti-noise ordinance. Mayor Lionel Burton, M.D., was quoted as saying: "Most people don't like to get stomped on by some snotty-nosed kid with an airplane on Sunday afternoon."

GREAT MINDS RUN IN THE SAME GROOVE

Or something like that. We've heard from three different people who constructed their own version of the Okay Monoplane before seeing Don Butman's in the November MODEL BUILDER. Dave Linstrum, of VTO and cheap gasoline fame, was working on a rubber-driven profile variation; Jack Leuken has a built-up Peanut Okay flying, as does John Oldenkamp. John is a research buff, and carried his investigation right to the top, designer John L. Atwood himself, in search of additional information. Perhaps these comments abstracted from Mr. Atwood's letter will be of interest to others contemplating construction of an Okay:

"I don't recall the engine cowling detail. As to the color scheme, the wings were yellow and the fuselage blue, but that's about the best I can do from my recollection.

"I don't think you'd be far off if you used the usual instrument panel groupings of the time . . . air speed indicator, altimeter, tachometer, bank and turn, fuel gauge, oil pressure and temperature, one cylinder head temperature, etc."

AERIAL PHOTOGRAPHY, ANYONE?

Joel Rieman, whose photos have appeared in this magazine, is a young

man with creative ideas. He is now offering, at reasonable rates, photography services for model or full-scale aircraft, including air-to-air work. Joel's base of operations is Woodland Hills, California, and he can be contacted at (213) 883-7694.

TISSUE COLORING HINTS

Says Stan Fink, of Eugene, Oregon: "Getting the right color for an early aircraft model covering can be a real hassle, especially if you want lightness too. Dope-sprayed tissue used by some is o.k., but adds too much weight. So, a better alternative is water soluble dye. Two of the most needed colors for early aircraft are buff (simulated doped linen) and dark olive drab camouflage.

"For those Bleriots, Nieuports, Demoiselles, and Blackburns, a good way to achieve a buff finish is to dye white tissue in the following manner.

"1. Build a frame of hard balsa or pine, using fairly sturdy construction (1/2 inch square sticks) about 9 x 18 inches. Don't make it much larger than this because wet tissue is very weak.

"2. Cover the frame with white tissue, by doping it firmly in place.

"3. Make a cup of instant coffee (medium strength) and let it cool. Don't use instant tea or you'll get a pinkish color. When cool, transfer the liquid to a pump-type spray-bottle, such as your wife's "Final Net".

"4. Near a source of low heat (out in the sun if you are lucky), spray the coffee, as evenly as you can, over the tissue with a sweeping motion. Repeat until desired color is obtained. Dry quickly to prevent drips and blotches.

"5. After tissue dries, cut from frame, and apply to model. Do not water shrink. Instead, shrink on aircraft by applying thinned dope near a low heat source, such as an electric space-heater.

"For that hard-to-get WWI dark olive drab color, use the same basic technique, except after preparing the white tissue covered frame, finagle a food-coloring kit from the kitchen. Mix 21 drops red, 15 drops yellow, and 22 drops green, in a half cup of rubbing alcohol (not for dunkin' donuts!) and transfer to the pump sprayer. Swish liquid around frequently to keep colors mixed. Vacate civilized premises, put on your worst clothes, and spray away! Repeat as required for desired results.

"With a sheet of buff tissue plus a sheet of olive drab, you have the perfect combination for that Peanut Scale SE.5, Sopwith Pup, Thomas-Morse Scout, etc." Stan also extends his thanks to Bill Gaiser, Earle Moorhead and Micro-X products.

NEW PLANS OFFERED

Ed Toner, of Buzzer Model Airplane Co. sent us samples of his latest construction plans releases, including a CO_2 powered B.A.C. Drone (a sort of powered glider) and an English Electric Wren, suitable for Jumbo Scale. Why not send Ed a stamped envelope for his complete list of offerings?

FLY'N THINGS

New from Vintage Aero is an 18 inch span rubber-powered helicopter. These are scarce birds indeed, and can be a lot of fun to fly indoors or outside. This particular design features contra-rotating rotors, and is an extremely complete kit, complete with detailed plans and assembly diagrams, select balsa printwood and strips, plastic rotor hub, tissue covering, rubber motor and complete hardware. Price is $4.49 at your dealers, or for direct orders add an extra 10% for postage and handling from:

Vintage Aero
1 The Glen
Tenafly, New Jersey 07670

While you're at it, ask for the list of REPLICA KITS, which includes reproductions of old Ideal and Megow models.

AND SPEAKING OF HELICOPTERS

One of our photos this month shows, approximately actual size, a single-blade ALLUMETTE-COPTER (look that up in your French dictionary) constructed as the result of a challenge issued during our recent trip to Europe. Doug Gillies and your author were sitting in a Paris sidewalk cafe discussing Peanut Scale models with Georges Chaulet, one of the leading French autogiro/helicopter model enthusiasts.

George felt that if we had in mind building small models, we should go *really* petite, and suggested that the matchbox Doug had in his hand at the time might form a suitable hangar. Immediately upon returning to Escondido, the problem was turned over to my son, Ken Hannan, who worked out the engineering details and had two prototypes flying within a matter of hours. After all the hard work had been attended to, yours truly prepared a third example, and the best two were sent off to France via air mail. Back came a letter, from which we have abstracted the following: "What fun I had today! And spending a jolly time flying the minicopters built by Hannan Junior and Senior! I think you have won yet our challenge of a match model. What must I do now? A microbe model? That will be very hard to achieve! Georges Chaulet"

STAND-OFF SCALE HERE TO STAY

At least that would seem to be the case, judging from the overwhelming acceptance of the class at recent contests, including the Nationals. Latest to join the ranks is long-time pattern flyer Phil Kraft, who will soon join the very exclusive ranks of modelers who fly reproductions of their own full-scale aircraft. In this case, it is Phil's "Super-Fli" which received good notices at the EAA big annual fly-in. Others who have flown scale models of their own real aircraft include Walt Mooney and George Meyers, who flew "Honey Bee", and

"Little Toot", respectively. For years we've heard threats by modelers involving the construction of a full-size North Pacific "Sleek Streek", to be fitted with a saddle. The idea, of course, is to forever blow the lid off flying scale competition!

PARTING QUOTE

Said Granger Williams after viewing a particularly unfortunate example of a semi-scale pylon racer: "The builder of that wouldn't know a scale model if it ran over him!" •

R/C Soaring . . . *Continued from page 27*

the room temperature is below 75°, wait two minutes. When the adhesive has cured properly it should be very sticky to touch, and should not smell strongly of solvents.

Now pick up the sheeting (after removing those pins that are holding it in place, dingaling!). Line up the center marks. Place the edge of the sheeting along the edge of the spar. Working from the center out, allow only the very edge of the sheeting to come in contact with the foam. When the entire length of the sheeting is tacked into place, you can smooth the sheeting down with your hand, again working from the center out, to prevent ripples. With this section in place, you can remove the newspaper mask. Take a soft cloth rag and rub the top surface of the sheeting until you can feel the warmth of the friction through the rag. This will insure a tight bond all over the sheeting. The aft section of the wing is done in the same manner. Remember to leave a gap in the sheeting to allow for the 1/16 balsa "V" tube trailing edge. The balsa trailing edge should hang over the end of the foam by about 1/4 inch. The balsa is applied with aliphatic or white glue, and a bead of glue is used to tie the balsa strips together at the extreme trailing edge. This will make a hard, straight trailing edge. When the sheeting, spar, and balsa trailing edge are in place on the under side of the wing, it can be removed from the board. Be careful not to tear a chunk out of the wing when you remove the core from the foam bed.

Now, using the bottom "bed" as a jig, the top of the wing can be sheeted in the same manner. These same techniques can be used regardless of the sheeting material that is used. The green skin foam, since it comes in large rolls, has a tendency to curl. This curl can be used to the modelers advantage when applying the sheeting, by cutting the pieces so they tend to curl up. This way, when the sheeting is stuck down in the center of the wing panel, the ends spring up away from the cores. This allows you to work your way out towards the tips without danger of sticking down the sheeting in the wrong place, or with a buckle in the surface.

Final step is to glue the balsa leading

edge in place, holding it until dry with masking tape.

To this point, we haven't mentioned wing attachment. Current trends in glider design dictate the use of plug-on wings. This feature is fairly easy to incorporate in foam wings. Since all of the stress is carried by the 1/16 ply spars, it is obvious that the tubes for the wing wire must be bonded tightly to the spars. The easiest way to accomplish this is to use hardwood blocks that have been cut to the proper thickness to shim the brass tube of fiberglass arrow shaft at the correct position between the spars. By cutting these hardwood pieces to the proper angle, it is possible to build the correct dihedral angle into the wing, allowing the use of a straight joiner wire. By using a tube through the fuselage (in the case of mid or shoulder wing designs) the wing wire can be removed. This makes transporting the fuselage a lot simpler and safer . . . or "Gee, Old Flying Buddy, I'm sure sorry my wing wires poked holes in the wings of your new Minimoa . . ."

Polyhedral wings can be built in much the same manner. After the poly breaks are cut (it is easiest to build the wing panel in one section, and then cut the polyhedral section) the foam between the spars is cut out two to three inches on each side of the break line. Then make a plywood laminate joiner, cut to the proper angle, to fill the gap. Use plenty of strong epoxy (not five-minute) to glue the joiner to the spars, and use white glue, aliphatic resin, or epoxy to glue the core sections together.

The finish method for the wings will depend on the type of sheeting used. If you have used balsa, either fully sheeted, or with fake ribs/capstrips, you can use Super Monocote. The balsa, and airspace between the Monocote and the foam will protect the foam cores from the heat. The green skin foam can be sanded and covered with any of the low-temperature plastic film coverings, such as Solarfilm, Kwik-Cote, Flite Cote, etc. Green skin can also be painted. The pores of the foam must be filled, however, and as always, weight is of primary concern.

Hi Johnson has devised two very clever fillers which work very well with foam sheeting. One is a mixture of one part aliphatic resin glue, one part micro balloons, and two parts water. This mixture brushes on smoothly, and sands very well. Another filler, which is extremely inexpensive, but may require more than one coat, is unflavored gelatin. Mix one small envelope of Knox Unflavored Gelatin in three ounces of hot water. This mixture is brushed onto the green skin, and when sanded, makes a very lightweight, easy-to-sand filler. One package of gelatin will do an entire wing at practically no weight increase.

Once the skin has been filled and sanded, it can be painted with either enamel or polyurethane. The important thing to remember in selecting a paint is to read the instructions. If it says "contains petroleum distillates," it will be safe for use on foam. One paint that has worked very well is Flecto Varathane. This is available in spray can colors. Although it takes several hours to dry to touch, and several days to dry really hard, it will put a high gloss, rock hard finish on the wings, when it has cured.

O.K. . . . by now you are all revved up to build a set of foam wings for your latest super soarer . . . right? (The smart guy who said, "No," can go read "Dirty Dan" Rutherford's column. He can handle people like you!) The advantages to having a fully sheeted wing are fairly obvious. But you don't want to spend half of next month's paychecks on balsa wood. Right? So, in order to have that super wing, with no sags between rib bays, absolute control over airfoil shape, and a wing that won't warp in the hot sun, you want to cover it with "green skin," but your friendly neighborhood hobby dealer never heard of "green skin." There is a way around the problem.

