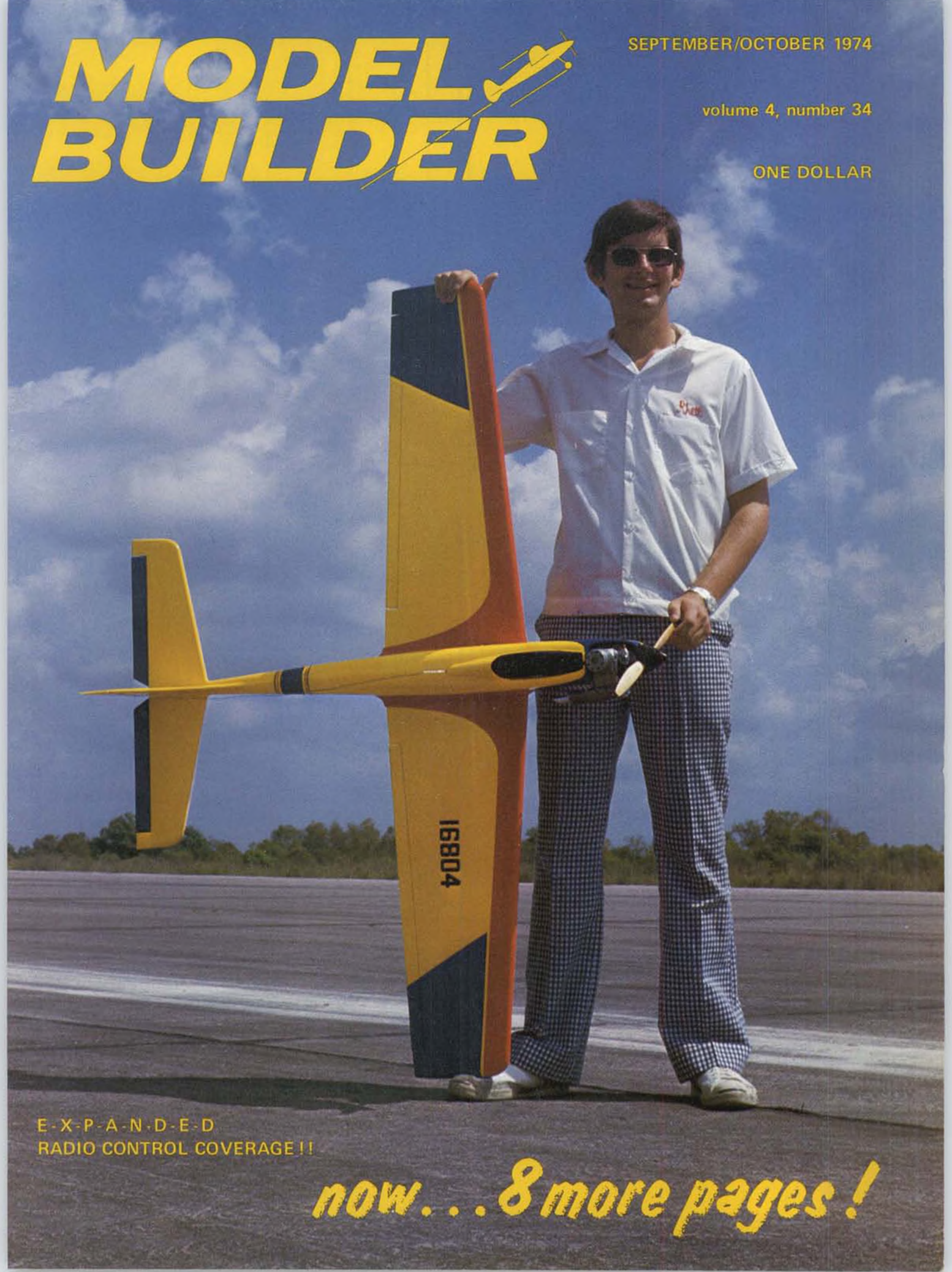
MODEL BUILDER

SEPTEMBER/OCTOBER 1974

volume 4, number 34

ONE DOLLAR



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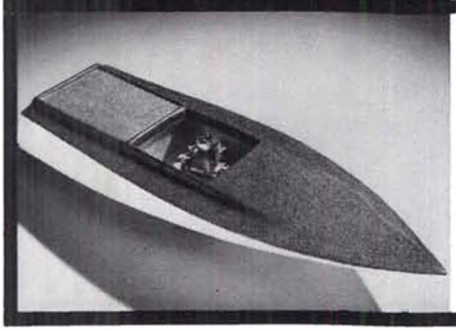

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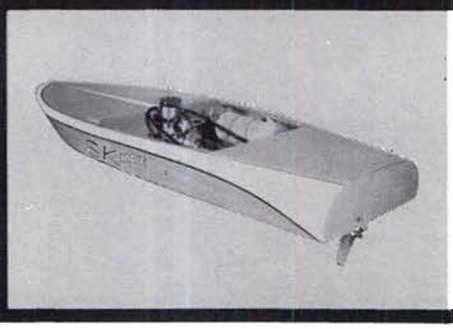

SK Daddle
the big model of a Hallet ski boat for .35 to .65 engines 36" long — #SK-1 $26.95 plywood & mahogany construction

dumas boats

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Tucson, Arizona 85719

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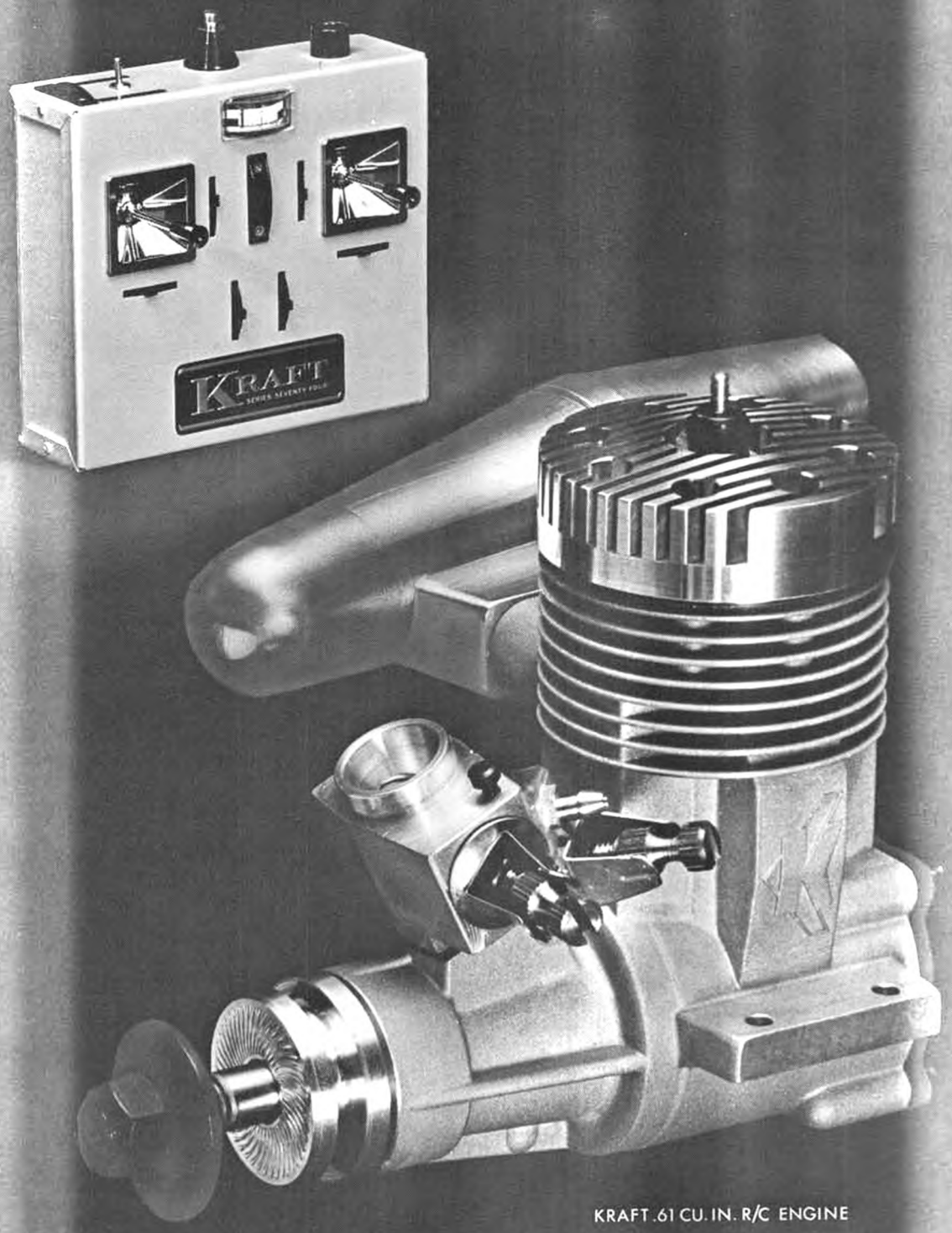

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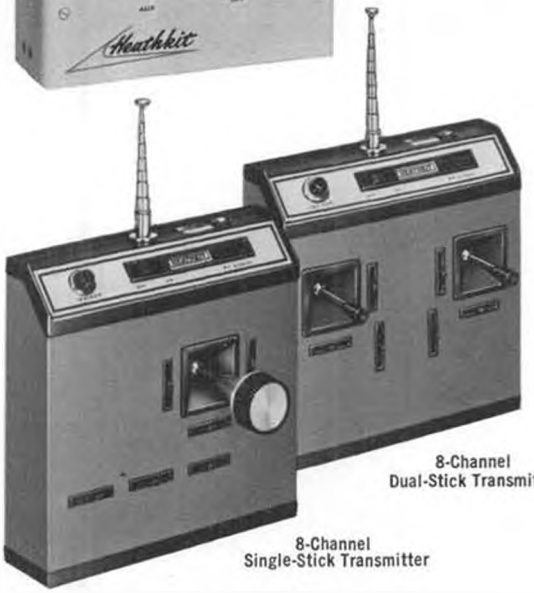

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MODEL BUILDER

SEPTEMBER/OCTOBER

1974

volume 4, number 34

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CONTENTS

FEATURES

SCALE VIEWS

CONSTRUCTION

Cover: For the second year in a row, this young man (now 16) has won a trophy at the AMA Nationals for being the best Senior in Class D R/C Pattern. Of course, that's sort of a tongue-in-cheek statement, because, in the process of winning that trophy, it just so happens that he also wiped out ALL opposition by a clear margin and won Class D-Expert Pattern for the second year in a row! On the vague possibility that you don't know, this is Rhett Miller III, Tallahassee, Fla., the airplane is his own "Compensator" design, powered by Super Tigre, and controlled by Pro Line radio. Ektachrome transparency by Bill Northrop.

"Uh . . . would you bring me another cup of coffee, Stewardess, I just spilled mine. Also, I have a message for you to give the pilot!" John Bungi's DC-3 performs an unannounced, optional maneuver during Sport Scale at the 1974 Nationals. Plane damage was minor.

from Bill Northrop's workbench . . .

ABOUT THOSE 8 PAGES . . .

Have you priced paper towels lately? Or that other paper product that is so essential in homes and rest rooms all over the country? The cost has almost doubled what it was a year ago!

In the face of that, it doesn't seem too sensible to add one-ninth again as much paper to the content of a magazine. However, if we were nuts enough to start this publication in the first place, it doesn't take that much more to fatten it up a bit.

Actually, for the time being, it's just a one-shot deal, brought about by having two big modeling events take place in the U.S. within a one month period, and as a peace offering from us to you for combining two issues.

You will note also that this scribe is once again involved in the writing of an R/C column. As explained in that section of the magazine, we are taking over where Frank Schwartz left off. Sorry to have him leave . . . his efforts have been much appreciated. And what a time to jump in . . . World Championships in R/C Scale, International competition in FAI R/C Pylon and R/C Gliders, and a whole bunch of R/C at our 1974 Nationals . . . you'll excuse us if "Workbench" is a little short this month!

By the way, this does *not* mean there will be any change in the amount of emphasis on free flight, control line, cars, boats, etc. As requested by many readers, we'll keep the mix going as is. After all, modeling is modeling is modeling, whether it's free, on a string . . . or remote . . . and we intend to keep it that way.

While we're on the subject of Model Builder . . . a couple of pieces of business.

We've had some comments about the dirty wires in the issue binders, and have referred the complaint to the supplier. But remember this. When you buy a piece of music wire at your hobby shop, you'll notice that it also has a dirty oily coating on it. This protects the wire from rusting, and as you know, if you build models, it must be wiped off before using, particularly if you're going to solder the wire.

By all means, remove the wires and run them through a paper towel or Kleenex before installing the magazines. After all . . . who would want to smear up any of Walt Mooney's great Peanut drawings!?

As some of you know, we've sold out all copies of our first issue (Vol. 1, No. 1), also September, 1972 (Vol. 2, No. 11). Based on numerous requests, we are considering running a reprint of these issues. In deference to those collectors who have made special effort to acquire original copies of all issues, the reprints, *if made*, will be identified as reprints. The descision to run a reprint depends on your reaction to the idea. Cost would have to be in the 5 to 7 dollar range. Let us hear from you.

LETTER TO MONICA

Speaking of the Nationals . . . and all the publications will for the next few months . . . we think the following essay, written by Earl F. Rodriquez, of Lacombe, Louisiana, sums it up beautifully . . . at least from the point of view of one who came away with pleasant memories. Earl's essay is entitled,

"My Love Affair . . . Monica and the Nats."

"It was a country mile . . . or two or three . . . between the pylon racers and the combat jockeys at the 1974 Nats. And, sprinkled in between, around what has to be the biggest area ever offered the Nationals . . . Chennault Field, at Lake Charles, La., were OT freeflight, hand launch gliders, rubber . . . you name it.

"But in the middle of the huge headquarters hangar, squinched in a table-top formed, U-shaped enclosure . . . there . . . sat my love, Monica. Now you may wonder why I found Monica more exciting than FF Scale, which, because of the wind, never did seem to get off the ground. No joke intended.

"Well . . . to begin with, she was pretty; she smiled, then she willingly looked up my AMA number in the microfiche reader, sweetly gave directions on how to get a replacement membership card "inside the office," and was cool and charming amid the turmoil of headquarters activity that morning.

"Did they specially select her to be one of the public's first contact with AMA? If so, it was a wise choice. Oh, the other volunteers did a magnificent job, I'm sure, but were they as pretty as Monica? In fact, my meeting Monica outshone by another of those country miles the complimentary copy of MB given to me by 'Big Bill.' I believe he calls himself WCN. Taking pictures of old model airplane engines instead of my Monica . . . imagine!!

"Well, all I can say is it was a long walk . . . that '74 affair at Lake Charles . . . to be honest, it was a *long ride* between events. And it was all worth it, 'cause if I didn't "fool around" with those little R/C beasties, I never would have met Monica . . . nor seen:

all look-alike pylon racers, beautiful but static;

all look-alike free flights, combat and (for the most part) U-control;

but:

exciting old-timer models and breathtaking scale, fashioned by the nation's

finest builders.

"So it was a hot, widespread (and that's no exaggeration) contest, thoroughly satisfying to all disciplines of our hobby and all-in-all an exhilirating experience.

"Especially meeting Monica."

Earl F. Rodriquez
Box 175
Lacombe, La. 70445

Influenced by other thoughts, Earl only rather whimsically touches on the one complaint that more or less sums up the 1974 Nats . . . too widespread.

Paradoxically, in past years, when the Nats was limited to one week by the Navy, many modelers talked about having more time to have more events . . . also having more space in which to fly them. Well, this year we had both; more time and more space (plus sub-tropic weather), and yet it didn't seem to come off right. Did the pendulum . . . as is its habit . . . swing too far the other way, or was it a result of poor use of the time and space?

Most modelers competing at the Nats complained about the schedule of events. Many categories straddled the weekend, meaning that contestants had to take their two full weeks of vacation in order to enter all the events of their choice. This was bad news for many, because if vacationing in Lake Charles didn't happen to be your bag, it meant a difficult exercise in maintaining pleasant family relationships.

On the other side of the coin, every Nats contestant wants full and equal time for his favorite category or categories. Unfortunately, if he cannot see beyond his nose . . . or category . . . it is impossible for him to envision the difficulties of trying to schedule all other categories in addition to his.

Just take R/C fr'instance. Formula I and FAI Pylon ran 3 full days, and could not share with other R/C events because all frequencies had to be available to accommodate the intricate heat/matrix system. Quarter Midget Pylon, though provisional, brought out almost 50 contestants and was limited to two half days. Again, all frequencies are required, and next year it could need more time . . . let's say two full days.

R/C Soaring had only two afternoons, possibly enough for the 30 contestants who entered. But, the Soaring Championships, held just a few weeks earlier in Illinois brought out plus or minus 185 contestants and took 3 days to run off! Put that into the Nationals, with all frequencies available *(In Illinois, there were 17 gliders in the air simultaneously at one point in the contest! wcn)* and there goes 3 more days.

Pattern? Yeah, sure, but just a minute! Here come da choppers! Only a few years old, but coming on like Gangbusters . . . and without any national rules as yet, helicopters still had a two day unofficial contest at the Nats with 18 contestants. Think what it could be once AMA rules are established and they become an official category! Figure 2 days, but they could possibly share frequencies with someone . . . you could have two course layouts in operation, but only one chopper in action for each at any one time.

OK, so now we're up to 8 solid days, plus helicopters for two shared days . . . which they won't sit still for if they continue to grow at the present rate . . . Let's call it 10.

Next comes Pattern . . .
What . . . ?

Oh yes, Sport and Museum Scale! Excuse ME! Though a provisional event, Sport Scale at the Nats proved out a trend that many have suspected for a long time . . . The combination of pretty fair flying and pretty fair fidelity makes Sport Scale an attractive event for contestant and spectator alike. And once in the air you can't tell 'em from museum scales . . .

Speaking of Museum Scales, the anticipated shortage at the Nats didn't happen! By registration and processing time, there were 10 entries . . . about 8 more than expected! It might be that one full day of Scale, both types, would be enough, and it would not have to share with Pattern finals . . .

Ah, Yes, Pattern! That finally brings us to the granddaddy of R/C events, the precision aerobatic maneuvers, or what have you. Pattern this year, as in many years past, took 4 days. And with Scale completed, the 20 finalists flew single lines at each site instead of two lines at one site, back-to-back. We didn't check with contestants, but putting all the finalists at one site back-to-back is a lot better for spectators. The other way was typical of the 1974 Nats . . . too spread out.

Anyway there you have it . . . 12 to 14 days of R/C Nats if you want it all together. Whadowedo now?

Still a very active modeler, who brought home some trophies from the Nats this year, Sal Taibi, left, was named to the Model Aviation Hall of Fame at a surprise ceremony during the Old Timer's banquet in Lake Charles. Johnny Clemens, AMA President, center, made the presentation, as Mr. Old Timer himself, John "Daddy Warbucks" Pond, looks on.

HALL OF FAME

Our most pleasant experience at the 1974 Nats occured during the Old Timer's Banquet. At one point in the festivities, AMA's President, Johnny Clemens, announced the addition of another long well known name to the Modeler's Hall of Fame. The honor went to Sal Taibi, who was completely unaware that

Continued on page 79

Doug Early, Mint Julep organizer, receives two "Round TUIT" buttons from Jack Backer and Ray Smith. See text for details.

OVER THE COUNTER

● We tongue-in-cheeked a story in our July 1974 "Workbench" column about being sabotaged by a book which was sent to us courtesy of Dave Linstrum, MAN's Free Flight editor. Little did we realize that Dave had sent us a scoop! The book referred to was "Nothing By Chance," written by J.L. Seagull's author Richard Bach, and now his organization, Creature Enterprises, is producing a solid model kit of the Travelair 4000 that was featured in the movie which has just been released!

If you read that last sentence without batting an eye at the words "solid model" then you're not the old time modeler you think you are. "Solids" disappeared from the model airplane scene well over 30 years ago, and though many old timers have lamented the loss of these kits which provided a much-needed indoctrination to the hand shaping of balsawood, the Travelair represents the first commercial return to this "lost art."

Opening the kit will be sort of a shock to the modern young modeler, who expects to see a barrage of pre-detailed plastic parts come pouring out. In fact, the old timer may be in for a surprise at first, until he really starts thinking back. Depending on which end you open, the first thing to come out may really put you on a nostalgia kick . . . a cast lead radial engine! To completely avoid the plastic scene, the company actually turned up the original molds to make lead engines and props as supplied in the old Maircraft, Falcon, and Hawk kits of the 1930's.

Following this "sinker" will be chunks of unmarked balsa for the fuselage, wings, and tail of the T-air. A card stock pattern sheet is supplied from which profiles of basic parts may be transferred to the wood blocks. An envelope contains the cast metal prop, turned birch wheels, windshield material, and balsa strut stock. We'd suggest substituting basswood from your hobby dealer's model railroad counter for the latter.

