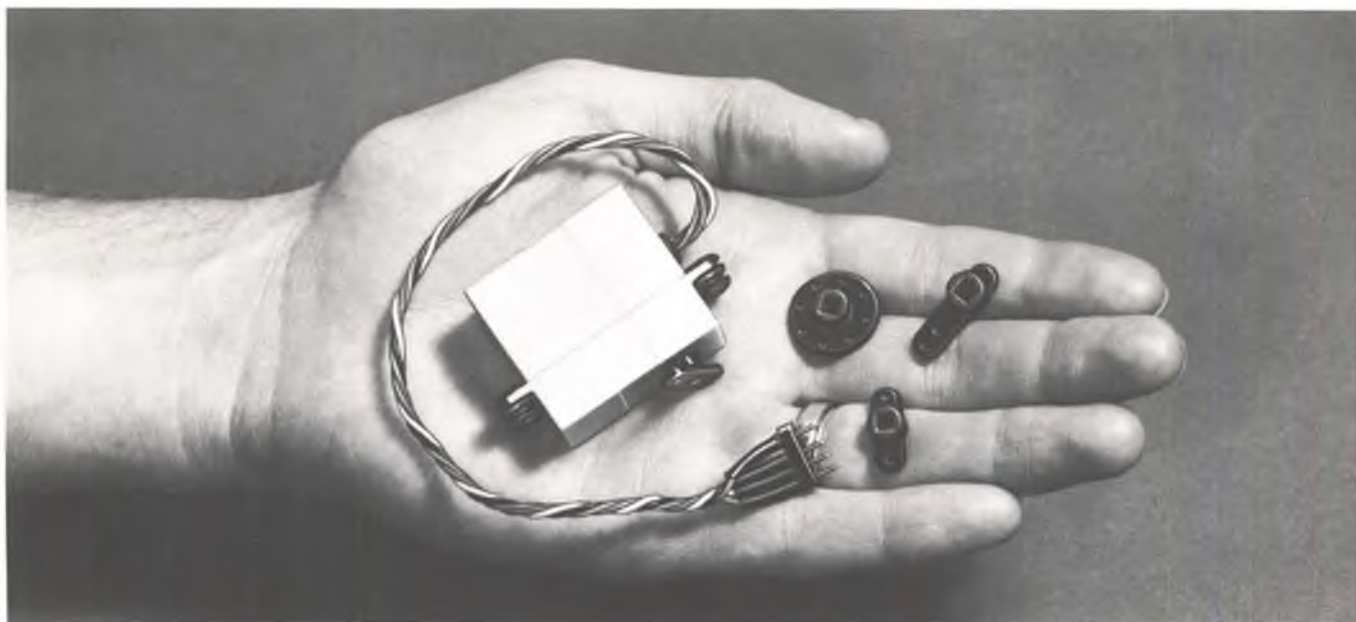


The **MODEL** **BUILDER**



SEPTEMBER/OCTOBER
volume 1, number 1

50 cents



1 1/4 ounces, 3-pound punch!



New Heathkit Sub-Miniature Digital Proportional Servo utilizes an integrated circuit to trim off excess bulk. The Sub-Mini weighs-in at 1.25 oz., measures 1 1/8" from mounting ear to mounting ear, yet provides the same 3-lb. thrust of much larger servos. Features include 90° rotation in 0.5 seconds; 1% position accuracy; ceramic variable control feedback element; nylon gears and molded nylon case. Just 18 components install quickly on printed circuit board. Includes 4 rotary outputs, is compatible with all Heath R/C Systems and most others. Measures 1 1/32" H x 2 1/32" W x 1 7/8" L.

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RETRACT GEAR SYSTEM

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SPECIFICATIONS:

System includes 2 or 3 gears (main gears, nose gear); airborne Freon 12 storage tank with filling valve; 4-way air valve; Neoprene tubing for airborne connections; hand control valve, tubing and charging nozzle for Freon 12 can; 1-fittings and slip-on fittings; complete instructions.

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Only 1/4" stroke of air valve is required to shift air pressure for full up and down action. While a separate channel servo is preferable, the valve may be operated from the throttle servo of a 4-channel set.

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Uses standard automotive air-conditioning FREON 12, available in cans everywhere. Filling valve is supplied for mounting at any convenient place on fuselage. Entire system rechargeable on the field in 15 seconds.

Easy to install: simply connect two Neoprene tubing lines to each gear, regardless of where installed, after first determining servo direction.

No more "nightmare" adjustment of wire push rods to an exact down and locked position.

No need for second servo to activate nose gear.

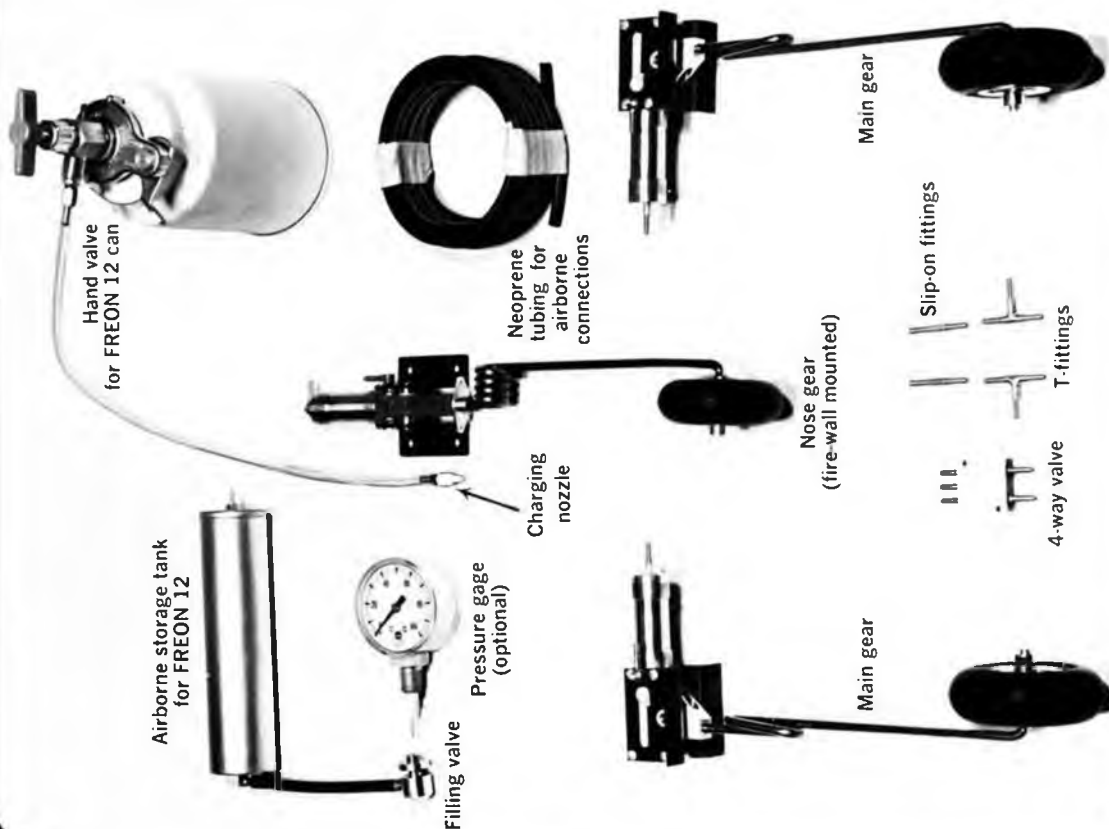
Nose gear easily separated from fuselage by disconnecting two slip-on fittings.

May be dressed for scale appearance. Added weight does not impair gear operation. Gears may even be extended when in inverted position.

Pressure gage available as optional accessory (\$10.50). System's condition may be checked at any time simply by inserting gage's probe into filling valve on side of fuselage.

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from **Bill Northrop's workbench . . .**

● Many weeks ago, when the thoughts of publishing my own magazine first started to become serious, I said to myself, "You're nuts!"

Later, when the thoughts persisted in spite of my efforts to dismiss them and I disclosed the idea to friends, they said, "You're nuts!"

Still later, when the thoughts had been turned into physical actions, and the advertising brochures and rate cards had been mailed, the first person to call me was Jack Stafford, manufacturer of several balsa kits, particularly the very successful Minnow and Midget Mustang Formula 1 Pylon Racers. His first words, after asking if he was talking to me, were, "You're nuts!"

As I started to scratch out this editorial, my thoughts drifted back over the past 8 to 10 weeks, reliving each of the major and minor crises that have come and gone, the disappointments and encouragements, the long drawn-out decisions and the snap judgements, the hours of planning and replanning; and of course, remembering that one particular day I took the big carton full of advertising brochures down to the Post Office, dumped them into the appropriate slots, and suddenly realized that in that one moment I had passed the point of no return....Going back over all of that, I could think of only one thing to say to myself. Sure, you guessed it, "You're nuts!"

Now that we understand each other, and you know why we are doing this thing, let's get on with it.

Starting the very first issue with an excuse and an apology or two wouldn't exactly be considered a red hot beginning, but it's your money, so you rate an explanation.

First, we come out with a monthly magazine and lo and behold the issue you now have in your hand is dated September/October! To make a long explanation short, the time of year is just right for introducing a magazine (in case you hadn't noticed, two others did it too). However, it also happened to be the time of year, and this year in particular, when your Editor/Publisher had two commitments from which he simply refused to back out: (1) Chief Judge at the AMA Nationals and (2) U.S. Judge for the World Championships. Two weeks out of July and at least a week out of September at such a critical time in a new publication's life is just too much. Naturally, subscriptions will be extended one issue to compensate.

Next, we claim to be a model magazine for all types, i.e., free-flight, radio control and control line, yet the only non-R/C article in this first issue is Walt Mooney's Peanut Scale Jodel. (Well, actually, Tom Laurie's Fairchild 22 would make a terrific F/F project without any structural alterations.)

Again, we are a victim of timing. Since most of our contacts in the past 15 years of modeling have been R/C oriented, and we wanted to start things out with a Nats issue, it was relatively easy to obtain the enclosed articles. And our official's job at the Nats prevented even a casual glance at anything but R/C (except for the F/F ships that drifted over the R/C sites, also one U/C combat job, complete with ribbon, that passed over at about 300 feet and crashed outside of the boundary). However, we

The MODEL BUILDER

September/October

1971

volume 1, number 1

Cover: The Editor's Graupner Cirrus makes a low pass for photographer Pete Lugo's Hasselblad. Orange Micro radio.

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● Anita Northrop - General Manager
● Bobbie Tyler - Secretary
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have made many contacts in F/F and U/C in the past month, and something good is coming in both areas.

That's enough about excuses and stuff. So, what is the MODEL BUILDER all about, and where does it fit in with four established national model publications and two other new ones (Junior American Modeler and the trade publication, Model Dealer)? Part of the answer to that will come in due time as we feel our way into the publication and begin to establish certain criteria. As with modern day proportional systems, feed-back will help to establish the norm. Your response to the articles and questions presented will help to determine the content of the magazine. For our part, we will try some new slants we think are desirable and different. Fr'in-stance...

The most prominent feature of The MODEL BUILDER will be up-to-the-minute news. Certain areas of the magazine will be left open so that last-minute items, such as reports of local contests, results of major competitions, and latest releases from manufacturers, will be as little as three or four weeks old when they reach you.

The success of this feature depends a great deal on you, the modelers and manufacturers. Let's make it a mutual keeping-each-other-posted-society and we'll all benefit.

Full size plans for construction articles will be shot directly on long lasting mylar from the designer's original drawing. Your copies will be blue-line prints from that mylar. Something can be lost when a drawing is done over in ink by another person. Included with each plan set will be a copy of the construction article.

Many times, while taking the 25 cent tour through a model production plant,

we've heard manufacturers say, "What the modeler doesn't realize...etc.," or "If they only knew what we had to go through to produce that simple looking part." Well, it's about time the consumer got the explanation right from the horse's mouth. It should not only make the modeler more appreciative of what he finds in a good kit, but should also bring the producer and consumer closer together.

We've talked this idea over with several prominent model manufacturers, and they're all for it. In fact, one has suggested that he'd like to publish a complaint letter and his answer at the same time. One thing for sure, this is intended to be a let-the-hair-down type thing. If it gets too commercial, it won't be genuine, or effective. For a start, we'll call it "The Manufacturer Talks Back."

Very often, a construction article will tell you to hollow this out, or sand that to a bevel, or add a wing fillet, or cover with small section of tissue, or build two sides exactly alike, or whatever. Our Modeling Classroom series is going to take individual steps that are part of the whole and study them, one at a time, in depth.

In addition to the above, we'll have Letters To The Editor, reviews of new products, kit analysis, etc. And, for our Spanish speaking friends in the U.S. and other countries, a column and correspondence service in Spanish from the the General Manager, Anita Northrop, "SALUDOS AMIGOS"

Son nuestros deseos que llegue a ustedes EL MODEL BUILDER MAGAZINE.

Trataremos de contestar todas sus preguntas. Tambien tenemos las instrucciones en español, de todos los artículos de modelos publicados bajo el SERVICIO DE PLANOS GRANDES.

Les invitamos a enviar sus comentarios acerca de la Revista. Le agradecemos su patronaje y el favor de decirle a sus amistades acerca de nosotros."

This service will also be made available in other languages, such as French, and German, if reader response indicates the need.

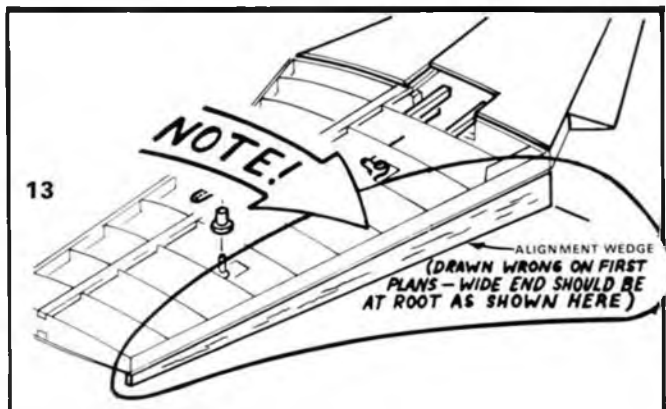
On these two pages, you'll find several uncaptioned photos. We thought for a change, we'd clarify them in this column. The heading photo was taken by our good friend Yoshiro Sato of Tokyo, Japan, who accompanied us during a tour of the M.A.C.S. Trade Show, held in the Anaheim Convention Center in April.

Top left, page 3, is the Rom-Air retract demonstrator, held by The MODEL BUILDER's G.M. This pressure operated system is described further in the Nats Pattern story.

Top right, was the scene in Santa Barbara's harbor on July 31-August 1, during the first annual Santa Barbara One Design Western Regional Championship Regatta (Wow! What a mouth full!). Tom Protheroe, designer of the S/B was first, Don Prough second, Bob DeBow Jr, and George Montague third (tie) and Bob Francis (yes, the NMPRA Francis) fifth. Vortex Model Engineering was the sponsor.

Bottom left is an important correction for all Top-Flite P-51 kit builders. Turn that alignment wedge around as shown or you'll have a wing with wash-out that won't quit.

Bottom right is a picture of the latest Tatone muffler, the "Calumet." Available in three sizes for .09 through .80 engines, the cost is a reasonable \$4.95-\$5.95. Units are extremely light, ranging from 2 to 3½ ounces. Special "Calumets" are also available for Testor/McCoy 21 series shown in photo.





HOW TO CULTIVATE

BY BOB UPTON . . . Here is an eye-catching, scale-like sport model designed by one of NMPRA's top fliers. It has all of the requirements for sport competition; speed, stability, maneuverability, and economy.

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

I wanted, in this day and age of super colossal 800 mph retract, R/C pattern bombs, an airplane that would be fun to fly, relatively stable, and an airplane that looks like its full size brother. I've even had people say, "Beanpatch looks like a real airplane!"

Anyway, the model started out if life as a tail dragger with a constant chord wing. I needed a snappy design that would keep me in practice for Formula 1 racing, hence the tail dragger configuration. This particular version met its demise in a Valley Flyer spin contest which I would easily have won if the judges had continued counting the number of revolutions as I skillfully screwed the model into the ground.

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

thereto.

Like many modelers, I hate to build wings, so start here, guys, and get the worst over with. You can use the "stacked rib" concept to make the ribs whereby the center and end ribs are cut out and the appropriate number of intermediate rough cut ribs stacked therebetween and sanded to shape. Belt or disc type sanders are handy for this particular operation.

Use a straight building surface, obviously, and lay out the $\frac{1}{4}$ by $\frac{3}{8}$ trailing edge and the $\frac{1}{4}$ by $\frac{1}{4}$ rear bottom spar directly over the plan, and after installing the ribs, proceed



Merely invert the wing drawing and build the other wing panel directly over the plan. Leave the center sheeting off of the bottom of the second wing panel to get at the dihedral bracing when the two wing panels are joined. Add the ailerons per the plans, using the torque rod method outlined and be sure and pin all hinges with toothpicks or the like! Add the wing tips and you are ready to join the wing panels. After the wing is completed and the servo area cut out, add a two-inch strip of glass cloth around the center section of the wing.