Unfortunately, "green skin" is available from plastics suppliers only in tremendous quantities. As a result, Hi Johnson is willing to sell the material directly to modelers. The price? Brace yourself. It will cost you a whopping 15 cents per square foot! Compare that to the cost of 1/16 balsa, and I'm certain that the inconvenience of having to mail order the material won't be a problem. Again, write to Hi.

At this point you should have a set of wings that are more accurate than any you have ever built. The airfoil will be correct (or as correct as your templates) at any point on the wing. The washout will be progressive from the root to the tip, and will be identical in each wing. And if the wing was covered using the procedure outlined here, there will be little or no danger of

the wing ever warping. Add this to advantage of very easy repairability and great strength, and I believe you will find this method of building wings superior to any other you may have used . . . even if it didn't take less than half the time.

That's it in a nutshell. An inexpensive, lightweight, accurate, strong, and attractive method for building sailplane wings. Study the drawings and photos. They should clear up any questions you may have. If you run into any problems, contact me in care of MODEL BUILDER.

Glow Driver . . . *Continued from page 42*

terminal) of R-10. So, N-1 acts like a voltage sensitive switch, programmed by the setting of R-10. While N-1 is turned on, it turns on X-4, X-2 and X-1, which allows maximum current to flow through the glow plug. C-1 and the external impedances, determine how long N-1 is turned off, before it can sense the voltage across the plug again. The colder or wetter the heating element in the glow plug is, the longer current is applied to the glow plug each time N-1 turns on. Therefore, extra power is applied automatically, whenever it is needed to maintain a hot glow plug. If the glow plug is shorted, or the glow plug leads are shorted together, C-2 becomes charged, X-3 turns on, turning off X-4, X-2 and X-1, which turns off the glow plug drive current. This condition will exist until the on-off-reset switch is turned off and back on again. So, to reset unit after a short, turn switch off and back on again (after short has been removed). Resistors R-3 and R-4 set the limits on how far R-10 can adjust the glow plugs temperature. Without this, a small change in the dial setting would make a large change in glow plug temperature. This would make it hard to set the temperature you want. If you ever come across a condition where you don't have enough range on R-10, readjust the values of R-3 and R-4. Resistor R-3 will effect the high temperature range, and R-4 will effect the low temperature range. D-2, R-2, R-1 and X-5 turn off the voltage divider network, consisting of R-3, R-10 and R-4, when the battery voltage falls below about 9 volts. This turns off N-1, which turns off the glow plug drive current.

The way your glow plug driver is built, using only Radio Shack parts, if you connect the battery leads in reverse (wrong polarities), you will damage your glow plug driver. Radio Shack doesn't carry a diode with a large enough amperage rating. To get around this, either install a polarized connector to your battery and glow plug driver, or find a 10 amp diode from another source, or be very careful making connections to the battery. If you get a diode, connect it in series with the negative (black) battery lead as shown in Figure 8 (as D-1), the dotted-in diode. It won't be necessary to heat sink this diode, but if you do, be sure it is insulated from the box.

Follow these simple instructions, to use your glow plug driver: Know what dial setting is needed for your type of glow plug before you go to the field. Otherwise, you will have to pull the glow plug out of the engine, in the field, to find out *(Make up a dial setting list on the plugs you most often use, and tape it to the box. wcn).* Turn the power switch off. Connect red battery lead to positive terminal on battery. Connect black battery lead to negative terminal on battery. Set dial setting required. Connect the glow plug leads to the glow plug and turn on power switch. Start engine now as you normally would. After engine starts, turn switch off. If engine continues to run, disconnect the glow plug leads. Remember, the heat indicator (D-4), only lights when there is heavy current flowing through the glow plug leads. The on-off-reset switch, must be turned off and then back on, to reset glow plug driver after a short circuit in the glow plug leads.

PARTS LIST

No.	Description	Cat. No.
R-1	82 ohm 1/2 watt	271-000
R-2	220 ohm 1/2 watt	271-000
R-3	10K ohm 1/2 watt	271-000
R-4	3.9K ohm 1/2 watt	271-000
R-5	1.8K ohm 1/2 watt	271-000
R-6	12K ohm 1/2 watt	271-000
R-7	1.5K ohm 1/2 watt	271-000
R-8	10 ohm 1/2 watt	271-000
R-9	10K ohm 1/2 watt	271-000
R-10	10K Potentiometer	271-1715
R-11	1 ohm 10 watt	271-131
C-1	.22 micro-farad	272-1070
C-2	500 micro-farad	272-1007
D-1	10 amp diode	see text
D-2	6V. zener diode	276-561
D-3	diode	276-1101
D-4	L.E.D.	276-026
N-1	741 OP. AMP.	276-010
X-1	power transistor	276-2019
X-2	power transistor	276-2018
X-3,4,5	general transistor	276-608
SW-1	switch	275-612

Alligator clips	270-378
Battery clips	270-379
Test probe wire (red)	278-553
Test probe wire (black)	278-554
Box 5 1/4 x 3 x 2 1/8	270-238
Dial knob	274-413
Strain reliefs (bushings)	278-1636
Perfboard	276-1390
Perfboard pins	270-1394
Hook-up wire	278-1296
Heat sink compound	276-1372
1 inch 4/40 stand-offs (2)	Hdw. Store
3/8 inch 4/40 screws (4)	Hdw. Store
3/8 inch nut	Hdw. Store

F/F Scale . . . . . *Continued from page 45*

3) Figure 2.
   a. Draw a line at any angle starting at the point just ahead of the last full tenth on the horizontal line (80%) any length. Divide this line into ten equal spaces (you could make this line 1-1/4 inches long and divide it into ten 1/8 inch lengths).
   b. From the outer most point on this line draw another line from that point to the next division point (90%).
   c. Continue drawing parallel lines with each one intersecting the points on the diagonal line and the horizontal line as well. This will divide the last full tenth of the chord line into 1% increments.

The beauty of this system is that it works for any size chord.

4) Figure 3.
   a. Now refer to the coordinate table. All values are expressed in percent, and since you have just divided the chord into tenths and one of these tenths into hundredths (1%) you are now ready to start plotting.
   b. Starting at the 1-1/4% station, note that the upper point is 1.98 and the lower point is -1.62. Using the dividers and the 1% increments, open the dividers to nearly 2%. (When the values are not an even number, you have to interpolate, "guesstimate", the difference.) Place a dot this distance above the horizontal line. Next, the dividers should be opened close to 1.62. This distance is placed below the horizontal line, using another dot.
   c. Repeat this same procedure for each of the remainder of the stations.
   d. When all of the points have been plotted, connect them with a pencil line, using a French curve as your guide.

That's all there is to it, and once you've done it a few times, you will become an old pro at it!

* * *

I'd like to pass on some information regarding some new scale plans. A plan business that has been around for a long time is Bob Holman Plans. Bob has been primarily involved in R/C scale plans, but he also has a long list of F/F scale plans. He presently has several really neat plans drawn up by Harold Towner, for both rubber and gas. Harold is a well known scale modeler in England. Several of these plans are for multi-engine rubber powered models.

Bob also handles all of Aeromodeller's plans and 3-views. Write to him about his comprehensive plans catalog. His address is P.O. Box 741, San Bernardino, Ca. 92402.

Another plans business, one that is not as well known as it should be, is Hall Enterprises, Box 485, Winter Park, Fla. 92789. Hall Enterprises scale model plans are full construction type, showing how to build a flying scale or museum quality scale model. Stick and tissue or sheet type construction is left to builder's choice; both are shown. The plans also show many authentic, historic details of the actual aircraft which have never been published before. MASTERPLANS are scaled from authentic data and personal measurements and are as accurate as it is possible to produce. FLYING SCALE plans are produced from whatever data can be obtained, and are as accurate as any normal scale plan.

Included in the list of drawings are . . . Marcoux-Bromberg Spcl., "Mr. Smoothie", Keith Rider's R-4 "Fire Cracker", and also a peanut size Northrop Alpha. With the exception of the Alpha, most of the other drawings are available in several different scales. Drop Hall Enterprises an SASE for a list and price of available drawings. *(Art Hall contributed the "Clipper Americans" and "Covering With Metal Foil" articles in the December '75 issue of MB. wcn)*

It is with regret that I have to close this month's column on a sad note. I have just learned that a good friend of mine, Hal Swanson has passed away. Hal, as many of you know, was the head of Modernistic Models. Over the years, he had drawn numerous scale plans, which he offered for sale. Recently, he had just expanded his service to include some outstanding scale drawings of Charles E. Steinchak. His energy seemed endless . . . those of us who knew him will definitely miss him. •

Remotely . . . . *Continued from page 17*

than in his home territory. To do the latter, he must incur travel, lodging, and food expenses that would far exceed the value of the model that he wishes to keep inexpensive. So, let him stay at home and "Sunday Race" under local rules. If he travels to race, it's up to

him to find out the local rules where he plans to fly.

On the other hand, referring to No. 2, perhaps a proposal to lower the minimum thickness percentage, if it's based on models and kits currently in use for Half-A racing, could be a logical and simple way to legalize the sport as far as AMA insurance and sanction coverage is concerned.

FAI RULES TALK

An interesting proposal in muffler requirement for pattern competition has been presented to the FAI by the R/C subcommittee.

Last year's somewhat premature proposal for engine silencing to 84 dB at 10 meters is again the basic requirement. However, this time, there is a more precise description of the testing conditions.

The model is to be placed on a rotatable platform, 1.2 meters (4 feet) above the ground, and the sound pick-up microphone is to be located at the same height, and 10 meters downwind from the model. With the engine running at full power, the table is rotated through 360 degrees, stopping at each 45 degree position for a sound level measurement. The average of these eight readings will be considered the noise level of the engine tested.

Further specifications state; that no measurement should be made in wind speeds over 5 meters/second (about 10 mph), that measurements should be made over short grass (okay . . . short to a grasshopper or short to a giraffe?), and that no noise reflecting objects should be nearer than 30 meters to the model or microphone.

The proposal also specifies that the equipment used for measurement should comply with International Electrical Commission document No. 179 "Precision Noise Level Instruments.

Obviously, something as complicated as this could not be adopted for all levels of muffler control, but certainly World Championship competition could handle it, and once the model aero clubs of the world have a positive standard to meet, confusion and lack of conformity will cease to exist . . . well, almost . . . Even this year in Berne, Switzerland, there were a couple of models that did not meet the present specifications. Surprising that any national aero club would allow its representatives to be caught in such an embarrassing situation.

Incidentally, the asinine rule against the use of venturi type mufflers will probably be dropped. Who cares *how* it works *if* it works!?

It is also being proposed (by Germany) that the builder-of-the-model rule be dropped in all F3 classes (R/C Pattern, pylon, and soaring.) The U.S., for quite a few years, has found the B.O.M. rule for R/C to be obsolete except in scale, where workmanship counts in the scoring. There is no particular advantage for a contestant to use "other-built" models, as long as he is not allowed to switch models at will during a contest. Current rules prevent that, anyhow. Let's face it, present day home-built competition models have reached a point of development that cannot be exceeded by factory production models.

The sport of R/C aerobatic, pylon, and soaring competition has reached a level where equipment advantage is just about nil. World Champ Wolfgang Matt, after placing fourth in Las Vegas and shipping his equipment back to Leichenstein, won the Tuscon Winternats Class D Pattern event one week later with a borrowed plane and radio, and without any opportunity to become familiar with the borrowed equipment!