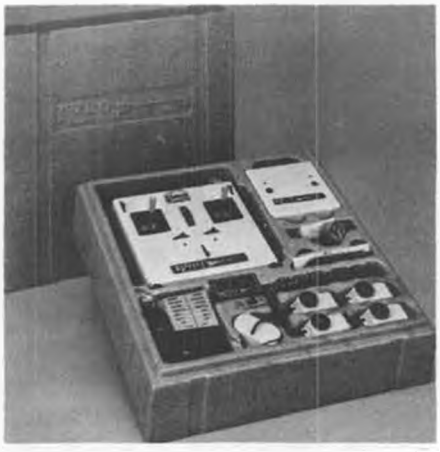
Finally, in addition to a decal sheet, the kit contains full size, well drawn and detailed 3-views of the airplane. Building and finishing instructions are also printed on the 3-view. The kits are available direct only, at this time, from Eckland and Associates, Dept. M, P.O. Box 7555, Van Nuys, Calif. 91409. Price is $2.50 plus state tax and 50 cents for postage and handling.

* * *

Aristo-Craft, 314 Fifth Ave., N.Y., N.Y. 10001 now offers an R/C motorcycle kit which comes with display stand, engine, a driver figure, wheels, hardware, less radio, for $249.95. The driver figure contains a servo that allows the torso to tilt with the sway of the two-wheeled cycle, preventing spills when going in or out of a turn. The bike requires a two channel radio to operate.

* * *

Pro Line Electronics, whose radios enjoy wide use by many of the nation's top fliers, is now offering a new custom-molded polystyrofoam shipping container/display case for its R/C systems. The case has divided pockets for transmitter, receiver, servos, chargers, battery pack, etc., and will also be used to return repaired systems.



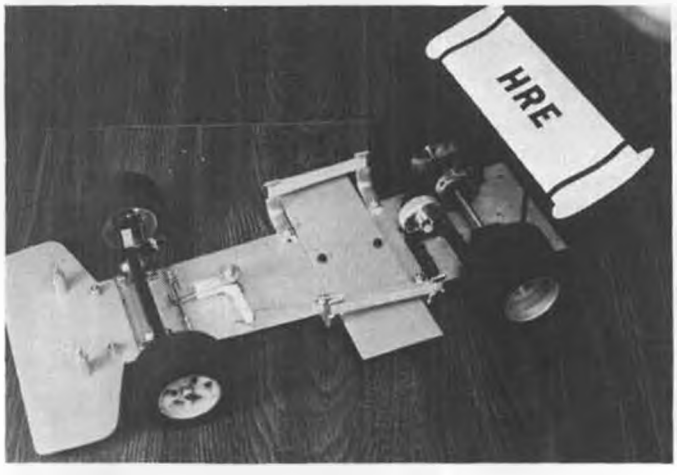
New custom molded polystyrofoam display/ shipping case for Pro Line radios.

* * *

Good nitrate dope, formulated especially for model airplanes, is now available from C.P.M. Products, 11054 Leolang Ave., Sunland, Calif. 91040. Sold in quarts, pints, and half-pints for $2.50, $1.60, and 85 cents respectively, FLO-KOTE nitrate is crystal clear and very high in dissolved solids.

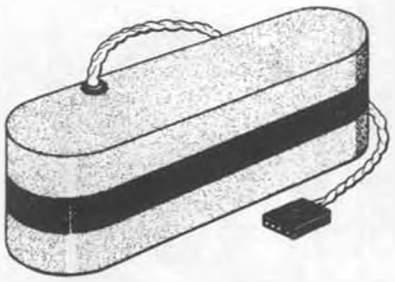
Nitrate is particularly good to use as an undercoat prior to an epoxy finish. Although it is not fuelproof, it does not cause the problems so often encountered with butyrate dopes resulting from escaping solvents which continue to surface for several days after application.

CPM also markets DUO-PLAST, a TCP plasticizer for nitrate and butyrate



Chassis kit from HRE includes all items shown in the photo.

R/C motorcycle kit imported by Aristo-Craft.



KB-4M battery pack by Kraft is small 450 mah weighing 3.3 ounces.

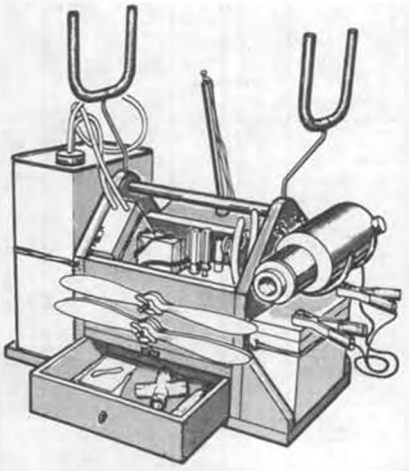
Special prop reamer cuts holes with parallel sides. By Rosie's R/C.

dope. Sold in 15cc quantities for 65 cents each, the plasticizer, when added to dope, helps prevent warping of surfaces by maintaining a resilient, non-brittle finish on your covering material. Since it is sold direct only at this time, write to CPM for information on mail order delivery.

* * *

Carl Goldberg has introduced several new accessory items for all model airplane types.

With strip ailerons so popular, the development of a good servo linkage for inset ailerons has somehow been overlooked . . . until now. Goldberg's 69 cent fitting is designed for rotary output and is extremely flexible in application and easy to adjust.



Handi-Tote Flite Box by Carl Goldberg. Comes in kit form for $14.95

A pair of clear plastic molded aileron pushrod exit guides by Klett, at 69 cents, add a finishing touch to this portion of an R/C installation.

A set of four extra-long (1-3/8 inches overall, 1 inch threaded) J-bolts, with 8 nuts and washers for 59 cents, will find many uses by all types of modelers, and especially control liners who wish to mount wedge tanks on profile models.

The new "Handi-Tote Flite Box" by Goldberg looks like a field box turned inside out! A gallon fuel can and electric starter battery strap to opposite ends, while props and transmitter are attached to opposite sides. A pair of metal hooks cradle the starter, and two more rubber tube coated wire saddles plug into the end plates to support the model fuselage. A drawer and a catch-all open-top center compartment with tool rack, complete the picture. Constructed primarily of 1/2 inch plywood, the box is approximately 7 by 15-1/2 by 9 inches high, but becomes larger once everything is strapped on. Price is $14.95.

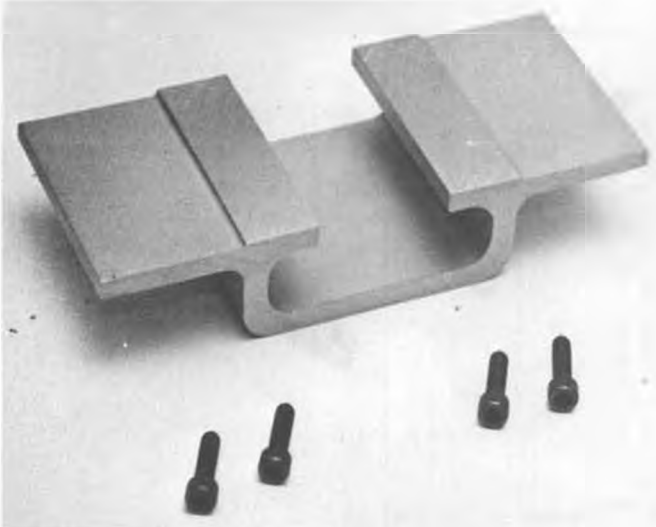
New book of full-size rubber scale model plans. Produced by I. E. Coleman, published by MB.

* * *

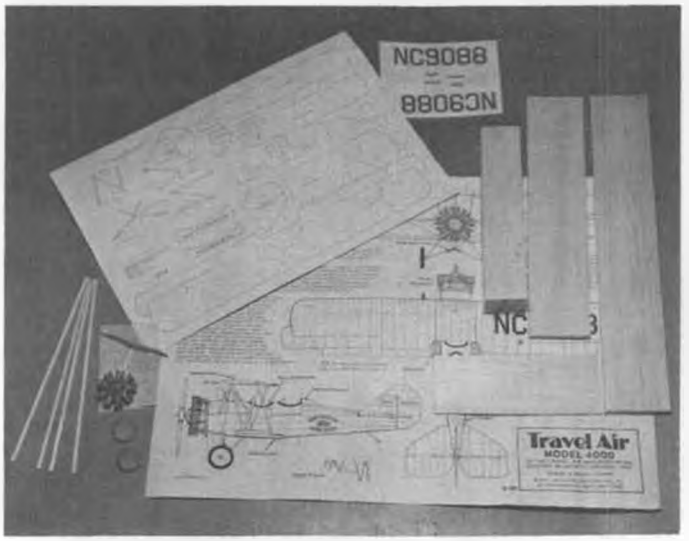
Rosie's RC, P.O. Box 10306, Lubbock, Texas 79408, has a new reamer designed specifically for propellers. Starting with a 1/4 inch pilot, the reamer tapers quickly to a straight 5/16 diameter. Prop shaft holes are thus constant diameter, rather than tapering from front to back. The "T" handle is removable for use with an electric drill. Another unit is 3/8 inch diameter for the K&B 40. Price is $9.95. Try your dealer or order direct by adding 50 cents for postage and handling.

* * *

Kraft Systems, Inc., has come out with a new smaller and lighter nickle-cadmium battery pack that should please glider pilots and pylon racers. The unit measures 3/4 x 1-1/2 x 2-3/4 inches long, weighs 3.3 ounces, and has a 450 milliamp-hour capacity. It can be fast-charged on any standard Kraft charger. Available immediately, the new pack sells for $17.95. *Cont. on page 78*



Octura Models' new "Omni Mount" for boat engines of .19 to .65 cu. in. displacement.



OK, Dad. Solid models are back. Show the kids what is was like in the good old days. Die cast engine from original mold.

During the Hobby Industry Association of Delaware Valley hobby show this June, Leon Shulman and the Central Jersey Radio Control Club presented this pylon racer (Wms. Bros. "La Jollita"), appropriately named "Soloman's Delight," to Matty Sullivan (rt) for his many years of work and contributions to the Academy of Model Aeronautics. Bob Stover, Exec. Dir. of the H.I.A.D.V. (ctr.) looks on.

'REMOTELY SPEAKING...'

R/C News, by BILL NORTHROP

Once upon a time we had a by-line, "Buttons pushed by . . . ." Back then, the button usually operated an escapement. Nowadays it's for fixed roll rate or instant low engine. Wonder what it'll do tomorrow . . . . .?

● Starting this month, your MB editor returns to the job he left 5 years ago while with M.A.N. . . . that of producing the monthly R/C column . . . only this time for MB!

We wish to thank Frank Schwartz for the job he has done for the past year or so and know he'll be happy to have a little more time each month for model building. Why don't you split the extra time 50-50 with Emily, Frank?

* * *

This month we've got to bend our efforts in two directions. In addition to this regular column, we are doing a separate story on R/C at the Nats . . . which you'll find elsewhere. R/C at the Nats is a tremendous undertaking, and getting it all done within a reasonable time is becoming more difficult each year. If you haven't done it already, read our

Nick Ziroli with his Curtiss A-12 "Shrike" which he had designed and built more than a year prior to the one appearing in MB.

Nick's "Shrike" in flight. Plans for Charlie Smith's A-12 were presented in the July issue of MB, and it appeared on the cover.

Don Neill's beautiful Grumman F6F Hellcat placed 4th in Class I AMA Scale at the Nationals. At something around 12 pounds you gotta be carefull how you lift it!

"Phil says if you don't qualify, he's going to take away your Mazerati!" Dave Barry "helps" Tony Bonetti through a pattern flight.

comments on this in the "Workbench" column.

The foremost problem in R/C at the Nats is inherent to the category . . . frequency limitation. We really have enough for local conditions . . . after all, 17 planes in the air at one time creates a new kind of pollution . . . and lots of mid-airs. But at the Nats, where you'd have to have several R/C events going on at one time in order to get it all done, it becomes a real problem. You can't say "27 mHz for helicopters, 72 mHz for pylon, and 6 meters for pattern" because it just ain't so. If you expect to get an event done within a reasonable length of time, you have to have all frequencies available, especially if the Nats is to remain open to all AMA'ers who wish to enter. (If the Nats were a series of finals based on regionals, it might be different, but that's another story.)

All we can say is "A freight car of Hershey Bars to the gentleman in the audience who can come up with a schedule that will allow enough time to fly Formula I Pylon, FAI Pylon, Quarter Midget Pylon, Sport Scale, AMA Scale, Gliders, Helicopters, and 3 or 4 classes of Pattern, all in one week and at one location with no limitation on the number of contestants."

R/C AT WORK

Le Gray sent us a clipping from the August 26, 1974 issue of *Aviation Week & Space Technology* which describes how R/C has made its way into law enforcement. The article reads as follows:

"ARM OF THE LAW

Without funding from the Justice Dept.'s Law Enforcement Assistance Administration, engineering aid from the Air Force or even technical advice from the Federal Aviation Administration, the Jefferson County Sheriff's Dept. in Birmingham, Ala., has designed, tested

Gale Helms, Formula I winner, proved that an exhaust "extension" isn't really necessary.

Bob Noll, Vestal, New York, shows off his new K & B Schneurle powered Stegall Minnow. His first Formula I ship in 3 years, it turned 1:34 the first time out.

Tony Bonetti took first in D-Expert at the 19th Annual Aeroguidance contest at Endicott in July. CD Bob Noll hands out the goodies.

CD Bob Noll awarded special prize to visitor Bruno Giezendanner. He was twice World Champion, from Switzerland.

Bob Knapp was first in Class A at Endicott.

Class B winner at Enicott contest was Lon Sauter.

and is planning for production of a 3-unit fleet of remotely piloted vehicles. The RPVs, which are to be built by reserve sheriff's deputies who are also radio-controlled model airplane buffs, will be able to carry up to 2 lb. of armament, including smoke or tear gas canisters or concussion grenades. Flight tests with the prototype have shown the craft capable of delivering the armament on a target. The department said it planned to use the 6-lb., 60-mph. RPVs to combat such criminal activities as snipers on tall buildings."

Though it would make an easier target for the gun-equipped criminal, just think how much more accurately an R/C helicopter could deliver the goods. One thing sure, there will be a few less people calling our models "toys!"

* * *

Another clipping from Le (yes, sometimes he works, too) is of an ad placed by General Railway Signal Company, a unit of General Signal, Rochester, New York. The ad tells about a radio control system for operating full size railroad engines! Now get this claim. "One man can handle the train . . . spotting cars, coupling, switching. Transmitter is a lightweight packset with a belt-carried control box. Receiver and interfaces to controls are aboard locomotive. *You can discretely control over 100 locomotives all on one frequency . . . no interset interference.*" (We put in the italics.)

Hmmmm. Let's see . . . That means we should be able to control 1700 model aircraft, boats, cars, etc., all at one time and at one location. That sure could cure the crowded R/C frequency problem at the Nats!

1000 BUCKS!

Over our 20 year span in R/C, we've often heard a modeler say that he'd spend almost any amount of money just to get his hands on a totally reliable radio system. And this immediately

Bob Forrest, 1st in Class D-Novice, is from Canada. Pro Line radio, Southern R/C Prod. Sweet-Tater.

Bob Karlsson and his huge TBD Devastator placed second in Sport Scale at Endicott. Note corrugations on wing.

Perennial contest goers, Ed and Louise Izzo. He finished 4th in Class D-Expert. His new ship is called the "Windsong."

Marcel Boulanger, from Montreal, Canada, flew this Southern R/C Products Tiger Tail with Kraft radio at Endicott.

brings to mind our favorite comment, when Space Control, the first commercially available proportional control system, came on the market. Even at $750 a set, it was by today's standards, somewhat . . . very . . . unreliable. Our comment went something like this . . . "If you want to fly more often than once every month, you've got to have 3 Space Control sets; one in your plane, one at the factory, and one in the mail!"

Anyhow, things are much better than that today. But still, there are modelers who are willing to go for the very best, and pay for it. Orbit Electronics, Santa Ana, California, believes in this to the point of doing something about it.

Offering a *LIFETIME* guarantee to the original purchaser, Orbit will soon be making a $1000 radio system. The units will be custom-built to the purchaser's specifications, and will have upwards of 25 extra features not normally available in the average over-the-counter system. Although we have been given permission to make this first public announcement about the system, we cannot yet reveal any of the super-modern technological features that will be included. It has been in development for better than two years.

First official advertisement of the "Super Orbit" will announce a national contest to name the radio, with first prize to be a 6 channel system. Contact your authorized Orbit dealer for more information on the contest.

EK-PRODUCTS HAS MOVED

In case you haven't read the fine print at the bottom of the advertising, EK-Products has moved to 3322 Stovall St., Irving, Texas 75061, phone (214) 252-8680. The company expresses thanks to its customers who have brought about yearly sales increases of 100% or more for the past 3 years, resulting in the need for larger headquarters.

BEATEN TO THE PUNCH

Nick Ziroli, prolific model designer and builder, more or less specializing in R/C Sport Scale, sent us photos and a letter saying that Charlie Smith's Curtiss A-12 "Shirke," published in July 1974 MB, sorta beat him to the punch. Nick has had his Shrike for over a year, but had not gotten around to making final drawings. His only problem with the Shrike is that it apparently has no modesty whatsoever . . . keeps losing its pants . . . wheel pants, that is!

Guess you'll have to fly off concrete, Nick . . . either that or cut the grass a lot shorter. The full size ships had problems with the pants too. On grass fields, following a rain, mud would build up inside the pants, jamming the wheels. With conventional landing gear, it was no problem leaving the pants off, but the Shrikes pants also housed machine guns, so getting caught with its pants down could be doubly embarassing!

THE NSRCA SPEAKS

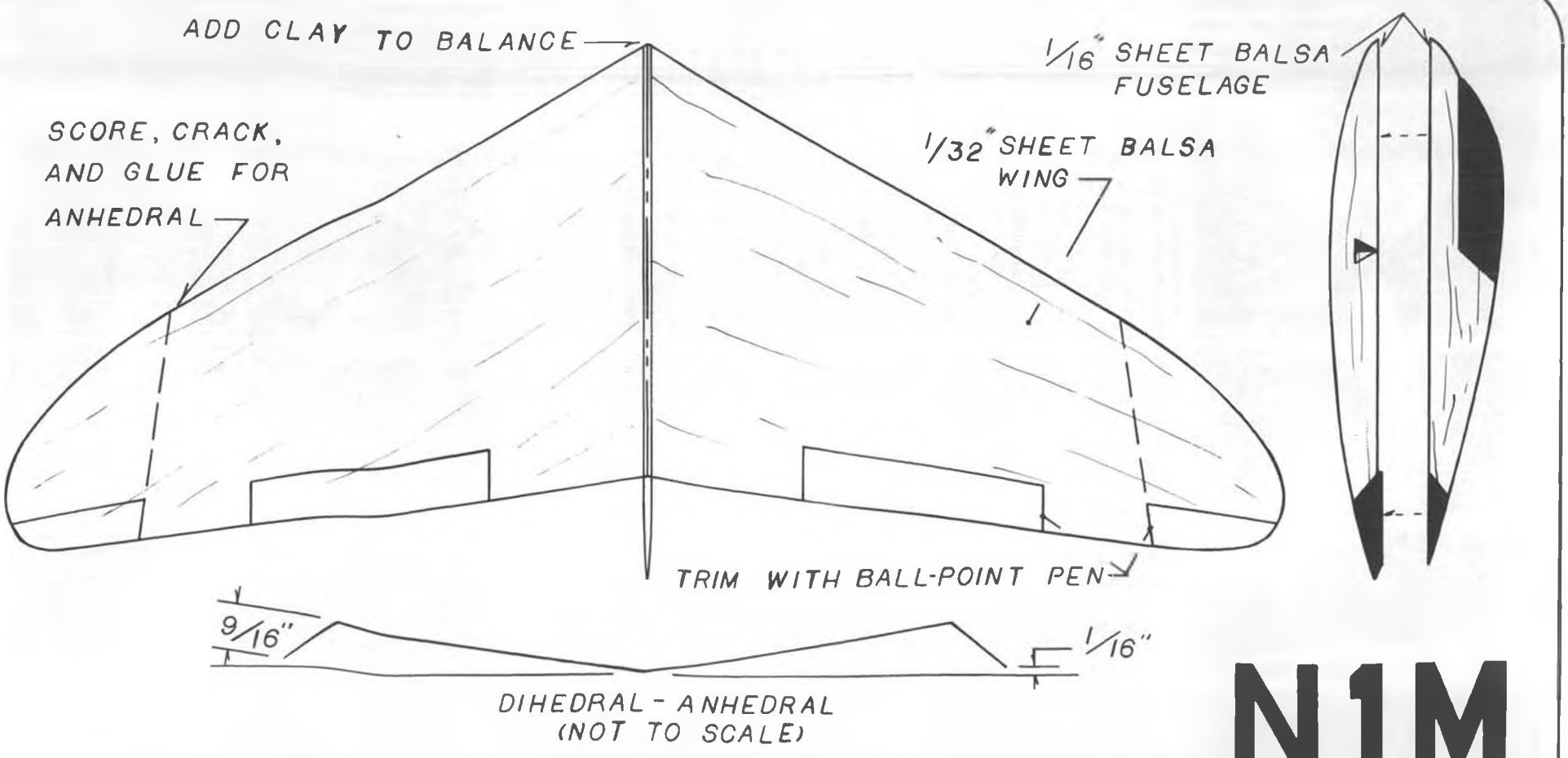
The July issue of "K Factor," newsletter for the National Society of Radio Controlled Aerobatics, edited by Rhett Miller, Jr., posted results of a membership opinion poll. About 25% of the members had responded. Not too bad by most standards. In most cases, the outcome was to be expected . . . competition pattern fliers prefer to fly the FAI, or D Pattern, local contest should include Class A, B, and D, and World Championship rules should be used at The Master's Tournament.