Start the fuselage by cutting out the left and right fuselage sides according to the plans, including the 1/8 fuselage doublers. If you prefer, you can substitute 1/32 plywood for the 1/8 balsa doubler, however, I have found the balsa wood doubler adequate for the job. Glue the doublers to the inside surfaces of the fuselage sides and set aside to dry.

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

Locate the firewall (F-1), F-2, and F-4 on the fuselage, being careful to maintain alignment, and glue and tape in place. Next, pull the tail post together with a pair of clothes pins, checking

A BEANPATCH?

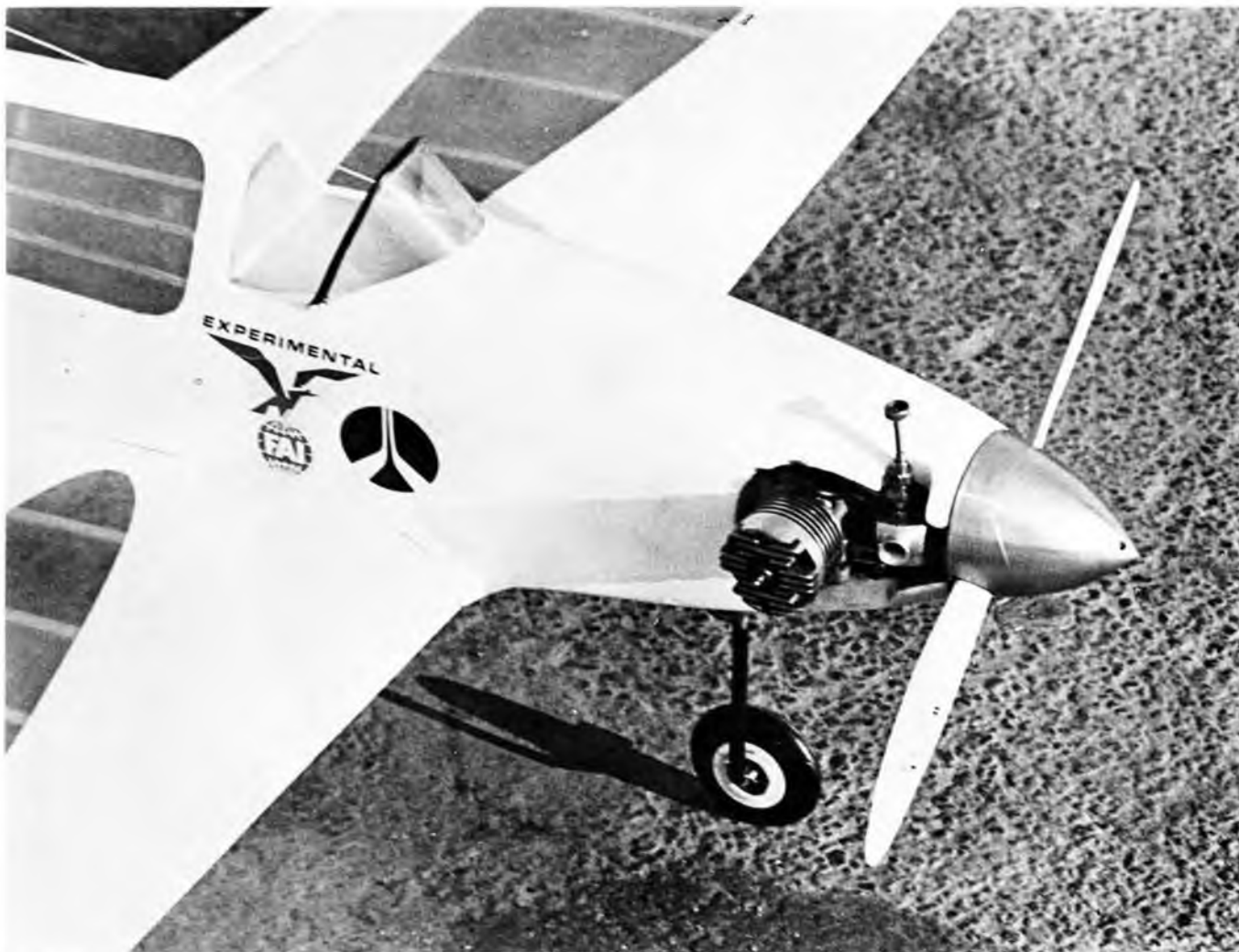
fabricating with the top of the wing, i.e., attach the front and rear spars, leading and trailing edge sheeting, and the sheeting that spans the center section from ribs W-1 to W-4, as well as the sheeting spanning end ribs W-11 and W-12, respectively. Finish off the top of the wing panel with the cap strips.

Turn the cured wing over and insert the hardwood landing gear blocks and all of the plywood doublers where indicated. Note detail A-A; be sure the grooved vertical block restraining the end of the landing gear wire is securely epoxied in place. The plywood dihedral braces, W-14 and W-15, can be epoxied into the nearly completed wing panel. The bottom of the panel can then be sheeted like the top surface and set aside to dry while the other wing panel is built.

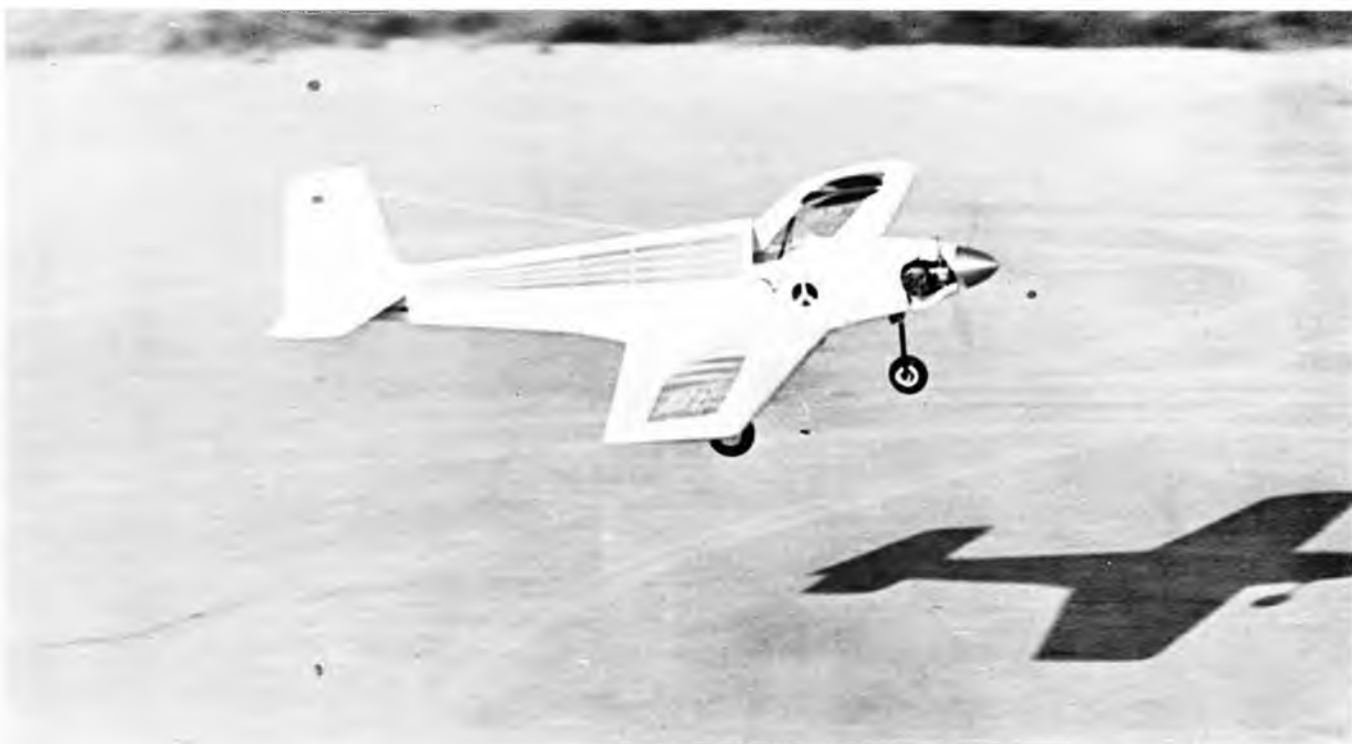
PHOTOS BY NATE RAMBO



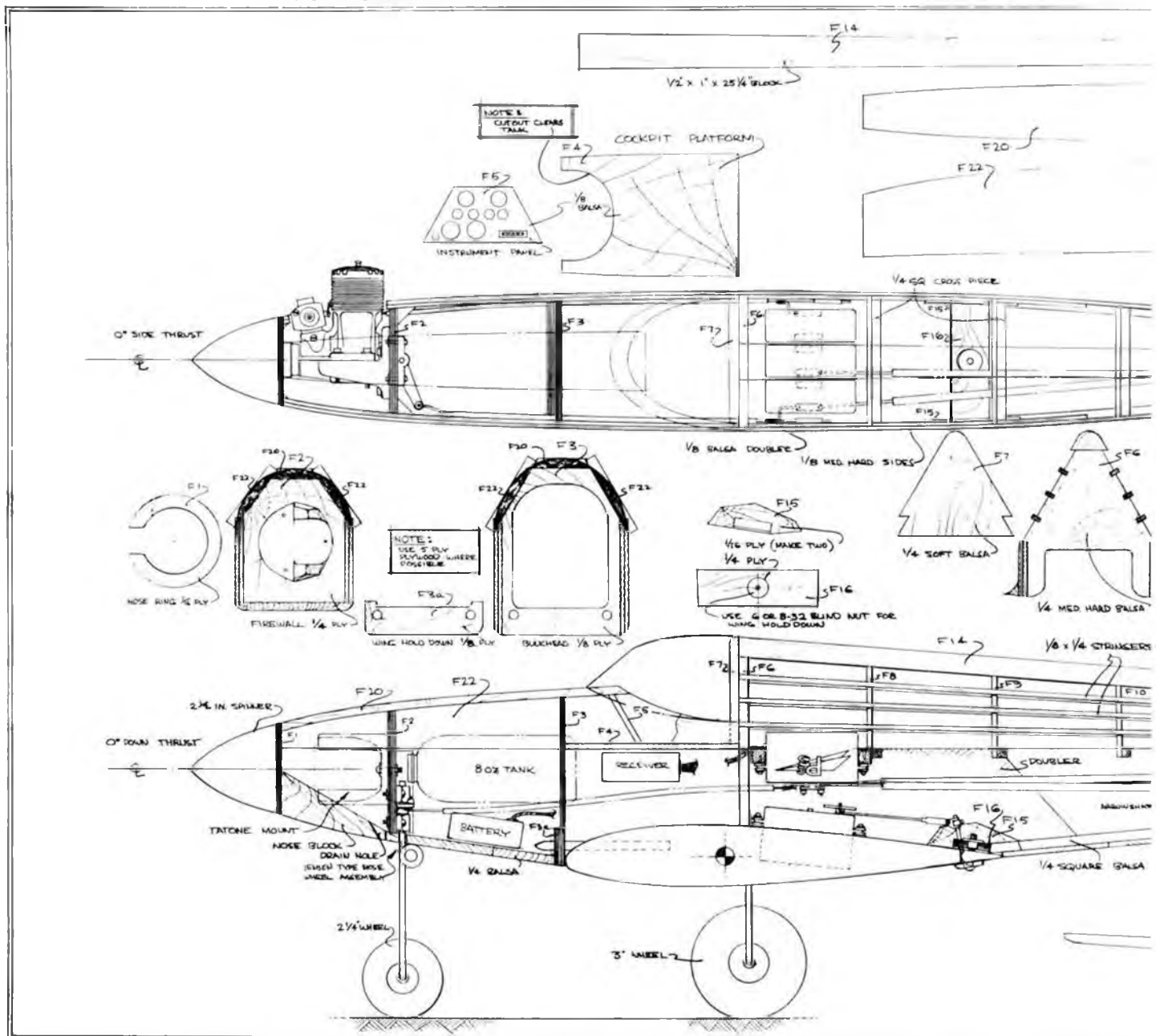
Beanpatch's designer and builder, also a top pylon competitor, Bob Upton. Plane is covered in Jap tissue. How about that!!



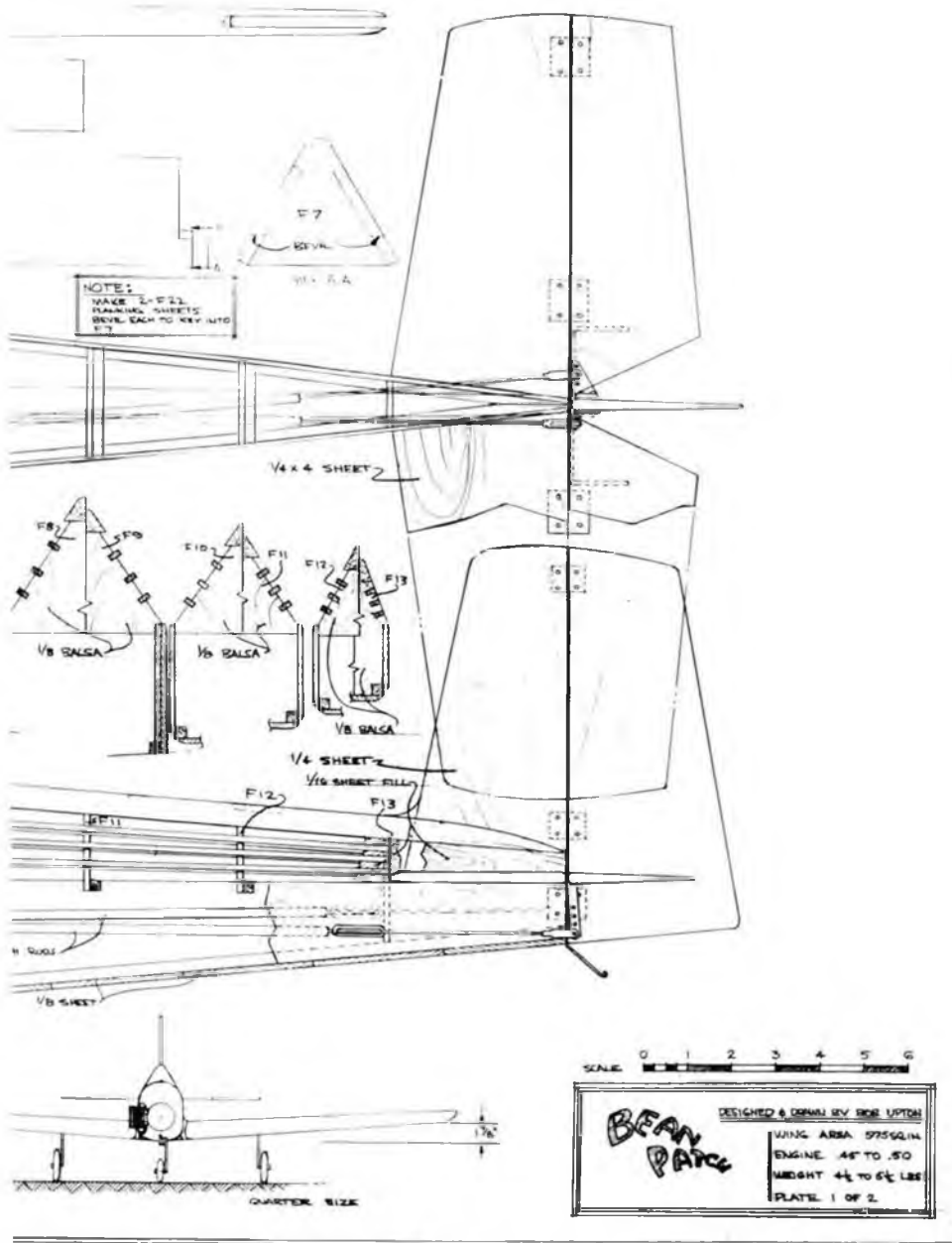
Notice the pylon racing influence in the neat way the fuselage lines flow back and around the Enya 45 from the aluminum spinner.



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



Bob brings Beanpatch in for a low fly by for the benefit of Nate Rambo's camera. No matter what the angle, this little job grabs you.



instrument panel, followed by fitting the two side pieces in place. Carve and sand the fuselage sides and top piece so that the diagonal side pieces fit flush to the top and side, then glue in place.

Next, rough cut the bottom block and be sure to hollow the inside section of the block to clear the engine mount before gluing in place. Glue the top, $\frac{1}{2}$ by $\frac{3}{4}$ soft balsa turtle deck piece in place on the rear formers, being sure to cut the $\frac{1}{4}$ " slot for the fin, then insert all of the stringers forming the rest of the turtle deck. The bottom, cross-grained $\frac{1}{8}$ " sheeting may then be attached and the whole mess set aside to thoroughly dry. Before final shaping of the nose section of the fuselage, I usually install the engine with spinner attached so that I can accurately locate the spinner and provide the proper clearance between the spinner and the fuselage. I also insert a $\frac{1}{16}$ " plywood nose ring behind the spinner to toughen up this rather vulnerable section of the model. Remove the engine and do the final shaping and sanding of the fuselage.