With the standard of pattern aircraft at its present level, requiring the flier to build the model would now be as ridiculous as expecting Jimmy Conners to scratch-build his own tennis racquets!

IS YOUR RS AILING?

Owners of RS radios will be happy to know that Chuck Moses, a former RS technician, is now operating as a repair station for this system. He has equipment and spare parts in plentiful supply, and knows the system inside and out. Chuck's shop is located at 6722 Park Ave., Garden Grove, California, 92645. Phone number is (714)-898-6121.

BULLETIN BOARD

Rhett Miller Sr., father of the "Tallahassee Kid," has been named R/C Contest Board member representing District V, by Vice President Jim McNeill. Rhett takes the place of Dr. Don Coleman, and we'd like to take this opportunity to publicly thank Don for his many years of service on the Board. Don was responsible for many of the pattern rules that have developed in recent years, and also originated the pilot classification system which is now being used.

* * *

Jerry Holcomb, whose Wankel powered seaplane appears on Page 17, send us notice of several R/C events scheduled for the northwest area.

Half-A pylon races are scheduled for January 11, February 15, March 14, April 11, and May 9, to take place in Portland, Oregon's East Delta Park. For further information contact Ken Thorstad, 287-4090 (Portland), Jerry Holcomb, 892-7732 (Vancouver), or Ralph Cooney, 648-4091 (Hillsboro).

The 8th Annual "Haystack" meet is at Haystack Reservoir July 3 and 4, 1976, and if you haven't guessed, is for R/C seaplanes. Located 10 miles south of Madras, Oregon, last year's meet attracted 45 entrants and 60 seaplanes! Contact Jerry about this one. •

Trouble Free . . *Continued from page 32*

our servos. These are the feedback pots that are driven by the gear train. Periodically, you may open your servos and clean the potentiometers with a Q-tip and alcohol. Be careful not to distort the wipers, but clean all of the lubricant and carbon dust off the wipers and the carbon potentiometer button. You may need to readjust the spring tension in the wipers.

Caution: Over-tensioning will cause excessive wear.

Before closing the potentiometer, re-lubricate the wipers and potentiometer button face with the manufacturer's lubricant (available also from Ace Electronics). While adjusting the potentiometer, after cleaning and reassembly, you may want to use one of the tricks that helped Ron Chidgey win two years in a row.

The two most important controls on a competition pattern airplane are aileron and elevator. These are the two servos that must "null" most perfectly. One method to assure that these controls null perfectly is to "grade" your servos. This is done by making a grading jig as shown in Figure 1. A short length of 1 x 2 is mounted on a 24 inch long piece of 1 x 4. Another short length of 1 x 2 is mounted perpendicularly on the opposite end. A ruler or other scale is mounted on this board. A side-mount servo tray is mounted on the upright piece of 1 x 2. Your servo is mounted in the tray, and a servo output arm to which extended pointer of 1/16 inch square balsa has been glued, is attached to the output shaft. This extended servo arm then indicates the "null" point. The servo is connected to your radio rig and deflected to the right and the left by movement of the transmitter stick, allowing it to snap back. The difference between the null, or stopping points will give you a relative value for the quality of the servo. I grade my servos in 1/8 inch graduations. I use a piece of Scotch Magic Mending Tape (because you can write on it) to assign a number to each servo. This number represents the number of 1/8 inch graduations separating the null points. My 1 and 2 graduation servos are used for aileron and elevator. Servos of lesser quality are used for rudder, throttle, and retracts.

ENGINE

Engine maintenance is relatively simple. To give long life, an engine must be kept clean, lubricated . . . and together. The first step in getting maximum power and maximum life from an engine, is to clean it before you run it. If you go no further than to remove the back plate and glow plug, and wash it out, you have saved a lot of possible trouble.

During machining, curls of metal may adhere to the parts and end up in the assembled engine when you buy it. Simply washing it out as best you can, with rubbing alcohol or lacquer thinner, before you run it, will remove most of these bits of metal.

If you wish to be a little more sophisticated, you may want to completely disassemble the engine and ultrasonically clean it before you run it. During machining, microscopic particles of abrasives will adhere to and become imbedded in the surfaces of the parts. No amount of cleaning or scrubbing by normal means will remove these imbedded particles. Ultrasonic cleaning, however, dislodges them.

Lubrication begins when you reassemble the engine. An engine that has been thoroughly cleaned, especially if ultrasonically, will rust very quickly. Use common household oil, not the rust removers (such as, WD-40). Three-in-one oil is excellent.

As fuel manufacturers turn away from castor oil-based fuels, and turn to synthetic oils, we must lubricate our engines after each day's flying in order to leave a film of oil to protect against corrosion. Castor oil-based fuels leave

this residue. Synthetic oils do not, and the products of combustion left by synthetic oils are slightly corrosive. An engine run on synthetic fuels can rust within an hour on humid summer days.

The best practice is to squirt several drops of oil down the intake in the exhaust and through the glow-plug opening, at the field, after you have run all of the fuel out of the engine. A few quick flips will distribute the oil sufficiently to protect bearings and machined surfaces. Even the slightest amount of corrosion is harmful, because it is pitting your cylinder and removing metal at a rate many times faster than normal wear. The metal is also being removed irregularly.

To keep the engine together, a little "preventative installation" is in order. Because of the elevated temperatures around and in the engine, Lock-Tite and other thread adhesives will not work. Silicone rubber and epoxy are about the only things that will hold at high temperatures. Silicone rubber is good for keeping muffler screws tight and especially good on engine mounting screws. A light coating on the screw threads, while they are clean at installation, will give good thread holding power and vibration protection, yet the screws can still be removed if need be.

THE AIR FRAME

Preventative installation here will eliminate the need for a lot of preventative maintenance later. Special attention should be given to high stress areas such as firewall joints, servo rail joints, and wing hold-down joints. These joints, of course, should be glassed, but in addition they should be all painted a light color. The light color paint will show up cracks.

RETRACTIBLE LANDING GEAR

All landing gears suffer at the hands of vibration. Screws should be installed with Lock-Tite. All set-screws in the wire struts and wheel collars should be set in small flats, filed in the wire. In addition, Rom-Air and Sonictronic retracks should be lubricated with heavy silicone grease, inside the cylinders, every few weeks or so. This is in addition to using refrigeration oil each time you charge the system. Once the system is installed and appears to be operating correctly, the system should be charged and left overnight. If enough pressure is left for two or three operations, then the system is sound enough.

PRE-FLIGHT CHECKOUT

Let us assume we are going to go flying tomorrow. What do we need to do tonight to be ready? We know to charge the transmitter and receiver batteries. These items never really bother us. What about the starting battery and starter battery; do they need charging too?

A tip here on charging batteries for starters. Many good 12-volt, lead-acid batteries have been ruined by overcharging. Motorcycle batteries, normally used for starter power, are not designed to handle 1-3, or even 6 amps put out by most automobile type, 12-volt battery chargers. These small batteries are designed to charge at 300 to 500 ma. The length of time will depend on the battery. A hydrometer is a good indicator of when charge has been completed.

The field kit should be checked for balanced props and sized plugs. A sized plug is a glow-plug that has been rethreaded. The thread size on glow-plugs is 1/4-32 (no misprint). Most glow-plugs are properly threaded, but the high speed threading machines miss a bit of metal now and then. An improperly threaded glow-plug can destroy an expensive head. One ruined engine head will more than pay for this odd-size die and the effort spent in finding it. Fox Manufacturing is now marketing this odd-size die, along with other hard-to-find modeler's sized taps and dies.

Now that we are sure we will have a "hot start", let us look at the air frame again. Hinges should be checked for tightness, remembering that too much pressure will defeat our purpose. The entire airplane should be checked for signs of cracks and black oily residue which indicates something is loose and metal parts are moving. Servo output wheel retaining screws should be checked for tightness. Clevis keepers (those little pieces of hose we throw away) should be checked. Retracts should be checked for cleanliness. The oil that makes them work well also attracts and holds dirt particles which can bind them. A quick check of receiver and servo plugs may reveal a loose connection. When servos do not plug directly into a receiver socket block, the plugs and sockets should be taped to prevent them from working free.

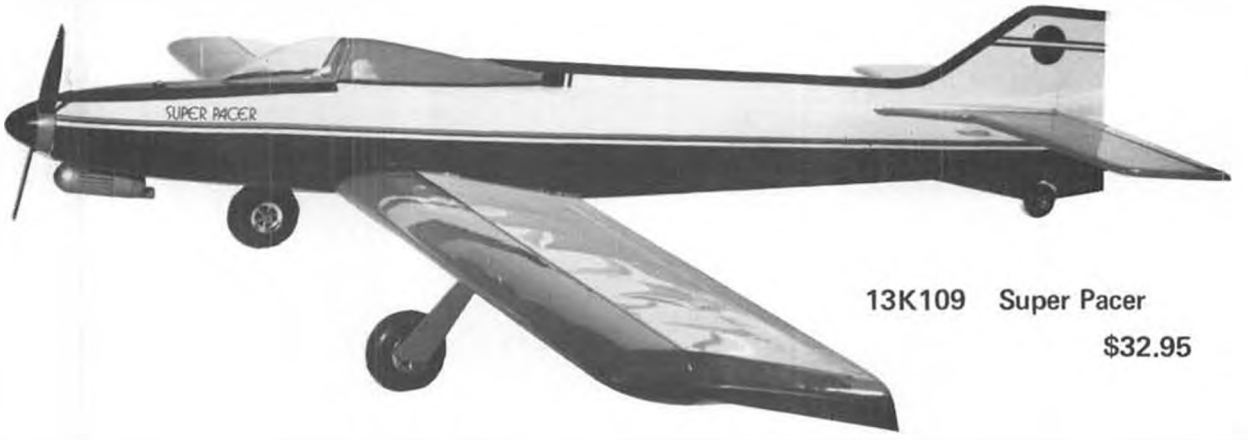
PRE-FLIGHT AT THE FIELD

Probably the most important check

SUPER PACER

DESIGNED BY OWEN KAMPEN

A .23 POWERED PATTERN SHIP FOR SPORT AND COMPETITION

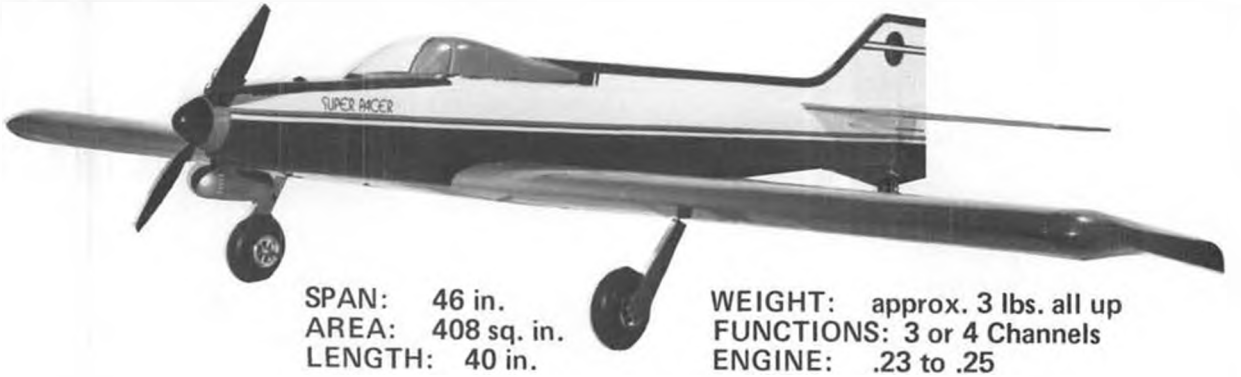


13K109 Super Pacer

$32.95

FIRST CAME THE PACER--it started a whole new revolutionary category of model planes, the 1/2A pattern ship. Then people wanted a larger, fully competitive version with the same features--good looks, easy construction, sensible design, light weight, fuel economy, and solid performance at an affordable price. Here it is, the Super Pacer. For the economically minded pattern ship flier.