Of special interest were the totals on two of the questions posed. Approximately 84% of those responding were in favor of substituting the National Sport Pattern Association event (for biplanes) in place of the current C Pattern. We suspect that most were of the feeling that only one major precision pattern event is needed, and that one should be the FAI Pattern. Several top FAI fliers have said they would rather concentrate on the one pattern, that diversifying would detract from their obtaining full potential in the World Championship category. Looking at it from the point of view of an AMA Contest Board member, it would seem best to make both events (NSPA and FAI) available to the AMA, as the Board's concern is the majority of AMA members, and not just the minority which has aspirations toward making the US FAI R/C Pattern Team.

Approximately 72% of those responding felt it would be OK to intermix A and B pattern with D during qualifying

Continued on page 57

Bob Nelitz, a Canadian airlines captain took first place in Sport Scale at Endicott with his Kinner Fleet Finch 16B. He was 1973 Canadian scale champion. Beautiful aircraft!



N1M

SIMPLE PROFILE OF EARLY NORTHROP FLYING WING

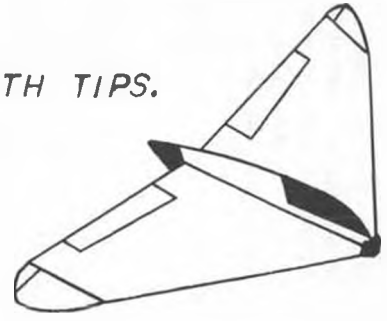
BY

DANIEL WALTON

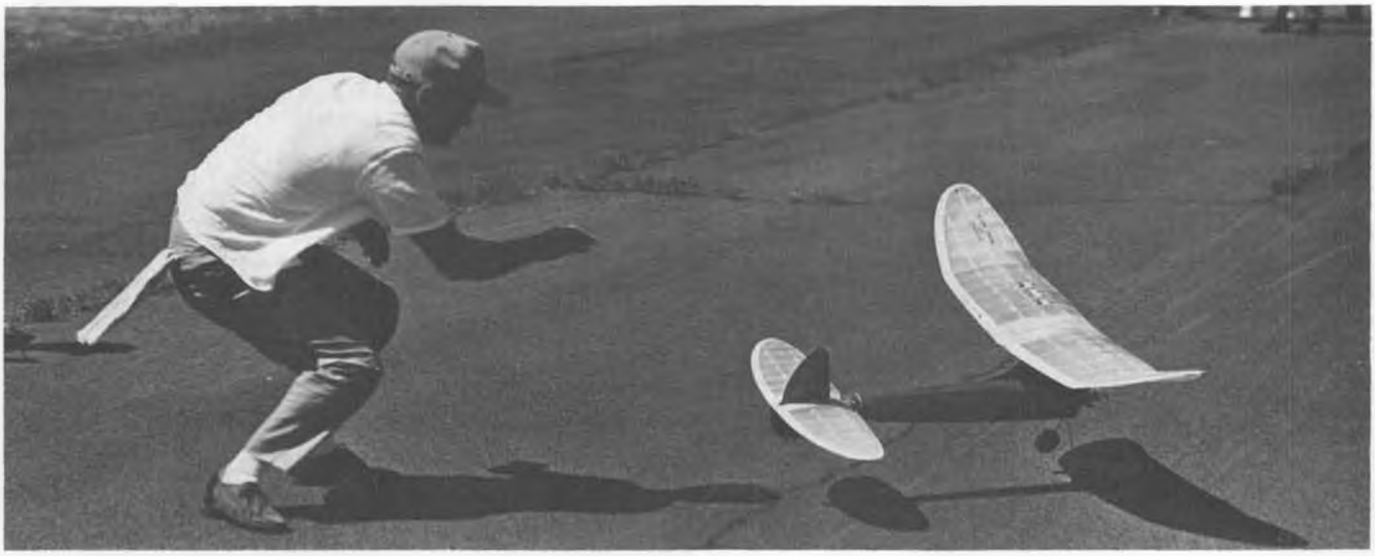
JULY 22, 1974

NOTE:

- ANHEDRAL & TOE-IN MUST BE EQUAL FOR BOTH TIPS.
- USE HARDEST EDGE OF SHEET BALSA AS LEADING EDGE OF WING.
- LAUNCH MODEL WITH RIGHT BANK AT 45° ANGLE.



Additional notes: Refer to Boxy article (Jan. '73) for further building hints. Avoid doping the model. Be extra careful that anhedral and toe-in are equal. Very critical.



Wayne Cain, Grand Rapids, Mich., launches his Arden .19 powered Zipper at the S.A.M. Champs, Lakehurst, N.J. Photo by Jack Humphreys.

PLUG SPARKS

By JOHN POND

● Greatest SAM Championships yet! This cry was repeated over and over, and for good reason. There were 104 competitors at the writer's last count on Wednesday, when 82 had been the all time high. The number of entrants was phenomenal, as the SAM treasury will fully attest.

Then, too, how could you miss with a site like Lakehurst Naval Air Station, completely turned over to the modelers . . . with a guy like Cdr. Jack Bolton as liaison man? Jack did an outstanding job of providing all facilities and every possible comfort for the modeler. The meet had to be a success!!

Full credit must go to Joe Beshar and Woody Woodman, along with Ed Franklin and Don Garafalow, for running an excellent meet. The writer was unable to spot one single glitch! Everyone came to have a good time and darn few went away disappointed (maybe 'cause they didn't win a trophy, but not for the lack of comraderie . . . it was great!).

When you stopped and thought about it, with those great concrete runways how could it miss! It was indeed a shame that the weather man didn't cooperate, as every day featured brisk breezes and sometimes downright windy weather.

The tempo of the meet was set by the Old Timer Eagle Club's bean feed on Monday night. The hosts had everything, including Miller Hi-Life on tap, courtesy of that beer firm! Even with the excellent turnout, there was still food and plenty of beer left over! Imagine a modeler leaving free food! He would have to be really stuffed! It was way past sunset before things broke up.

Bright and early (and I mean early, as the columnist had to start the Texaco Event at 7 a.m.), the contest got rolling. Those who flew early in the morning enjoyed the shorter chases best, of course, thermals were not as strong. In free flight, one had to make a tradeoff to decide how to get three flights, as the

BOLTON PHOTO

THIS is your new S.A.M. President!!?? Joe Beshar comes back after retrieving his Fox. Wonder who retrieved Joe? S.A.M. Champs.

Ed Rangus, Waukegan, Ill., at the S.A.M. Champs with his Lanzo Record Breaker, Spitfire power. Boyer photo.

Tim Banaszac, Whiting, Indiana, and his Super Cyke powered Buzzard Bombshell.

Joe Scuro, Pittsburg, Pa., flew this twin pusher at Lakehurst.

Ron Moulton, Aeromodeller's publisher, proxy flew So-Long for John Haggart of England.

Bob Bisset's OS 20 powered American Ace 54 takes off under radio control. Hez from Baltimore, Maryland.

Fred Collins, Pittsburg, Pa., complete with cardboard mustache, flying his Forster .99 powered Super Buccaneer with radio. Engine swings a 17-6 prop. Note ailerons.

retreiving got progressively longer in the afternoon. Most of those modelers who were able to get in three good flights were assured of a place. Even Joe Beshar brought out his "Fox" design and proceeded to show the writer it was no fluke that the model flew. Despite several tree climbs, Joe was able to place second in Class A. Great stuff! Versatile fellow, this Beshar.

Over on the R/C side of things, Howard Carmen, with his wife as mechanic, won his first event in the Antique Event with his new Powerhouse. As Howard put it, his knees were knocking so hard, the model simply *had* to stay up. Howard attributes the good flying to sage advice, but it was the writer's observation that Howard would *listen* and learn. Not too many like that nowadays. Howard also won the Texaco Event, to show his flying was no fluke. Not bad for a two day showing!

MECA NAT'L "COLLECTOGETHER"

Tuesday night featured the Model Engine Collector's Association (MECA) National "Collectogether" which features displays, engine swaps and sales, and just plain everyday good old bull sessions.

Of course, things were made extremely pleasant by Cdr. Bolton, who arranged for one of the rooms in the CPO club. If things got too hot or dry, you simply stepped across the other side of the room where the many varied forms of refreshment were being served. With such a good location, the Collectogether enjoyed a tremendous turnout of spectators and engine men who just came to see some of the rare goodies.

As an added attraction to those setting up exhibits, a prize was offered by M.E.C.A.. Steve Ditta, of New York, won this easily with his clever portable folding display that seemed to unfold endlessly. Also noted were good displays by Martin Schindler, Bob Cowles, and Mike Cook (Yeah, he's back after all these years.).

MORE COMPETITION

Wednesday morning was practically a carbon copy of Tuesday, and eventually the whole meet had the same weather all three days. Jack Bolton, in addition to all his other duties around the base, found time to again place in two events. He eventually won four trophies! What we need are more model minded Navy Commanders like Bolton. "We" would never be hurting for the use of a good airbase!

The ever-effervescent (try that with a mouth-full of Saltines) Leo Weiss and his smooth flying 7/10 Aristocrat.

Mr. and Mrs. Howard Carman flew Powerhouses with Fox Eagle power. Howard won Antique and Texaco.

Leon Shulman came out with his redoubtable "Zomby" and proceeded to win his event. Leon is still highly competitive and if he had to break your leg to win (or his own for that matter), he would! Results speak for themselves. Lee is a great competitor to watch.

Also among the oldies showing up was the 1935 Texaco Winner, Leo Weiss, with a scaled down version of his "Aristocrat." Although plagued with engine troubles, Leo managed a third in the Antique with that streamline airfoil of his! Model flew great as an R/C. Leo was also greatly intrigued by the author's Texaco Event, though the airfoil simply wouldn't do it in the light lift. However, Weiss became so interested that Beshar, with a gleam in his eye, said, "Aha! Now we've got you hooked" . . . Another O.T. Convert!

Cliff Schaible's Cleveland Playboy Senior R/C gets off with the pull of a Super Tigre .29 with 9-4 prop. A good action shot by Jack Humphreys.

Over on the free flight side of things, strictly gas was held on Wednesday, after three rubber events on the previous day. Well worth noting was the Flying Aces Club members out in force and taking the lion's share of trophies, with Jack Whittles and John Chilmark heading up the parade.

The .020 Replica event has finally caught on back east, proving no exception for a large entry. The first three places were separated by only five seconds!! This extremely popular event is just what the doctor ordered for small fields. The next thing to start up in earnest will be the radio version. Entries were rather light in R/C O.T., as this event suffered from being fairly new.

Most surprising to the writer was that Woody Bartelt managed to win two first places and still had time to take out his Beechcraft for an aerial search of the area for his Powerhouse and sundry other models . . . including Pond's R/C Class C Raider which free flighted beautifully . . . But that's

Cincinnati, Ohio's Jim Miller launches his Swenton stick job from a 1940 Air Trails. Jack Humphreys photo.

Dick Ball, Columbus, Ohio, and a sharp looking Brooklyn Dodger.

Northern Star, vintage rubber design from England, being launched by Paul Roberts, Toronto, Canada. Photo by Jack Humphrey.

And for a switcheroo, Peter Freebrey, from England, launches his 1937 vintage Canadian rubber Record Holder! Humphrey photo.

another story!

The search did uncover three models in fifteen minutes, of which two were picked up immediately. The writer had been in the brush three times previously and was quite aware of the heat and humidity, the wind being unable to penetrate and cool things off. In that line, Hale Wallace suffered a bad case of heat prostration and had to be rescued by a group of modelers. Lesson learned; Never go into the heavy undergrowth without a partner or better yet, several others. Keep contact by voice. And everyone sez the columnist lost his voice yakking too much. Such scurrilous, unfounded statements!

Largest model on the field was not a freeflight, but it might as well have been. Dennis Hentzy produced a Boehle Giant, Ohlsson 60 powered, with R/C. In the breeze, after initial takeoff, the model failed to make much headway, eventually stalling and spiraling down to

regain speed. The flight was of short duration. Too bad, as it was exciting to watch the huge monster battle the wind. The author has full sympathy, as his Ohlsson powered Dallaire 9 ft. cabin barely made headway. After four minutes it was only about three hundred feet forward of the takeoff area.

Fun really developed when Carl Hatrak (Pond's trusty mechanic and henchman) showed up to assist. Informed he was too late to launch the Raider and it had disappeared with the radio switch conveniently turned off, he insisted on organizing a search party. During the search, he climbed a freight train for a better view. The train promptly started up, leaving a startled Hatrak to scramble off as best as he could. Failing to find the model, the Jersey group then adjourned to the campgrounds for generous libations, hangar flying, and renewing old acquaintances. And someone wonders what makes the O.T. events fun!

Hatrak never lost his aplomb. After working with the columnist for a half

Continued on page 70

OLD TIMER Model of the Month

BUHL PUP

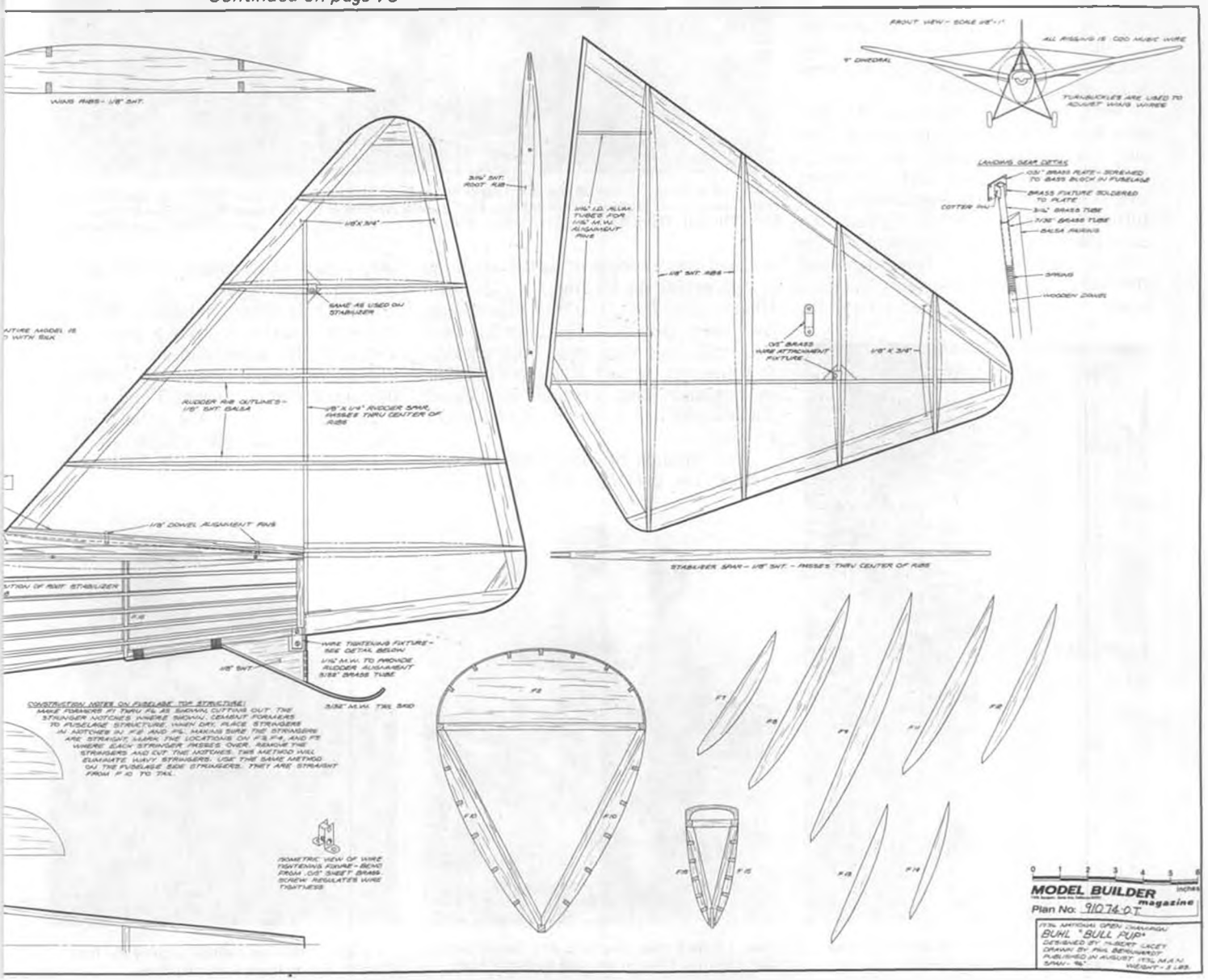
Designed by Hubert B. Lacey
Redrawn by Phil Bernhardt
Text by Bill Northrop

● Plans for this model were first published in the August 1936 issue of Model Airplane News. Typical of the time, the plans lacked a great deal of information, leaving things pretty much up to the individual. However, *untypical* of today, most all of the critical dimensions were given. This was fairly necessary, as in those days, there was no such thing as "Full Size Plans Service."

To add to the mystery in this particular case, no article or photos accompanied the plans. All we know is that it's an 8 foot span gas powered model described as "National Open Champion," original design and model by Hubert B. Lacey, and the plans were drawn by Bill Effinger, dated April 10, 1936.

Knowing that we were to publish drawings of this model, Sal Taibi suggested that anyone building it should reduce the fin/rudder area about 10-15% to eliminate a spiral stability problem. The huge area tends to take over and lock the ship in a turn, which will spiral it into the ground. Plans show the original size.

The model should be terrific as an R/C Old Timer, combining antique with semi-scale. Construction should be kept extremely light, so that the short nose and long tail moment won't cause a great deal of ballast to be added. Wing incidence should be dropped for R/C. We'd recommend setting the flat bottom at zero incidence, which still amounts to a little positive in relation to the centerline of the airfoil. Also, drop the dihedral to about 3 to 5 degrees, and again, reduce the fin and rudder area about 10 to 15%. With this arrangement, ailerons won't be necessary or recommended. Be sure to add 1/16 sheet vertical webbing between wing spars, at least 2/3 of the way out on each panel. The rigging is functional . . . don't leave it out! ●



FULL SIZE PLANS AND STICK 'EM PATTERNS AVAILABLE — SEE PAGE 80

Where'd everybody go? At the height of activity, this is what it looked like at Site B during Pattern Qualifications. In a word, Chennault

RADIO CONTROL at the 1974 AMA NATIONALS

● Some years ago, a strong feeling had developed among active competition fliers that radio control should have its own separate nationals. We remember particularly how strong this notion was back in 1966, following the first special gathering of top pattern fliers in Oklahoma City to select the U.S. Team for the 1967 World Championships. The reaction from AMA officials, however, was strongly against any such proposition . . . all Nats competition should take place at the same time and station *(Naval* Station, that is, up until 1973).

Well, at the 1974 Nationals, R/C Pattern fliers got that wish of several years ago, except they might have picked a different time of year and a different site, if the choice had been theirs. As it turned out, they flew on the last four days (Monday through Thursday) of the official Nats schedule. Free flight had finished up and the contestants had gone home. Control line finished on Sunday and had only a couple of lightly attended minor events on Monday . . . all other Ukie fliers had left. The Nats model shop had been closed . . . Headquarters was still open, but they were busy packing to move out. In fact R/C event officials even found some of *their* equipment packed and had to rescue it at the last minute!

Class D Finalists, 17 out of the 20. Top (l to r): Bob Smith, Jim Oddino, Ed Keck, Jim Osborne, Ron Chidgey, Al Dupler, Steve Helms, Don Lowe. Middle (l to r): Norm Page, Steve Ellison, Mike Mueller, Dave Brown, Jim Martin. Btm (l to r): Bill Salkowski, Rhett Miller, Jim Whitley.

Well, enough of that. We have commented on the Nats R/C schedule in other parts of this issue, so let's get on with the happenings.

R/C helicopters, relatively new on the scene, and not even a provisional event at this time, had its own little private, unofficial "Nationals" on Sunday and Monday, August 3 and 4, prior to the beginning of the official stuff. Due mainly to the efforts of Walt Schoonard, who volunteered (?) to run

Sandra Smith, resident Nats score sheet runner. Well known hard worker.

Host LARKS club members Joe Barnes and John Embry (flying) worked hard for Nats.

"Big Bill" Rutledge collects trophy for best Class A Junior from Kemp Bunting.

Air Force base is HUGE. Even if there HAD been a crowd, it wouldn't have looked crowded . . .if you know what we mean . . .

Photos and text by BILL NORTHROP

The "Brass" pays a visit. Ron Morgan and Earl Witt watch the flying while Johnny tells Duke why Fox engines can't be listed as required equipment in all AMA events.

Anthony Schroder calls for brother Walt "Butch" Jr. Judges (l to r): Jack Spalding, Mason Wood, and Whit Stockwell.

Look close! Those aren't shoes on Lou Penrod's feet, that's jus' ole "Looziana" mud. Photo taken while Lou was flying, shortly after a downpour that just about washed everything out to the Gulf!

"Zzzzzzz . . . dunno about this judgin' bit. Think it was less work flying in the competition. On the other hand, I could be back in my air-conditioned office drillin' on somebody's tooth . . . zzzzz"

the event, 15 chopper pilots from around the USA and Germany (Mike Bosch came over to compete) flew in the contest. A complete story, with photos, will be featured in next month's "Chopper Chatter" column.

Then, on Tuesday and Wednesday, using half-day schedules, events were held for the provisional Quarter Midget Pylon category and for R/C Soaring. The QM's flew each morning, 8 to 1 pm, and the gliders flew each afternoon, 1 pm to 6 pm. Unfortunately, we did not arrive until Tuesday evening, and then it took well into Wednesday morning be-

Mike Mueller demonstrates his technique for placing 6th in Class D-Expert Finals.