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

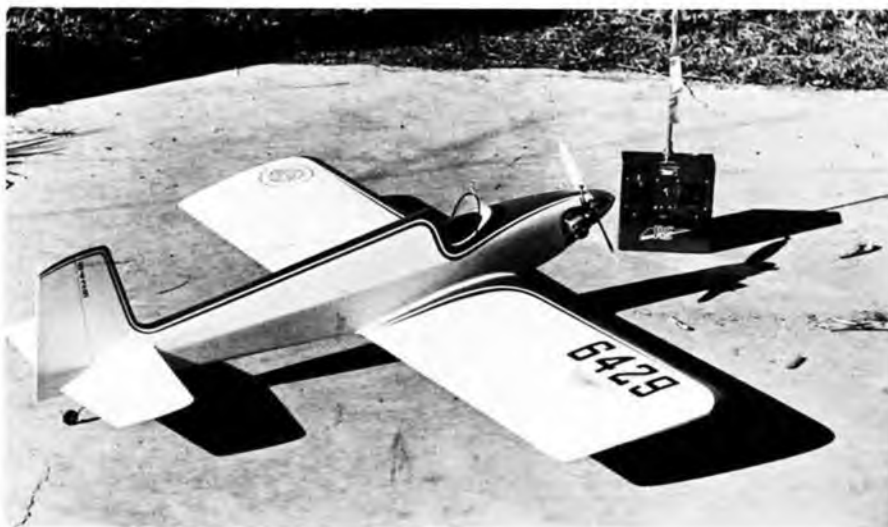
The wing may be attached to the fuselage in a number of ways to suit the modeler's particular preference. I like the leading edge dowel and trailing edge bolt method. On this particular model, I use two dowels at the leading edge with a single 8-32 screw into a blind nut at the trailing edge, as shown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

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

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

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

* * *



Before the spin contest! Beanpatch No.1, the straight-wing tail-dragger. Evolution from pylon racer easy to see. Frank Capan photo.



PHOTO BY BILL NORTHROP

R/C PYLON - 1971 NATIONALS

PHOTOS BY BOB STOCKWELL

BY BOB STOCKWELL . . . NMPRA's reporter gives us the complete story on Formula I and F.A.I.

Pylon racing at the 1971 Nationals, along with a precise analysis of the results.

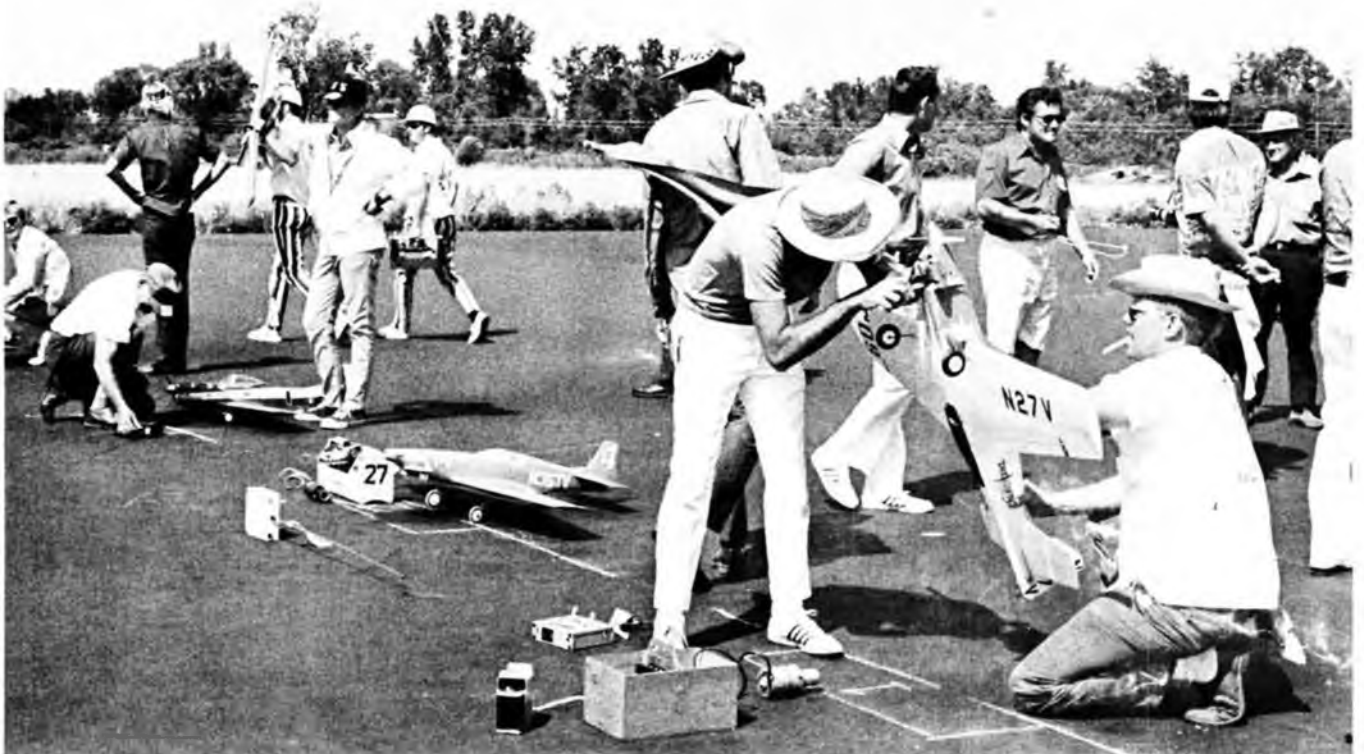


PHOTO BY BILL FUORI

THE WINNERS: Formula I.

TERRY PRATHER, with a Supertigre up front, distinguished himself with First Place in Formula I, winning all five of his heats in the finals, beating head-to-head such tough competitors as Bob Smith, Paul Benezra, Larry Leonard, Whit Stockwell, Tommy Baker, Joe Bridi, and Hal DeBolt. He was on the same frequency as the TELFORD/VIOLETT team, who took Second Place because they were beaten in one incredible race by Larry Leonard—the only race he finished all day. In that race Bob Violett got his engine started only about three seconds before the flag dropped, and as Cliff Telford turned his Cosmic Wind loose, Bob was still running back to position between the pylons. Though he was clearly faster than Leonard, he was sufficiently shaken up (as who wouldn't be?) that he didn't fly the course he is capable of, and Larry flew it to perfection and the most dramatic win of the whole contest. Except for this loss, the T-V team had a perfect score, and one could almost wish Larry had laid off so that we could have had a fly-off between Prather and T-V: what a race that would have been! Third place was taken by the KORPI/ROY team, the only K & B fliers in the top three. It is worth note that none of the top three raced against each other, though both Prather and Telford/Violett were enough faster than anyone else that only a race like the one with Leonard could have beaten either of them.

An extraordinary fact, however, is that the fastest time of the finals was not put in by any of those who finished high, but by Harold Coleson, a Delta Airlines Pilot out of Atlanta, who had a blistering 1:35:8 with a K & B Torpedo, beating Prather's best (1:41.5) by almost six seconds, and T-V's best (1:42.8) by a full seven seconds. Presumably because of the remarkably cool Chicago weather, no one else was turning the record-breaking times in the 1:30's that have been cropping up around the country.

THE WINNERS: F.A.I.

The TELFORD/VIOLETT team, with a Supertigre in the front of a PB products P-51 fuselage, a wing of their own design, and very clean retractable gear, easily ran away from BOB SMITH in a fly-off for First Place. Smith flew one of his classic courses—just about half as far as Bob Violett flew—but the T-V entry was so much faster that there was never any doubt of the outcome. TERRY PRATHER took Third Place, to maintain his great showing this year in all racing events. These three will constitute



The winner in Formula I - Terry Prather (Rt) and his dad, Al. Ship is a Jack Stafford Models Minnow, the engine Supertigre.



The winners in F.A.I. - Bob Violett (Lt) and Cliff Telford. Ship is PB Products P-51, retract gear and Supertigre power.



The Telford/Violett Team, second in Formula I. Their mid-wing Cosmic Wind is now kitted by REV-LINE Products. Supertigre.



The Korpi/Roy Team (Korpi on the right), was third in Formula I. Ship is a Francis Products Ballerina and powered by K & B engine.

the first United States F.A.I. Pylon Team. On this performance as well as previous performances, they have got to be rated the three best in the country, a group sure to distinguish themselves in international competition.

RACE MANAGEMENT

Before we get to details of the qualifications and finals, we want to extend a vote of deep appreciation to the Event Director, BOB REUTHER of the Middle Tennessee R/C Society, and his excellent assistants: BILL BONE,

the starter (from Seattle) FRANK SCHWARTZ (also from the Middle Tennessee R/C Society), HANK WAECHTER, Chief Tabulator (from MTRC), CURTIS WILLIAMS, Assistant Tabulator (also from MTRC), the handicap judges JAN SAKERT, JOHN ELLIOT, and CLINT SMITH, all of whom also worked either on the desk or at the line throughout the races, DAVID HYDE in tabulation (from Dallas, Texas,) MARK SMITH, and MIKE DENEST, the sideline judge from

Delaware R/C.

Reuther had never before run a race with these kinds of numbers, though of course he is a highly experienced C/D. He is calm, imperturbable, competent, willing to learn from mistakes, flexible and reasonable. Though there were various kinds of disagreements about interpretations of rules, he tried to be fair to everyone and still stick strictly to the rules as he understood them. I think he and his team did a great job through-

Continued on page 32



Bob Smith was second in F.A.I. with "Miss B.S.," kitted by PB Products. No less than eleven of these ships made the finals.



Terry Prather was third in F.A.I. with "Miss B.S.," Supertigre. Who said aircraft quality would fall off with new handicap judging?



Tommy Baker, Kings Mtn. N.C., and his Minnow.



Jeff Bertken, Vista, Calif., and Miss B.S.



D.C. May, Atlanta, Ga., and Stafford Minnow.



Vern Smith, York Pa., and Stafford Minnow.



Danny McCan, Thousand Oaks, Ca., Miss B.S.



Paul Benezra, Francis Prod. Shoestring, Fast!



Eric Faber holds Miss Dara for Bob Smith.



Whit Stockwell, former Grand National Champ.



Ted White doing great announcing commentary.



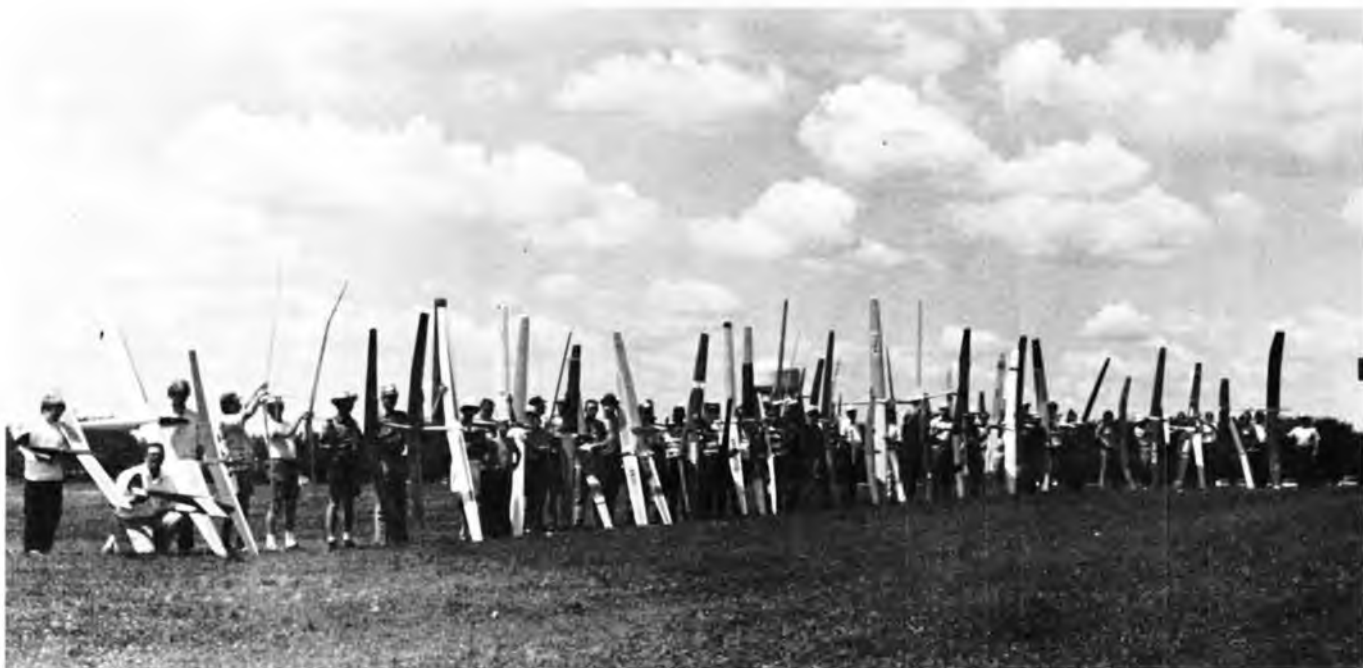
Marty Barry of Kraft. Top appearance Minnow.



Larry Leonard, Miss Dara design by Chuck Smith



Jack Stafford and his kit prototype FAI P 51.



Enough wing area for a 747. The line up of contestants for the unofficial Soaring Nationals at Miller Meadow, a park near Chicago.

R/C SOARING - 1971 NATIONALS

PHOTOS BY LLOYD WEAVER

BY JOHN DONELSON . . . The president of Southern California's Harbor Soaring Society describes the second annual Soaring Nationals held in conjunction with the AMA National Championships.

● While the pylon and pattern eliminations were just getting underway at Glenview, about 20 miles south at a grassy park called Miller Meadow the second off-site soaring Nationals were being held. Organized by Dave Burt (CD) and Dan Pruss of Chicago's SOAR club (Silent Order of Aeromodeling by Radio), this AMA-sanctioned meet drew 55 contestants from all over the country. Dave not only ran a smooth contest, but also came up with some ideas which added to the fun, not the least of which

was the team challenge which saw 6 clubs vying for the Midwest perpetual trophy. Excellent flying weather topped with king-sized thermals, a 6-man sudden-death flyoff for the grand prize of a Schwinn 10-speed bicycle, and a few heated words over the method of launch were just a few of the happenings that made this an interesting and important contest. Certainly the results of the latter (method of launch), which will be discussed in more detail later, are of interest to all contest directors planning

future soaring meets.

All flying was done at the Miller Meadow site, a park located within a reasonable distance of Glenview NAS, and offering a large, smooth, grassy field bounded on all sides by trees. With very few obstructions, other than the trees on the boundary, it was an excellent choice, and if the flying conditions were typical it would be a good bet for next year.

Sunday was allotted as a practice and demonstration day with contest flying



Carter Carlsen puts everything into launching his Open class glider. It appears to be the imported ARF kit Phoenix mentioned in the text.



Mark Smith and his old master, father, take turns winning contests. This time Rod took the honors, with Mark's Models Windward, of course.



Standard Class (under 100" span) winners, from left; John Neilsen (2nd), Rod Smith (1st), Mark Smith (3rd). Site appears beautiful.



Terrific instant lift, as this Cirrus climbs into, was available on both days of contest.



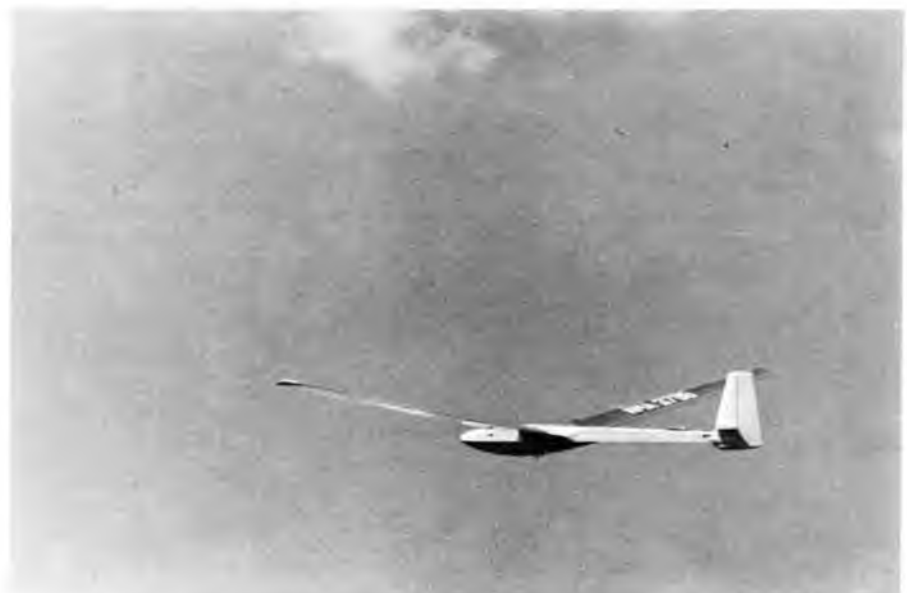
Open Class (Over 100" span) winners, from left, Carter Carlsen (2nd), John Neilsen (1st), Otto Heithecker (3rd).