All balsa and ply construction. Quick to build, light and sturdy to last long. It has to be a sin to get so much enjoyment out of the performance obtained at so little expense.



SPAN: 46 in.
AREA: 408 sq. in.
LENGTH: 40 in.

WEIGHT: approx. 3 lbs. all up
FUNCTIONS: 3 or 4 Channels
ENGINE: .23 to .25

Try your dealer first. You can order direct if he doesn't have it.

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done before flying is the radio check. Before anything is attempted, after assembling the airplane, travel of all control surfaces should be checked. Next most important is a battery check. I check battery level before each flight. The new expanded scale voltmeters are excellent for this purpose. It only takes about five seconds to determine whether there is enough charge for one more flight.

In competition, the pre-check must be more stringent because starting time is limited.

After fueling, a clothespin, labeled "fueled" is clipped to the prop. Have you ever been on the line only to find out you're out of fuel? I have.

The glow-plug is checked, either by removing it and checking the glow, or testing with a plug checker (see MB July 1975, page 11).

The fuel line is connected, but clamped to prevent flooding.

The prop nut is retightened, because the wooden prop hub is under compression and will loosen, especially if the day is dry and hot.

The engine intake and exhaust are covered to prevent dirt entry.

In the case of pneumatic retracts, pressure is relieved until just before take-off. A hot summer day can cause the pressure in the tanks to increase until the tank or fittings rupture.

Wing hold-down bolts are checked between each flight, as is the battery charge.

Should a landing be especially rough, or any contact be made with another airplane . . . or contestant, the wings should be removed from the aircraft and a complete check made of servo rails, landing gear mounts, wing hold down mounts, and so forth. All too often, a seemingly unhurt airplane crashes, due to some undetected problem after such a mishap.

After you fly, clean your airplane completely, like you were going to take it home. You cannot see your problem until you get all the dirt and oil out of the way. A clean airplane shows the judges you respect your equipment, and besides, your wing saddle may be cracked, your motor mount may be coming out. Touch everything gently and see if it is loose. Remember, gently! We are just trying to find out if everything is still in place; not strain test it.

"Preventative Maintenance Program? No Way! . . . Who wants to work that hard at a hobby?"

But all of this took a lot longer to read than it would actually take to check things over. Are a few simple tests as much work as rebuilding after a needless crash?

On top of everything else, a preventative maintenance program will not only save you money but may even MAKE you money. For the last three years, I have gone to a pattern contest two or three times a month during the season and managed to have my pattern bird intact at the end of the season . . . so I sold it!!!! This is a fine way to finance the winter's building. There is always someone ready to purchase a good, though well worn, airplane.

Remember that ten cents on the dollar is better than a radio repair bill.

Pocket Plane . . *Continued from page 54*

(from rear) and vice-versa. Sand the rudder to a streamlined shape and glue onto the fuselage. Let the plane dry 1/2 to 1 hour.

Indoor cement and Hot Stuff work best because they do not warp the wood.

Check for warps, and if you find one, breathe on it and bend in the opposite direction. Add clay to the nose until it glides smoothly. If it turns too sharp to one side, try bending in opposite rudder.

I have an old "Charms" candy box, and this plane just fits in it. I can carry my plane to any contest in my back pocket! •

C/L . . . . . . *Continued from page 39*

tee's proposals failed to pass, and they had 24 separate proposals on the final ballot, so most Carrier fliers ought to be pleased.

The ridiculous safety thong requirement in Stunt has been dropped, so Stunt fliers are going to have to go searching high and low for something to complain about. A proposal to allow the use of a backup plane in Stunt passed, so now you get to load up two Stunters when your car barely has room for one Stunt ship in the first place.

I would go into the changes passed for Combat, but the Combat rules are so complicated already that you are just going to have to wait for your new rulebook to sort out the changes. Combat is basically such a simple event, why are our rules so complex? To have a Combat match, you only have to tie streamers on two planes, start the engines, find somebody to fly each plane, and let them try to cut each other's streamer off. That is simple enough, but look at the rules we have! Any volunteers out there willing to write a new set of Combat rules?

I have just hit some of the highlights of the new rules as I see them. Be sure to go over your new rulebook with a fine tooth comb. Lots of changes this year. Don't find out about the changes when you go to your first contest of the year.

One significant thing that came out of the past two-year rules change cycle was that the Advisory Committees finally came of age and were recognized by members of the CLCB. The voting definitely shows that CLCB members were paying attention to what the SAC, RAC, NCAC, CAC and PAAC were saying. This is great. Who knows better what rules should be adopted for an event than a committee made up of people that actively fly that event?

Now that the two-year rules cycle is completed, a lot of my correspondence

indicates that people are getting kind of laid back and are ready to take a break from hassling about rules. Can't blame them, but I don't think that we can afford to let up right now. Per CLCB procedures, proposals to be considered in the next two years, for possible inclusion in the '78-'79 rulebook, must be submitted to AMA HQ by June 1, 1976. Read that again and let it sink in a little. You only have about five months to get your proposals in. If you miss the cut-off date of June 1, your rule or event can't be published in the rulebook until 1980! Now is the time to put together a proposal, assuming there is an event that you wish to see changed or added.

If you are considering a proposal, now is the time to work on it. But before you get too involved in setting the world straight, on your own, I would suggest that you contact both your representative on the CLCB and the chairman of the applicable Advisory Committee. It is easy to get in touch with CLCB members. Their names, addresses and phone numbers are published monthly in the AMA Monthly Mailing.

In case you want to get in touch with a particular Advisory Committee, here are the names and addresses of the chairman of each: Speed Advisory Committee; Bill Pardue, 1201 Surry Dr., Greensboro, N.C. 27408. Navy Carrier Advisory Committee; Richard Perry, 5016 Angelita Ave., Dayton, Ohio 45424. Precision Aerobatics Advisory Committee; Keith Trostle, 10900 Phillips Dr., Upper Marlboro, Md. 20870. Combat Advisory Committee; Ron Scoones, 8300 N.E. 146th, Bothell, Wash. 98011. Racing Advisory Committee; John Kilsdonk, 16159 Old Bedford Rd., Northville, Mich. 48167. *(Don't know about our readers, but MB's editor is copying the above list into his "little black book!" wcn)*

The chairmen of all the Advisory Committees are hard workers and interested in bettering the rules under which we compete. They will appreciate any input they can get from you, so get in touch with them. Just don't wait until it is too late. The time to get a proposal together is right now!

By the time this issue reaches you, Bill Pardue will have resigned from the CLCB and Jean Pallet will have resigned the chairmanship of the CLCB, although I understand that he will continue to serve as Dist. II's representative to the CLCB. Both Jean and Bill have put a fantastic amount of time and energy into their work on the CLCB.

Wait! Hold everything! I was just getting ready to write the usual trivia about how being chairman of the CLCB is a thankless job, etc., etc. True, it is a thankless job. But you already know that. I just can't mince words and make it sound right, so here is my view on Jean's resignation.

Jean worked very hard at being chairman of the CLCB. He obviously is very organized and punctual. When a vote was due, I always had my ballot on time. When the votes were in, they were tabulated quickly and the results were always back in my hands in short order. Any correspondence to Jean was always followed up immediately. Write a letter to Jean and he answered quickly and in full. There was never any question about where Jean stood on any issue. He told you his views and told you flat out why he thought a particular way. If there was any question on a particular issue, Jean had the complete record on it and could lay it on the line for you.

However, as chairman of the CLCB, Jean ran things with a very heavy hand and, all too frequently, was completely out of touch with what the fliers wanted. Many have been very dissatisfied with Jean and it even came to the point where a petition demanding his removal from the CLCB was being passed around. Serious stuff, but not out of line considering some of the things that happened.

At any rate, Jean has decided to give somebody else a chance to chair the CLCB and I, along with many others, want to thank Jean for all of the work he did. Jean, I have disagreed with you about most everything, but you did a job that I would not do for money, let alone for free. Even with all of my complaining, it could be that you did a better job than I could have. We'll never know. Like I said, I wouldn't chair the CLCB, even if I was paid for it!

Looks as if most of this month's column is going to be about rules, even if I go to something else right now, so here is something for you to consider when thinking of new events for our already overloaded rulebook.

I feel that there is a lot to be said for *not* putting certain events into the rulebook, as an official AMA event. The events I am talking about are all of the events that are designed to be easy for the novice to break into: Slow Rat, Slow Combat, Mouse Race, Profile Carrier, Sport Speed and Slow Proto, although it is not an AMA event. Whenever any event "goes National", that event is doomed to someday becoming too fast, too sophisticated, too

expensive. What starts as a beginners event, or as a substitute for an ultra-sophisticated event, which is how Rat originally got started, soon evolves into just another event where money, hard work and experience win. *(Right on! I've been spouting the same comments on R/C events. Perfect example is Quarter Midget, as related to Half-A. wcn)*

Everybody knows what has happened to Rat, so we won't go into that. But did you know that Duke Fox produced an $84.00 engine just for Profile Carrier? Duke had the engines available at the NATS and they were judged as being legal and were used by a few competitors. Imagine that! A big-bucks engine for Profile Carrier. What could be next?

What, indeed. You ought to see some of the Slow Combat ships being developed around the country. Some I have seen (and I am working on one myself. Got to keep up, you know) are huge, consuming balsa by the bundle, will turn very tight, are harder to build than a typical Fast Combat, and go almost as fast as a Fast Combat of only a few years ago.

What about Goodyear? When G/Y started up, it was a turkey event, compared to what it is now. I still enjoy G/Y, but the racing was a bunch better back when everybody ran a 'tigre 15. Now the Rossi 15 dominates and there are a lot of people around who just will not spend the money to get a good Rossi. *(Hey, you wanna write the R/C column for a while? wcn)*

The refinement of an event is only natural. Present a nation of competitors with an event and everybody is trying to come up with the hot set-up. The manufacturers see a popular event and they, quite naturally, see a market for a product, whether it is a better engine or just a fast-fill.

But Novice-style events are originally designed around the engines, kits, etc. available at the time the event is first dreamed up. Everything is fine for awhile, but then people start building scratch, special-purpose planes, the manufacturers come out with specialized equipment (always more expensive, naturally) and the Novice goes away or takes up the challenge . . . Too many go away.

Not all of this is bad. I personally enjoy seeing new events come along and I, along with a lot of others, enjoy the challenge of going faster, building better planes within the rules, whatever they are. When the event gets to be a bit much for me (which is where I stand with Rat right now) I will drop it and pick up on something else. New events coming along means old ones dying out and that is OK with me.