Jerry Jackson calls for Jerry Krause as judge Frank Capan tries to look interested.

Mr. and Mrs. Louis Casteneda came up from Mexico to fly in the Nationals.

Class A Pattern winners: Terry Nitsch 1st, Greg Kieliszek 2nd, Bob Williams 3rd, Merle Hyde 4th, Duane Reetz 5th, Clifford Hiatt, Best Senior, and Bill Rutledge, Best Junior.

Class B winners: Tony Howze 1st and Best Senior, Jess Hogan 2nd, Bill Constant 3rd, Dale Adam 4th, Tom Golson 5th.

Rhett Millers Sr. and III on the flight line and making a bunch of points.

Sam Crawford, Bill Eich, and Julie Woods judge a flight by Mike Stokes, who won Class D Novice. Mike's wife, Sharon, stands by to call maneuvers.

fore our luggage caught up with us (courtesy of Texas International, nicknamed "Tree Top Airlines" by one of its regular passengers) and we caught up with MODEL BUILDER's motor home, which had been driven from California by Jed Kusik, Larry and Jim Jolly, and Paul Plecan. Consequently, we missed seeing the Quarter Midget Racing.

The QM event brought out 48 contestants, and Tommy Baker, well known Formula I and FAI Pylon racer from Kings Mountain, North Carolina, came up with the winner's marbles. Old flying buddy Austin Leftwich, a leading QM flyer for several years (see his "Little Gem" QM racer construction article with Brad Shepherd in the March 1974 issue) was second, followed by Danny Dougherty, Bob Reuther, and Dave Pearce.

Hopefully by next month, we may have some comments on QM at the Nats in Jerry Silverman's Pylon column.

R/C Soaring, for reasons both pro and con that could take an article all by themselves to fully discuss, had a relatively poor turn out. One thing that has confused the issue is AMA's allowing the big event in Lockport, Illinois to be called the "Soaring Nats." It has attained national championship status through the efforts of Dan Pruss, and in several previous years, was flown off-site, but in conjunction with the AMA Nationals. This year, however, the first year in which it was an official AMA category, and for the many pro and con reasons mentioned above, it was still held, at an earlier date, in Illinois. As such, it should have been called the "Soaring Championships." It's much the same situation in free flight, where the NFFS Championships (held this year in Taft, California) is not permitted to call itself the "Nationals." Each contest has its winners, and let the recognition fall where

Rusty Van Baren, a member of the Long Beach Calif. B.I.R.D.S club, was 4th in D-Novice.

Being a top Pattern flyer, Don Coleman's performance with his Akrostar was superior. He placed 3rd. Ron Chidgey helps.

One thing obvious about Sport Scale . . . it brings out a variety of aircraft. Let's hope it survives "improvement."

Dave Platt did an excellent flying job to place his FW-190 first in Sport Scale. Ship will be produced in kit form by Dave and Joe.

Dan McCan put on a model size exhibition of Bob Hoover's flying with his model size version of Hoover's Shrike Commander.

Maxey Hester helps Hazel Sigafoose fly her Clipped Wing Cub, a Sig kit model, strange as that may seem. She flew well.

Don Neill taxis his Grumman F6F Hellcat out to the takeoff area. It was a little sluggish at 12 pounds, but managed to fly. Looked great!

Ray Colelli's Fokker D-VII about to touch down. He placed 3rd in Class II AMA Scale.

it may.

The official "Soaring Nationals" was put together and directed by Tom Williams (Texas Tom that is, not California Tom of Craft-Air). Approximately 30 contestants showed (for the time alloted, it's well there weren't too many more than this). Our Nationals winner in the Open Class was Cecil Haga, Arlington, Texas, followed by Gary Gibbs, Ken Cashion, Ronald Vick, and John Gunsaullus. In the Standard Class, the winner was Claude Frost, Lawton, Oklahoma, followed by Paul King, Louis Faerman, William Williamson, and Bill Weesner. Best Senior was Richard Wilson.

It was interesting to note that there were several pylon flyers among the spectators, and though they made fun of the obviously slower pace of the competition, they were quite respectfully intrigued with the winch launching method . . . something most of them were seeing for the first time.

Formula I and FAI Pylon was flown on Thursday, Friday, and Saturday. Form I and FAI split Thursday and Friday and Form I had all day Saturday.

Those who feel that the attraction of FAI Pylon has become somewhat nebulous, if even that, had more ammunition for their argument, as only 28 contestants entered this year's Nats event. Another disappointment was the loss of R/C Pylon's perennial winner and favorite whipping boy, Bob Violett. Bob, who tried unsuccessfully several weeks prior to the Nats to get a ruling on registering late due to his airline pilot's job committment, got the ruling after driving 24 hours straight to Lake Charles and arriving hours after registration had closed . . . No!

Winners in FAI, from first to tenth place were: Kent Nogy, W. Reiss, Tim Pownall, Ron Schorr, Larry Leonard, Adam Sattler, Jim Stegall, R. Brogdon, Jim Booker, and George Zautner.

A unique feature of pylon this year . . . there were no qualifications and finals. The only eliminations came as a result of radio failures and/or crashes. Anyone entered could have at it as long as they lasted, and quite possibly, this had an effect on the results, particularly in Formula I. Quite a few of the "big-

Tom Stark's beautiful Heinkel bought some Louisiana Territory.

Bob Underwood's unusual pancake nose Alcor became known as the "Prop Eater." Retract gear trouble but flew extremely well.

John Alexander's P-38 making one of those beautiful sounding, close-in passes. It simply made your spine tingle to watch and hear it.

John made his own molds for the pod and booms. Additional heat sinks on the engines allowed them to run cool though enclosed.

Yes, folks, that is the new, skinny Sam Crawford, helping Joe Bridi with his Sport Scale P-40.

Bob Underwood's beautiful Sport Scale Stormavik IL-2. Bob also broke the prop on this ship . . . the hard way . . . from the back!

gies" suffered zeros from crashes or engine cuts, thus allowing slower but consistant fliers to come out on top.

In Formula I, the names of Chuck Smith, Bob Smith, and Terry Prather, were not found among the top twenty finishers. Terry, who simply burned up the sky with a new record run of 1:14.9(!) had numerous flame-outs traced to a bad fuel line. Whit Stockwell and many others had times in the low 1:20's, but in a rerun of Aesop's famous tortoise and hare fable, Gale Helms of Forth Worth, Texas, who never put in a faster time than around 1:33 came out the eventual winner.

The way it all happened, and just at the end of 3 days of racing, was both ironic and stunning. Coming into the last round, Leonard and Nogy were tied for first place, were in two different heats, and were both faced with some hot competition.

Leonard's heat came first, and by the second lap it was obvious he was having radio trouble, and it was getting steadily worse. His spike on the monitor was dropping steadily, and by lap five, his ship purchased a small piece of land southwest of No. 1 pylon. (It will be some time before he hears the end of ribbing about transmitter charging!)

Kent Nogy was in the very next heat and seemingly home free . . . but not quite. Larry Leonard stayed with Kent to launch his ship and call for him. As the flag dropped for Kent's plane to go, the unbelievable happened . . . Larry, probably with his mind still partly occupied by his own unfortunate accident, allowed the tail of Kent's plane to lift too high. The prop's diameter immediately changed to about a ¼ inch greater than the spinner, the engine screamed in agony for a moment . . . and then it was all over. The race in the air was anti-climactic.

No one in pylon racing would, for one moment, take anything away from Gale Helms' sudden victory. The same events could have happened in earlier heats, and the results would have been entirely different . . . but they didn't, and it's impossible to predict when they will happen . . . and that's the racing game.

Dan Santich and his 2nd place (Sport Scale) P-47. It's prototype for next Top Flite kit.

Sunday, August 11, was scheduled for R/C Sport Scale . . . period. With only

Terry done dood it again! He and his Dad, Al Prather, hold up the ship that he used to turn a 1:14.9 just moments before.

Manuel Sierra and Victor Colea of Mexico take their racers out to the pylon course. Manuel was 18th in FAI.

Gale Helms, Fort Worth, Texas, winner of Formula I. K&B, reworked by Nightingale, Bandito, Kraft wheels with "O" ring tires, Pro Line.

Best Senior in FAI Pylon was Anthony Galicia, from Mexico.

Tommy Baker, winner of first Nats QM pylon races, was 17th in FAI. From Kings Mtn., N. C.

Frank Capan officiated at FAI Pylon. As for the rest of the caption, you're on your own!

NMPRA's former president, Ed Rankin, Fort Worth, Texas, placed 17th in Formula I.

a moderate turnout for this event (around 30 preregistered, but only 19 entered), and the possibility of only *two* (2) AMA Scale entries, it was decided to run both on Sunday. Strangely enough, after the decision was made, nine AMA Scale entries showed up. Could be that word got around, and the contestants felt they could pick up some hardware.

The fact that the emphasis is on flying instead of building, in Sport Scale, was certainly well illustrated by Dave Platt's win. Dave's flying in scale in previous years certainly left something to be desired, but his models were outstanding. In winning Sport Scale, Dave flew his F.W.-190 extremely well, indicating that he had had more time for practice. Of course, the year-round flying weather in Florida did no harm either.

Dan Santich, who replaced Dave at Top Flite . . . when Dave left to join forces with Joe Hancock and produce kits under the Dave Platt Models label . . . placed second with a beautiful P-47 Thunderbolt, the prototype of Top Flite's next stand-off scale kit.

Don Coleman, for many years in the winner's circle of D Expert Pattern, placed 3rd in Sport Scale with a beauti-

Continued on page 75

Larry Jolly, Santa Ana, Cal., gets his 80-20 from Frank Szekula, fueling official.

Georgia's D. C. May, returns to the pits after a Formula I heat.

Ken Nakamura came all the way from Tokyo and placed 15th in Formula I.

Dave Martin's Hegi Enstrom F-28A, Veco .61, Kraft radio, hovering over a practice field in San Diego, California.

CHOPPER CHATTER

By JOHN TUCKER

NEWS SCOOP

Just received the following press release from Ron Moulton, publisher of RCM & E and Aeromodeller, in England:

"Sixty-five years almost to the day, after Louis Bleriot's historic crossing of the English Channel on 25th July 1909, a model helicopter repeated the achievement . . . in the reverse direction.

"On Wednesday, 17th July, 1974, a radio controlled scale model of the Bell 212 lifted off the lightplane parking area of Ashford aerodrome, Kent at 15:38 hours. It was piloted by Dieter Ziegler, of Munich, who controlled the model from a Bell Jetranger II of Alan Mann Helicopters, flown by Captain Nigel Thornton.

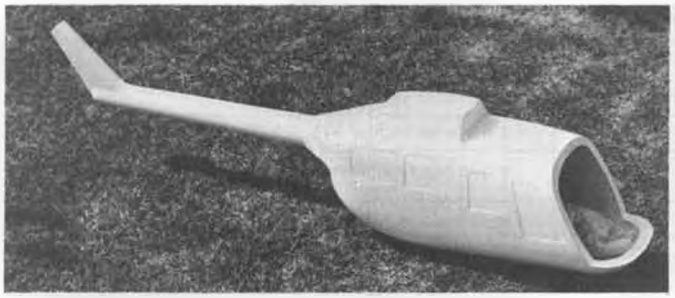
"After a circuitous flight, via Dimchurch to the French coast, passing close to Les Baraques and Sangatte whence Bleriot and Latham had taken off northwards in 1909, the model landed at 16:45 on Ambleteuse, Boulogne.

"During the 67 minute flight, the 10 cc HB Stamo engine consumed 1,535 cc. of fuel. Gross weight was 5 Kg., of which half was taken up by the fuel tankage, sufficient for almost 2 hours flight. On July 13th, the same model helicopter established new World Records at Munich for duration, at 1 hour 45 minutes, and for declared distance, of 57.5 kilometres.

"The model is a lightened version of

Ground shot of Dave Martin's Enstrom. He's a Navy pilot, based in San Diego (La Mesa). Photo above was taken during one of his first flights!

Dave purchased his Enstrom kit while in Japan. Floats by Model Helicopters.



"Sorry, Charlie, you'll never get to be a 'Stah Kist' tuna, no matter how big your mouth is!" The WIK BO-105 fuselage.

Another view of the Bolkow fuselage, with landing gear, looks a little less like a fish and more like a helicopter.

the standard Graupner kit for a radio controlled Bell 212. The normal collective pitch mechanism was replaced by a simplified rigid rotor for the purpose of the record and cross channel flights. Radio equipment was standard Graupner-Grundig Varioprop 12.

"On leaving Ashford, conditions were 15 kts. wind from 340 to 350°, offering a tailwind component to aid the flight. Holding 500 ft. ASL, the Jetranger maintained a distance of 100 ft. from the model, navigating under the light aircraft corridor. Registration was appropriately G-BB'EU'. Ashford-Ambleteuse could have been made within 50 minutes on a direct course.

"The flight reflects considerable skill in pilotage on the part of both Captain Thornton and Dieter Ziegler. It also illustrates the technical achievements in the model field.

"Most surprising to official observers was the reaction of British and French Customs officials to this historic occasion. The British Customs dispatched the flight as though it was an everyday occurance. French Service des Douanes looked upon the arrival of Mother and bebe helicopters as Bleriot re-born, signing their voluntary inscription of certification on the model fuselage with obvious delight at having witnessed the landing. *"L'Europe n'est pas plus une ile."*

"The Channel flight was organized and sponsored by RipMax Ltd., distributors of Graupner model equipment throughout Gt. Britain, and who has already announced their intention to stage a cross-Channel model helicopter in 1975."

How's that for something to shoot at? Anyone for Los Angeles to Catalina? Or how about a transcontinental record from the Atlantic to the Pacific? (Via the Panama Canal!)

PRODUCT REVIEW

As most of you who read MODEL BUILDER already know, the latest R/C helicopter kit from Germany is the Bolkow BO-105 by WIK, imported through Midwest Model Supply. At first glance, it appears to be a duplication of the Hegi-Cobra kit, complete with Schluter mechanics! A second glance, however, will immediately point out several different features, including modifications to the clutch assembly and an adjustable pitch feature which many modelers will appreciate. And, of course, the fuselage doesn't look too much like a Cobra, being quite bulbous, with a long, slender tube supporting the tail rotor.

The kit comes in an enormous box, most of which is taken up by the polyester fuselage. The mechanical parts components are neatly segregated into molded trays for easy selection during construction. I was particularly pleased to see the one piece windshield unit which, when assembled according to the instructions, will provide a huge opening for "two handed" servicing and adjusting of all internal mechanisms. Even the seats are molded from durable plastic and are designed to separate the mechanics from the cockpit. You "scale-birds" will have a ball with all that room, unobstructed by radios, servos, wires, etc.

In physical dimensions, the BO-105 is about the same size as the Kavan Jet Ranger, except that there is considerable more space in which to install the drive unit and radio equipment. As can be noted from the photos, the vertical fin area is rather small, so you can expect very little "weather-vaning" effect in-flight and good rudder control. The landing gear is assembled from preformed aluminum tubing and attached to the fuselage by the use of cleverly designed nylon brackets in conjunction with rubber shock mounts.

The main and tail rotor blades are finish-shaped for quick assembly and all that needs to be done is to lightly sand and cover with the pressure sensitive sheet material supplied in the kit. An aluminum blade adjustment gauge is supplied for ease of setting in the initial pitch angles of both the main and tail rotors.

"See-Saw" and blade attachment for the Bolkow helicopter kitted by WIK and imported to the USA by Midwest Model Supply.

Neat packaging of the mechanicals for the Bolkow is a great help during assembly. Rotor head features adjustable pitch.

R/C HELICOPTER DATA LIST

MANUFACTURER	KIT/PART	ENGINE	WEIGHT	ROTOR DIA.	REMARKS – NOTES	APPROX. PRICE
Du-Bro	Shark	O&R 1.34	14 lbs.	52-1/4"	Kit includes engine	$350.00
Du-Bro	Hughes 300	O&R 1.34	14 lbs.	57-1/4"	Kit includes engine	$350.00
Du-Bro	Whirley Bird 505	K&B .40	3.8 lbs.	46"	Torque reaction chopper	$125.00
Hegi	Enstrom F-28A	.61	11 lbs.	60"	Very stable machine	$359.95
Hegi	Bell Huey Cobra	.61	11 lbs.	60"	"Old Faithful" - Excellent for first chopper	$389.95
Kalt	Jet Ranger	.61	9-11 lbs.	55"	Kit includes engine	$395.00
Kalt	Bell Huey Cobra	Enya .45	9 lbs.	50"	Kit includes engine	$399.95
Graupner	Bell 212	H.P. Stamo .61	10-13 lbs.	63"	Convertible collective pitch. Kit includes engine	$425.00
Graupner	Part No. 92 Bell 212				Main rotor shaft modification (raises rotor disk).	$36.00
RCH Inc.	Bell Jet Ranger	.61	8-9 lbs.	60"	Lightweight "performer"	$375.00
Wik	BO 105	.61	11 lbs.	63"	Report in this issue	$395.00
MRC-Kalt	Bell 212	.61	10-15 lbs.	67"	Excellent scale . . . sliding doors	N.A.
Schluter	Gazelle	.61	10 lbs.	63"	Convertible collective pitch	N.A.
Kavan	Bell Jet Ranger	.61	10 lbs.	63"	Collective pitch rotor Deluxe kit & accessories	$400.00
Kavan	R/C Access.				Electronic Gyro Fuel warning lights Navigation lights	$50.00 15.00 12.50
Kavan	Alouette	.19			In production soon	N.A.
Lenco	100	.61	9.5 lbs.	59-1/2"	Convertible collective pitch	$285.00
Hiness	Hughes 500	Twin cyl. .44	9-10 lbs.	56"	Collective Pitch. Fuselage available separately	N.A.
Micro Mold	Lark	.23			New British kit in production later in year.	N.A.
Model Helicopters	Scorpion Too	.61	7 lbs.	63"	Production late in 1974	$300.00
D&B Models	Training fuselage				Excellent trainer set-up for Kavan and others	$34.95
H.B. Veco	Engine	.61			With Perry carburetor and special R/C chopper muffler	$95.00
H.P. Stamo	Engine	.61			Equipped with rear case blower assembly (per Graupner Bell 212)	N.A.
Model Helicopters	Floats				5 oz. double-wall 8 mil vinyl Patch kit available	$16.00 $1.00

As mentioned earlier, the entire mechanical system is Schluter designed and directly interchangeable with parts from other similar helicopter kits. This should make it easy to "maintain" from a replacement viewpoint . . . and it certainly is the most reliable to date. Some changes are worthy of inclusion in this review; for instance, the clutch assembly now consists of two replaceable micarta segments which are spring loaded for positive action and easily replaced when worn. A small contact shoe is cemented to the segment for contact with the clutch bell-housing.

Another innovation is the one-piece molded transmission plate to which is bolted the engine, clutch, and gear box. And you don't have to "shim-up" the engine for proper alignment since the engine "end" is already shimmed in the molding. The cooling shroud has extended side area for additional cooling benefits.

The Cardan rotor head assembly has been modified to the extent that the see-saw is a healthy 15mm thick, primarily to permit the use of adjustable blade holders which are inserted into the see-saw. These blade holders may be rotated in the head and locked in place by compression, thus permitting easy adjustment to any desired pitch. The blade holder shaft is grooved to straddle the compression screws so that they are held securely in place, thus preventing blade "fly-off" at high rotor speeds (see photo).

About the only disappointment in the whole kit is the printed parts sheet and the instructions. The 13 x 28 inch plywood sheet contains some 20 odd printed formers which must be sawed to shape. The wood is excellent and the printing is clear, however, I have a built-in rejection factor when I have to spend an hour or two bending over my jig-saw to cut out those parts which could easily have been die cut! Although the plans are excellent, the instruction manual leaves a lot to be desired. Two manuals are furnished; one in German, and the other is an English translation less photos, etc., and there is much room for improvement in the translation . . . the words just don't come out the right way. I must admit the instructions are adequate for any modeler worth his weight in balsa wood, particularly if he has previously constructed another chopper, however, I wouldn't recommend it as a first kit unless you had a little help available from another source.

All in all, it's a fine looking machine and one which should provide trouble-free service for some time to come. Due to these features and its inherent good looks, I predict it will be a popular model for sport flying.

R/C HELICOPTER DATA LIST

The information listed in the chart has been compiled to acquaint R/C helicopter builders with the known kits on the market at the present time, and in addition, a few kits for which little information is known as to availability, production dates, etc. Also bear in mind that the listed prices are approximated since they fluctuate with the market, and from shop to shop!

NEW PRODUCTS

How 'bout something to make your life a little easier? Then you should try

Continued on page 68

Not exactly a pylon ship, but you'll have to admit, it's a little different! Jerry takes a detour from pylon this month to tell of his first experiences in flying an RPV (Remote Piloted Vehicle).

pylon

● This month's article is quite different from any I have written in the past, as I generally devote most of my interests towards Formula I, or at least racing in general. This month, however, I feel the urge to write about the unusual, different and sometimes, I think, unnatural.

Last month, I was given the opportunity to watch and even participate in the flying of an R.P.V. The first thing may come to mind is, "What is an R.P.V.?" Well the precise name is "Remote Piloted Vehicle". That may not seem entirely different from what most of hs have been flying for many years, however, let me assure you that by the time the story unfolds you will certainly see the difference.