John Neilsen displays the Nordic style Phoenix gliders. Perfect for endurance-only contests.

scheduled for two days on Monday and Tuesday. Two classes were provided, Standard for under 100 inch wing span, and Open for any size wing span. There were 23 entries in Standard and 42 in Open with several of the Standard class ships entered in both classes. Nearly all of the fliers showed up for the practice day which saw the Harbor Soaring Society team demonstrate the LSF speed task. It was interesting to note that in as much as most of the fliers had never tried this task, only a few signed up to fly. But after watching a few flights and seeing the challenge involved, there was quite a lineup to give it a try. After a beautiful practice day with abundant thermals, many contestants layed awake Sunday night listening to the hard pounding Chicago rain, wondering if the contest would be rained out. However,

Continued on page 37



Otto Heithecker's 10 1/2 footspan Snoopy, won the Best Original Design trophy. Clean, simple lines. Beautiful Monokote covering



Maxey Hester and his first place Ryan STA. Mike Stott also placed third in C/L Scale with some design. Ship is now kitted by Sig Mfg.



Bob Wischer with his beautiful red and silver Douglas M-2 Mailplane. Weight is 10 lbs., Enya 60 power. Neat sheet-metal nose cowl.

R/C SCALE - 1971 NATIONALS

PHOTOS BY BILL FUORI

BY BILL NORTHROP . . . The MODEL BUILDER's editor reports on the spectator's favorite Nationals R/C competition. R/C Scale can and does guarantee lots of thrills and spills.

●They used to tell you way back in English composition class that when you wrote a story you should slowly but surely build up to a climax that occurs about three-quarters to seven-eighths through the text, and then taper off rapidly during the conclusion and ending.

Looking back at the R/C Scale event during the 1971 Nationals, it would seem logical that, as in any competition, the climax would be the posting of the final scores and finding out who was first, second, third and so on. This much we go along with, however, upon gathering our thoughts it seems that the story really develops after knowing the results,

not before. This is the way we can tell it best. And so, you have now read the conclusion, next you will get the final results, and from there we will slowly taper off to nothing.

The winners, through fifteen places, starting with first, were: Maxey Hester, Bob Wischer, John Roth, Ed Ellis, Ralph Jackson, Walt Moucha, Bill Bertrand, Joe D'Amico, Bruce Lund, Hale Wallace, Claude McCullough, Bill Hiller, Bob Underwood, Bud Atkinson and Jim Hiller.

Trophies for this all-age-class event went through fifth place and were donated by DuBro Products, Inc. The best Scale Flying Achievement Award was

won by Ralph Jackson, the Best Senior Award by Bill Hiller, the Best Junior Award by Jim Hiller. The latter three trophies were donated by Sterling Models, Inc.

For those of you who may not know, a contestant's final score is determined by multiplying the model's static scale fidelity points plus in-flight scale operations by the best single flight score. Supposedly the contestant's fidelity points are kept under cover by officials until the first flight is concluded. (And that's the only comment we'll make on that subject) Apparently the theory is that the event needs some suspense, and not knowing how you stand after static

Close-up of Bob Wischer's Douglas Mailplane showing cockpit detail and simulated rivets. Bob says it's an easy plane to fly.



Last year's winner, and still in there for fourth place, Ed Ellis with his Spirit of St. Louis. ST 60 powered, it weighs 10 1/2 lbs.





No, that's not a growth on Johnny Clemens' face, he's just for ever taking movies. Write to AMA if you'd like your club to see them.



Mr R/C, Claude McCullough preparing his old reliable Sky Pirate, Douglas XT82D-1. Placed first in 1965, in 11th this year.



Walt Moucha and his second Fly Baby. He competed in last year's World Championships. Walt and big model placed 6th this year.



Joe D'Amico's Martin B-26 looks as though it just had a forced landing in a wheat field. Ship is a beautiful flier, placed 8th

judging keeps you and the spectators on edge until the last drop of excitement is squeezed out. Unfortunately, this theory falls flat, at least in R/C, since the flight score sheet looks like a 1040 tax form that has been revised by a resident of Section 8, and by the time the poor tabulators come up with a final score, everyone has gone home.

If the fidelity points were legally given out prior to the flying (OK, so that's one more comment on the subject), it would be somewhat easier for contestants and spectators alike to have some idea of each plane's chances. If contestant "A" knows his fidelity score is half that of another contestant "B", then he realizes he must gain twice as many flight points as contestant "B" to just stay in there. Of course, it might be that this would discourage contestant "A" into not flying which would be bad for the event. However, the possibility that "B" is a builder, not a flier, and that "A" is just the opposite, still leaves the outcome wide open.

Whatever the logic, R/C Scale, like Formula 1 Pylon, which also involves scale models, attracts a huge crowd. It is gratifying to attend a modeling event, even more so to participate in one, where spectator reaction often results in a large round of applause and cheers

for a job well done. It is a shame, but necessary, that the Pattern finals are being flown at the same time as Scale. Many a fine pattern flight goes by with no more than a pat on the back for the thoroughly wrung out contestant as he plods back to the pit area. The World Championships is something else when it comes to this. Applause is often heard at the end of each maneuver!

By the way, an excellent job of keeping the spectators informed during the scale competition was performed by the Navy's LCDR Graham Hicks. His voice, coming over the PA system, described each plane in detail and told about the contestants, their home towns, etc. Graham is an R/Cer himself, flew in the Class A competition and also during the model air show on Sunday after the Nationals.

At the time of this writing, we do not have the breakdown of static versus flight points, but the scores of the first five places were 22,579, 19,241, 18,333, and 18,102, and 17,096 respectively.

It just occurs to the writer that the word "static" is very appropriate in relation to the scale fidelity points. It is in this area where most of the noise comes from the contestants (Third and last comment on that subject!).

Maxey Hester's winning Ryan STA

has been well described before. It is the ship with which he placed second in the 1970 World R/C Scale Championships, is being kitted by Sig Mfg. Co., and is featured quite thoroughly in the September issue of M.A.N. Mike Stott, who along with Maxey, is a full-time employee of Sig's, placed 3rd in C/L Scale with an almost exact duplicate of Maxey's Ryan. Incidentally, we stopped by Sig's operation in Montezuma, Iowa on our way back from Chicago on Tuesday following the Nats, and were shown the new Ryan kit box labels, ink still wet, listing the three primary accomplishments of this fine looking plane! No grass growing here.

Bob Wischer's beautiful Douglas M-2 Mailplane was our favorite advance choice for one obvious reason. It's a biplane! Bob and his wife Dolly are long-time modeling friends, and our Big John biplane, published about five years ago in R/C Modeler had an influence on his choice of scale subject! He wanted a plane that flew as easily and realistically as Big John. The M-2 was right on the money. All of the sheet metal nose cowling was formed over hand made dies and both the scale muffler and control stick operate.

John Roth's simple, clean, and functional Volksplane was a natural choice



When Ken Drummond starts up the six engines on his B-36, it's a show in itself. Gary Winterbottom, from Hawaii, gives Ken assist.

for scale. The main feature of the model of course, is the smooth running Ross twin. John, like Maxey and Bob, is a long time R/Cer whose name appeared at the top of many pattern competitions during the earlier days of multi in the northeastern states.

Ed Ellis, last year's winner in R/C Scale came back to place fourth with his pretty Spirit of St. Louis, built with modifications, from the Royal Products kit. The 10 3/4 pound airplane, Super-tigre 60 powered, is a bit flakey with the extremely small scale stab, but Ed still managed some nice flights. His last year's win was particularly outstanding since it was his first contest.

Ralph Jackson, another long-time R/C campaigner, from upper New York State, placed fifth in the competition, and also won the Best Scale Flight Achievement award. We had the honor of winning this trophy the first year it was awarded, 1965, with our third place,

15 pound, 7 1/2 foot, 3" scale Gipsy Moth. If our recollection is correct, Ralph was second that year with a Comanche, and Claude McCullough, flying the same XTB2D-1 Douglas Sky Pirate that he entered this year, was first.

Ralph's scale ships are often quite unusual, and this year was no exception. The beautifully detailed and delicate looking Handley Page 0/400 Bomber, put on a beautiful flight show. The sound of the two engines and the almost scale speed provided a very realistic performance.

In sixth place this year, was another member of our 1970 World Championship team, Walt Moucha (pronounce it Moka) flying a duplicate of his W/C Fly-baby homebuilt.

Bill Bertrand and his big Fokker D-VII have flown together in several Nationals. This year, powered by the Cox Industrial Conversion engine, the

Fokker flew as always, at absolutely scale speed. Lacking scale points, however, Bill was placed seventh.

Joe D'Amico's Martin B-26 Marauder, decked out in "D" Day striping was one of the more out-of-the-rut models, and was a beautiful flier, which seemed to indicate that the pilot had had it in the air many times prior to its Nats appearance.

Bruce Lund was a newcomer this year, entering a pretty scale homebuilt, der Jager D. IX/69, in his first contest. First flight was a flip on takeoff with a lean engine, but the plane, and pilot, survived to try again and catch ninth place.

Hale Wallace's 1970 World Championships Chipmunk (he was the third team member) had earned many scale points, but unfortunately broke the ground barrier during an official flight. It might have been radio failure or possibly Hale momentarily lost the fast moving ship in the sun. We haven't had a chance to check. Tenth place is not his usual location at the end of a scale contest.

As mentioned earlier, Claude placed his well preserved Douglas Sky Pirate in eleventh. Guess he's been too busy building a new house and moving to Montezuma where he has joined Sig in engineering of the kit lines.

A Nationals without the Hiller gang, young Bill and Jim, just wouldn't seem right. However, they shouldn't have grown older or maturer. It used to be a lot of fun listening to them bawl each other out right in the middle of one or the other's flight. Nevertheless, none of the competition enthusiasm has waned. Bill's Zlinn Acrobat and Jim's Yak 18 PM, both Sig kits, flew quite well, though lacking in the professional, museum quality detailing of the winning planes.

Continued on page 38



Barbara Lund with husband Bruce's der Jager D. IX/69. Real ship is an EAA homebuilt. Webra 61, Pro-Line. First contest, placed 9th.



Bob Campbell's F7F Tigercat by R/C Kits. Powered by Webra 60's, Royal retracts, weighs 12 pounds. Very pretty.



A "behind-the-scenes" view of the three top winners in Class C Expert at the 1971 Nationals. Can you pick them? The judges did.

R/C PATTERN - 1971 NATIONALS

BY BILL NORTHROP . . . The Granddaddy of R/C competition, the Pattern event, as described and analysed by The MODEL BUILDER's editor. Quick summary: Retracts are here to stay.

● There is one thing about the Delta Dart program that almost no other event at our AMA Nationals can lay claim to. You can't rattle off a list of names and stand one chance in 20 of picking the winner.

The Expert class of Pattern competition, whether it be the C or D list of maneuvers, is one of the best examples of this. In fact, if you just read off last year's top twenty, you'd have picked 15 of the 1971 finalists. And four out of the remaining five; Bridi, Brooke, Penrod, and White, aren't exactly strangers to the national top-of-the-crop list. The one real qualified newcomer in the bunch is John Agee, from Metairie, Louisiana. To

the best of our knowledge, John's last Nats appearance was in 1967 when he was a member, along with his wife, of the first non-Navy R/C flight judging team. It is fairly obvious that Dr. John has been practicing something besides medicine since that time.

Speaking of judges, a separate story can and will be written about this piece of the Nationals. Most contestants are pretty well aware of the job the R/C flight judges do year after year and are properly appreciative. As chief judge, and the one judge to whom the contestants can legally bring their problems without possible disqualification, we are in a better position than anyone else to

make comment. Meanwhile, a big thanks to the following who judged R/C flying wholly or in part at the 1971 Nats:

Bob Upton, Walt Sousa, Paul Benezra, Jack Stafford, Jack Spalding, Carl Olson, Sam Crawford, Mike Denest, Walt Monson, Dick Austin, Jack Fabbri, Charles Bailey, Bror Faber, Walt Glemser, Bill Bertrand, John Patton, Joe Stream, Chuck Gill, Ernie Weiss, Frank Schwartz, Don Lowe.

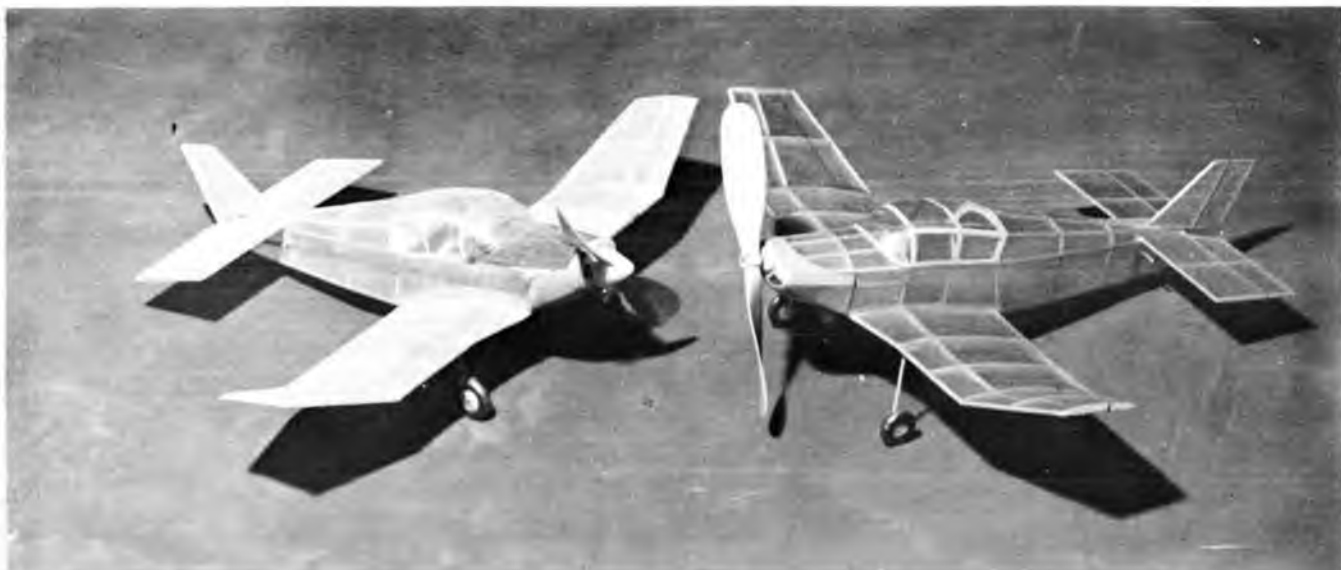
Except for slightly different lists of maneuvers, the pattern event was pretty much like last year, even including the list of contestants, as previously mentioned. If nothing else, having the same systems and schedules repeated again made for a lot less confusion as compared to R/C Nationals of past years. It used to be that after hearing three or four versions of the same instructions, each one coming from a different person with the very top final authority, it was not unusual to conclude that you were at the wrong Naval Air Station during the wrong week and that you might as well spend the rest of the time vacationing with the family.

This year, as it was in 1970, a short qualifying pattern was flown for as many complete rounds as possible on Wednesday and Thursday. As it turned out, three and a half rounds were flown each day. Those who flew at Site A on Wednesday, flew at Site B on Thursday and vice-versa. Meanwhile, the judges stayed put, thus more or less leveling out the site and judging variations.

Here's the front view of the winners shown above (l to r): Don Coleman 2nd, Ron Chidgey 1st, and Jim Martin 3rd. The MODEL BUILDER's editor, and Chief R/C Flight judge congratulates the winner.



PHOTOS BY THE EDITOR AND BILL FUORI



Peanut Jodel by Ron Stoner and Clarence Mather. Plans courtesy of Bill Hannan's "Plans & Things," all photos by Fudo Takagi.

PEANUT SCALE JODEL 'MASCARET'

BY WALT MOONEY . . . This is the first in a series of models to be presented by a gentleman whose name is synonymous with free-flight scale aircraft that DO fly. FULL SIZE PLANS on next two pages!!

● This little model was designed as a simple scale airplane suitable for flying indoors or out, in a field, or from the street corner. It can be a little disappointing for a designer sometimes and this Jodel turned out to fly far too well for the local street corner. Built according to the plans it is capable of flights of between 30 and 40 seconds indoors and outside it has done more than two minutes, and more than one builder has been worried about losing his in a thermal.

Construction of the model is about as simple as they come and still remain in the built-up category. About the only things that are different from straight forward rubber model construction are the wheel pants and the canopy which may be formed over wooden block molds with the aid of a Mattel "Vacu-form" toy. If you have a "Vacu-

form" you'll know how to use it and all you'll have to do is carve balsa block molds to the shapes desired and then form the plastic to shape around them. If no Vacu-form is available you can make the pants out of balsa laminations. The canopy can be made out of two pieces without the bubbled contour on the windshield without hurting the appearance very much and without hurting the performance at all.