We in C/L are not alone with this problem. In R/C, the Rossi has finally hit QM Pylon Racing and you ought to hear the screams, right Bill? *(Amen! wcn)* QM started out much like our Goodyear event did, and it is going to be interesting to see how much longer the event lasts, as originally conceived.

Back to C/L. Novice events aren't designed to be fodder for the gung-ho C/L competitor to pick up on and elevate to a high level of sophistication and then to give up on only to go to another event . . . and start all over.

Novice events are for the novice. They should be set up so that the novice really can use off-the-shelf equipment and still stand a chance to win. Fine, most everybody will agree with that. But how do you set up a Novice event that is immune to creeping professionalism?

First off, you should forget about putting the event in the AMA rulebook, no matter how popular it is locally. Keeping the event local instead of national will keep the event simple for the reasons I have already given.

Next, it seems that all novice events start out with rules that allow the use of kits and easily available motors. Using kits for an event is fine, but the rules always seem to allow kits or scratch-built planes. Before long, the kits are not competitive and the scratch planes are doing all the winning. Novices, as a rule, don't care to design and build their own planes. So they are faced with using inferior equipment or quitting. And too often they quit.

Engines present the same problem. The pros make theirs run fast in the first place and use whatever works (usually an engine that is hard to get, or expensive), in their quite natural quest to pick up yet another trophy.

So I suggest that we eliminate the special, one-event planes from Novice events by restricting the choice of airplane to kits only, no exceptions. The kits could be modified a little but only by beefing up the weak areas, such as the fuse at the TE of the wing and in the area where most profile planes are weak, the nose *(i.e., structurally only. wcn).* Canopies would have to be used, the wing couldn't be shut down, landing gear would have to be as shown in the kit.

Making up rules for engines and the rework allowed is always a problem, particularly when the event is national. But on a local basis, there should be no problem if the rules contain a "claimer" clause. At a contest, the top three engines would be subject to claiming by anyone who placed lower than third. If you really think the other guy's engine is what beat you, pull out the long green and pay him the going retail price of the engine, and it is yours. Nothing to it. The experts won't spend big bucks and long hours getting an engine to really wail when they know that somebody else can buy it from them for what they paid for it in the first place. Would you? I know that I wouldn't. I would run a cleaned-up stocker, make sure I had my act together, either at the handle and or in the pits, and hope for the best.

To put the above into practice, how about a Slow Rat event in which you could only use kits and the allowed kits would be published as part of the rules? I just checked my catalog and there are 26 profile planes, in the 35 size, that could be allowed in this event.

To keep things simple, shut-offs, fast-fills and the like, would not be allowed in this event. To keep the event slow, only plain bearing engines would be allowed. This could be carried even further by limiting the choice of engine to 3 or 4 brands that have a reputation for being inexpensive, reliable and easy to get parts for. And the previously mentioned "claiming rule" would keep everybody honest without making up a complex and difficult-to-enforce engine rework rule.

The obvious problem with an event like the one outlined above is that different areas of the country would be using slightly different rules and you wouldn't be able to go to many contests outside of your own area without running into problems. In your area a certain plane/engine combo might be legal and competitive, but either illegal or not competitive at an out-of-town contest. So the above example event for Slow Rat would be limited to just one area or group of fliers, which may or may not be a problem in your part of the country.

If you have any further thoughts concerning the novice events, let me know what they are. If you are presently using a set of rules for a novice event that you think are particularly good, send me a copy of the rules. Possibly I will publish them in this column and others can benefit from your experience. Write to: Dan Rutherford, 920 240th St. S.E. No. 1, Bothell, Wash. 98011. •

Ms. Only . . . . . *Continued from page 21*

tience and understanding we would not dread, but look forward to, the next obvious stage of development. I've thought of a way to list, and prove, our living conditions so we can really show other women how much we have put up with. This would bond us girls closer together. As Jonathan Swift said in the 1600's, "We are fond of one another because our ailments are the same."

For my plan, we would need a performance voucher of some kind to cover certain patience and understanding skills. These skills would have levels of endurance . . . say five. This voucher could show a minimum required goal or minimum required time, and have places to list the actual goal and/or actual time. We could call this documentation process something like League of Silent Fight or League of Silent Fright. Then we could call it LSF. That has a nice ring to it.

Upon completion of the simple Level I tasks, the Aspirant would submit the performance documentation voucher to an Executive Board for membership enrollment. After acceptance of the voucher, you would be awarded a "Fight" or "Fright" number and you would receive a Level II performance documentation voucher. And so on. Following each level attained, you could wear that level number as jewelry on your handbag or clothing. Or it could simply be inked on the back of your hand with a permanent wide-tipped marking pen. Each level would get harder, of course, and Level V would be formulated to recognize advanced patience, skill, and determination in R/C model soaring. Remember, in this case you are not the "Soarer," but the "Soaree."

It might be well if verification of each task of each level would require the signature of qualified witnesses. I suppose a witness should be over 21 years of age, and not related to the Soaree . . . especially not her mother!

As far as the tasks involved, I'm thinking of something like Embarrassment Duration. In order to pass Level I of the Embarrassment Duration, it would have to be verified that you were silently embarrassed at a non-R/C social gathering by your husband talking about modeling for 15 uninterrupted minutes. Level II would be a half hour embarrassment. Level III would be a 45-minute ordeal. Level IV would be a one-hour harangue. And Level V would be a two-hour disaster. Two hours seems an impossible record to attain, but take heart, your chances improve the longer your mate has been in modeling.

Another task might be called Nausea Duration. Level I - Slightly nauseous from modeling fumes. Level II - Very nauseous from modeling fumes. Level III - Extremely nauseous from modeling fumes. Level IV - Sick in bed from modeling fumes. Level V - Hospitalized from modeling fumes.

There could be another task called Homebound Requirement. It would start out at Level I with the requirement of spending 3 out of 8 weekends alone while your mate goes to contests. Level II - 4 out of 8. Level III - 5 out of 8. Level IV - 6 out of 8. And finally, Level V - 7 out of 8.

Even if this idea doesn't get off the ground, it's fun to think about. I started day dreaming about it when Bill insisted we hang his first peanut scale on the Christmas tree (Building that plane is a whole other story!). I didn't think a little tiny Pietenpol Air Camper could tip a tree. Over it went and somehow the Air Camper landed on top unharmed. Damages were only to a small Wedgewood pin dish that belonged to my Great-Grandmother.

So friends, you can see why I'm not interested in flying anything but my broomstick at the present time. Don't let me spoil your fun, though. If you want to learn to fly, my advice is . . . don't let your husband stand in your way. You might hurt him. ●

Strictly Sail . . . *Continued from page 29*

columnists get chained to their typewriters, and winch manufacturers are buried under piles of gearmotors and limit switches. Who is left at the lake? I don't know. Public relations really takes so little effort. Most local papers are pleased as punch to learn of such activities as ours. It is so wholesome that it could even be put on TV during the "family hour", except for some of the protest committee hearings I've been to!!

Another interesting aspect of club activity is the method used to score the Club series of races. I've been sort of studying this in order to identify new methods that will take into account such things as 1) Skipper absenteeism, 2) Fleet growth as the season progresses, 3) Skipper skill stratifying the fleet so that the same few always get the trophies, and so on. The latter could be another

reason for people leaving the fleets. Ron Menet, of the El Dorado Yacht Club, and the new editor of the AMYA Quarterly Newsletter, provided a comment on their system.

I've enclosed our Point Race rules and scoring system. When we originally began our point races this year, we were using the reverse scoring system and allowing for throw-out heats so that a person could be sick, bored or out-of-town on that weekend. Unfortunately, we didn't anticipate the tremendous growth in our club (due mainly to the point races), and we reached that point of no return where we had sailed more heats than a new member could throw away. Various scoring methods were discussed which culminated in the attached. Basically, it is the NAMBA positive scoring system. Dividing the year into four quarters allows anyone to enter the competition at almost any time and still feel that he or she has a chance at winning something. At the end of each quarter, the skipper with the most points is given a prize worth approximately $5.00. At the end of the quarter, all of the skippers in each class are ranked and given a cumulative score for the quarter as though they had sailed but one heat. These quarterly cumulative scores are then added together to create the annual score for the winner in each class, who will be given a trophy at our installation dinner.

"*Scoring:* Each race shall be scored as follows: 1st – 400, 2nd – 300, 3rd – 225, 4th – 169, 5th – 127, 6th – 96, 7th – 72, 8th – 54, DNF – 25 and DNS – 0. Penalties: Opposite Tack Rule: minus 75, and all other rule violations minus 50."

My experience has been with a system set up for a monthly, 8-regatta series, with 2 throw-outs allowed, or variations on that, such as 7 regattas with 3 throw-outs. Throw-outs take care of the absenteeism problem. Scoring on a given day is by the AMYA system or, 3/4 point to a heat winner, 2 points to 2nd place, and so on. At the end of the day, the skippers are ranked in ascending score. The winner, the man with the lowest score, is then assigned Cumulative Points as follows; 1 point for attending the regatta, plus one point for every boat he is ranked ahead of. For examples; the winner of a 12 boat regatta gets 1+11=12. Third place in a 20 boat regatta gets 1+17=18 points.

A regatta may be 6 heats or 40. Weather conditions are taken into account under this system, as heat scores do not become a mathematical part of the cumulative scoring. As the year progresses, the fleet grows and each regatta becomes more valuable, so that priority is given to Aug./Sept./Oct., as they will be the largest and have the highest point value.

The knotty problem of skipper skill stratifying the fleet has been attacked in a couple of ways. We split the fleet into two divisions one year, and gave a duplicate set of trophies. Would you believe that the B-Division skippers felt discriminated against? I had assumed that the coaching and assistance which was made available to them by A-Division would have been appreciated. Apparantly they felt like poor country cousins, so the practice was stopped. Next, the fleet captain in one fleet was approached and asked if he would OK the top 3 or 4 skippers sailing with the fleet, but having the trophies starting below them, as they valued the practice of fleet sailing. The request was denied. At the moment I'm stymied, or maybe I'm feeling guilty about the stack of plaques and trophies that I keep tripping over at home. Maybe I should see an analyst. Comments anyone? *(Have a carregatta, and get rid of 'em . . . or stay home and write columns! wcn).*

The point remains, that far from being over-formalized, AMYA has continually urged each of its clubs to innovate and try new things . . . only requiring that in the AMYA wide events, that each club is to hold one each year, following a standard format, with scoring and rule structure maintained in order that all entrants have an equal

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chance in a familiar setting. The Clovis, New Mexico fleet previously mentioned, is leery of becoming an AMYA sanctioned club since they fear that they would be forced into an overly structured situation. Such is not the case at all. Indeed they are experimenting with an extremely loose set of racing rules which deserve consideration. They require only three things while racing: 1) You may not cross the starting line until after the starting signal, 2) You must round all buoys on the proper side, 3) The entire boat must cross the finish properly. How's that for brevity? They are sailing Tahoe 600's as a one-deisgn fleet and I imagine that port/starboard situations develop!! But, it works for them, and is worthy of our consideration, and maybe even trying.