The whole thing came about when Jack Hertenstein, a close friend of mine, asked me if I would be interested in going to Fort Irwin and watch. Naturally I couldn't refuse. Jack, as many of you know has, been racing Formula I for many years and, coincidentally, was the person who introduced me to Formula I three years ago. As he began to explain how everything works, I found myself becoming more and more interested.

The next morning I met him at Developmental Sciences Inc., the company that has been doing the research and development on the R.P.V. project for many years, and is certainly far ahead in this state of the art. Jack first introduced me to the company president, Dr. Gerald Seeman, and their chief engineer, Howard Krachman, along with Dr. Gordon Harris, the head scientist.

Following these ammenities, we next went to the laboratory where the magic plane was being prepared for the upcoming flight. The first look was enough to set my mind to thinking that these guys were nuts! The plane is completely different from what I had imagined. It resembled a flying wing, somewhat. There is, however, a short fuselage, about four feet long. The R.P.V. weighs approximately 100 pounds ready to fly. The wing span is 13 feet and the wing loading is quite high. The next thing that caught my eye was the engine. It was on the wrong end! That is, if you're used to seeing it on the front. That's right it's a pusher. On the front end is the TV camera. That's the next thing that entered my mind. Why do you need a TV camera? Well, that is how this confounded thing is flown. Just imagine what it would be like trying to race Formula I through the eyes of a camera. Thoroughly amazed I began to ask several questions and the answers were quite enlightening.

First of all, the plane is equipped with a Kraft seven channel radio that has been somewhat modified. The antenna has been removed and connected externally to an amplifier that will now give it range that is much much greater than we are used to. Probably in the neighborhood of 50 to 75 miles.

The engine is also somewhat different than we are used to. It is a 15 horsepower McCulloch chain saw variety that also has been modified. The carburetor came from a motorcycle engine and it turns a prop about 8,000 rpm to, produce it's full horsepower potential. In the fuselage is nestled enough fuel to last for about two hours of flying.

Also in the fuselage, between the engine and the TV camera, are amplifiers,

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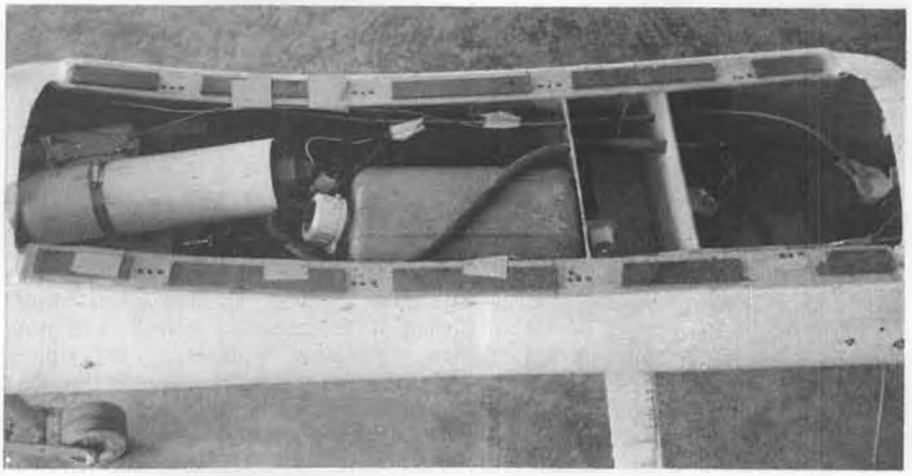
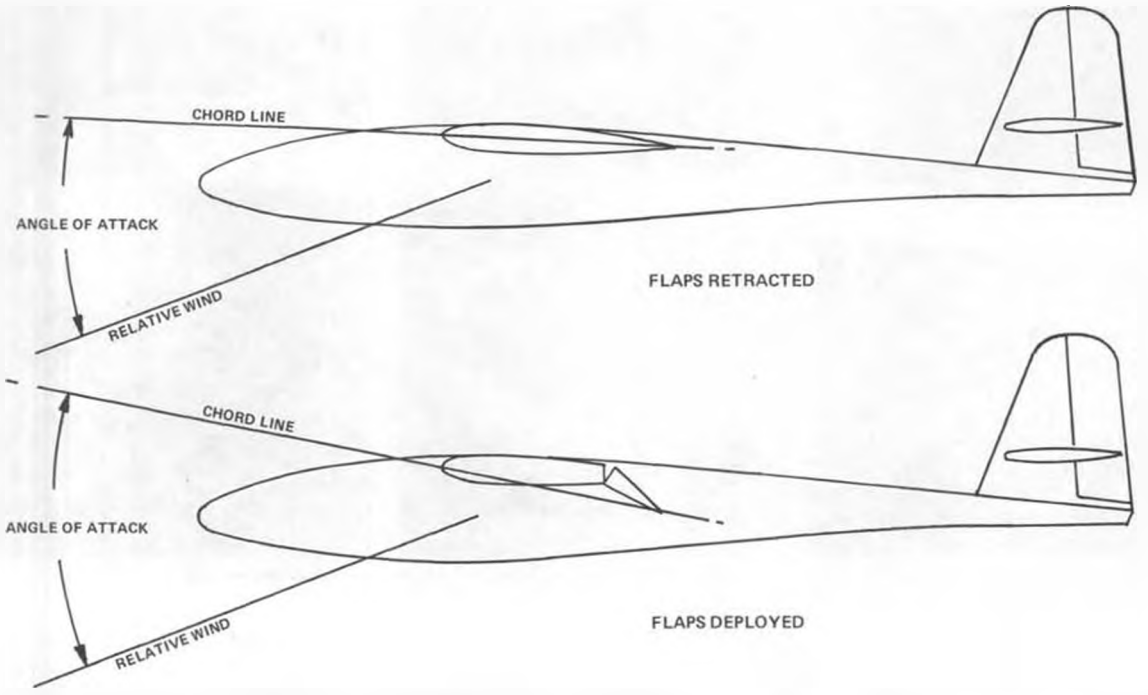


Don't know what all that stuff is in there, but there it is, anyway. Judging from the text, that round gadget is apt to be a TV camera.



Comparative Angle of Attack: Common glide angle with flaps retracted and deployed.

R/C SOARING

By LE GRAY

Flaps and spoilers . . . auxiliary controls for precision landing approach and touchdown . . . or why make a big flap and spoil a good thing . . . or, not all birds flap, some spoil (Oh, that's foul!)

● If there were a controversy in R/C soaring . . . and if such controversy were characterized by heated oratory . . . the subject of such hypothetical raging controversy probably would be the relative merits of flaps versus spoilers. However, there is no controversy, raging or otherwise, on said subject within the R/C soaring fraternity. A few differences of opinion might be sounded . . . though hardly impassioned . . . and the majority of sportsmen probably don't give a damn one way or the other. But it's a shame to waste such a dramatic leadline, so let's kick it around for awhile.

Sooner or later almost every R/C soaring pilot gets a hankerin' to upgrade his precision landing proficiency. The motivation for this can be any of several reasons. It might well be that competition fever has set in; spot landing points are important. Maybe it's pride . . .a long walk for retrieval can be embarassing. Safety can be a valid reason; if you can't land it where you want it, it ain't under control. Perhaps the closest available flying field is surrounded by a windbreak of trees or has other vertical obstacles that prohibit long, easy letdowns. Then, too, when the larger, faster sailplanes are in ground effect, they seem to have built-in float, and often cover more real estate than is comfortably available. Tight turns at low altitudes can be the initial phase of a major rebuilding project.

Any device that automatically upgrades landing ability can be very attractive. Why expend time and effort to improve piloting skills when a bit of electro-mechanical magic can provide an instant solution? But this kind of reasoning leads to disillusionment. It's the old story of "something for nothing" and "getting what ya pay for" with maybe a little "silk purse and sow's ear" thrown in for flavor. There isn't an easy answer . . . there's no substitute for talent . . . and, certainly, neither spoilers nor flaps guarantee instant spot landing expertise. Honest.

Spoilers or flaps can add more than just complexity and weight to an R/C sailplane, but no matter how ingenious the device, appropriate piloting skills are required if it is to be of real benefit. Look at it this way. Unless the requisite flying techniques are demonstrated, all that spoilers or flaps can do is cause a landing to occur at some place other than if the auxillary control had not been deployed. Nothing says that either place will be the desired target point. On the other hand, the skillful pilot can utilize either system to effect more accurate placement of glidepath and landing touchdown than is possible with only elevator control.

It should be recognized that the use of flaps is not limited to landing approach control. Slow flight capability for thermalling and reduced turning radius is also important. Some pilots fly the launch with partial flaps, utilizing the highly undercambered airfoil for greater climb ability at slower winch speed. Certain full-scale designs offer negative flap setting . . . trailing edge "up" . . . of about 5 degrees, and claim it gives better high speed performance for cross country and thermal jumping runs.

The function of spoilers is highly limited and primarily for landing approach control, though they can be useful for rapid descent or to break free from unwanted lift . . . such as the Killer Thermal. However, to keep the flap versus spoiler controversy to a workable level of discussion, consider the exclusive purpose of either system to be that of landing accuracy.

This flaps/spoilers thing is not unique to R/C sailplanes. Similar divergence of opinion exists for man-carrying vehicles, too. Historically, European designers of full-scale craft seem to favor the flap concept, whereas American configurations have featured spoilers. This variance has not been universal, of course, and it is less prevalent today than in earlier years.

FAI regulations for full-sized competition vehicles only recently have allowed flaps on other than Open Class sailplanes. With revocation of that arbitrary restriction, Standard Class sailplanes can reflect aerodynamic rather than administrative genius. The landing drag . . . or drogue . . . parachute is a further option that is available to designers of riding-in type sailplanes, but it seems to offer little practical value for R/C craft.

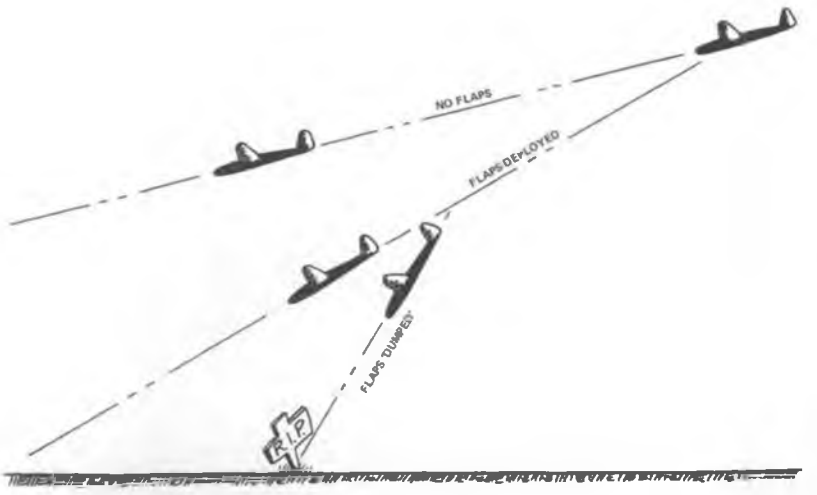
Both "flaps" and "spoilers" are generic terms, and each system has many variations. A flap, for example, might be a simple drag flap or a very complex lift augmenting device. It might be a split flap or a trailing edge, hinged flap. It could be an area increasing Fowler flap. It could encompass drooping ailerons. It might incorporate a spoiler component at extreme angles of deflection, or have automatic coupling with spoilers. It could progress from a lift to a drag function. It can be a combination of several features.

The spoiler concept has few options. Spoilers can be vertical fence or hinged panel type. They can be balanced . . . located on both top and bottom wing surfaces . . . or single surface . . . top of wing only. The structure can be perforated or a solid plate. Most commonly, spoilers are simple lift disturbing units, but they can be speed limiting or even terminal velocity dive brakes.

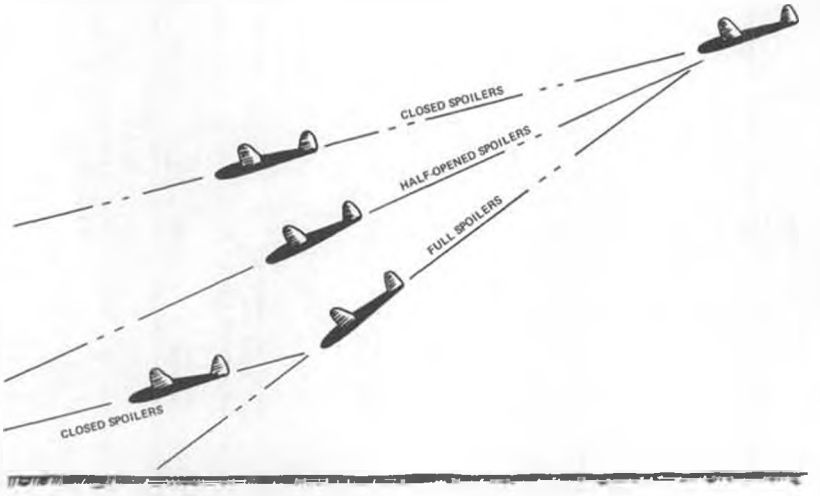
Basically, any flap system is a *speed* reducing mechanism, whereas the spoiler is a *lift* reducing device. Whether the flap allows reduced flying speed by increasing lift or increasing drag . . . or both . . . is of no immediate interest.

A deployed flap changes a wing's airfoil section and thus, its lift/drag characteristics. If such deployment increases the lift component more than the drag component . . . which is reasonable at modest angles . . . less airspeed is required to support the weight of a given sailplane. This permits a relatively slower landing approach without danger of stalling. The pilot has more time to analyze, judge and correct the vehicle's flight path. This does not guarantee greater accuracy in landing, but it does give the pilot a better opportunity to work and resolve whatever problems may develop during the critical final approach and touchdown.

The slower flight speed for a given lift value, as allowed by flaps, permits a shorter final approach than does a similar lift value produced at higher speed. Reduced forward velocity means that less ground is covered in a specified period of time. This is very technical stuff having to do with speed multiplied by time and equalling distance. Also, note that the increased ratio of total lift to weight usually results in a slower rate of sink . . . at a reduced glide ratio. That is, the deployed flap mode of flight provides a slower descent, but at a steeper descent angle than does the clean wing mode.



Final approach glide path with various flap settings.



Final approach glide path with various spoiler settings.

When a flap is deployed to an extreme angle . . . say greater than 45 degrees . . . it is primarily a drag inducing device. Very little additional lift can be expected from this configuration.

The drag flap allows very steep approach angles without buildup of speed. Literally, a drag flap is an air brake, and it requires a pronounced nose down attitude for maintenance of adequate flying speed. This arrangement can be most helpful when landings must be made over ground obstacles . . . or the available area is limited . . . or the desired landing target has been approached with excess altitude. Any flap angle upsets an aircraft's pitch attitude and trim. Appropriate compensation must be made for the revised flight characteristics. Flaps "down" cause nose "up."

Probably every flight instructor has a story about the blank-expression response of a Dummy Student (DS) when said student was told to "Change the aircraft's angle of attack, but leave the nose where it is, right on the horizon." A seemingly unreasonable, if not downright ridiculous request. After a moment's thought, DS decides that he has been fed a trick question. He smiles acceptance of the new plateau of camaraderie being offered by his mentor. The Hero Instructor, with much aplomb, reaches down and pulls on one notch of flaps. The resulting nose-up pitch reaction is deftly countered by the happy student's forward pressure on the control column . . . to keep the nose on the horizon. About then, DS knows he's been had.

Angle of attack can be defined as the angle between the relative wind and the airfoil chord line. The chord line is an imaginary line connecting an airfoil's leading and trailing edge center points, and DS realizes . . . a little late . . . that by deploying the flaps, the instructor lowered the airfoil's trailing edge, and, thus, the aft point of the chord line. The new chord line, connecting the

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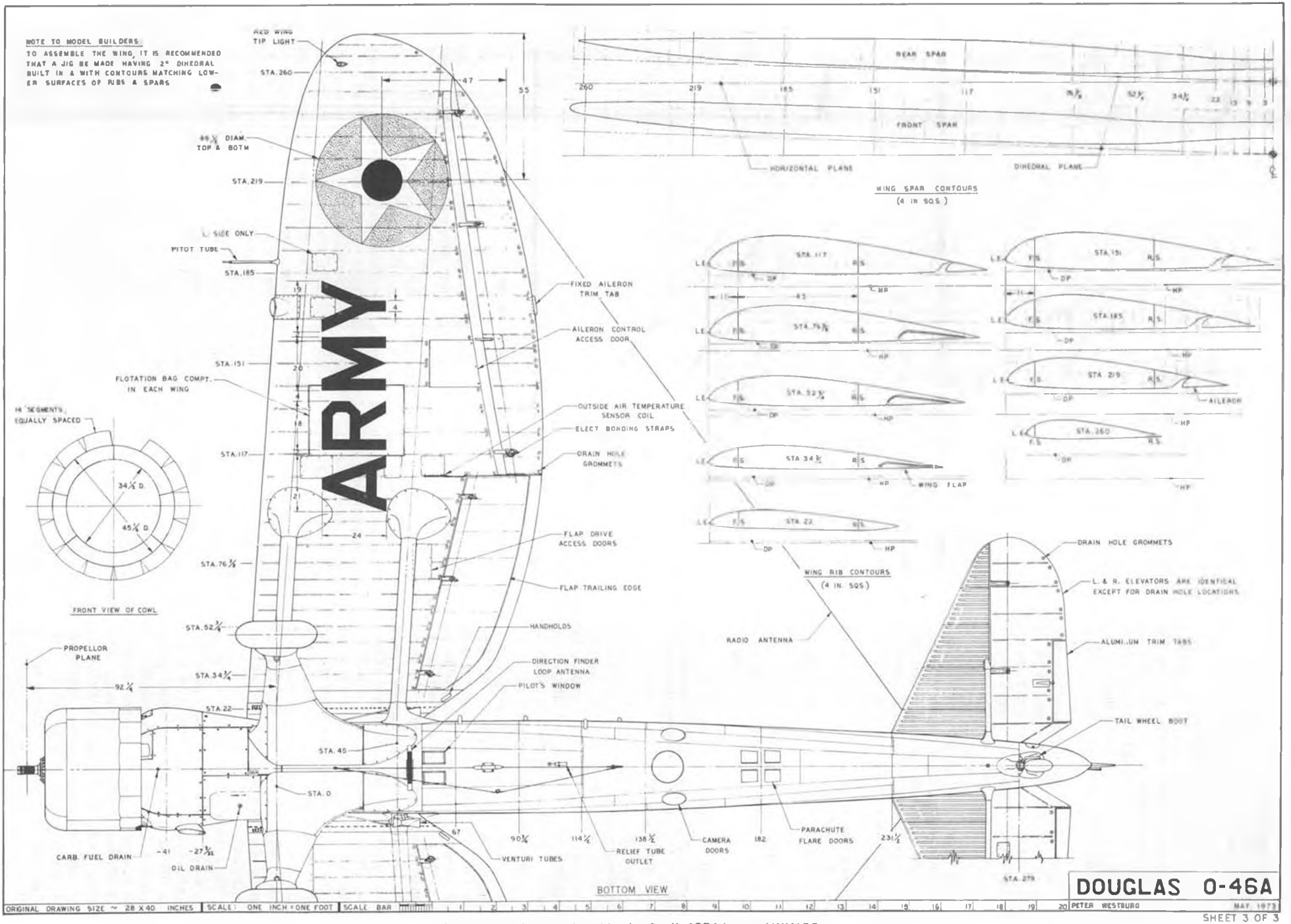


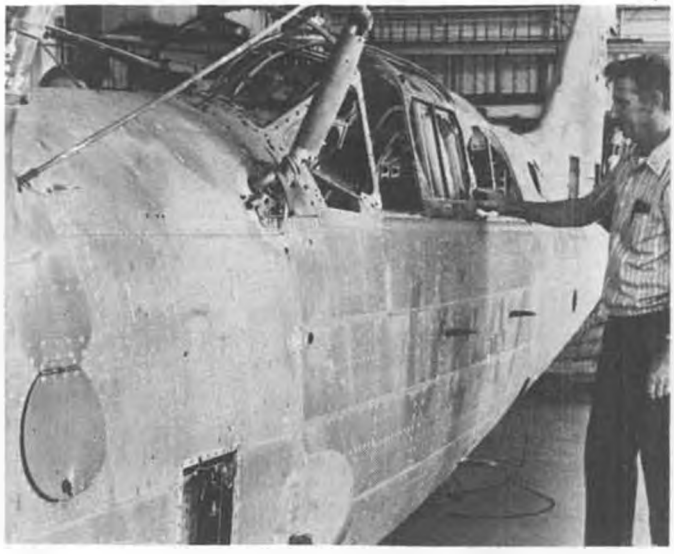
These plans first published in the April, 1974 issue of WINGS.

USAF PHOTOS

Many O-46A's were assigned to National Guard units. One of the New Jersey NG O-46A's being wiped clean; August 12, 1940.

DOUGLAS O-46A (PART 2) By PETER WESTBURG

The last O-43A was redesigned to take a 725 hp "Twin Wasp" and had struts instead of wire cabane. Called the XO-46, it was good enough to earn a contact for 90 O-46A's.



One O-46A remains. It is being restored by Purdue University and will go to Air Force Museum this year.

An O-46A of the 91st Observation Squadron in company with a venerable O-38 of the California National Guard.