Use medium weight balsa for the sticks and light balsa for the sheet cutout items. The blocks at the nose can be harder and therefore heavier balsa.

I recommend the Northern Pacific products "Sleek-Streak" as a source of both the propeller and the wheels. They are both light and efficient. The tail wheel need not roll and thus can be simply cut out of sheet and cemented

in place.

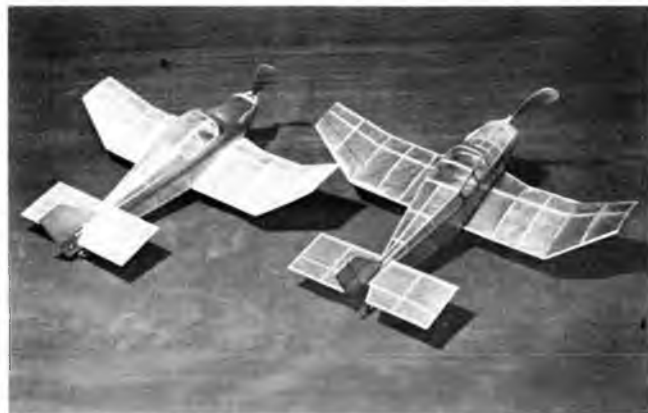
The model should be covered with your favorite colors of lightweight tissue. Superfine tissue is best. It should be shrunk with a very lightly sprayed on fog of water and when dry brush on a thin coat of clear dope. (2 parts thinner to 1 part of dope). The wings and tail should have only a single coat applied whereas the fuselage may have two coats with perhaps a third coat on the balsa parts at the nose.

Flying adjustments are noted on the plan. The power for indoor flying can be slightly heavier for a more snappy climb. Experiment but don't over do it. Remember that adding more rubber will move the balance point aft, so if you do, be sure to rebalance accordingly.

Sand or file the point off the rear motor holding pin if you want to keep your winding helpers happy!



The little Jodel D. 150 "Mascaret" may be built directly from the magazine plans. Be careful outdoors, you may need a dethermalizer!



Careful inspection reveals that Clarence's model is a little stretched and covered with condenser paper. Has done over 1:20 indoors.



Winner in Class B Pattern, Phil Giesekeing, receives trophy from Event Director Bob Scott. B trophies donated by The MODEL BUILDER.



The winner in Class A Pattern, Charles Shade, Miamisburg, Ohio, used his own radio which he calls Shade-E-Trol.



Second Place in Class B Pattern, Kim Johnson, Fort Worth, Texas.



Third Place in Class B Pattern, James Duda, Davenport, Iowa.



Fourth Place in Class B Pattern, Terry Edmonds, Iowa City, Iowa.

The list of Class C Qualifying maneuvers which had been (Ahem!) conveniently printed on the back of a business card and handed out to all contestants by some overly ambitious model magazine publisher (Ahem!) and his wife (Ahem!), included Takeoff, Four Point Roll, Figure M, Horizontal Eight, Reverse Cuban Eight, Slow Roll, Top Hat, Landing, and Spot. Approximately 100 contestants, 25 to a line, two lines to a site, registered 700 flights in the com-

Fifth Place in Class B, James Dornberger, Canton, Illinois.

bined C Novice/Expert competition.

On Friday and Saturday, the top 20 qualifiers flew a total of 6 rounds, using the complete AMA Class C Pattern. Unfortunately, because of the tremendous contestant load and number of events to be held, R/C has had to go to a shared-time schedule developed last year by the over-all R/C Director Kemp Bunting. The advantage is that the many flights needed to properly select National Champions can be crammed into the all too short

LCDR Graham Hicks, just a little bit out of uniform, flew in Class A. Top-Flite Contender.

week of flying. The disadvantage is that the Pattern Finals and R/C Scale are flown at the same time, one event at each site nearly a quarter of a mile apart. Of course you could watch one event one day and the other event the next, but it's hard to tear yourself away from either one. For the most part, some beautiful pattern flying goes by unnoticed, out-glamorized by the more incident laden scale flying. Perhaps, in addition to the reason stated in the R/C

John Deneke, a long-time R/Cer from the New Jersey Radio Control Club.



THE MODEL BUILDER





R/C's FDA (Flying Dentists of America, that is) Jim Edwards, Miss. Don Coleman, Ala., and Ralph Brooke, Seattle, Wash.



"Phew!! I'm glad this job is almost over!!" Jim Bachelor, chief tabulator for the Pattern event. A busy man during Nationals week.



Rockland County (N.J.) R/Cer Dennis Donohue Class B, Kraft, Webra, Rom Air, "El Tigre"



Bob Nelson, Waterloo, Iowa, built this chrome Monokoted DeBolt Cobra. Veco 45, EK radio.



Eric Meyers, Best Senior, Class A, DuBro Sportsman, Pro-Line radio, H.P. 60 engine.

Scale story, the sites should be switched next year.

Since Friday and Saturday are also shared with the finals in Pylon Racing, which demands availability of all frequencies, Pattern and Scale are flown from 8:00 A.M. to 1:00 P.M. Kemp Bunting's shared frequency system works as follows: Taking all of the available frequencies (15) and splitting them into two groups, Kemp assigns half of the Scale contestants to fly from 8:00 to 10:30 A.M., the other half to fly from 10:30 A.M. to 1:00 P.M. The Pattern fliers meanwhile are likewise split into two groups, and the group on frequencies not used by the 8:00 to 10:30 Scale fliers go to it during that time period, and the remainder fly from 10:30 to 1:00 P.M. In its second year of successful operation, the only thing that could foul it up, a drastically uneven distribution of frequencies and fliers, has not happened. Vive La AMA Frequency Committee!!

OK, meanwhile, back at the tabulating tent, Jim Bachelor and his two able assistants, Pat Kendall and Lee Ann Smith, along with capable help from

Navy men Sheets, Byers, Pendleton, Archer, Jarnigan, Pacheco, and Hane-winkle, sifted, sorted, added, checked, double-checked and posted the results. Suspense really built up as scores appeared, and everyone interested was trying to figure who would squeeze into the top twenty and qualify for the Class C Expert Finals.

Norm Page posted the top qualifying score of 474 out of a best possible 540. (9 maneuvers, times 10 points each, times 3 judges scores, and add the two best flights together.) As other scores began to come in, it was getting obvious that it would take at least 420 to make the cut. George Hill, from near Washington, D.C. (Annandale, Va.) and Panorama City, California's Bob Smith were feeling the most pressure with 422 and 421 respectively. As it turned out, they both survived, making 19th and 20th place.

At one point it was thought that R/C's court jester, the man with the velvet (heavily starched) fog voice, Harold "Goldy" Goldklank, was going to top all qualifiers with a tremendous score, having posted a 354....on one flight! How-

ever, it was discovered that the "iced tea" he had given to the judges prior to this particular flight had a curious effect on ones eyesight and coordination immediately after only one swallow. Upon checking the score sheets, it was noted that no judge gave Goldy less than 10 points for any one maneuver, and one ordinarily very critical gentleman gave Harold 13 7/8 points for a maneuver which he was believed to have described as "a Double Inverted Alternating Cuban Eight and One Half Gainer." Come to think of it, it was rather interesting. Anyhow, Goldy couldn't come up with a good enough second flight to qualify, so the matter was dropped.

Below the finalists, and starting with the highest score of 400 even, came the C/Novice winners, determined by the qualifying scores only. The winner was Carl Weber of Waukesha, Wisc., followed closely by George Buso, Hyde Park, N.Y., with 392, Tom Melsheimer of Palos Verdes, Calif., right on George's heels with 391, then Tom Atkins, Marietta, Ga. 387, and fifth, Adam Sattler, Dist. II R/C Contest Board member from



Kraft Systems field conference (l to r): Phil Kraft, Rep., and Vice President Cliff Weirick talk it over. Tony Bonetti, Eastern



"On this heading, starting...NOW!" Former World Champ Ralph Brooke makes sure the judges can see...and hear the maneuvers.

Schenectady, N.Y., with 382. Trophies for first through fifth place were donated by Ace Radio Control.

The Best Junior award donated by Ace Radio Control, went to Jim Hiller, Hickory Hills, Ill., who tied for 6th place with Mark Radcliff, Wintersville, O. The Best Senior Award, also donated by Ace, was won by Mark O'Conner, Prio Lake, Minn.

Incidentally, in ninth place there was a Walt Schroder, from Bedford, N.Y., home of the Walt Schroder, same name and all. However, this one had more hair on his head than on his chin, none of which was gray, was barefoot most of the time, and could do a pretty good job of flying. Hmmmm.....guess it wasn't M.A. N. at Work.....maybe a relative or something.

The finals settled down to a serious battle between the country's top pattern fliers. There was not as much fooling around as during the qualifying. Fliers

in the No. 1 ready box (next up to fly) stood quietly by themselves, head down, getting themselves "psyched up", or intently watched the planes in the air. No one chatted with them or bugged them with questions, the helpers usually saw to that.

Near the end of the second day, when it was almost over, and only a few flights were to be made, the tension again built up as potential winners and their followers watched the scores being posted, only moments that seemed hours, after each flight. Would they be bumped down or would they stay in that high spot? Jim Martin, Bloomfield, N.J. was feeling pressure with an 825 total that could put him in the top three. Ron Chidgey, Pensacola, Fla., one of our World Championship Team members, appeared to have it sewed up with 835. But there were good fliers, working with high previous scores of over 400, who could still put up a red hot flight

and knock everyone down a notch.

Each time Jim Bachelor came out of the tent with a handfull of carefully tabulated and checked scores, forty to fifty pairs of eyes followed every movement of the felt-tipped pen in Jim's hand as it formed the telling figures on the score board....Suddenly it was all over. The guy who probably wanted to win the most, who probably had more reasons for wanting to win, the one who many people were rooting for, and the one who had been so close so many times, Ron Chidgey, a Monsanto Chemical engineer, owned first place, lock, stock and barrel. Don Coleman, dentist from Citronelle, Ala., R/C Contest Board member, and a fine gentleman, who has also hovered near the top for several years, was second with 826. Jim Martin's 825 did indeed keep him in the top three, only one point below Don for third place.

We said Ron wanted that first place



The MODEL BUILDER's General Manager takes another subscription order. This time from the outside loop record holder, Jim Edwards.



Jim Oddino, Woodland Hills, Cal. and his modified "Californian." Lee Custom 60, and S&O Radio (Salkowski and Oddino)



portion of the large crowd that turned out for Sunday afternoon's Model Air Show. R/C, U/C, and F/F demonstrations were presented.



AMA's President, Johnny Clemens at the Official's Banquet Sunday night. "Hmmm..... Just once I wish they'd give me MONEY!" Jim Davis, far left, and AMA's Executive Director John Worth, right.

for several reasons. Above and beyond the more obvious ones, we're sure, was the fact that he was, until now, the only 1971 World Championship Team member, the others being Phil Kraft and Jim Whitley, who had never won at the U.S. Nationals. This win certainly had to be most satisfying from that point of view. The fact that Phil and Jim finished 6th and 10th should be of no concern either. They are both excellent fliers and finished among the Nation's ten best. To them the Nats was a warm up for bigger things, the World Championships in Doylestown, Pa., Sept. 16-19. That is not to say that they goofed off at the Nats. You don't do that and end up in the top ten. But that final bit of drive, that extra drop of adrenalin, was not there, and as far as we're concerned, that's just fine. Save it for Doylestown, men!

Jim Martin has to win the big "IF" award for 1971. In one of his best two flights, the wind either came up suddenly or dropped off, we forget which, just as he was putting his fast Banshee down for the Spot Landing. The ship missed the circle, but Jim kept his cool and averaged 8 or 9 points for the landing.

IF...IF he had made that same landing inside the circle, the additional 24 to 27 points (total score of the three judges) would have put him in the lead. Oh well, Jim, Third Place ain't bad, and there's always next year.

The top twenty finalists ended up as follows; and the listing for each one gives: Final position, score, name of flier, qualifying position, qualifying score, and last, in case you're interested, their final position in the 1970 Nationals.

1. (835) Ron Chidgey	2 (472) 7
2. (826) Don Coleman	10 (443) 6
3. (825) Jim Martin	4 (459) 9
4. (819) Norm Page	1 (474) 8
5. (816) Jim Kirkland	6 (454) 1
6. (814) Phil Kraft	15 (431) 3
7. (800) Ralph Brooke	3 (465) -
8. (797) Jim Edwards	5 (458) 2
9. (790) Ted White	12 (435) -
10. (785) Jim Whitley	8 (446) 4
11. (783) Tony Bonetti	18 (428) 10
12. (781) Bill Salkowski	13 (435) 13
13. (775) Lewis Penrod	7 (447) -
14. (773) Larry Leonard	11 (436) 5
15. (773) Joe Bridi	9 (444) -
16. (766) John Agee	14 (433) -
17. (753) Jim Oddino	17 (429) 12



Pylon Event Director Bob Reuther (rt.) watches, PA man Ted White takes notes, and MB's pylon reporter Bob Stockwell stands over. Ship being weighed out after flight is Whit Stockwell's Form I.

18. (743) Doug Spreng	16 (429) 14
19. (731) George Hill	19 (422) 17
20. (721) Bob Smith	20 (421) 15

Trophies were donated by E. K. Products, Inc. (1-5), Fox Motors (6-10), Lanier Industries (11-15), and Dee Bee Engineering (16-20). The Best Senior Award, donated by R/C Modeler Magazine, went to Bob Smith.

The home area of the flier seems to have some bearing on the outcome. There were seven from the South, seven from the West (all California), three from the East, and one each from the Northwest (Ralph Brooke, Seattle), Midwest (Ted White, Okla. City), and Central (Norm Page, Mt. Prospect, Ill.). With the few exceptions, the better fliers seem to predominate in the areas where the weather is balmy all year round. The nonmodeling keys to success would appear to be living in the deep South and/or being in the medical profession. This formula has worked well for Drs. Ralph Brooks, Don Coleman and Jim Edwards, all dentists, and now John Agee. Wonder if John took up medicine so his flying would improve?

Retract gears? Once or twice during

the qualifying we noticed planes in the air with the gear down although they were not landing or taking off, and figured the retracts were stuck or the radio was not operating properly. Actually it turned out they were fixed gear, but retracts were so common that this reaction was not unnatural. Most were either KDH, Pro-Line or Kraft, all using servo actuators, but Jim Martin's and Tony Bonetti's planes were equipped with the new pressure operated Rom-Air units. This new system uses a rechargeable freon gas cylinder for pressure, and is so powerful that helper springs aren't needed. In fact, we wouldn't like to have our fingers in the way when that gear retracts. When testing it in a plane on the ground, there is a combined hiss and thud when the switch is actuated, and the momentum shakes the plane, but man, do it work! Incidentally, as we recall, there was only one plane, Bill Salkowski's, in the 20 finalists without retract gear.

The predominance of retract gears brought about some new rules proposals primarily because of Ted White's forced gear-up landing, which required an on-the-spot interpretation. The judges correctly ruled that a wheels-up landing must be considered a crash landing no matter how well executed or how little damage is done. This is standard FAA practice. The ruling was later adopted by the R/C Contest Board.

While on the subject of judge's decisions, there was only one serious judging problem that developed throughout the four days of C Pattern, and this was mostly because of ambiguity in a maneuver description. The Figure M description, as taken from the FAI list, states that the second stall turn shall be in the opposite direction from the first. Unfortunately, it does not specify whether this is as seen from the ground or in the plane. The maneuver as pictured in the book would be as seen from the ground, however, as any pilot knows, the plane stall turns in the same direction as seen from the cockpit, i.e., both stall turns require the same rudder to be thrown over to appear opposite from the ground! Anyway, the rule book will be clarified as far as the AMA wording is concerned so that there will be no doubts.

Getting back to equipment specifications, the top 20 airplanes for the most part, were either Veco or Webra powered original designs. The top fliers usually stick to their own creations year after

Continued on page 39

"OK, Larry, go ahead and fly. But no outside loops!" Just after 15 minute repair job.



The Navy's on our side! The Nationals Project Officer, Walt Servis, talks to a tired group of officials. He made them feel much better.



The MODEL BUILDER's General Manager, Anita Northrop, watching the unofficial Nats R/C Soaring Meet with AMA's two Johns, President "Free" John Clemens and Executive Director "Pay" John Worth.





The diminutive size of this one inch scale ship makes the Ace Pulse transmitter look huge. Model is a perfect subject for flying scale.

FAIRCHILD 22

BY TOM LAURIE . . . An attractive old-timer, and a real cutie-pie in one inch scale, this Fairchild 22 may be flown as a free-flight or with single-channel radio.