My cry for information on scale sailing boats has brought word of a 33 inch FRIENDSHIP model available from David Mainwaring, 36 Hawthorn Street, Needham, Mass. 02192. I have a hull/deck on order, but not seen it yet. The boat is gaff rigged, with inner and outer jibs. The outer I've not yet figured how to rig for tacking, as its clew comes aft of the inner jib's luff. Maybe we could sheet it to an endless belt arrangement so that the clew would be dragged forward and around the inner jib stay then aft to set the foot. The inner jib is club footed in standard practice, but the outer will have to be clubless. It also flies a topsail above the gaff boom and the topmast, which will be interesting to rig. The prototype generally used hoops to fix the main luff to the mast. I'm working out a bolt-rope/slotted mast arrangement in which the hoops are decorative, giving scale appearance but maintaining the good sail shape which comes from a slotted mast support. Write directly to Dave if you're interested. Price of the hull/deck combination is $35.00.

From Jack Holcomb, in Miami, comes the latest in scale/racing 50/800's. Jack has produced a 50 inch long FLYING DUTCHMAN. It is unbelievably sleek, has scale lines, and extremely shallow hull, so that I'm not sure that the winch will sit down inside. It may require a bubble-top hatch cover be put on it. It sports a 14 inch beam and should plane from the lightest air. The keel that comes with it is a standard YANKEE unit, which caused me to chuckle, as they are made only a mile from here, but got shipped to Florida and all the way back!!! The sail plan is somewhat modified from the prototype to meet the 800 square inch rule, and experiments are hovering around a 35-65% jib-main proportion with a 68 inch main luff. My approach will be to put on a minimum area keel, with bulb, in hopes of not adding to the already large wetted surface. It should tack well and I'll put the good old standby SOLING rudder aboard to handle the steering chores. The deck has non-skid areas on it, and

an almost scale cockpit depression that can be cut out to fit your needs. Stiffening members are glassed in the bottom of the hull, and the locations of keel and rudder marked inside the hull. Not a project for a beginner, but might prove a surprise on the race course. Contact Jack at 1670 N.E. 145th St., North Miami, Fla. 33181, for availability and prices. There are a number sailing, but I don't have a performance report yet.

The fighting Hemmalins of Rhode Island sent me a most novel suggestion for score keeping on rainy days. (I think they are still drying out from our STAR 45 ACCR). A piece of plexiglass is scored in the outlines required for a heat list. The scoring lines are filled in with waterproof magic marker. Ordinary 600 grit sand paper is used to roughen the surface. The result is a heat sheet which can be written on with a number 2 pencil, and will not smudge or run in the rain. China marker will work also, and it can be re-used many times. Now that is a good idea! They have been busy organizing AMYA Club No. 51 (See below) and should be contacted for information regarding their activities.

OTHER NEW AMYA CLUBS ARE:

No. 9 Vancouver MYC (Allen Gardner, 857 Westview Crescent, North Vancouver, B.C., CANADA)

No. 50 Whirlwind MYC (Chuck Mil-

lican, 246 Prospect Ave., Pewaukee, WI. 53072)

No. 51 Narragansett MYA (Al Hemmalin, 234 N. Fenner Ave., Middletown, R.I. 02840

I am continuously soliciting your assistance in the photography department. Pictures of fittings, gear installations, as well as workshop practices, are most welcome, in black and white, for publication. What is old hat to you might be just what some other skipper needs to solve his problem, so don't hesitate to make a contribution to the sport.

I'll field questions directly or in care of MODEL BUILDER. Rod Carr, 7608 Gresham St., Springfield, Va. 22151 •

Plug Sparks . . . *Continued from page 35*

flock of .604 engines; hence, with parts and service available for this size, the Cyke was reverted to size .64.

Interestingly enough, in the transition from the Baby Cyclone, Model F to the Super Cyclone, Model G, quite a few prototypes were built. In viewing the Cyclone collection of Larry Boyer, it is interesting to see the engine start as an updraft .60, similar to the Baby, and gradually change to the present downdraft intake.

An anecdote is in order here. Larry Boyer was so pleased to acquire the Super Cyclone prototypes that he was publicly displaying them. Whether Joe Wagner was fed up listening to Larry, or just having fun, he spoke up during one showing and said, "Oh yeah, I know those engines. Those were the ones that were stolen from the Curtiss-Wright Institute Plant." Larry turned white. To this day, Larry has never shown the prototypes again. Aw c'mon, Larry, bring them out, the statute of limitations expired 30 years ago!

Super Cyclones lend themselves very readily to "hopping up". High compression heads were numerous, among the more popular being the "Denver" and "Texan" heads. This, plus opening the intake slot on the rotary shaft and "packing" the crankcase with thicker crankcase back plates, made the Cyclone a formidable opponent in any competition.

Much later in the game, around 1962, Bob McCord acquired the rights, dies, and parts to the Super Cyclone and Anderson Spitfire engines, from Mel Anderson. McCord did a fine job of producing good engines, but unfortunately, the engines seem to have a jinx on them, as all owners have had marital problems directly after acquisition! This has been the primary reason the engine dies have changed from Anderson, to McCord, to Quentin, to Mrock, and now to Karl Carlson of San Jose.

At present, Karl's plans are only to sell parts until such time elapses that he is able to set up a production facility for the two engines. The Super Cyclone will live again!

CYCLONE SIDE NOTES

Many modelers have inquired as to the best aircraft combinations with a Super Cyclone engine. In line with this, the columnist heavily favors the Cyke with the Playboy Senior, a practically unbeatable combination. Unless you have a red hot Cyke, the Sailplane is a little large for hot competition work. Surprisingly, in the cabin types, the

Spook 72 flies quite well with this combo. Comet Clippers can be utilized, but the weak wing must be reinforced with a series of top multi-spars. In the non-kit designs, the Gladiator and Bombshell cabin models are excellent. For pylon types, the New Ruler is far and away the most popular.

SAM CHAMPIONSHIPS, 1976

Don't say this column doesn't have the latest info, because here it is on the Old Timer Nationals, called the SAM Championships. Just received all dope from Tim Banaszak by telephone, just in time to make this column.

First off, with the next AMA Nationals being held at Wright-Patterson Field, near Dayton, Ohio during the week of August 1 to 8, it occurred to the mid-west boys that here was a chance to utilize a field in their own backyard. Inasmuch as outdoor free flight competition does not start until Wednesday (August 4) this would leave August 1, 2, and 3 open to stage the SAM Championships. Of course, this means the unofficial Old Timer Events annually staged on Friday of the Nationals week would be scrubbed. This would leave one less contest for the old timer fans in that area.

However, the SAM Championships should grow in stature, as it will truly have a "Nationals" label. Inasmuch as all NATS free flight events are being held at the Springfield Ohio Airport, located about 15 miles north of Patterson Field, the old timer fans will enjoy runways of better than 9000 feet in length. According to Contest Coordinator for 1976 SAM Champs, Bill Hale, the weather in this area is most mild with only light winds. Sounds too good to be true, huh?

The Central Ohio F/F Club will be the host club this year, with fellows like Bob Reuter planning all sorts of activities. Can't let those Rocky Mountain boys show us how to do it all the time! Incidentally, the R/C Soaring Glider Events will be held on the same field, but not at the same time as the Champs, so the R/C O/T events should have no problems. All other C/L, R/C and flying scale events will be held at Wright-Patterson Field.

At present, SAM has no Contest Director for this meet, but gentle hints have been wafted this way for the columnist to do the chores. Don't we have any qualified volunteers out there? All volunteers take one step forward . . .

STOCKTON 15TH ANNUAL OLD TIMER MEET

Boy! Is this meet ever starting to get the whiskers on it! Full credit must be given to Dick Douglas for organizing, promoting, and continuing this first-of-a-kind contest. Although overshadowed by the Fresno G.M.A. Annual, which is staged in conjunction with the O/T meet, Dick reported a good turnout and even better flying.

Of interest was the Playboy Senior flown on glow by Guy Kirkwood. With only 15 seconds motor run (using a K&B 40) he outperformed Bob Hunter's red hot K&B ignition conversion in a Sailplane, although Bob had a 25 second motor run! Those K&B motors are real potent engines for old timers!

Results show Greg Rasmussen taking Class A, F. L. Swaney winning Class B, Guy Kirkwood dominating Class C, Jim Persson showing the way in .020 Replica, SAM Sweepstake winner Phil McCary showing how to do it in rubber, and finally, Al Rasmussen winning Sweepstakes.

9TH ANNUAL SCIF TEXACO CLASS CONTEST

Well, it took four years for the R/C boys to do it, but they finally cleaned house on the free flight boys in the recent SCIF Texaco meet on October 19 at Taft.

This most interesting meet, which pits the free flight boys against the radio guys, has been the subject of some real joshing. Up to this year, the best the R/C boys have been able to do was a second place in 1974. However, this year, Cliff Silva, who was sitting in first place with a beautiful 30 minute flight by his F/F Roll 14 ft. model, was the victim of a beautiful thermal discovered by Bob Von Konsky. This was immediately piggy-backed by Bill Northrop and Otto Bernhardt. *(No, John, not a thermal, it was a stationary wave located over the hill to the north of the field. wcn)*

With all contestants comfortably sitting under Bernhardt's awning *(Not me, John! wcn)*, it was just a matter of time (haw! a pun!) who would emerge the winner in this boomer of a thermal *(No, John, a wave. wcn)*. Bill Northrop finally eked out a close win over Otto Bernhardt (45:45 to 45:08), while Von Konsky had to be satisfied with 34:38.

With such a showing, it is understandable why the SCIF Club is returning to a strictly free flight event for the F/F Texaco models. *(Funny, they never worried about it while the FF's were winning! wcn)* At present, the R/C portion of the Texaco Event is up in the air, but the SAM 21 Club, with its membership of 36, is looking for a spot to stage an R/C Texaco Event. Keep tuned for future developments.

In the Scale event, Cliff Sylva, with his 6 foot Corben Ace, won over a gaggle of Fokkers, spearheaded by Chandler, Adams and Brickner (E1, D8, and EIII respectively). Meanwhile, Jack Jella was showing the boys how in the Tow-line Glider event, using a little-remembered Wally Froom design called "Cosmo", scoring over the Jasco designs

of Trooper, Floater, and Thermic 36 by Levine, Brickner, and McCary. Good meet all around!

NORTH-SOUTH MEET

With contests coming thick and fast, the writer was extremely gratified to find the North-South meet well attended. This annual affair between the Yanks and Rebels has always been one of keen rivalry with the South capturing the most wins for the last five years.

This year, due to Jack Jella's fine flying with his Megow Ranger, taking two firsts, the North barely eked out the win based on extended placings to break the tie! Al Rasmussen also did his part for the North, garnering three thirds and a first, which helped offset wins by Sal Taibi, Bob Oslan, Larry Boyer, and F. L. Swaney, of the southland.

Weather was beautiful as was the field at Fresno. This field was originally a real estate development, with streets all put in, but no houses! What a great place to shag models. Based on the success of this meet, it appears that all North-South and Stockton O/T meets will be held here.

BALSA BY AND FOR THE MODELER

Most all of us are familiar with the excellent balsa wood that comes in Competition Models' kits (Sal Taibi does the wood selection). Now it is with distinct pleasure I receive a notice that Sal's son, Mike Taibi, has organized Superior Aircraft Materials, a wood cutting specialty house.

Best part about the wood is that it is available in five foot lengths, and also special lengths for Peanuts. Why buy what you can't use? Balsa, spruce, and plywoods are available from Superior Aircraft Materials, P.O. Box 8082, Long Beach, Ca. 90808. Right now, they are offering a special introductory discount price, so why not drop Mike a line and get a pleasant surprise.