"Man with the $7.82 arm!" Jed Kusik just about to catch the FAI team racer being flown by his partner, Larry Jolly. His left arm carries diesel fuel under pressure to a finger valve, a spare prop, and wrench. A good pit stop takes about 5 or 6 seconds.

Moments later, the ship is off and running. With a 200 lap difference of 7 secs., pit time becomes a critical factor.

Control line

"FROM THE HANDLE"
By JED KUSIK

● This month your C/L editor is going to lose friends and make enemies because there are some things that are really bothering him and since he has the opportunity to express himself, he's going to let it all out.

Our topics this month include the Nationals, the Control Line World Championships, the new FAI Controline Society, the US Team Selection Program, "Funny Lines," how most control line contests are really run, and cheating at combat.

First, however, we'd like to do a bit of bragging. Working as a team with partner Larry Jolly, we won FAI Team Race at the Nats, and also won 20th place and a trophy in FAI R/C Pylon. No, we are not traitors to control line, it was an FAI event and that makes it all right. Besides this was our first ever R/C contest and we beat some of the regulars. Did you ever notice how control line flyers can go into other events and compete on an above average basis? Remember Terry Prather when he flew combat?

If you didn't go, you missed a good Nationals and a bad Nationals. We spent 12 days in Lake Charles, Louisiana, attending the longest, most boring Nats to come along in the 14 years we've been attending. Only six of the twelve days had control line events scheduled, and those days were very busy, especially if a contestant wanted to enter as many events as possible. It didn't seem that the entry was as good as previous years. Perhaps many people stayed away, fearing similar problems to last year at Oshkosh, where there was insufficient practice area.

Actually, the site was terrific! Chennault Air Base is probably one of the best Nats locations ever. True it is not at all centrally located, and the West and

Ernie Violett, College Park, Md., won Open Scale with his DeHavilland Comet.

Joe Musumeci, Richardson, Texas, scored 440.6 points to win Junior C/L Stunt.

Cathy Burnstine, Danville, Ill., won Senior AMA Scale with her Thorp T-18.

Jed Kusik and Larry Jolly scored twice as a team in FAI, with 1st in Team Race and 20th in R/C Pylon.

Patrick Hempel, age 13, Garland, Texas, with his Rossi .15 powered A Speed ship. He placed in several speed events.

Jed Kusick removes the engine and tank from the winning team racer for the required qualification inspection.

Rick "Star" Wisniewski's B Proto Speed ship with tuned pipe. Biplanes a rarity in this event.

Northwest contestants had to travel nearly 2/3 of the way across the U.S. in order to attend. The weather was good. Clear, bright skies, humidity about 60%, and temperature average 90°. Good engine running conditions, if you were from California! Heavy rain occured only twice during the day and really didn't last too long. I had no problems with insects, mosquitos, or otherwise, although I heard that some free flight types went out into the underbrush and forests and haven't been heard from since! But that is their own fault for letting go of the handle!

Space . . . If you wanted to go practice by yourself for hours without being bothered, you had your chance. Just get in your car and drive any place you want. No guards to stop you and no restricted areas. Believe me, an ex B-47 base with double runways, intersecting taxi strips, and parking aprons big enough for several squadrons, has more open space than can be used. And for the wheel-less types there were large, open athletic fields of soft grass.

Housing facilities at Lake Charles were also good. We spent 6 days at a motel and then 6 days at McNeese college dorms. The dorms were much better than anything previously available at a Nats. There were separate rooms; both single and double, dorms for females, couples, and also apartments for families. There were even camping facilities on an out-of-the-way parking strip, surrounded by forest, for those who wanted to simulate an African safari.

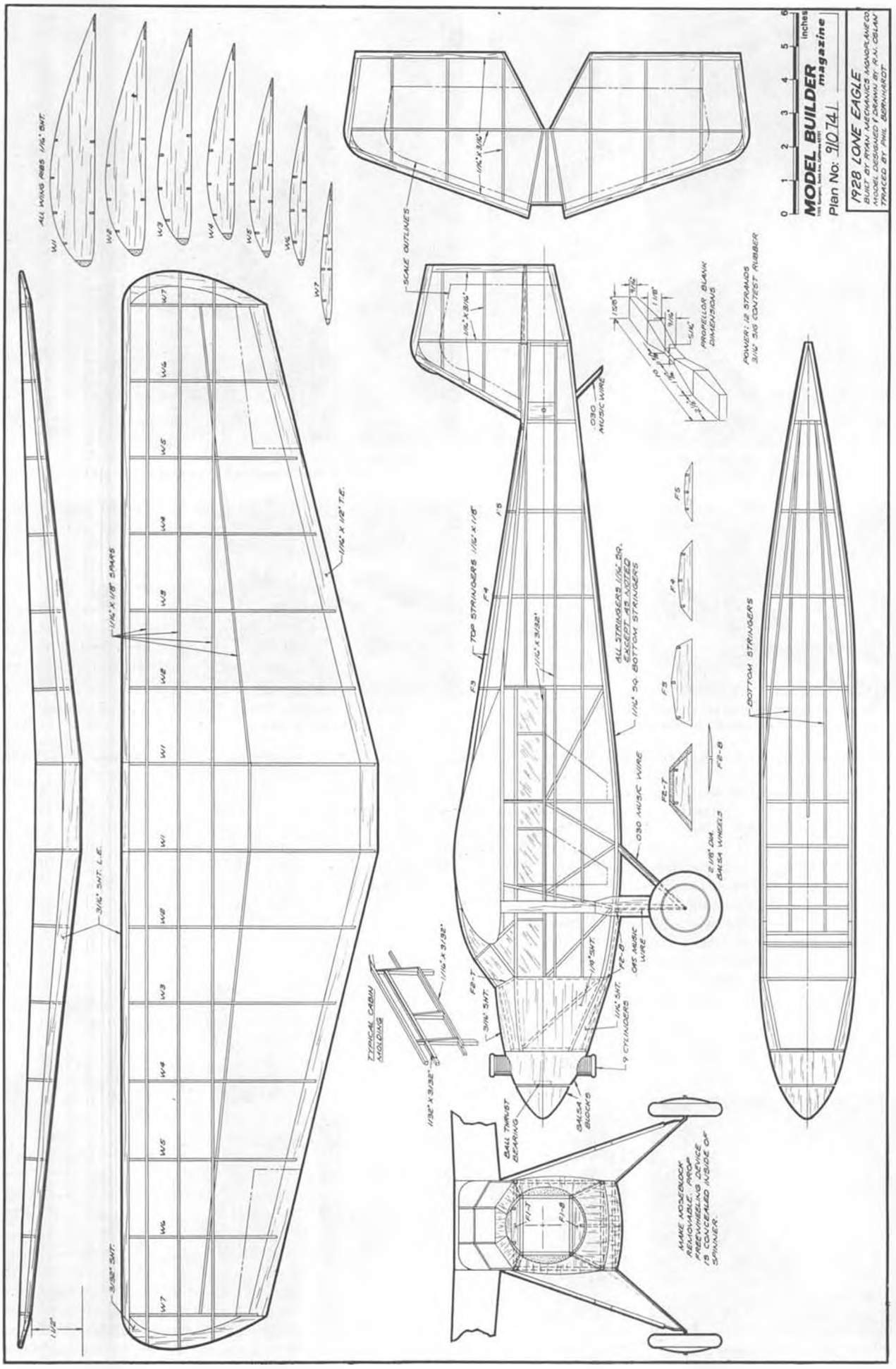
If we return to the Lake Charles site . . . there was a lot ot talk about that . . . let's at least get the schedule changed to an efficient 8 day run, with no "free" days. Start Sunday with registration and do paper work from 9 am to 9 pm, then Monday morning start all categories *together*. Indoor does not have enough

Continued on page 68

"Dishonest" combat ship has fences that do nothing but help to snag and cut ribbon.

Underneath exhaust outlet created turbulence making control squirrely, OK in glide.

Second place in FAI TR, Jim Dunkin (lt) and Bill Wright, pit man.



FULL SIZE PLANS AVAILABLE – SEE PAGE 80

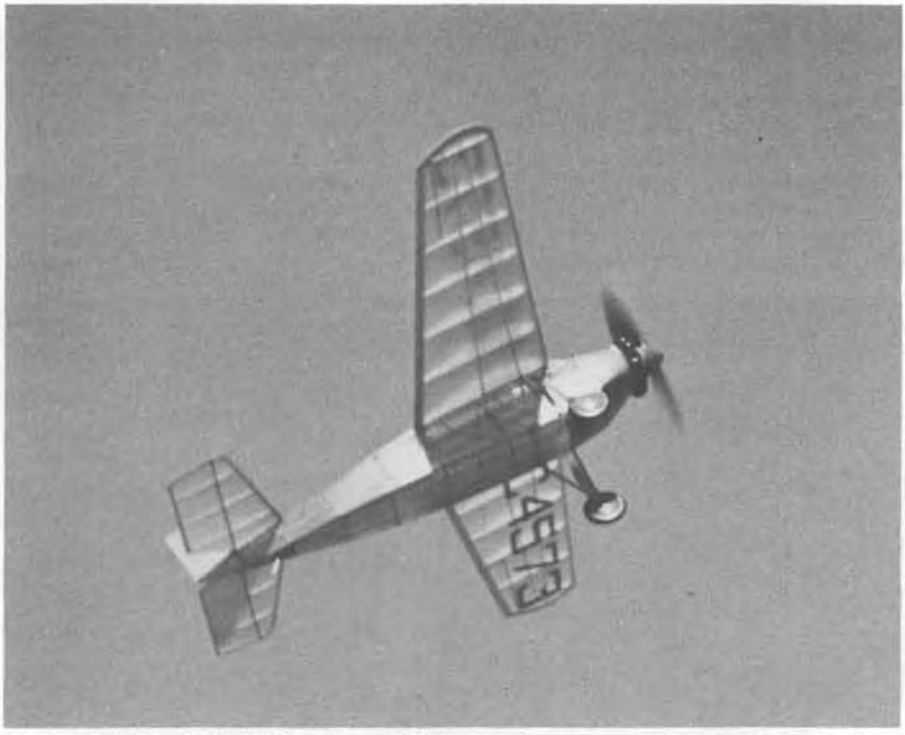
the LONE EAGLE

By BOB OSLAN

It was sort of a haunting coincidence . . . the model was slated for publication in this issue several weeks prior to the announcement that the real "Lone Eagle," Charles Lindbergh, had passed away. Aeromodeling, as well as full scale aviation, owes him a lot because both were really "discovered" as a result of his historic flight.

● The Lone Eagle was designed and built in 1927 by the Ryan Mechanics Monoplane Company of San Bernardino, California. The Company expanded in 1928 and incorporated into the Federal Aircraft Corporation; the Lone Eagle then became the CM-1 "Lone Eagle." I have no idea what CM-1 stood for, but the "Lone Eagle" was in honor of Charles Lindbergh. The three principals of the company had worked on the Spirit of St. Louis and possibly hoped to capitalize on the Ryan name and fame, hence the name Ryan Mechanics. Their success can be measured by the fact that the Lone Eagle did not become one of the classics of the period despite creditable performance.

It was powered by a 230hp Wright Whirlwind J B-4 and had a maximum speed of 125 mph with a 105 mph cruise. It carried a pilot and four passengers for 700 miles at cruising speed and landed at 40 mph. The wing span was 37'-6" and the overall length was 29'-3". An article in the March 1928 issue of Aero Digest describes the interior as follows: "The chairs are of reed and fibre construction and the backs are padded and finished with tapestry to harmonize with the upholstering. Each chair is provided with a separate cushion built up of 36 separate coil springs and covered with tapestry." The interior of the cabin is finished with heavy red Fabrikoid and the floor is covered with carpet." Pretty classy . . . those were the days.



Some models have the look of being a good flier, even when sitting on the ground. The Lone Eagle is no exception to that rule. This model departed for parts unknown soon after completion.

The Lone Eagle is well suited to model work, with its reasonably long nose and tail moments. The tail surfaces were enlarged for stability and the landing gear was lengthened slightly to allow for a large enough prop to insure good performance. These are customary scale compromises and do not detract from the model's appearance.

Construction is conventional throughout and building goes surprisingly fast.

FUSELAGE

The basic framework is made of hard 3/32 sq. longerons with medium uprights and crossmembers. Note that all the uprights are one piece and the horizontal sticks that form the cabin windows fit between the uprights. This is important, because the strength of the fuselage depends to a great extent on one piece uprights. Stringers, or fairing strips, are 1/16 sq. medium hard unless otherwise noted. The noseblock and spinner should be made from the heaviest stock that you can cut with reasonable ease, as weight in the nose is needed and it may as well give you some structural advantage. Dummy engine cylinders should be made from heavy stock and

Thick wing section allows excessive strength without paying a weight penalty. Scale works out to .85 inch to the foot, so you'll have to carve engine cylinders or fudge something from Williams Bros. 3/4 or 1 inch scale plastics.

they should be countersunk into the noseblock to eliminate the annoyance of being knocked off from handling on the flying field. The amount of detail put into the engine is up to the individual. The original model had almost as many hours put into the engine as did the entire airframe and frankly, you wouldn't know to look at it. So . . . suit yourself.

Build the fuselage sides one atop the other to assure identical size and shape. When completely dry, join the sides together, being careful to keep the framework cross section square and the curves symmetrical. Attach the formers and stringers to the top of the fuselage, noting the stringer sizes on the plan . . . this minimizes the chances of stringer sag after covering. Attach Formers 1t, 2, 1b, and 2b. Plank the top formers with 3/16 sheet as shown on the plan. Note that the finished shape changes from angular at Former 2 to circular at Former 1t. Plank the sides of the nose with 1/4 sheet and cover the bottom of the nose between 1b and 2b (rear) with 1/16 sheet or planking, which ever is easiest for you. Add the side fairing strips and cabin molding strips . . . see cabin detail on plan.

Bend the landing gear, using the front and side views for your guide. Secure the two wire cross members to the bottom fuselage cross members with thread. Then bind the lower parts of the gear with copper wire and solder. Now apply two or three coats of glue to the thread holding the gear to the fuselage. Add the bottom fairing strips. You can now install the windshield framework of 1/16 x 1/8. The curved top cabin strips are added after the wing is attached to the fuselage.

The front view shows a wire (straight pin) going from the axle area up to the "shock absorber" strut. This pin goes through and is glued to the landing gear struts (1/16 x 1/8) and extends up and into a piece of aluminum tubing that is imbedded in the "shock absorber" strut. This makes for a nicely simulated and fully shock absorbing landing gear. The shock absorber strut is added after final assembly and doping. Wheels are built up from medium balsa, unless you are lucky enough to have ready made wheels on hand that are light and the correct size.

WINGS

The wing is made from light stock and is surprisingly rugged. This is due to multi-spars and severe thickness taper. If my experience is any indication, wing warps will have to be intentional, and even then it won't be easy, The real aircraft had a flat upper wing surface and the small amount of dihedral in the model does very little, if anything, to detract from the effect.

When building, pin the trailing edge and bottom spars flat on the board. Do not stick pins through the spars. Block up the leading edge 1/16 above the board. Glue on the ribs, being sure to tilt the root ribs so that they will be vertical when the wing halves are joined at the prescribed dihedral angle (check wing front view for details). Glue in top spars before removing the wing from the board.

Build in the dihedral right on the plan to assure correct alignment. Pin the center section trailing edge on the board and block up the center section leading edge 1/16 above the board. With the leading and trailing edges cut to the correct length and pinned in place, glue each wing half to them and block up the tips to proper height. Pin the halves to the board at their roots and add the top center section spars. When dry, remove from the board and add the bottom center section spars. You now have a wing, that when covered, is the P-47 of the stick-and-tissue crowd.

EMPENNAGE

The vertical and horizontal stabilizers are perfectly straightforward. In each case, block the leading edge, trailing

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You can put a winding eye on the prop shaft if you prefer, but Bob chose to wind from an "S" hook. Thrust offset is put in for flying only in order not to mess up appearance when sitting.

ANNOUNCING!

MODEL BUILDER magazine's

FIRST ANNUAL INTERNATIONAL (Premier)... Parcel Post Proxy Peanut RUBBER SCALE CONTEST!

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

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

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

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

GRAND PEANUT of 1975!

(HIGHEST OVERALL COMBINED STATIC AND FLIGHT SCORE)

Other prizes include such items as; Peanut Scale kits and materials, Brown Jr. twin and single cylinder CO_2 engines, Uber Skiver knives and sets . . . over 50 trophy and merchandise awards all together!

Contest Director: CARL HATRAK

Chief Static Judge: RUSS BARRERA

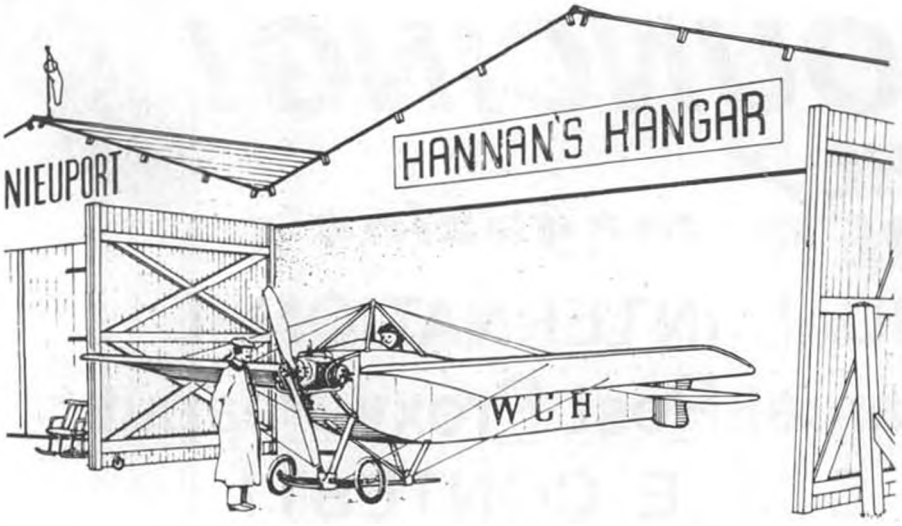
Competition will be divided into five (5) classes: Pioneer, World War I, Golden Age, World War II, and Modern. There will also be individual awards such as; most distant entry, best shipping container, entry most damaged in shipping (Don't try hard for that one!), best entry built from Walt Mooney plans,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

Scoring will be based on the total of each entry's static scale points (100 maximum) and flight points (100 maximum). Static judging will be according to AMA Indoor Rubber Scale rules. Flight points will be the average of the two best flights out of four official flights (10 seconds minimum, 100 seconds maximum). Ties will be broken by highest single score, or a fly-off. Unlimited attempts subject to size of total entry. Highest individual flight and static points will also be honored. A three-man jury will preside over all decisions.

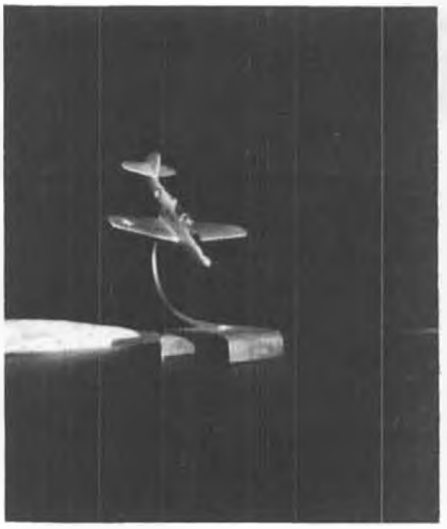
SCHEDULE: Register by mail on or before February 1, 1975.
Models to be on hand on or before April 1, 1975.
Contest to be held approximately April 15 to May 1, 1975.

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

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



. . . . miniature and full size aeronautica spoken here.



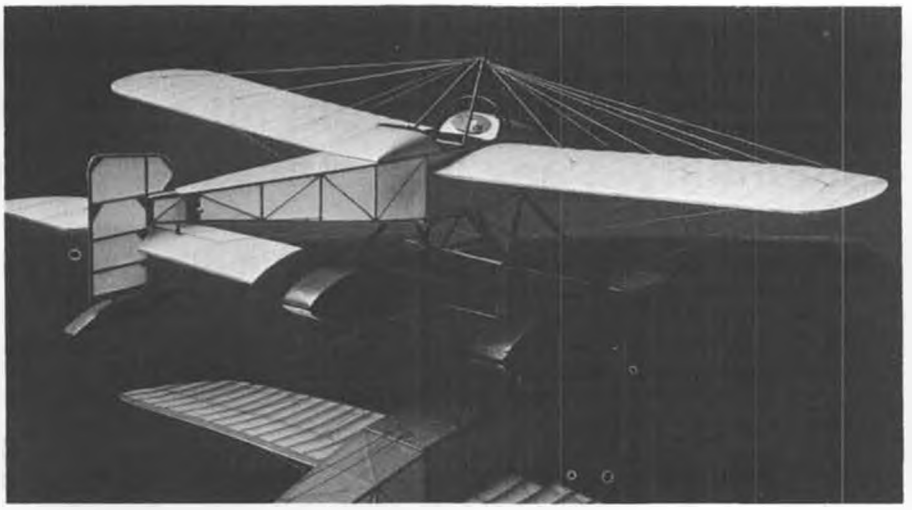
Small solid model built by Fudo Takagi in 1943. Read interesting story in text.