PHOTOS BY JOHN BRANZETTI

● The radio controlled scale model of the Fairchild 22 presented in this article is the fulfillment of a long standing dream of the author. I have been collecting magazines, books, etc. since 1928 and have always thought about all the model projects I could work on when I retired some day. Well, the present plight of the defense industry has afforded me this opportunity much earlier than I had expected. Twenty-nine years at Northrop Aircraft, including the wonderful years of the flying wing, is enough for a lifetime of that activity

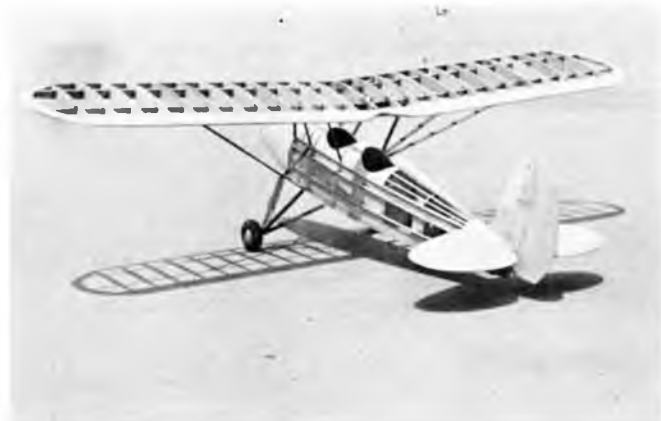
anyway.

I purchased an Ace Single Channel Commander radio control system about a year ago and have had a good time just flying for fun. Small models can be made much quicker and they "bounce" real good compared to the live and six pounders.

I spent some time looking for all the pictures, three views, etc. on the Fairchild and during this process I came across the name of the owner of a restored 22. He is Major Don Coleman and he owns one of the oldest, if not the

oldest restored 22 in existence. The airplane is presently in the EAA Museum. Major Coleman supplied photos and information and it is his airplane that the paint job and license number NC1932F are copied from. His airplane used Duco, but I selected model airplane dope in the interest of saving weight.

Typical model construction and methods were used in the design of the Fairchild, however some unique features are included. One is the method selected for installing the landing gear and wing



Here's a nice picture of the Fairchild "bones." Structure has been well designed for strength without sacrificing lightness.



You'd never know this ship was all yellow with white trim and green pin striping. Results of black & white print from Kodacolor negative.



Another shot of the framework, revealing the neat cowling of the engine and the strut detail. All struts screw on or plug in tubing.



The author and designer poses with the Fairchild 22 before covering. Tom is testing an Ace foam wing unit for use with this model.

struts. Aluminum tubing is mounted in the fuselage to receive piano wire fittings on the ends of the plywood struts. This feature facilitates painting of the model and I believe it also adds to its ability to absorb punishment. Easy wing removal also aids installation and access to the radio and helps when a repair job happens! The model features a landing gear shock absorbing system wherein the struts move much like the big Fairchild.

Another feature is the compatibility of the model and the Ace constant chord foam wing. I have made a foam wing for it but have not yet made a test flight. The foam wing with wood inserts for attaching the wing mounting screws, balsa trailing edge and covered with transparent Top Cote weighs approximately two ounces more than the built-up tissue covered wing shown on the plans. If you are a foam advocate go ahead — I believe it will work OK.

Contest balsa is used throughout, except for the few places noted in the text, for weight saving or ease in fabrication. Ambroid and five-minute epoxy (Devcon or Hobby Pox) were used for all glue joints. I am a strong believer in using several coats of glue so this point is made over and over throughout the construction article. Full size plans are available and if you are like me, you will probably buy them even if you don't build the model. (Good, good. Ed.)

The wing is of conventional construction. I cut all the ribs to the configura-

tion shown on the plans, although some modification is required on the center rib to allow for the spar splices and trailing edge cutout. Also, the outermost rib on each tip requires some modification during tip shaping, but since I hate cutting ribs anyway I made them all at the same time and made changes later as noted above. A total of twenty-five ribs is required. Rough cut oversize blanks and pin them together with straight pins pushed in from both sides. Using a plywood template, you can then saw the ribs to shape on a jigsaw. A small amount of sanding finishes the job.

Since I have been building several models of this general size I went to a little extra effort in preparing a wing jig. I purchased some half inch thick clear soft white pine from the local lumber yard. It's expensive, but worth it. It is normally used by cabinet makers for the sides for drawers and takes pins nicely. I cut two pieces about seven inches wide by twenty-four inches long and joined them with strapping tape at the center, for varying dihedral angles. Lay these on your bench and block up ends to proper dihedral. Now you can assemble the complete wing without moving it and thus help to prevent warps.

Either cut the wing outline from the plan or trace the necessary information on vellum and place on the wing jig. Cover with wax paper or saran wrap. Next pin the spars and the lower trailing edge piece in position on the plans.

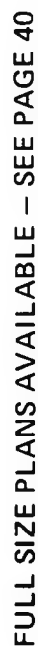
Be sure and select very hard 1/32 inch sheet balsa for the trailing edge. You can now glue all the ribs in place. Next, glue the 1/16 thick splices at the center spar joints. Relieve the center rib for these splices before attaching it. I omitted the trailing edge cutout at this time. Add soft balsa filler blocks at the trailing edge between the first two ribs on each side. After the glue is dry, sand the fillers to the contour of the upper rib surface. I partially shaped the leading edges and the tip contour before gluing them in place.

The tips are cut in the usual manner from 1/8 inch sheet balsa. Two layers are required, as shown on the plans. The layers are made in three pieces each with the grain in the direction shown for added strength and warp resistance. Set the tip on top of the lower trailing edge and block it up to meet the leading edge. Shape the wing tip at the trailing edge as required to install the upper trailing edge piece at this time, leaving the remainder of the tip shaping until the wing is complete.

Using a long sandpaper block, bevel the top aft side of the lower trailing edge piece to conform to the rib contour and to provide additional glue surface for the upper trailing edge piece. This results in a slightly sharper trailing edge which improves the appearance of the wing. Add the hardwood strut attach blocks in place as shown on the plans. They fit be-

Continued on page 35







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9. Cliff Weirick 1:46.9
10. Dan McCan 1:47.1
11. Vern Smith 1:47.8
12. Terry Prather 1:47.9
13. Hal DeBolt 1:47.9
14. Martin Barry 1:49.2
15. Chuck Smith 1:49.7
16. Tommy Baker 1:50.0
17. Harold Coleson 1:50.5
18. Doug Spreng 1:50.6
19. Hale Wallace 1:51.3
20. D. C. May 1:51.4
21. Whit Stockwell 1:51.5
22. Pete Reed 1:52.9
23. Bror Faber 1:53.0
24. Ted White 1:54.8
25. Jack Stafford 1:55.2

After handicap judging, the top twenty of these all held good for the finals except Hale Wallace, who dropped to a tie with Whit Stockwell so that Stockwell qualified for the finals by virtue of having a second qualifying time that was faster than Wallace's second qualifying time. The cut-off this year was therefore 1:51.5, which is seven seconds faster than the cut-off in 1970 and virtually the same time as the FASTEST qualifying time in 1969. A point of interest is that it was Whit Stockwell's time that was fastest in 1969, but when he posted the same time in 1971, it was the slowest.

QUALIFYING ROUNDS: F.A.I.

There were 41 fliers who posted times in F.A.I. Pylon. The qualifying times were considerably faster than most people had anticipated: it took a 2:13.3 to make the finals, which is a good deal faster than the slower F.A.I. qualifiers at Las Vegas, where they flew without mufflers, and the fastest time (Telford/Violet's 1:54.6) was only a little slower than the fastest unmuffled time at Vegas (Whit Stockwell's 1:51.0). The Telford/Violet time was five seconds better than Bob Smith's who had the only other time under two minutes. It is pretty clear that more work and experience with F.A.I. engines and F.A.I. fuel is going to move these birds very close to the usual Formula I times. The amount of work to bring about that result may, however, not be commensurate with the general level of interest in this event as compared with Formula I or Formula II. Only Smith managed, with his superb flying, to get under two minutes with a commercial muffler. The Telford/Violet muffler was their own creation: extremely effective, without reducing RPM to the level induced by the commercial mufflers. I got the impression from a wide variety of sources that there ought to be the same kind of standardization on commercially avail-

PYLON *Continued from page 12*

out, and they all deserve recognition and gratitude commensurate with the enormous energy and dedication they displayed.

QUALIFYING ROUNDS: Formula I

To my mind the highlight of the qualifying rounds was the sportsmanship displayed by BILL SALKOWSKI, one of the top pattern fliers in America, a consistent winner on the West Coast and 12th at the Nats this year. Bill was clocked at 1:38 in a qualifying heat. Since Bob Smith was in the same heat, moving quite a bit faster than Bill, and he only clocked 1:50, Bill knew that the timer had made some kind of error probably a nine-lap time. In any case, Bill disallowed the time, knowing that he had not turned a legitimate 1:38, even though contest officials were prepared to let it stand. In his subsequent attempt, Bill blew his engine on a lean run and failed to qualify for the finals. I say Bill is the kind of gentleman this sport needs more of, and if the negative of that shoe fits anyone, do by all means

wear it.

The top qualifying time was Paul Benzra's 1:34.6, a beautiful heat in which Paul showed why he is one of the most formidable West Coast competitors. He didn't finish as high as one would have predicted in the finals only because of a midair that cost him a zero in one heat, even though he was able to land and repair his wing for subsequent heats. It seems as though the hound dog is always out to get the top qualifier.

The number who actually flew qualifying heats in Formula I was 68, though there were 77 entries. This number is somewhat smaller than last year, and is in fact smaller than two local West Coast races this year. The top 25 times are listed below:

1. Paul Benzra 1:34.6
2. Bob Smith 1:40.2
3. Telford/Violet 1:40.6
4. Ernie Weiss 1:41.2
5. Larry Leonard 1:43.2
6. Gary Korpi 1:44.1
7. Jimmy Stegall 1:44.3
8. Joe Bridi 1:44.6

able engines in F.A.I. that we have in Formula I. Otherwise we have a ridiculously expensive specialists-only kind of event. The reasons for racing F.A.I. rather than Formula II at the Nats were good ones, I think: namely to find out what kind of competition we can put up under international rules. But now that we've done it, it also seems pretty clear that we ought to fight like hell to change those international rules into more rational ones.

The top 25 qualifying times are listed below:

1. Telford/Violett 1:54.6
2. Bob Smith 1:59.7
3. Vern Smith 2:00.9
4. Jack Stafford 2:05.4
5. Pete Reed 2:06.0
6. Bob Bleadon 2:06.6
7. Bob Noll 2:07.3
8. Terry Prather 2:07.7
9. Jeff Bertken 2:09.0
10. Tommy Baker 2:09.2
11. Joe Martin 2:10.2
12. Ed Keck 2:10.5
13. Chuck Smith 2:10.5
14. Dave Gierke 2:10.6
15. Hal DeBolt 2:10.6
16. Larry Leonard 2:10.7
17. Korpi/Roy 2:10.7
18. Dan McCan 2:11.8
19. Whit Stockwell 2:13.1
20. Kent Landerfeld 2:13.3
21. Joe Stream 2:13.3
22. Brian Sattler 2:15.8
23. Adam Sattler 2:16.6
24. Bud Atkinson 2:18.5
25. Austin Leftwich 2:18.7

As in Formula I, the 21st qualifier got into the finals, in this case because Dave Gierke's wing was about 1/32" too thin. This was particularly bad luck because he had built it thick enough and it literally shrank during some very hot weather on a rack high in his garage. Dave, like Hale Wallace in Formula I, is a gentleman and a sportsman, and shrugged off his bad luck with no ill feeling. We look for him to be hard to beat next year.

THE FINALS: Formula I

I believe this year has proved beyond all question that racing fast against fast does NOT lead to more midair collisions. There were none last year, and this year only one in the finals—it damaged Paul Benezra's wing, and Tommy Baker finished the heat without a scratch (it was his wheelpant that caught Benezra's wing). The only midair collision that wiped out the airplanes was in the qualifying rounds, and it was in a passing situation around the number three pylon when Bror Faber was trying to go by Dave Johnson.

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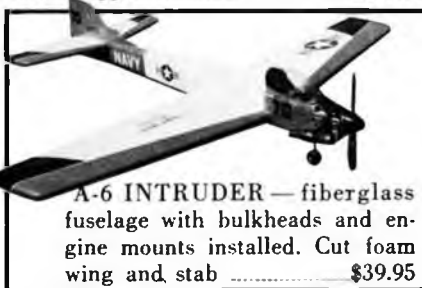
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The closeness of the heats in the finals was not to be believed: time and again the 1-2-3 finishers were only separated by a second or two, and on several occasions only by tenths of seconds. The KORPI/ROY team might well have carried home all the marbles: in the only two races they did not win, they were second by a matter of a couple of plane lengths. Though he finished ahead only of Danny McCan (who crashed in his first heat—the only crash in the finals), Larry Leonard played the role of giant-killer when he beat Telford/Violett in that fantastic race we mentioned earlier. It was Terry Prather's good luck that when Leonard went against him, instead of going the way he had against Telford/Violett he flamed out—and when he raced Korpi/Roy, he took two cuts. Racing is just that unpredictable. In fact, with the exception of the first four finishers, the wins were so evenly distributed that it took only 14 points out of a possible 20 to place fifth (Tommy Baker), and 8th through 10th place were decided on times, all

three having but 12 points.

Here was the order of finishing, with fastest heat time for the top five:

1. Terry Prather 1:41.5
2. Telford/Violett 1:42.8
3. Gary Korpi 1:43.4
4. Bob Smith 1:42.4
5. Tommy Baker 1:46.3
6. Jimmy Stegall
7. Joe Bridi
8. Hal DeBolt
9. Martin Barry
10. Whit Stockwell
11. Harold Coleson
12. Paul Benezra
13. Chuck Smith
14. Cliff Weirick
15. Vern Smith
16. Doug Spreng
17. D.C. May
18. Ernie Weiss
19. Larry Leonard
20. Dan McCan

THE FINALS: F.A.I.

There has been a proposal made to the Contest Board that in local contests

NYLON PROPELLERS

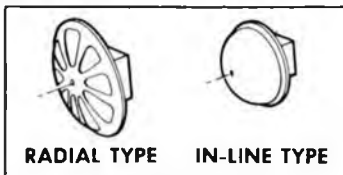


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beginners should be allowed to have experts land for them, if they wish. This is both for safety and to encourage newcomers, who invariably damage their birds because they don't have the experience to land a hot pylon aircraft on a single dead-stick approach. The F.A.I. finals provided two rather persuasive bits of evidence which should cause the Contest Board to reconsider its preliminary negative vote. Larry Leonard, the 1969 Formula I National Champion, the 1969 National Pattern Champion, and by any standard one of the best model aviators in America, dumped his F.A.I. bird in a tree on his landing approach, nearly wiping it out. If HE can misjudge it, who is exempt? Jack Stafford then proceeded to land in the same tree: only whereas Larry's dropped to the ground (in a couple of pieces, to be sure), Jack's STAYED there. After about two hours of tree climbing and getting hung up on fences, Jack and his colleague Jack Fabbri managed to retrieve the airplane, virtually undamaged—but the races were over.

Except for these two mishaps, the F.A.I. finals went rather routinely, with a good deal less of the kind of excitement that Formula I generated. In many heats the winner so totally outclassed the competition that there was no excitement generated, and the losing airplanes were so much slower that the results of the race could be accurately predicted after a lap or two. I honestly believe that the mufflers are tremendously damaging to spectator appeal: part of the excitement is the scream of unmuffled engines. By the end of the

F.A.I. races there were not over half-a-dozen spectators left, and there hadn't been so very many at any time. But for Formula I there was a crowd that matched the crowd for Scale, and it didn't thin out much right to the bitter end. The greater spectator appeal of Formula I can be attributed in part to the excellent job of announcing the races over the P.A. system that was done by TED WHITE: but it was also clear that F.A.I. was much less exciting.

Here are the final standings of the F.A.I. races:

1. Telford/Violett 2:02 tie-fly-off
2. Bob Smith
3. Terry Prather
4. Chuck Smith
5. Bob Noll
6. Jeff Bertken
7. Hal DeBolt
8. Vern Smith
9. Bob Bleadon
10. Korpi/Roy
11. Tom Baker
12. Dan McCan
13. Kent Landefeld
14. Pete Reed
15. Whit Stockwell
16. Ed Keck
17. Joe Martin
18. Larry Leonard
19. Jack Stafford
20. Joe Stream

RANDOM OBSERVATIONS

I don't imagine anyone who flew at this Nationals will be in favor of the proposal that has been made to race always against the clock rather than against one another in systematic heat rotation: repeatedly in the qualifying

heats the times posted were clearly wrong in both directions, and not just in Salkowski's case. Since the stop watches were calibrated by the event director, we can only attribute the variability to the thumbs of the timers. In the finals the clocks were used only to corroborate positions, and they were being handled by experienced competitors who volunteered to work after they were eliminated in the qualifying. Under these conditions there were fewer problems.