CONTESTS, CONTESTS, CONTESTS!

We're finally getting so many reports, it is hard to write them all up (especially when they are all in the same time frame), but regardless, we will quickly acknowledge all. (Keep those reports coming, never know when we are short!) *(Fat chance! wcn)*

Don Hartman, President of the Somerset Signal Senders sez their Annual O/T Radio Assist contest came off in great style, with Mark Patriola winning Class A, Vince Bonema (the old pro) using a Clipper for his Class B win, Ted Patriola (Mark's dad) winning Class C and Esio Grassi taking the Antique Event.

Joe Beshar (2nd Class A) did it again, as his radio quit at the top of a climb. (what luck!) hence it penetrated up wind and ended up just a short distance across the river, with only a broken stabilizer (this guy lives a charmed life . . . or that blasted "Fox" does!).

For a switch, the SCIF Club ran the Old Timer Events for the San Diego Orbiteers on their Annual staged at Lake Elsinore. Five events were held on October 5, consisting of .020 Replica, 30 Second Antique, Class A-B Gas, Class C Gas and Rubber. The rubber and replica events enjoyed the biggest turnouts.

C. D. "Brick" Brickner noted that some of the hot Schneurle engines being used were just too much for the planes; ending up by burying themselves in that tough Elsinore sand. Big winners were F. L. Swaney, Larry Boyer, and Sal Taibi, using standard engines.

Incidentally, at this two day meet, the old timer models were flown only on Saturday, while Sunday was devoted to the contemporary stuff. Can't say either one was contaminating the other!

C. E. Haught, Contest Director of the CAMS Old Tim Bash (Coeur d'Alene Aeromodeling Society) reports that their meet attracted contestants as far away as Albany, Portland (475 miles), and Seattle, Wash. (315 miles off). Boy! Are those old timers dedicated!

The field was a little soggy on Sunday, but who cared as long as the rain stopped in time to stage a meet?! About the only serious mishap that occurred was a Buzzard Bombshell becoming lodged in the power lines on the south end of the field. The Washington Water & Power Co. sent out a basket type truck to retrieve the errant model. Great stuff!

ENGINES

We have been remiss in not reporting that Karl Spielmaker, 3153 Burlingame, Wyoming, Michigan 49509, has been producing the Golden Eagle engine for quite some time. The motor is a smooth runner and does start easily.

Karl reports he is contemplating the production of the "Spielmaker 60." Just as soon as photos of the prototype are received, we'll feature it in this column. That should keep you engine collectors on your toes!

"NO RECEIVER" CLUB

That's what we are going to call it. After this columnist pulled the classic boot of not turning on his receiver for his Raider at Lakehurst NAS, a considerable number of like experiences have been coming in. It is comforting to find the "great" have their human failings also, as witness this report from Leon Shulman.

Lee had a brand new 1158 sq. in., 7 lb. Zomby that he was extremely anxious to fly. However, the weather at the Lakehurst contest was abominable, with wind gusting so badly, takeoffs were extremely hazardous. Lee (who would break his grandma's leg if it would count as a win) was determined to test the new 40 powered ship, and conned Dave

Jagge into launching it. Surprisingly, in spite of the gale force, he was able to get the Zomby back to the starting line.

That did it! Fire the model up for an official right away! Put in hot fuel, tweak that needle, motor screams, hot dog! "Dave, launch that model. Atta boy, beautiful launch. Looka that model climb, better give it a little right trim. Oh no!!" . . . The receiver wasn't turned on!

Wouldn't you know it, the Zomby climbs in beautiful left hand turns just like the old days. The model, of course, drifts downwind rapidly, so a car is commandeered for the chase. By the time Lee got off the base, the model had been lost to sight and it landed in the woods several miles downwind. Several hours later, no results. Did you ever try to find a model in the brush surrounding Lakehurst NAS? Impossible!

Upon Shulman's return to the base without the model, Joe Beshar, who is never without sympathy moved in with the other fellows to offer condolences. Shulman himself was not without feelings as he exclaimed, "There's one consolation, the nickel cadmium batteries won't go dead." This broke up the funeral.

If we keep losing models like this, the columnist would like to propose this "No-Receiver" Club with suitable award, patch, etc., to commemorate the induction of another member to this dubious honor. How about that Joe? Can do?

CONTEST SCHEDULE

We're getting earlier all the time in announcing the Old Timer Contests staged around the country. In 1976, the Midwest boys can look for the following meets: June 6, Chicago Aeronuts, 15th Annual Spring Meet; July 11, Pelican M.A.C., O/T Meet; Sept. 26, Chicago Aeronuts, 14th Annual Fall Meet.

Sounds like this is a long way off, but velieve the old professor, better gettum ready, because the time will be here before you know it.

SAM EXPANSION

Would you believe with close to 1000 members in SAM now, we have members in all 50 states, plus Belgium, Italy, Australia, England, New Zealand, Japan, Phillipines, Guam, and Puerto Rico? How about that? We are truly an international organization.

Tim Banaszak, Treasurer, confidently expects the memberships to be well over the 1000 mark by the time of the Annual SAM Business Meeting in 1976.

MECA COLLECTOGETHER

We don't report these very often, but this column would be remiss in its coverage of old timer activity if we didn't talk about the big Region 2 Collectogether at Sacramento on October 11, at the Del Campo High School, located in Fair Oaks.

With the doors opening at 9 a.m., awards were presented all day for the two Best Engine Displays, Farthest Distance Traveled, and a series of nine door prizes. Something was going on all the time, including the very popular engine auction run by Bill Daniel, of Long Beach.

Those who missed a real good gathering (58 collectors plus wives!!) also missed some real bargains, as many good flying type engines went for between 15 and 30 dollars. You don't find them like that every day!

Featured as the Collectogether were Dick McCoy and wife, plus the Cameron brothers, plus Hank Hilscher, all the way from Indiana. All were available for questions on their line of engines and MECA doings. Don't miss the Spring Collectogether!

"YOUNG" STUFF

Several issues ago, this columnist commented on the younger set in this O/T game, especially Guy Johnson, who insisted on flying his Garami Strato-Streak with Atom 09 power. He then proceeded to win the O/T Nats with highest time.

In this same line, received the nicest letter from his dad, R. M. "Dick" Johnson, who is understandably proud of his boy. He writes (with some small editing) as follows:

"I am proud that Guy is injecting the new blood that Bert Pond said was so important to the modeling game. You know how he won, but credit should be given to Dave Sweeney and the rivalry the two have built up in the .020 Replica Class. If anyone knows how to trim a Streak then "Doc" would know as he has lost more than a few.

"Guy took his Streak to the Nats at Lake Charles completely uncovered. Matter of fact, the dope was still wet on Thursday evening when O/T models were being processed. When I shattered my Comet Mercury, Guy decided against flying his Strato Streak. However, Dave prevailed on Guy to trim out his little Strato-Streak, and after three flights gave the "thumbs up" signal. The rest, of course, is history. The fact that Dave Sweeney took time off to help Guy is another act of sportsmanship that has to be seen to be appreciated. Dave and Guy have had a private challenge of their own for the past two years, flying identical models, that proves the "generation gap" idea is strictly a myth. Dave was just as proud at the awards as Guy.

"In late August, my wife and I watched my son go down the driveway and off to college at Texas Tech University, in Lubbock. How I hated to lose my flying buddy, but it is significant to me that he is taking this step at almost the same age I was when I tackled the University of Kansas. Incidentally a

time when fine folks like Jack Jella and Roy Edwards were my associates. I can only hope my boy can find such long-lasting friendships as I have enjoyed from this 40 odd years of modeling, with contest performance being only the vehicle to meet them.

"So my prize free flight, Guy, has been launched with the knowledge that I have done the best to build sturdy, light, and straight. This is the biggest contest of all, and we hope there are a long string of maxes ahead for him."

What can you say to top that? Amen, brother! •

Korda . . . . . *Continued from page 37*

some of the workmanship done on today's models, I'd be afraid to take a chance flying them."

Getting back to the Wakefield model . . . Korda's famous flight of 43¼ minutes was the first official flight of the 1939 Wakefield competition, on a golf course bordering Bendix Airport in New Jersey, August 6th, at about 11 AM. It put the contest on ice almost before it started! For the remainder of the one-day affair, only second place winner, Canadian Fred Bowers, managed to find another thermal for a 14 minute flight.

Soon after the Wakefield win, the Megow Model Company put out a kit for the 1939 model that sold for $1.00. And in the December 1939 issue, Air Trails magazine offered a Korda Wakefield kit *plus* a one-year subscription for a grand total of $1.50! By comparison, we must now get more than that ($2.00) just for a set of plans for the same model!

As usual, we do not offer detailed instructions for building old timers, but the following flight trimming suggestions come from the November 1939 Air Trails construction article. Thrust offset is one degree right and two degrees down. The wing's leading edge should be shimmed up 3/32 of an inch. The right wing tip is washed in slightly as well as the left stab tip.

We built a Megow kit of this model during the Christmas holidays of 1939 and flew it during the 1940 season. For some reason, ours flew best to the left (so what does Korda know!), a fact that we discovered at a contest in Lancaster, Pa., where a 100 hand-wind test hop resulted in a 28 minute o.o.s. *unofficial* flight! Yes, we got it back a week later, 20 miles from the contest site.

By the way, if you're interested in building a Korda Wakefield, P & W Model Service, Box 925, Monrovia, Ca. 91016 can supply an excellent partial kit for $4.25 postpaid. You need only strip wood and plans to complete the framework. For your convenience, you can send us one check for $6.25 (add 6% if you're a California resident) and we'll have P & W ship the partial kit directly to you.

What's Korda doing now? "I'm 60 years old . . . 60? . . . oh well. Machinist at G.E., play some golf . . . 15 handicap. Spend most of the weekends, summer and winter, towing or flying sailplanes. •

Workbench . . . . *Continued from page 6*

(Mercy! Been watching too many football games!)

So . . . we don't need an R/C Pylon Board, an R/C Pattern Board, and an R/C Soaring Board. What we need, and have, is an R/C Contest Board, which leans heavily on the advise of the NMPRA (Pylon), the NSRCA (Pattern) and the NSS (Soaring) . . . and gentlemen, you've only got six months to get us some good advice in the form of proposals . . . or forever (until 1980) keep your peace!

We have some further comments relative to R/C proposals in "Remotely Speaking," and Dirty Dan has some C/L rules discussion in his column . . . so that leaves free flight.

This writer won't claim to be an "ex free flighter", because his active participation in that phase of the hobby dates back to pre-World War II. Our last out-of-sight free flight was about 1961 or 62, when we were having too much fun with an escapement controlled, Walt Good WAG. Staying up too long, the escapement rubber on the rudder ran down, with the engine in high cruise. The ship was gone for a month. Since then, we have participated in a few indoor and outdoor HLG contests, and inaugurated a winter session of "Unlimited Delta Darts" for our former Delaware R/C Club. (UDDs had to meet the outline shape of the Delta Dart, but anything else was legal; hollow motor sticks, 1/32 square, condenser paper, etc.)