● Noting our mention of the Tony LeVier and Tom Lanphier P-38 Lightning program, Alex Toth wrote in to tell of two other famous flyers who devoted their time and talents toward increasing the efficiency of the Lockheed "fork-tailers." Charles Lindbergh and Jimmy Mattern both achieved fame by flying solo across the Atlantic Ocean. Together, they tackled the problem of extending the operational range of the P-38's serving in the South Pacific. Each tested out all sorts of fuel mixture settings at various altitudes and throttle settings in order to discover the optimum combinations for various combat situations. Next, they undertook a program of personal instruction to front-line pilots stationed in the various Pacific outposts. These demonstrations and briefings were largely unheralded and unknown to the general public, and yet contributed mightily to the efficiency of the American squadrons. Alex signed off his letter with the observation that the P-38 remains today, one of the visually most exciting aircraft ever designed, and it is fortunate that at least a few are still flying.

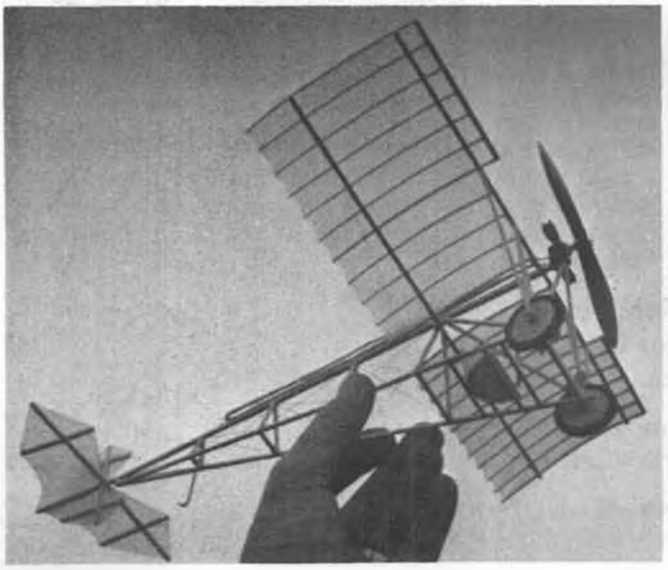
PEANUTS ROUND THE POLE?

Ray Schnell reports another way to have fun with Peanuts. He installs Baby Bee engines, attaches a tether line to the wing, and flies them on an 8 to 10 foot line around a pole. He suggests a hangar, gymnasium, or even a large driveway as

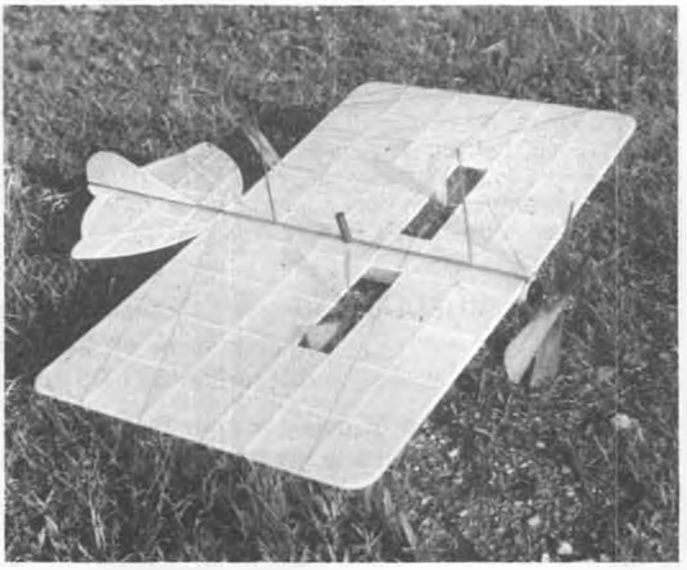
Continued on page 67



Beautiful Borel hydro, constructed by John Oldenkamp, editor of San Diego "Orbiteers" newsletter. Rubber powered, it was researched from an early FLIGHT magazine.



Peanut Demoiselle from Mooney plans. Construction by D. Giauffret, photo by J. F. Frugoli.



Model of early Soviet aircraft (claimed to fly before the Wrights) by Dave Stott. Flies on any combination of props. Original steam driven.

A lesson in how to be boxy with character!

When is dihedral not absolutely necessary? When the fuselage sides have barn door proportions and Walt Mooney does the flying.

A Belgian Peanut... Renard R-17

By WALT MOONEY . . . No innocent 3-view seems to escape the crafty eyes of our supreme leader of the great Peanut movement. Don't be concerned about all those ribs; you can leave some of them out!

● A few days ago a copy of "L'ALBUM du fanatique de L'Aviation" No. 55 came in the mail. This translates, I guess, as "The Aviation Fanatic's magazine." The title might even be right. In any case, inside was a nice 3-view of the Renard R-17 . . . a peanut builders delight with one exception . . . the horizontal tail is very small . . . but the rest of the airplane looks like model construction.

The plans are drawn with scale structure as nearly as possible, with the horizontal tail enlarged for better flight characteristics. Because this results in more structure than really needed for a peanut, and because it makes the model heavier than necessary as well as somewhat complicated looking for the beginner, we're going to tell you how to simplify and lighten it.

First: There are many diagonals in the fuselage structure. These may all be omitted. The tissue covering of a peanut model is more than adequate to take the shear loads that the diagonals took in the full size airplane.

Second: Scale rib spacing is shown in the wings. Starting with the two center ribs, two out of every three ribs may be omitted in the wing. This will leave a rib spacing which is plenty strong and still looks OK on a peanut.

Third: The same approach can be used for the tail as for the wings. But if you really want to save time, pick some light balsa.

Fourth: The dummy engine can only be simulated with something simple, like lengths of soda straw painted black, or something similar.

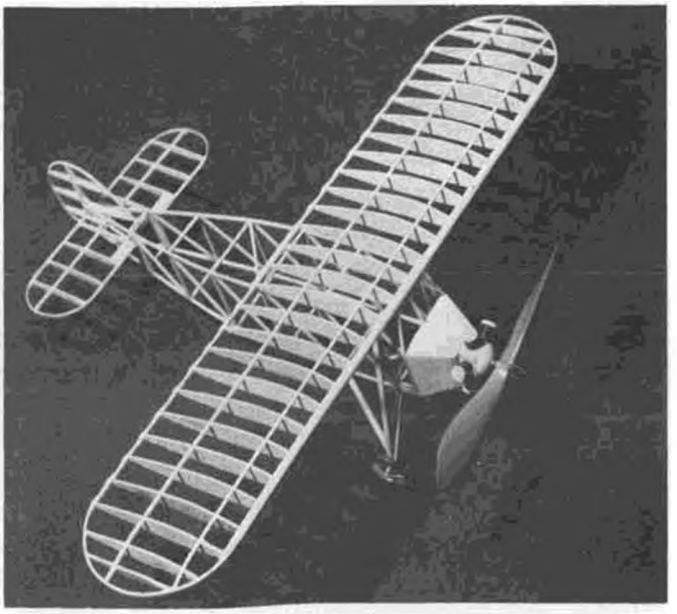
None of the above changes will affect the looks of the model in flight significantly, but of course, in a scale contest, one built with all the detail will outpoint a simplified one in the scale judging. The simplified one will fly better . . . at least it will fly longer, because it will be lighter.

The Hungerford wheels shown are delightful, but since the wires on the full size aircraft were fabric covered, simple balsa or hardwood solid wheels can certainly be used.

The color scheme on the original appears to have been overall silver with black trim and registration numbers. The trim consisted of a black stripe along each longeron.

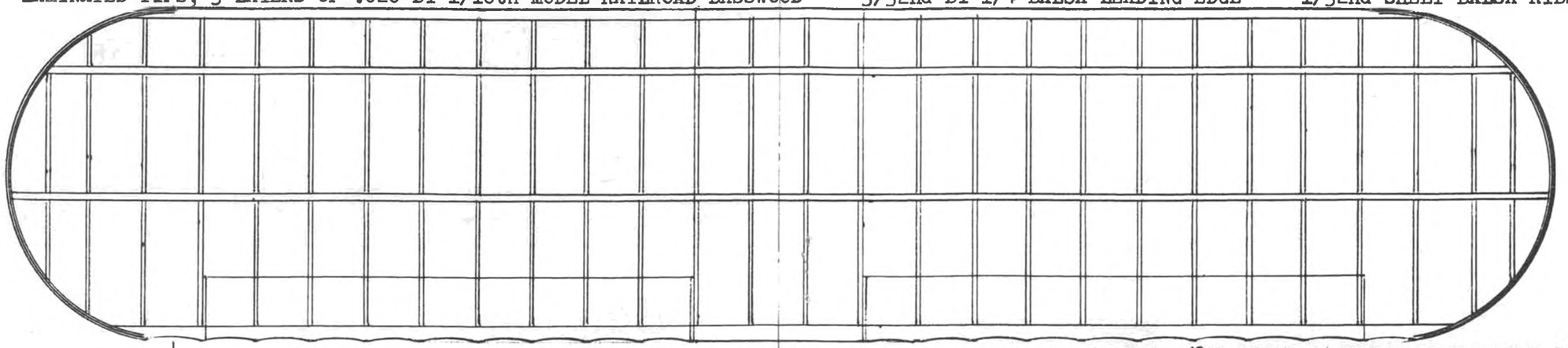
Have fun flying your Renard 17. ●

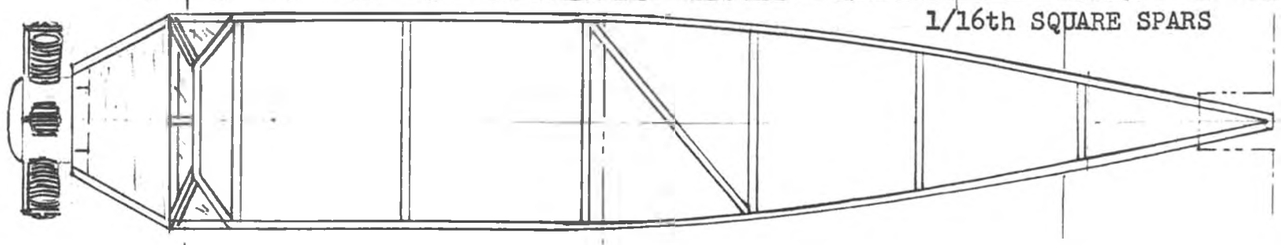
Even after enlarging, that stab looks pitifully small. Wing has lots of area in that 13 inch span. Look for low aspect ratios!



Walt explains how you can safely eliminate some of that structure. Sorta reminds one of the 1/2 inch scale Cleveland "Dwarf" series.

LAMINATED TIPS, 3 LAYERS OF .020 BY 1/16th MODEL RAILROAD BASSWOOD 3/32nd BY 1/4 BALSA LEADING EDGE 1/32nd SHEET BALSA RIBS





1/16th SQUARE SPARS

1/16th BY 1/8th BALSA TRAILING EDGES-NOTE SCALLOPS

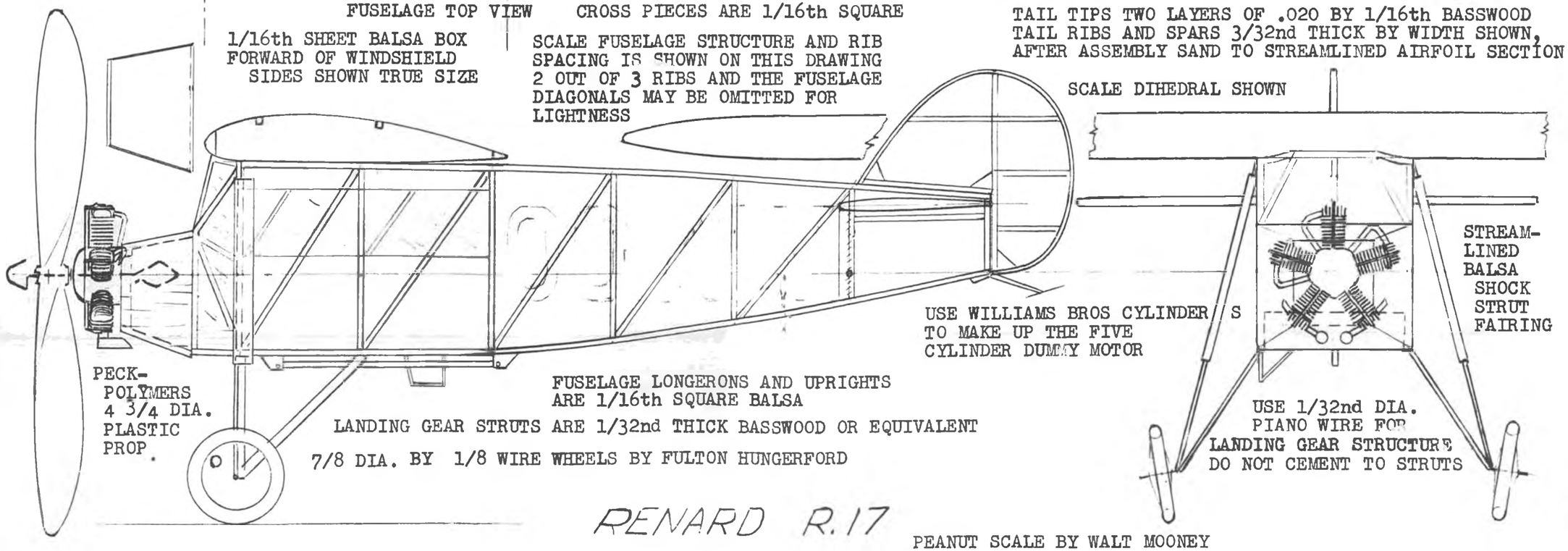
FUSELAGE TOP VIEW CROSS PIECES ARE 1/16th SQUARE

TAIL TIPS TWO LAYERS OF .020 BY 1/16th BASSWOOD
TAIL RIBS AND SPARS 3/32nd THICK BY WIDTH SHOWN,
AFTER ASSEMBLY SAND TO STREAMLINED AIRFOIL SECTION

1/16th SHEET BALSA BOX
FORWARD OF WINDSHIELD
SIDES SHOWN TRUE SIZE

SCALE FUSELAGE STRUCTURE AND RIB SPACING IS SHOWN ON THIS DRAWING 2 OUT OF 3 RIBS AND THE FUSELAGE DIAGONALS MAY BE OMITTED FOR LIGHTNESS

SCALE DIHEDRAL SHOWN



PECK-
POLYMERS
4 3/4 DIA.
PLASTIC
PROP.

USE WILLIAMS BROS CYLINDER S TO MAKE UP THE FIVE CYLINDER DUMMY MOTOR

STREAM-
LINED
BALSA
SHOCK
STRUT
FAIRING

USE 1/32nd DIA.
PIANO WIRE FOR
LANDING GEAR STRUTS
DO NOT CEMENT TO STRUTS

FUSELAGE LONGERONS AND UPRIGHTS ARE 1/16th SQUARE BALSA

LANDING GEAR STRUTS ARE 1/32nd THICK BASSWOOD OR EQUIVALENT

7/8 DIA. BY 1/8 WIRE WHEELS BY FULTON HUNGERFORD

RENARD R.17

PEANUT SCALE BY WALT MOONEY

Jim Gerz, Vice President of the Chicago Scalemasters, built this 1 inch scale Pietenpol Sky Scout. The real plane is in the EAA Museum, Hales Corner, Wisconsin. Model scored 95 out 100 possible at 1st annual indoor meet. Best flight time, 40 seconds. Photo by John Harris.

FREE FLIGHT SCALE

By FERNANDO RAMOS

● I've had several requests for an article on covering techniques for the scale modeler involving Japanese tissue. I will include covering with wet Japanese tissue as well, and will point out how to avoid wrinkles, which can be a problem, even for the most experienced modeler.

First, I would like to start with the two most basic covering techniques involving Japanese tissue. The most common method is to pre-dope the outline surfaces of the structure to be covered, usually sanding lightly between coats. The next step is to cut the tissue slightly oversize to the structure, then fasten it to the frame by using thinner. The thinner softens the dope and causes the tissue to adhere to the framework. If you use this method, here are some suggestions which may improve your covering techniques.

On a rubber powered model (except Peanut) I put no less than four coats of dope around the outline of the wings and tail, etc. On gas models I usually use no less than six coats. This assures you that when thinner is applied through the tissue, it will definitely adhere to the structure. The next step I follow is to take some fine sandpaper and sand off the excess tissue. Then I dope the edge with one more coat. The opposite side of the structure is done the same way, followed again by an additional coat of dope around the entire edge. I let this dry thoroughly before water shrinking.

Some of you may wonder why so many coats of dope around the edges. If the edges are not secured properly or thoroughly, the water shrinking process can pull off a corner, and you then have the start of a great wrinkle.

Before continuing, let's back up to the water shrinking stage. A couple of things to remember here are; always use a fine, even spray to apply the water, and always pin your structure down onto a flat surface using spacers between the structure and the flat surface *("Pin-Downs" work well for this. wcn)*. The spacers keep the tissue from touching the surface and permit air to circulate underneath as well. This system prevents warping.

Once the tissue has dried, the first coat of dope can be applied. Wipe the surface with a tack cloth first to eliminate any dust in the finishing stages. When I apply the first coat of dope, I dope the underside first. Most importantly with this coat, I do not get any on the edges. Why? By the time the top side is doped as well, there are many fumes trapped inside the structure just waiting to work on the edges. If dope is applied to the edges as well, the chances are increased considerably that the covering can be loosened enough for a wrinkle to start.

In my opinion, that is why many wrinkles appear after doping, particularly when there were none after the water shrinking. After the first coat of dope is applied and dry to the touch, pin down the structure again to dry thoroughly. The second and any succeeding coats of dope can be applied over the edges as well, but pin down after each coat!

A couple of areas that usually cause wrinkles, regardless of how careful one may be, is on the fin/rudder and wing tips. If the material used at the base of the fin is the same size as used for the outline or cross members, this will usually be pulled upward after shrinking, resulting in a wrinkle on the base of the fin. On a rubber model, this can be corrected by using wider stock. How many times have you built your fin/rudder, placed it on the fuselage for size, and found it to be undersized at the bottom of the fuselage? Or perhaps the angle of the fuselage turtle-deck didn't match that of the fin/rudder. By using wider stock at the base of the fin, it allows for all the uncertainties that seem to crop up, as well as preventing wrinkling.

On the rudder, the trouble spots seem to be the radius at the top and bottom of the rudder. Since there is seldom any cross members to these areas, they can flex enough to permit wrinkling. A diagonal at each corner should remedy this with no further problems. Wrinkling at the wing tips usually occurs when one tries to use only one piece of tissue to cover the entire wing. It is best to cover the wing tip in as many sections as needed in order to assure a tight, wrinkle-free covering job.

For the last several years, I have been attaching my tissue on the framework using thinned out white glue. This method is very quick and the end results are exactly as the previous method mentioned. The only difference is that you eliminate 90% of the work and time by using white glue. The structure is sanded smooth. No pre-doping of the structure is required! Take a ratio of about 60% glue to 40% water, and brush

Continued on page 66

Free flight columnist Dave Whatzistrum with his 1/2A Orbiteer built from Competition Models kit.

Free flight columnist Bob Whatchamacallick with his 1/2A Stiletto II at Harts Lake Prairie, Washington.

FREE FLIGHT

By BOB STALICK

It seems appropriate to begin this issue of Model Builder Free Flight by quoting some excerpts from recent fan mail received by your free flight editor, with proper acknowledgments, of course. Here 'tis:

"It's the new momentum . . . " Johnny Clemens

"Modern . . . " Society of Antique Modelers

"Return to sender, address unknown . . . " U.S. Postal Service

"Chauvinistic . . . " Ms.

"Plenty of models, but no foldout . . . " Playboy

"Well padded . . . " Streaker's Gazette

"Unbelievable . . . " Ripley

"Free Flight?" . . . Don Dewey

"Too one sided . . . " Walt Schroder

"No seaplanes . . . " Don McGovern

"All American . . . " Reader's Digest

The above comments were either received by the F/F editor or imagined to have been received. Any similarity to actual persons or publications is purely intentionally tongue-in-cheek.

SEPTEMBER MYSTERY MODEL

Here's a clinker for all of you out there in Model Builder land. This one appeared in several different sizes in 1947. It was designed by a famous modeler, to handle any .09 to .23 ignition engine. A free subscription to M.B. to the first person to give the exact name of this model and its designer.

PLAN OF THE MONTH . . . FLIP 18

The Flip 18 is one of the best outdoor hand launch gliders around. It is a development by Phil Hainer, one of the more well-known model designers and theoreticians in the Northwest. I have personally spent over 2 years with this design and am just now learning how best to use it *(Easy, Bob. You just throw it into the air and watch it glide. wcn).* Although it has a better than average climb, it is really in its element when it needs to glide. It has a thermal hunting instinct and seems to center into lift very well without diving out. The three-view is condensed from several pages of plans supplied to me by the designer.