This Nationals produced a greater variety of types of aircraft than the last two or three. There were four MISS DARA's entered; they were designed by Chuck Smith, and flown by him, Bob Smith, Larry Leonard, Danny McCan and Jeff Bertken. The Telford/Violett shoulder-wing version of the COSMIC WIND is a beautiful clean airplane, now (or very soon) available in fiberglass and foam from Rev-Line Products, Bethesda, Md. There were plenty of the good old Stafford Minnows still competing with excellent success, and also the Stafford Midget Mustang. Jimmy Stegall's new fiberglass Minnow was flown by most of the southern contingent—Baker, Coleson, D.C. May, and Stegall himself. Benezra's Shoestring, from the Francis Products Fiberglass and Foam kit, proved that this classic model moves still with the best. I thought the quality of workmanship on all the entries was extremely high: and I am happy to report that this year NO ONE FOLDED A WING. I think perhaps that unhappy disease is a thing of the past. (Just for the record, however, Marty Barry found after the last race that his wing was starting to buckle, with the top sheet pulling away from the foam: one more fast heat and it might well have given way.)

Starting positions were determined in a way which is new to me: they were determined not by handicapping alone, but by handicapping plus qualifying time. So the slowest qualifiers invariably started last, whether they had airplanes with superior appearance points or not. I was under the impression that appearance/workmanship/scale judging should be for two purposes: to arrive at an ADJUSTED qualifying time (which was done), and to determine order of take-off, irrespective of qualifying time (which is not the basis that was used).

Any way you look at it, it was a well run and exciting Nationals. Congratulations to the top winners—Terry Prather, and Cliff Telford and Bob Violett—and to the event director, Bob Reuther.

* * *

tween the ribs so no rib notching is required. They fit flush with the lower surface of the wing.

The wing structure is now complete except for finish sanding and covering. Prior to removal of the wing from the building jig, coat all joints with generous amounts of Ambroid. After drying, the wing can be removed from the wing jig and the tips and center section cutout completed.

The tail construction is entirely of sheet balsa. The horizontal stabilizer is made in one piece. Cut all parts from 1/16 inch sheet balsa. After assembly of the various pieces, sand the outside edge smooth and attach the 1/16 inch square outline. Wet this piece in hot water and keep tension on it until it is bent and pinned in place. After drying, apply glue and the stabilizer is finished except for sanding.

The rudder is constructed in a similar manner from 3/32 inch sheet balsa. Drill the small holes for sewing the rudder in place, but don't attach it now. Form the wire keeper for rudder actuation and drill the hole for the 0-80 screw, and the tail sections are complete and ready for assembly to the fuselage.

Begin fuselage construction by cutting out the two sides and formers from 1/16 inch sheet balsa. I used vellum tracings of the parts for patterns and a fine ball point pen to trace the outline on the balsa. Mark the centerlines on all formers to assure accuracy during assembly. The only difference in the two sides is at Former 3, which is offset to provide right thrust. Select a firm quality contest balsa for these parts. The X-Acto razor saw was used in conjunction with a small square whenever possible to provide accuracy. Glue the balsa slide pieces for actuator mounting and the 1/16 doublers in the gear area before assembly.

Accuracy is very important in locating the balsa pieces for the actuator board to slide in. I used a soft white pine board from the material described in the wing construction paragraph to assemble the fuselage. Mark a centerline and former locations on the board to aid in assembling the fuselage. Begin fuselage assembly with Formers 5 and 6 and the fuselage sides. Use a small square, triangle, etc. to assure good accuracy and squareness. After these parts are completely dry, continue assembling the remaining formers. Rubber bands and plastic clothes pins help here. After this assembly is completely dry, remove it from the board and install the various pieces of plywood for wing, landing

gear, struts, and tail skid mountings. The fuselage should have been notched to receive and locate these pieces. I coated all the plywood-balsa joints with Devcon at this point as they will be hard to get at later on. Also coat all former and side joints with a second coat of Ambroid. The 1/16 balsa battery tunnel between Formers 3 and 5 can be installed now. This assembly is shown in Former 4 and 5 cross sections. Next glue the 1/16 outside diameter aluminum tubing for wing and gear strut mounting to the plywood cross pieces. Use plenty of Devcon here as failure of these glue joints will result in a great big repair job.

The main landing gear strut should be sewed in place at this time (see paragraph titled Landing Gear and Struts for a complete description of this operation). After the gear is installed and epoxied in place, the bottom fuselage may be added. It is made from 1/16 sheet balsa with the grain running crosswise except for the immediate area adjacent to the landing gear which is made from 1/8 inch thick sheet balsa. It is faired into a smooth contour after the nose blocks are added. Sand the bottom covering smooth with the fuselage sides. The fairing strips can now be added to the fuselage sides. The upper and lower strips are hard 1/16 square balsa and the middle two are 1/16 by 1/8 balsa. They extend from Former 4 to the rudder hinge-line. The strips are faired to a feather edge at the aft end (see top view).

The actuator torque rod should now be installed. It is made from .045 piano wire. There is a hard wood forward bearing block on Former 7. A piece of plastic tubing is used at the rear for a bearing. If you are using the Adams actuator, it would be a good idea to try it in the fuselage at this point to assure the satisfactory operation of the torque shaft.

You are now ready to install the balsa covering in the cockpit area. It is formed from 1/16 sheet and extends from Former 4 to Former 7. I soaked the wood in hot water and formed it around the fuselage with rubber bands and pins. After it is dry, coat the structure with Ambroid and mount the formed sheet in place. The 1/16 by 1/8 fairing strips that form the turtle deck aft of the cockpit can now be glued in place. Make an engine mount check at this time. The firewall layout shown is for the Cox Tee Dee .020. I used blind nuts on the rear side of the firewall.

The nose is formed from four balsa blocks using soft balsa. The upper block has to be hollowed out for the firewall

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prior to installation. Spot-glue the blocks in place as they must be removed for final hollowing out. Include Former 2 at this time and shape the outside blocks as shown on the drawings. The nose block and Former 1 should be included in this operation. After the outside contour is complete, remove the blocks and hollow out the insides as shown. The nose uses a 1/16 diameter dowel at the top and a number 2 sheet metal screw at the bottom for fastening. Finish the fuselage by cutting the cockpit openings and then carve the headrest. Do not mount the headrest until the fuselage is covered.

The tail surfaces may be epoxied in place at this time. Be sure and get them on square. The horizontal stabilizer is glued in place first and then the fin. Shape the balsa blocks that fit on the sides of the fuselage next to the fin. Now sew the rudder in place making sure it is able to move freely.

The landing gear and wing struts are constructed from plywood, soft pine, piano wire, aluminum tubing, sheet brass and epoxy cement. The use of quick drying type epoxy allows you to hold many of the pieces until dry instead of working out methods of clamping. You will need a pin vise, small drills, razor saw and round and flat nose pliers. The

sizes of all materials are called out on the drawing.

Start fabrication with the landing gear strut which is permanently attached to the fuselage. The main member is bent from 1/16 piano wire to the shape shown on the plan. A series of 1/32 inch diameter holes are drilled in the plywood inset in the fuselage to facilitate passage of the needle while sewing the gear to the fuselage. Now form the rear landing gear member from .031 piano wire. The lower ends of this member have a small portion bent to lay parallel to the main member. I used thread to hold this joint until the wood fairing pieces were added. Notice that the rear member is not attached to the fuselage, but lays against the bottom of the fuselage and is thereby able to slide rearward when a severe landing is encountered.

The fairings for the main struts are made from two pieces of 1/16 inch thick plywood which is grooved on one side so as to enclose the wire strut. I accomplished the grooving with a series of side-by-side saw cuts using the razor saw. The rear fairings are made from 1/16 inch plywood which is grooved on the underside to conceal the rear wire strut. Cut the pieces to length and round the leading and trailing edges. Using five minute epoxy, attach the fairings to

one side at a time. You will waste your epoxy if you try both sides at one time.

The intersection of these struts is faired with 'Spackle'. Use the new vinyl type which comes in a tube at your local hardware store. The use of this type material, which dries quickly and sands beautifully was suggested by Fernando Ramos of the NAA Flightmasters. You can also fill in the fuselage in the area where the main gear is attached at this time. After the Spackle is dry, sand the joints and surfaces smooth and the main gear is complete.

The wing struts and the rest of the landing gear are well detailed on the plan. The small brass fittings called for on the wing end of all struts are available at A. J. Fisher Co., 1002 Etowan Ave., Royal Oak, Michigan, 48067. They are called Gunwale Eye Plates number 564. At three cents each, you can't afford to make them. A small dowel is used to further strengthen this joint. The aluminum tubing used in the simulated shock struts are held in place by filing notches through both parts and applying epoxy. A slight bend in the wire also helps to hold things together.

I used the Ace Commander Single Channel Radio with the Adams Baby Twin Actuator. A 225 MA battery is used and the GEM receiver for a slight weight reduction. Most any of the single channel radios on the market may be used with slight alterations. I happened to use the Ace radio system so the details are included in the article.

The actuator mounting includes the switch and charging plug. I used connectors in the wires between the actuator, radio and battery. A hole is provided in Former 6 for the wires to pass through. The battery is located in the tunnel by using foam to locate it at a point required to balance the model. The receiver, wrapped in foam, slips into the front cockpit. It is much easier to install the radio before the wing is in place.

I slip the actuator mounting board outside the airplane when charging the battery. Operation of the switch when flying is through the cockpit opening.

The entire wooden framework was coated with Hobby Pox Clear and finish sanded prior to covering. This added strength to the balsa and there is very little warpage or sagging visible on my Fairchild after six months.

The entire model is covered with silkspan, applied wet to help around the curved places. As mentioned previously, the color scheme shown on the drawing was taken from Major Coleman's Fairchild. The wing, tail and

upper part of the fuselage is Dupont Dulox 'National Fleet Yellow No. 93-224. The trim on the fuselage and fin is Juniper Green No. 72001 and the lower fuselage is Blue-Toned White No. 93-21667. I obtained color charts on these paints and came very close with Aero Gloss Dopes. Cub Yellow was used with no changes. Use Swift White with a few drops of Curtis Blue and Fokker Red for the Blue-Toned White. Green Monokote Trim Sheet was used for the Juniper Green. Add the black license numbers, and the painting is complete.

I used a very simple technique for assembly of the wing to the fuselage. Put two guide lines intersecting at right angles on a large piece of vellum. Next place the wing upside down on the vellum with the trailing edge parallel to one of the guide lines. Use blocks to hold the wing in place. Next place the fuselage upside down (wing struts attached) in place over the wing using the other guide line for alignment. Again I used blocks to hold the fuselage. Position the strut end fittings onto the blocks in the wing and drill small pilot holes. Now fasten the sheet metal screws in place. Don't slip or a hole will result. Check alignment throughout this operation. Next assemble the outer wing support braces in a similar manner. Notice the stability these struts add when they are in place. This completes the assembly of the model. A slight bend in the wire will keep the struts in place if they tend to pull out.

Balance the model at the point shown. Make a radio range check, find a field with some "deep stuff" and GOOD LUCK. If you have questions, I will be glad to try and answer them, either thru the magazine or at home, 1100 Nottingham Road, Newport Beach, Calif. 92660.

SOARING • • Continued from page 15
Monday and Tuesday were beautiful, the rain holding off until all contest flying was finished.

The contest task for all rounds was 10 minute precision with a bonus 25-point scale-runway landing (25'x150'). One point per second was awarded up to 10 minutes with 1 point per second deducted for times above 10 minutes. No one achieved a perfect 625 points, however there were several 624 point scores. With killer thermals extending to cloud base (estimated at 2500 ft. on the first day) the latter requirement resulted in many high-speed dives to get down within 10 minutes. Maxes in both classes were as common as missed spot landings. Three rounds were flown on both days with the total score from all

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rounds used to determine final standings. Scores for all rounds, including team standings, were posted near the judges stand, and contestants could determine their position round by round.

Launch was by either electric winch (4 available) or hand tow with a maximum line length of 300 meters (984.3 ft) for each. The use of hand tow deserves some comments here since it caused quite a commotion during the contest. Since a hand tow does not reel in line like a winch, it is evident that a higher launch can be achieved with a hand tow. The Chicago thermals were boomers, but one had to have the altitude to get into them. If you once got up there, and there was a cloud nearby, it almost meant an automatic max. It then is a question of who has the best launcher with the physical ability to tow the glider. The Chicago boys turned up with a 200 lb super athlete, Jack Hiner. With the line nearly vertical when the sailplane released it was apparent that the hand tows were nearly twice as high as winch tows, an unfair advantage, especially since it was not available to all. In addition, hand tows tend to disrupt the contest since they take longer to set up and have to be done away from the winches. If everyone had hand towed, a lot less rounds would have been flown. Never the less, since those were the rules, the Harbor Club from Southern California, finding itself 1,000 points behind on the first day, spent Monday night in preparation, and hand towed all flights on Tuesday. By the last round they had nearly made up all of the points. (Also, by the last round, Harbor Club members Mark Smith and Eddie Rempelski were plenty pooped). CD Dave Burt explained that the SOAR club is against hand tows and used this to show the unfair advantage. However, it was the feeling of many fliers that this could have been demonstrated on the practice day rather than holding off until the

official flying. Nuf sed.

If the contest was dominated by one man it would have to be John Neilsen flying his ARF Phoenix 130, and 99 sailplanes. John (hand tow) finished first in Open and second in Standard. The Phoenix, which he imports from Germany, is a very light (7 oz/ft² loading) all balsa ship which resembles a large Nordic glider. It climbs nearly straight up on tow and certainly showed its superiority over the Graupner Cirrus in an endurance-only contest. Several of the Chicago flyers placed well up in the standings flying the Phoenix. As usual, however, the Graupner Cirrus was the most popular ship, a cursory count showing 20 entered. Also entered were two Super Cirruses, a 25 percent scaled up Graupner Cirrus developed by Bob Belger did real well with his and was Belger and Ray Vanderdonck of the Greater Detroit Soaring and Hiking Society. It has a 12 foot span and features a fiberglass fuselage. Bob Belger did real well with his and was leading Open class when an unfortunate launch accident wiped it out; he still managed to finish 8th with a backup ship. Otto Heithecker's 10 1/2 foot span Snoopy won the trophy for the best original design. Otto, flying only a few months, finished 3rd in Open class and certainly showed his 20 years of free flight experience.

Standard Class was close from the start with Rod Smith the winner flying a Windward (from the Marks Models kit). Rod's maxes (and there were many) became quite a show to see. At 9 min. 30 sec. he would put the ship into a vertical dive, pull out inverted at about 50 ft, make a wide circle inverted, and finally pull out and land on the spot within a second or two of 10 minutes. He sold a lot of Windward kits based on that show.

After the final round the top 3 in each class competed in a sudden-death fly off for the grand prize of a Schwinn

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10-speed bicycle (John Nielsen with-drew because he donated the bicycle). Mark Smith edged John Donelson for the honors.

If you have been reading the AMA news carefully you might know that the R/C World Championships at Doylestown, Pa. Sept. 15-19 will feature R/C Soaring Competition in addition to pattern and pylon. This is almost a last minute addition but teams from England, Canada, and Mexico are coming. Germany, France, and Italy are also trying to send teams.

Per AMA Headquarters the R/C Glider Nats winners will be used to form the team for USA. Based on overall point totals the members will be:

Prime Team:	Alternates:
John Nielsen	Cas Pels
Carter Carlsen	Mark Smith
Otto Heithecker	Niel Liptak

The SOAR Club is to be congratulated for conducting a fine contest. All in all, the entrants enjoyed this meet immensely. It was interesting to note the difference in design between the west coast (heavier

ships designed for the LSF rules) and the rest of the country. Many of the ships from the midwest tended to look like big Nordics. Surprisingly only one east coast flier attended (Carl Lorber). California had 5, all from the Harbor Soaring Society. The rest were mostly from Illinois and Michigan, the latter being represented by 3 teams, the largest being the Greater Detroit Soaring and Hiking Society. It is obvious from talking to Earl Pell (President) that the Detroit area is a hotbed for soaring activity.

The 3-man team challenge, which was won by the SOAR club, was an excellent idea and should be retained. This has also been tried in California where the state is split, North versus South; it adds a lot of dimension to a contest. There were also a lot of special awards presented, including best Monokoted ship, best technical achievement, best scale, etc. This is good too, especially for a relatively new sport such as RC Soaring.

Next year the soaring event will probably be an official part of the Nationals, although still held off base.

It is this writer's opinion, however, that if the meet is to be considered a part of the Nationals, the contest tasks should be based on a balanced agenda including precision, speed, and distance, in addition to endurance; similar to the LSF Soaring Tournament. The National Soaring Rules proposal presented in the June Competition Newsletter should be adopted in time for pre-contest planning.

SCALE • • Continued from page 18

Bob Underwood's Bonzo very appropriately finished in thirteenth place. On the first flight everything went fairly well until a radio range problem came up. The resulting straight-down, full bore crash behind high shrubbery off the base was thought, by everyone, to be the final appearance of the plane. Miraculously, Bob showed up later with a practically unmarked Bonzo. Soft foliage apparently brought the plane to a halt before it hit the ground. Later however, apparently the same radio thing happened, but this time the plane was reduced to a basket case.