Anyway, in a most controversial manner, the VTO has been dropped from free flight, as of Jan. 1, 1976. This is sort of a milestone (or is it gallstone?) in free flight history, and one that is not greeted with great acclaim in

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R/C SAILPLANE PLANS: "Osprey 100." 1974 N.S.S. Standard Class champion, open age class. $4.00 per set. By Ray Hayes, N.S.S. 71-029. A.M.S. Inc., P.O. Box 9368, Ft. Wayne, IN 46809.

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1938-1945 MODEL AIRPLANE NEWS, misc., S.A.S.E. for list. D. Nelson, 6261 Braemar Dr., Huntington Beach, Ca. 92647.

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INDEX TO ADVERTISERS

many areas (in fact we heard there was an attempt being made to put a hold on the matter, pending further deliberation. Just to add to the confusion, we'd like to make a couple of comments.

First, the VTO was apparently dropped because of its danger. As a frequent, but outside observer (who is therefore quite unbiased) of free flight competition at the Nats and at the USFF Champs in Taft, California, it appears that the biggest danger in VTO is the added amount of dirt that is stirred up, which can get into teeth, eyes, and camera shutters! Other than that, the fliers seem to be more attentive to last second matters, like timer release and direction of launch, when planting the tail than when merely releasing or javelining the model.

Secondly, it appears paradoxical to us that in the face of decreased engine run and max times, to avoid fly-aways in the ever shrinking free flight sights, that a move should be made to improve flight times (If it doesn't improve flight time, then why the extra engine run for VTO?). If engine runs continue to be cut down, combined with no VTO, what you will eventually have is engine assisted hand launch gliders . . . Or do you have them now?

There is even talk of a Cat III, with still shorter engine run and shorter max. Before it's too late, we'd like to suggest

a Cat IV. In this category, the model must have a two-wheel landing gear and a tail skid. When sitting on "all threes", the prop must *not* clear the ground by more than 4 inches. We could call it Rise-off-Ground.

Matter of fact, we'll even stand back and let Dave Linstrum use the initials "R.O.G." for his column, if V.T.O. becomes obsolete!

* * *

While one foot is now firmly planted in our mouth, we'd like to try for two.

Moments ago, we said that the contest board members cannot be expected to be Jacks-of-all-trades. Now we'd like to add one more phrase to that, and say "within their basic category," meaning R/C, F/F, or C/L. The board members should be well versed in their basic category, and have some knowledge of the subdivisions, ie, in R/C, there is pattern, pylon, soaring, and now payload. Along this line of thinking, therefore, the Scale Contest Board is not practical. Within it, you have F/F experts voting on R/C, C/L experts voting on F/F, and so on. Can you imagine what it would be like to have a Precision Pattern Board? This board would also bridge across the basic three, and you would have C/L Stunt experts voting on R/C Pattern, and vice versa. How about a Goodyear Board, deciding rules for R/C and C/L? Or a Payload Board voting on R/C and F/F?

We feel that there should be three scale advisory boards, one each for R/C F/F, and C/L. Perhaps the members could form the nucleus of national organizations Fernando Ramos feels that F/F Scale is ready to organize now. Each of these advisory boards would be responsibile for collecting and composing well-directed rules proposals for presentation to the basic contest board concerned. In this way, the basic F/F, C/L or R/C rules would be in hands of one responsible board, instead of being scattered across all three.

COX/SANWA R/C

The L.M. Cox Company, Santa Ana, California, a subsidiary of Leisure Dynamics, Inc., has just taken a giant step into the model hobby field. Although Cox has long been the backbone of ½A power for all types of sport and competition models, its main business for several decades has been in ready-to-operate plastic toy production and sales.

Bill Selzer, Cox President, has just announced that the company is making a major move into the hobby end of the business. It has acquired Lee Renaud's company, AirTronics, making it a division of Cox, with Lee as its General Manager.

In addition, Cox has concluded an agreement with Sanwa Electric, a major Japanese manufacturer of radio control systems. Sanwa, with six plants in Japan, is also a primary supplier of circuits and other components for many U.S. television set manufacturers. Under the agreement, Cox will purchase R/C systems from Sanwa, while Sanwa will market Cox-manufactured products in Japan.

Another major step, involving engines, will be officially announced shortly. We can only say at this time that FAI and AMA free flight power, and R/C pylon (QM and Formula 1) modelers will become very domestic minded in early 1976! The sport R/C fliers will also find items of interest for their power models.

FAA AND AMA

Following a review of the current situation, the FAA has contacted AMA to seek a repeat of its previous efforts in pushing safety, particularly in regard to 'incidents' with full-scale aircraft.

The campaign initiated by AMA in 1972 in behalf of air safety, has brought about a pleasant relationship with the Federal Aviation Administration, especially in local areas around the country where, for the most part, FAA officials and AMA members have initiated and maintained mutual contact.

With the tremendous growth of the model aviation hobby/sport, many new faces have entered the picture in the last few years, and with this in mind, both the AMA and FAA are asking that everyone continue to maintain and improve the mutual understanding that helps to avoid the federal restrictions that none of us even want to contemplate, let alone endure. ●

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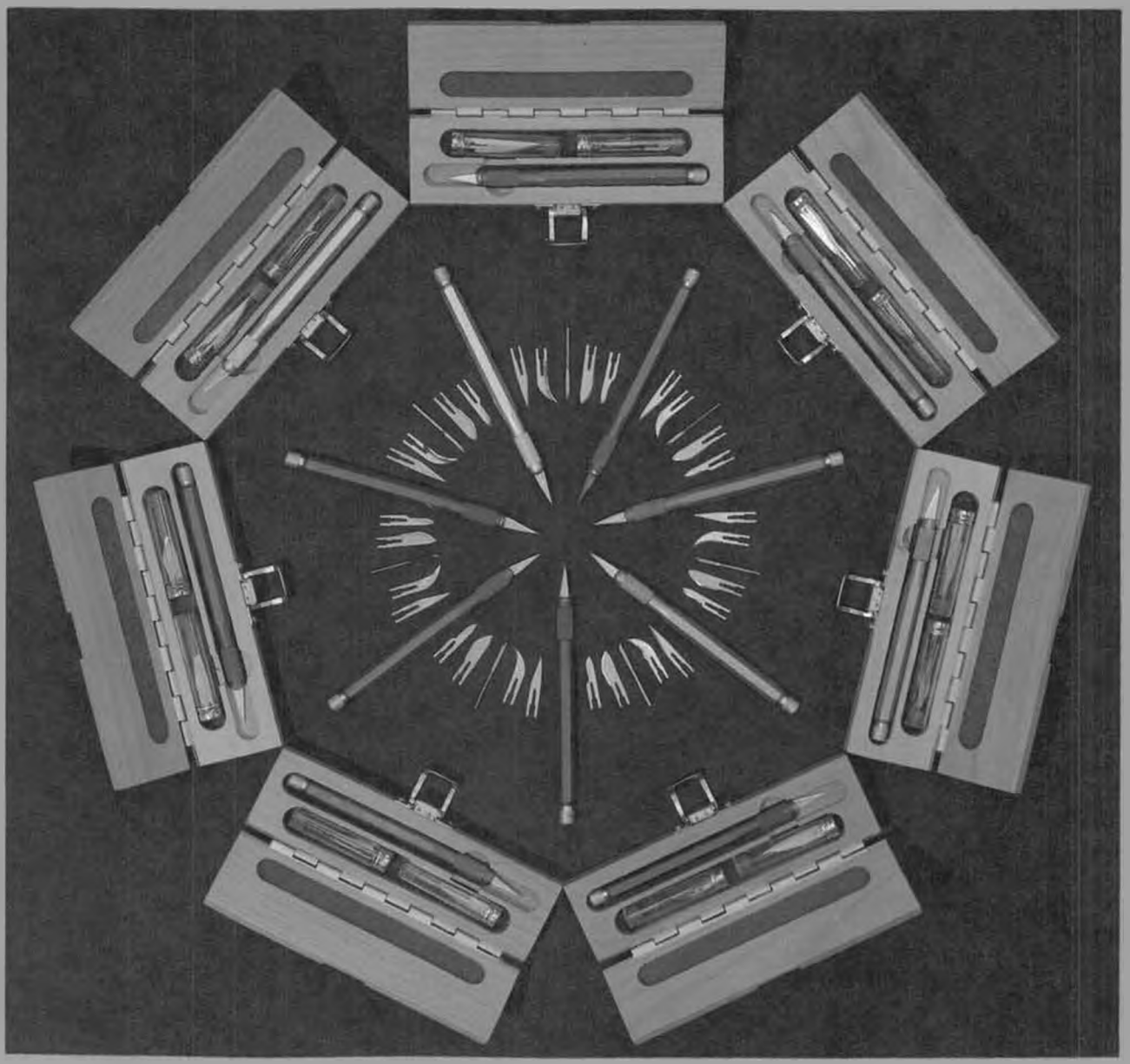

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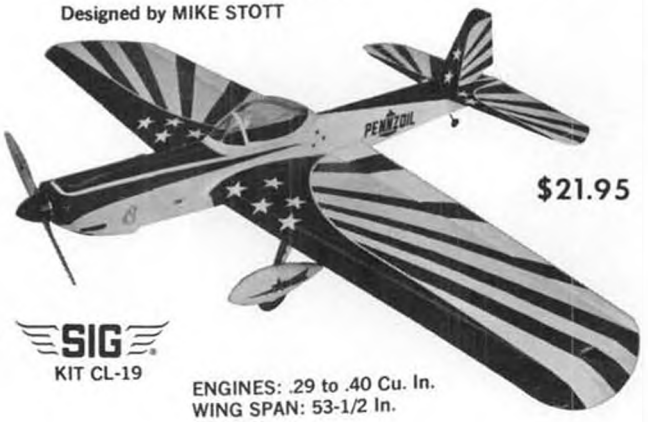

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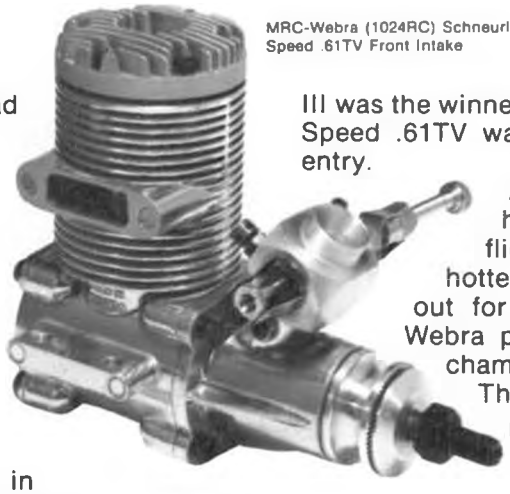

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Bringing with them the engines that had carried them into this ultimate competition, they came to Berne Switzerland from around the world to compete in the 1975 International Championships. These men were the best, and so were their engines. When points had been tallied, performance scrutinized and the judgements made, it was the MRC-Webra Schneurle Speed .61TV (1024) in the hands of Wolfgang Matt which had taken on all comers and come out on top of the world. And there in Hanno Prettner's aircraft, which had finished in second place, sat another Speed .61TV. Also, here at the Nationals, where America's heavyweights competed, Rhett Miller III was the winner, and again an MRC-Webra Speed .61TV was mounted in the winning entry.

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In 1975 there were two big contests... there was one big winner.

Wolfgang Matt, World Champion, (right), stands with second place winner Hanno Prettner on field in Berne Switzerland site of the 1975 Internats.