Bud Atkinson, one of R/C Scale's perennial competitors, entered his trusty push-pull Dornier (OK, so I forgot the designation). The front engine is the only live one. Bud placed fourteenth.

Generally speaking, except for a few highlights, R/C Scale did not sparkle with as much excitement as it has in some past years. Average flying ability with exception of some of the veterans, was sort of a throwback to the years when it was obvious that airplanes (and pilots) were pretty much untested. Some beautiful scale ships were pulled prematurely off the ground with lean and/or overtaxed engines, resulting in the inevitable stall and "kerwhump".

1971 SOARING NATIONALS RESULTS (FIRST TEN PLACES)

STANDARD CLASS (100" or Less)					8	R. Belger	Mich	G.D.S./H.S.	2434	
PLACE	NAME	STATE	CLUB	POINTS	9	R. Smith	Calif	H.S.S.	2319	
1	R. Smith	Calif	H.S.S.	2513	10	G. Nelson	Ill	S.O.A.R.	2202	
2	J. Nielsen	Ill	S.O.A.R.	2506	TEAM STANDINGS					
3	M. Smith	Calif	H.S.S.	2468	1	S.O.A.R. (Silent Order of Aeromodeling by				
4	J. Donelson	Calif	H.S.S.	2203		Radio)				7154
5	J. Pitcher	Mich	Seaway R/C	1963	2	H.S.S. (Harbor Soaring Society)				6938
6	B. Wolfe	Ill	S.O.A.R.	1805	3	G.D.S.&H.S. (Greater Detroit Soaring				
7	L. Weaver	Calif	H.S.S.	1767		& Hiking Society)				6234
8	R. Vanderdonck	Mich	G.D.S./H.S.	1660	4	Midwest R/C — Michigan				4302
9	E. Rempelski	Calif	H.S.S.	1616	5	Seaway R/C — Michigan				3178
10	A. Slagle	Mich	G.D.S./H.S.	1487	6	Decatur Blunderbirds				1847
OPEN CLASS (Any size Wingspan)					SPECIAL AWARDS					
1	J. Nielsen	Ill	S.O.A.R.	2916	Best Monokote — Ed Mozurkewich					
2	C. Carlsen	Ill	S.O.A.R.	2898	Best Technical Achievement — Harbor Soaring					
3	O. Heithecker	Mich	G.D.S./H.S.	2876	Society					
4	C. Pels	Ill	S.O.A.R.	2781	Best Original Design — Otto Heithecker					
5	M. Smith	Calif	H.S.S.	2661	Best Jr-Sr — Mark Smith					
6	N. Liptak	Ill	S.O.A.R.	2525	Best Scale — John Donelson					
7	D. Pruss	Ill	S.O.A.R.	2501						

Even some of the better fliers were getting zeros for flying over spectators.

This brings up a point. No matter how good a flier you are, if your scale subject is a tail dragger, and an unsteerable tail skidder to boot, taking off crosswind is just about out of the question. Perhaps Nats planners should investigate the feasibility of flying R/C Scale from Site B in Chicago. This site is at the intersection of two runways, and one of them is in the direction of the wind that almost always makes itself known in large quantities, particularly on Scale Days. Weather is something you can do nothing about, so let's give in to it.

Credit goes to event Director Don Lindley, pride of Crown Point, Indiana, for keeping things moving along smoothly. Although there are many less contestants than in Pylon and Pattern, the many added details and fine points that must be kept clear during the event require the leveling influence of a competent official.

It is interesting to note the number of repeat performers from previous years: John Roth and the Volksplane, Ed Ellis and the Spirit of St. Louis, Bill Bertrand and the Fokker D-VII, Claude and the Sky Pirate. Also the other familiar names near or at the top: Maxey Hester, Bob Wischer, Ralph Jackson, Walt Moucha, Hale Wallace, Bud Atkinson, Bob Underwood and the Hillers. Scale, as well as Pattern and Pylon, seems to have its list of top modelers who are in there year after year.

On the other hand, it is also some what disturbing to note the direction in which R/C Scale is headed, no doubt influenced by the world modeling organization, FAI. Perhaps it is all well and good to have a category of R/C Scale competition as now exists for the Nationals and the World Championships, in which the planes must be of museum-like quality, able to stand up under magnifying glass scrutiny, with minute details that only a few specialists in the hobby can duplicate. These planes, to qualify as "flying" scale must, almost as an afterthought, get out and flounder around in the sky in order to qualify. In fact under this year's and last year's AMA rules, it is possible to qualify as "flying" by taxiing without even leaving the ground!

But AMA represents thousands of modelers in all parts of the country who are getting more and more turned off by the complicated scale rules and are instead going all out for scale as typified by the so-called "stand-off" rules. Under this system, the emphasis is on flying.

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Planes are quickly qualified as scale after a moderate check into fidelity, given a rating in relation to the other planes entered, and from there on, they better fly, and pretty darned good.

Proof of the popularity of this type of scale competition is evidenced in the many unofficial meets held around the country. The permanently established Rhinebeck WWI contest is a good example. Many clubs have WWI and WW II contests in which flying tasks are the main source of scoring points. These meets bring out large numbers of contestants, whereas AMA scale may produce two or three.

Take a look at the Nationals. The planes that evoked the most spectator and fellow modeler reaction were the spectacular flyers. Ken Drummond's B-36, back for the second year, was way down in scale points, receiving almost no presentation score. But Ken came to fly, and fly he did, until an underpowered takeoff resulted in a low altitude stall and a wipe out. However, this was a daring project, taking lots of guts. Not many witnesses will forget the bombing run on his first flight when Ken passed over the judges, called "opening bomb bay doors" and then poured it on straight down the runway and dropped two bombs that "exploded" in clouds of powder in the spot landing circle.

Joe D'Amico's B-26 is a beautiful plane, not detailed a great deal, but again a dramatic thing to see and hear as it is flown ever so smoothly through the required pattern. Bill Bertrand's big old Fokker D-VII lumbers around more

realistically than any scale ship we have ever seen. If anything, it flies slower than scale speed. Now if he could only get a machine gun sound effect going for those strafing runs...

We hope that the Scale Contest Board will take a long look at Stand-off Scale. For the Nationals, we need the Maxey Hesters, Bob Wischers, Roths, Ellises, Moucha's, McCulloughs, Wallace's and their beautifully detailed and finished planes, but for grassroots modelers competing in AMA sanctioned contests all over the country, weekend after weekend, we need scale FLYING, not just flying SCALE.

PATTERN • • Continued from page 27
year, making slight modifications only where necessary. Pro-line radios were in the top five airplanes and about five others, with Kraft in most of the remainder. Bill Salkowski and Jim Oddino were using their own unit (available directly), and of course, Ted White was using his own Galaxy.

As far as we can recall, there were no crashes throughout the four days of Class C flying. Ted White's cartwheel during that one wheels-up landing in the tall grass on the other side of the runway, although ruled a crash for judging purposes, did no damage and Ted went on to fly his scale-like tail-dragger in the Saturday finals and during the Sunday Air Show demonstrations.

Before we go on to the Class A and B competitions flown Sunday from 8 A.M. to 2 P.M., we should mention the fact that an unofficial worlds record was established one morning at an off-station

R/C site. Shortly after taking off for a practice flight, Jim Edwards' plane decided it would prefer to do its own flying. As a rule, when the battery power cuts off in modern-day pattern ships, they promptly screw themselves into the ground. But as mentioned before, these southern dentists must live right.

Jim's plane, when it decided to go on its own, had enough altitude for an outside loop...just about two feet more than barely enough. The first loop was so much fun, and seeing those little people on the ground waving and shouting and all, that it decided to try it again, and then again and again, etc. However, Jim noticed that the plane was gradually working its way sideways toward the slope of a hill. Pretty soon the ground would slope up to meet the bottom of one of those loops. Then they could get out the basket, sweep up, and head back to the Naval Air Station.

The plane however had other ideas, or do they call it ground compression? As it worked its way up the hill, each outside loop tightened just enough that the ground clearance remained constant!! Could one of the best barnstormers in the business, Jim Martin, have done any better?

By the time the ship had looped to the crest of the hill and there was nothing more to stop it, it magically made one 90 degree horizontal turn at the top of loop number Lord-knows-what and resumed the loops in a direction parallel rather than perpendicular to the wind. As a result, the loops became egg shaped and the ship rapidly gained altitude and distance and before long became a speck in the sky...still outside looping, of course!

Jim did what most any modeler would do at this time, took one final look in the direction the plane had last been seen, sobbed, and climbed into the car to return to the base. Of course, he had a back-up plane and though handicapped by not being able to fly his prime (though rather independent) ship, he still managed an eighth place in the finals.

The end of the story, and the world's record claim came later that day when the ship was returned totally damaged, but with all radio gear, except the battery pack, aboard. It had been found just on the edge of a lake several miles away from the starting point. The tank was undamaged and bone-dry. Since everyone had run out of fingers and toes counting the number of loops long before the ship went out of sight, Jim could only estimate that the loops per minute times the normal engine run would have amounted to at least 600!

It's also hard to say what was going on during the glide. Anyone care to beat that record?

Meanwhile, there was still Sunday, and the Class A and B Pattern competition. Both sites were used, with two lines per site as in Class C qualifying.

Although much of the flying was not as smooth and precise as seen the day before, there were some very beautiful performances, and it was heartwarming to see so many Juniors and Seniors in action. Perhaps the most noticeable difference, other than the flying, was in the variety of planes and radios being used.

Charles Shade, Miamisburg, Ohio, winner in Class A, used his own radio, made from a combination of various kit parts. The name Shade-E-Trol on the transmitter sort of put you in mind of the shade-tree mechanics of years gone by.

Eric Myers, best Senior in Class A, flew an H.P. powered Du Bro Sportsman with Pro-Line radio.

LCDR Graham Hicks flew a Top Flite Contender in Class A. He had added large tip plates which made the plane exceptionally stable. During the Sunday Model Air Show, he was able to hover the ship into the wind and was actually backing up at times.

Bob Nelson, Waterloo, Iowa, flew a flashy DeBolt Cobra with EK radio and Veco 45 power. This ship was totally covered in chrome Monokote.

Dennis Donohue, Bergenfield, N.J., flew an interesting original "El Tigre" in Class B. Ship was Webra powered, with Rom-Air retracts and Kraft radio.

Flying was completed around one o'clock and as soon as tabulating finished its checking, the trophies were awarded on the spot. It had seemed a shame to us when the other trophies were being awarded at the banquet the night before that A and B could not get theirs at the same time. However, the size and enthusiasm of the crowd that gathered for the awarding of the A and B trophies more than made up for the necessary situation.

We were especially proud to be present at the awarding of the five top place trophies in Class B, since The Model Builder Magazine was the donator of these awards. Heath Company donated the five Class A awards and E.K. Products donated the four Best Junior and Best Senior trophies.

Bob Scott, the R/C Pattern Event Director, concluded a long week of hard work with the pleasant duty of handing out the trophies. Bob is a long-time modeling buddy of this writer. In fact, he had already been in R/C for some time

when we joined the "Lost Controllers" of Wilmington, Delaware back in 1954, and some of his adventures with a certain much modified Trixter Beam, known as "Lead Belly", when single channel was all we had, could fill a book. Back then, a 3 turn spiral dive was a contest maneuver. One time, Bob's determination overcame his common sense. Starting way up high, but not high enough for "Lead Belly", the count went, "One, Two,...Splat...Three!"...Like we said, it could fill a book.

The results, with scores, were as follows:

Class A;	
1. Charles Shade	311
2. Michael Murray	295
3. Joe Hildreth	292
4. James Maki	290
5. Charles Kenney	280

Best Class A Junior:	
Van Johnson (yes, Van!)	211

Best Class A Senior:	
Eric Meyers	240

Class B:	
1. Philip Giesekeing	405
2. Kim Johnson	399
3. James Duda	388
4. Terry Edmonds	384
5. James Dornberger	384

Best Class B Junior:	
John Stamm	379

Best Class B Senior:	
Kim Johnson	299

Oh yes, we were supposed to mention that Kim and Van Johnson are from Fort Worth...Fort Worth what!? Fort Worth, Texas, of course!

* * *

FULL-SIZE PLANS (with instructions) SERVICE

No. 9711 BEANPATCH
An EAA scale-like model for sport R/C. 45 power.
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No. 9712 FAIRCHILD 22
Scale old-timer for single channel radio or free-flight. 020 power.
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MONOKOTE GETS LETTERS... LOTS AND LOTS OF LETTERS!

"I've never taken the opportunity to thank a manufacturer before, but I do want to express my opinion on your Super Monokote. I've just covered five new wings and stabs with it, and it is great!

Chuck Broadhurst
Sacramento, Calif.

MONOKOTE IS THE GREATEST!! I've experimented with most of "them" and always go back to Monokote.

Dan Rhoads
Newington, Conn.

I'm a fairly new modeler and thought Monokote was too expensive until I saw your ads comparing Silk & Dope costs to Monokote. I tried Monokote . . . and you're right—Monokote's cheaper than Silk & Dope, and holds better too!

Marc Hoit
Michigan City, Ind.



The ship came in 250 ft. straight down in a radio failure and there was only a small tear on the underside of one panel.

Harley E. Michaeli
Walla Walla Wash.

In these days of repairing it's a real pain into a product everything else.

I have not "Monokote before. Monokote job on an Antic, silver, covered 14 model Bikes, 1 Tripe & 4 included in this total.

Don Johnson
Denver, Colorado

I've been showing it to everyone I know demonstrating how hard it is to damage and the ease with which it can be repaired. Believe me it's all the ad says and more.

Winston Hockenberry
Waterbury Center, Vt.

I have found that Super Monokote works easier than any other covering that I have ever used. Super Monokote surprised me at how smoothly it covers curved areas like wing tips.

Brian McAvoy
Greenock, Pa.

It's the prettiest finish I've ever had.

Dr. Walter Good
Bethesda, Md.

Even Naomi, my wife, loves Monokote because it is odorless, and also I have been able to stop getting paint all over my clothes. I am sold on this item and intend to trade in all of my paint brushes for a new "iron."

Donald Rothbaum
Silver Spring, Maryland



**NOW THERE ARE 16
SUPER
Monokote
FINISHES**

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NEW
COLORS**

26" WIDE
CLEAR PAINTABLE \$1.35
CHROME 1.35
PLUMB CRAZY 1.75
(METALLIC PURPLE)

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CHECKER BOARDS 1/2" sq.
RED ON WHITE \$1.19
RED ON CLEAR 1.19
BLACK ON WHITE 1.19
BLACK ON CLEAR 1.19

**5
NEW
TRIMS**

Oops!
**MAKE THAT 18
FINISHES IN ALL!**



repaired the damage and recovered with a fresh section of transparent Super Monokote. Only a tired eye would ever spot the repair. The good old days of it and wait, then steam it again to make adjustments are gone forever if Super Monokote is used.

Richard A. Lape
Dewitt, Mich.

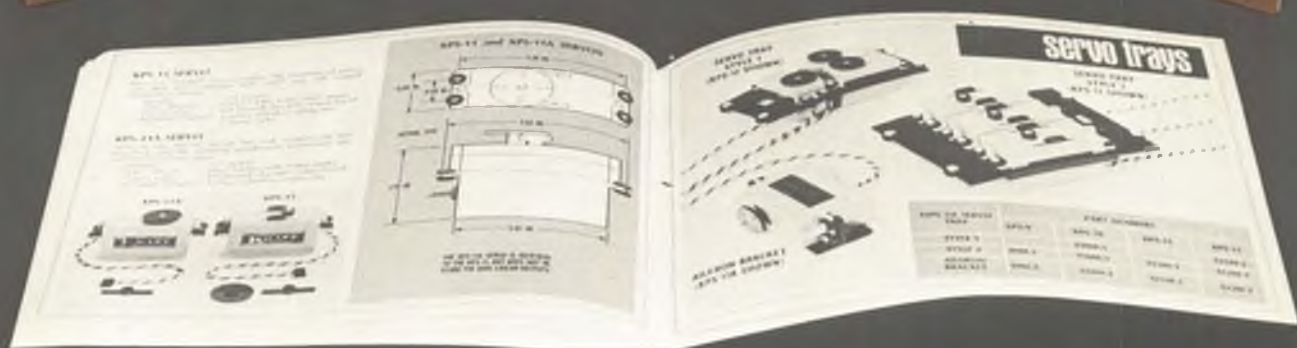
THESE ARE JUST A FEW OF THE MANY, MANY LETTERS WE RECEIVE EACH MONTH ABOUT SUPER MONOKOTE. TAKE A TIP FROM OUR USERS—SUPER MONOKOTE WILL CUT YOUR COVERING TIME TO A FRACTION AND IT'S MORE ECONOMICAL THAN THE OLD SILK AND DOPE METHOD. IT'S BEEN PROVEN . . . MONOKOTING GETS YOU FLYING, FASTER!

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