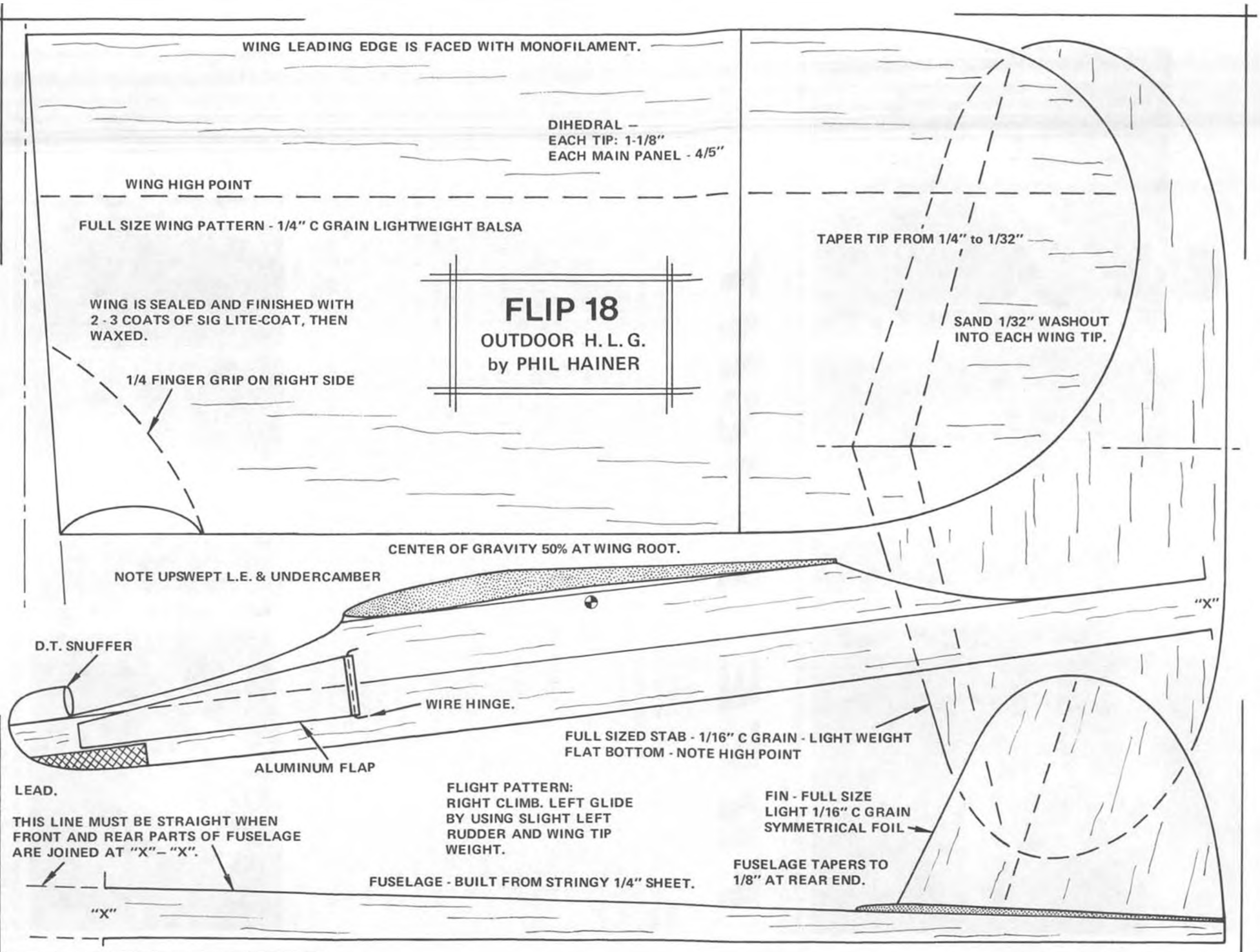
I have found it to be just a bit improved by a slight reduction in fin area from that shown in the plan (about 3/16 inch cut off the top of the fin). Phil Hainer, Jr. at one time held the Senior AMA record with this design. Although the D.T. system does work, it is not as effective as a pop-up stab, in my estimation. The swinging flap tends to spiral the model down in a slow descent . . . nose down. It is an excellent HLG, a good one to build, if you are looking for something just a bit out-of-the-rut. Mine weigh between 28 and 31 grams, which is just about right for my size (6' - 1") and weight (175 lbs.).

BREAK THAT (RUBBER MODEL) FUSELAGE . . . THE EASY WAY.

I always envied the guys with the

O. J. Stewart, Florida, flies this Centaur designed by Bob Sifleet. Is O. J. a member of the Confedrate Air Force?

No, it's not a double-barrel shotgun. Glenn Coronel uses this light bulb base and receptacle detach system on his Unlimited. See text.


WING LEADING EDGE IS FACED WITH MONOFILAMENT.
DIHEDRAL –
EACH TIP: 1-1/8"
EACH MAIN PANEL - 4/5"
WING HIGH POINT
FULL SIZE WING PATTERN - 1/4" C GRAIN LIGHTWEIGHT BALSA
TAPER TIP FROM 1/4" to 1/32"
WING IS SEALED AND FINISHED WITH 2 - 3 COATS OF SIG LITE-COAT, THEN WAXED.
FLIP 18
OUTDOOR H. L. G.
by PHIL HAINER
SAND 1/32" WASHOUT INTO EACH WING TIP.
1/4 FINGER GRIP ON RIGHT SIDE
CENTER OF GRAVITY 50% AT WING ROOT.
NOTE UPSWEPT L.E. & UNDERCAMBER
"X"
D.T. SNUFFER
WIRE HINGE.
FULL SIZED STAB - 1/16" C GRAIN - LIGHT WEIGHT
FLAT BOTTOM - NOTE HIGH POINT
ALUMINUM FLAP
LEAD.
FLIGHT PATTERN:
RIGHT CLIMB. LEFT GLIDE
BY USING SLIGHT LEFT
RUDDER AND WING TIP
WEIGHT.
FIN - FULL SIZE
LIGHT 1/16" C GRAIN
SYMMETRICAL FOIL
THIS LINE MUST BE STRAIGHT WHEN FRONT AND REAR PARTS OF FUSELAGE ARE JOINED AT "X"– "X".
FUSELAGE TAPERS TO 1/8" AT REAR END.
FUSELAGE - BUILT FROM STRINGY 1/4" SHEET.
"X"

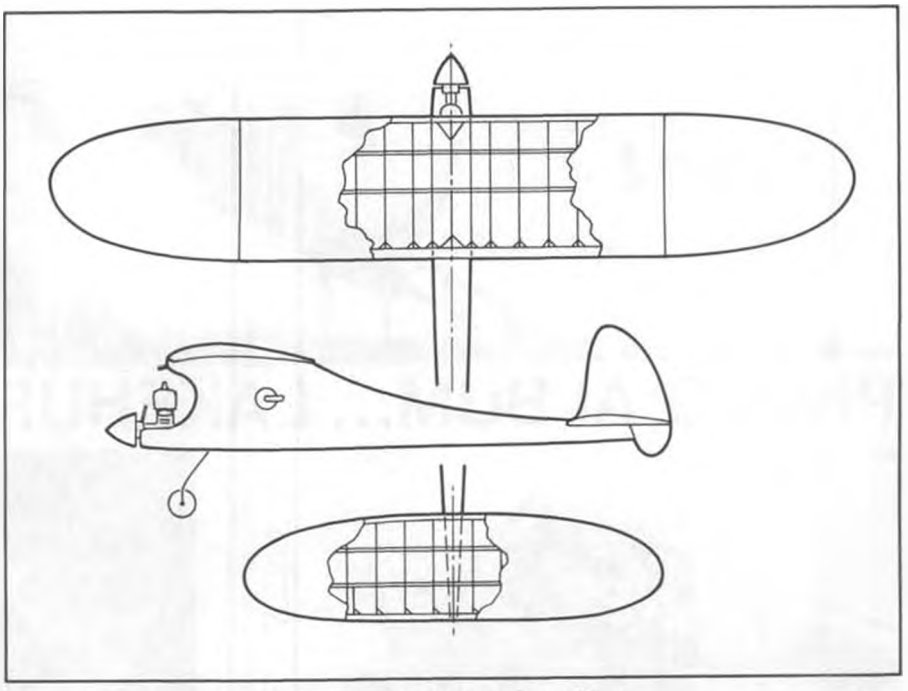
First photo of the new Brown Junior twin CO_2 engine. Photo by Dr. Dzus.

Dave Linstrum's comment on the increased cost of glow fuel.

machine shops, because they could turn out nifty little goodies that would allow them to design special features into their models which I couldn't duplicate. For instance, I built Bob Hatschek's Skyscraper Wakefield a couple of years ago. If you recall, this model has a detachable rear fuselage boom, so that you could wind the rubber motor from the rear. Kinda neat, I thought. However, getting the fuselage boom solidly attached to the fuselage was a real headache. It tended to wiggle and squirm. So, I fixed it. Epoxied the thing to the motor tube and had a solid fuselage . . . just like all of the others I had.

At a recent Nor'Westers F/F Contest, I ran into Glenn Coronel, from Caldwell, Idaho. Glenn flies Skyscrapers in Wakefield and Unlimited Rubber. I asked how he wound them up. "From the rear," he responded.

"How do you attach the fuselage," ask I.



Mystery Model for Sept/Oct.

Sez he, "Oh, I made up a screw-in tail boom."

"Show me," sez I.

So he does.

Sure enough, what does he do but to take an old burned out light bulb and separate the base from the bulb and epoxy it to the tail boom (the base, not the bulb). Then he buys a light receptacle from the local hardware store and epoxies that into the motor tube. A little filing for the motor peg and he's got himself a solidly attached tail boom on a fuselage that he can wind from the rear.

At first, Glenn was skittish about the boom unscrewing in flight, so he drilled a hole through the joint and inserted a pin, but he found this wasn't necessary, and now doesn't even use it. Total cost: about 19 cents. No machine shop, either. By the way, his Skyscraper performs as well as mine. It's a good model to build and fly, even though it's a 15 year old design.

DARNED GOOD AIRFOILS
GOTTINGEN 400

In an excellent article which appeared in the February, 1962 Aeromodeller Magazine, by Werner Thies, and entitled "Is Undercamber Necessary?", the author spends some time discussing and comparing the few airfoils tested for slow speed flight data (of use to modelers). These foils were in the Gottingen and M.V.A. development series, and some of the earliest tests were performed way back in 1895. One of the developments of this laboratory was the Gott. 400. This is obviously a foil of moderate dimensions, having a relatively thin mean camber line, with a rounded nose entry. These features place it in the non-critical range as far as trimming goes, but supplying high lift in relation to drag. In fact, its L/D Ratio is 15 at a 6 degree angle of attack (1919 test data). It would provide some good competition as an A/2 foil for a windy weather ship, or could be used in FAI power where both speed and glide are high priority.

FLAPPERS AND OTHER INTERESTING THINGS

Bill Gieskieng, who is one of the foremost experimenters in the U.S.A. in the area of flapped power models, "found" the Gott. 400 when he was searching for a good flapper foil. Here's what Bill says:

"Going through the old NACA reports, I'm always on the lookout for possible flapper foils. Imagine my joy when I stumbled on a series of tests that were about as close to a flapper's needs as possible. The basic Gott. 400 was tested with a 40% aileron (flap) in

Continued on page 73

DARNED GOOD AIRFOILS - GOTTINGEN 400

STATION %	0	1.25	2.5	5	7.5	10	15	20	30	40	50	60	70	80	90	95	100
UPPER	1.35	3.05	3.88	5.10	5.90	6.60	7.60	8.22	8.65	8.32	7.43	6.14	4.68	3.20	1.65	.85	.08
LOWER	1.35	.25	.05	.05	.36	.75	1.50	2.10	2.85	3.08	2.92	2.48	1.80	1.10	.50	.22	.00

PHOTOS BY BILL FUORI AND DICK PENROD

PHOTO ALBUM... LAKEHURST, JULY, 1974

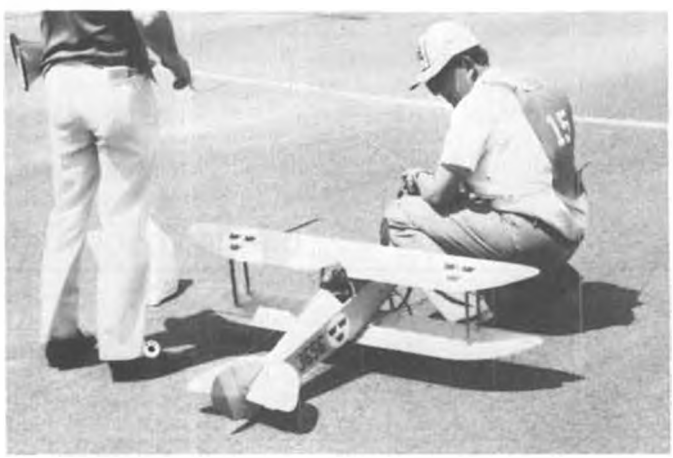
Cockpit detail in the Piper Cherokee Arrow, by Bruno Klupp, West Germany. Placed 11th.

Cockpit detail in the SAAB SK-50B, by Esbjorn Stromqvist, Sweden. Veco 61, 10-1/2 pounds. Placed 9th.

Rene Fouquereau of France, placed 5th with this CAP 20. He's being assisted by Jacques Lang, also from France.

Michel Planchon, France had trouble in the strong wind with his Broussard MH 1521. Placed 16th.

Canada's Earl Brydges placed 10th with his Pitts Special S1S.



Goran Kalderen and his OV-1 Tummelisa. The contestant from Sweden placed 18th.

U. S. Team member Mike Stott placed 9th in Control Line Scale with his Grumman F7F Tigercat.

Scale judges (r to l):Serge Zwahlen (Fr.), Leroy Weber (US), Chief Judge Dennis Thumpston (Eng.), Tony Aarts (Neth.), John Carrol (Ire.), and Timer Hank Minning, Old Bridge, N. J.

Winner in Control line scale was Valery Kramerenko, U.S.S.R., with this Antonov An-14M. He had the highest fidelity score, and the 3rd highest in flying. Specially built "in-line" engines were hit of show.

Specially built engine to fit in the turboprop cowl of the An-14M. The spare was not needed, as the two in the plane ran perfectly.

Zbigniew Jurek of Poland placed 11th with this DeHavilland Mosquito VI.Victor Konchenk

Victor Konchenko, of Kiev, U.S.S.R., placed 5th with this Tu-2.

Fokker EV/D-VIII and builder Horace Venable of Great Britain. Placed 8th.

The remarkable P-38 by Poland's Jerzy Ostrowski, which placed 2nd in Contol Line scale. Placed 2nd in fidelity, had working blowers.

USA's Mark Smith placed 3rd in the International R/C Soaring competition. Windfree, Orbit radio.

Jeff and Jerry Mrlik placed 2nd and 1st in the powered soaring event.

Jack Humphreys, Weston, Ontario, Canada, with his Northerner. He placed 16th in the competition.

Nord Gerneke, South Africa, with his original design called "Deep Float." He placed 14th.

Ryszard Czechowski, Poland, indoor winner. Best 3 flights were over 34 minutes.

"Rain drops keep falling on my bird . . ." Toshiaki Minagawa, Japan, 17th.

West Germany's Werner Wetzel, 21st.

Adalberto Frioli, from Italy, makes repairs. He placed 20th with a best flight of 28.44.

Team winners of indoor, Poland 1st, USA 2nd, Czechoslovakia 3rd. US Team was 2nd, 8th, and 10th; Servaites, Stoll, Cailliau.

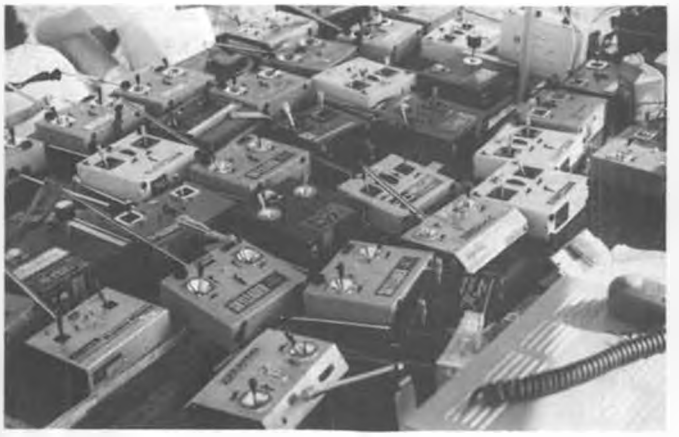
Juhani Sederholm of Finland, with caller Pentti Reinas, also Finland.

No. 1 pylon barrier and signal set up designed by Paul Zink and donated by the Long Island Drone Society (LIDS) to AMA for use at the Aerolympics. Employed shutters instead of flags.

Brian Rawcliffe of England, with his BobCat. Had trouble getting his engine to run well in the heat and humidity.

The deadly duo of Cliff Telford and Bob Violett triumphed for the third straight time in International competition.

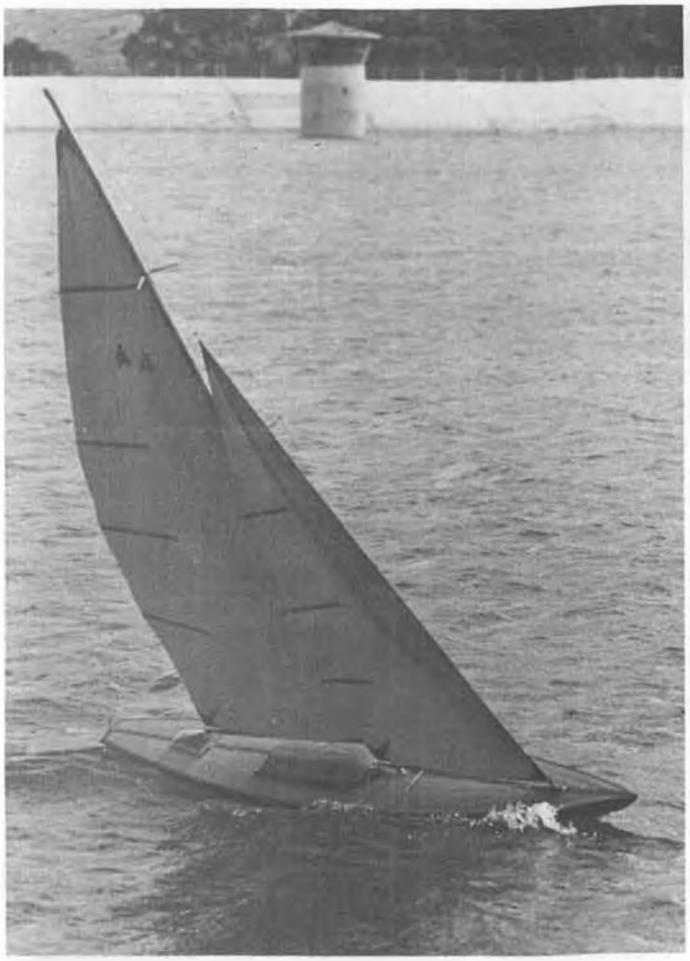
Hal DeBolt, still in there plugging, placed 7th overall, and 5th among the 12 US contestants.



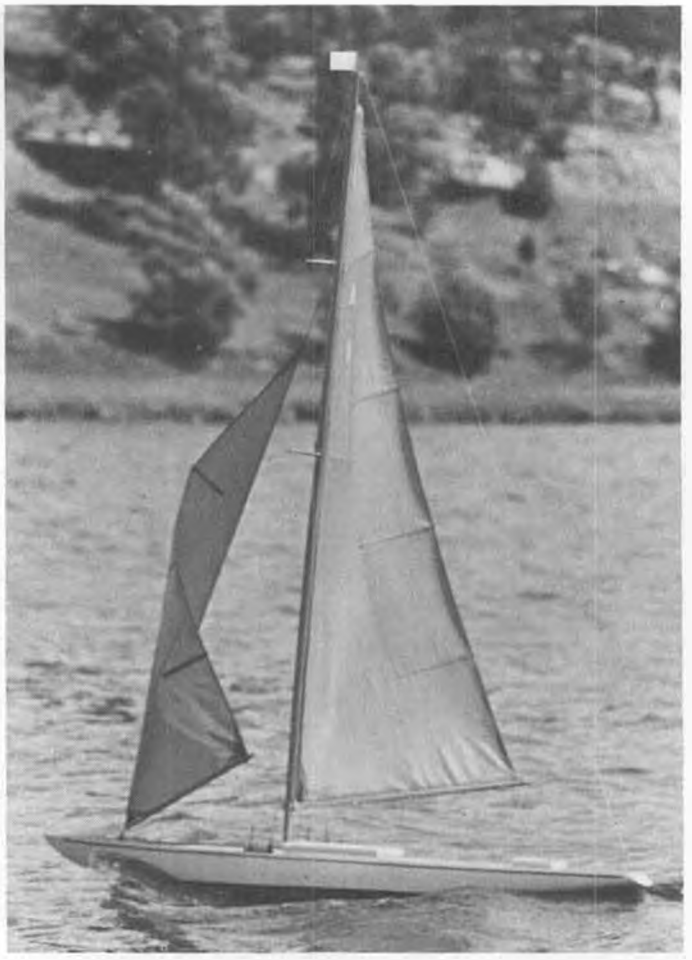
A regular United Nations of radio transmitters! Frequency control worked well in spite of unusual conglomeration of equipment.

Second place winner, Jim Booker, and his V-tail racer, get an assist from Adam Sattler.

British pylon team paraded this sign on July 4th, were told it was a deal provided they'd take Nixon along in the bargain!



A Souther A-boat going to windward. The jib is too full in the middle, and as you can see, the top two-thirds of the luff has started to break down. The jib leech is much too flat, and doesn't need the battens provided. The foot outhaul should be eased, as well as the luff tension, more flexible battens, and a loose foot to get low down drive without damaging heel. The main sheet could be more tensioned to shape the leech more regularly. Jibstay tension is good, adjustment to the sail should produce miracles in boat speed to windward. Some adjustment might be necessary to avoid backwinding that big main.



Here is a Challenger A-Class boat from the fleet in Tasmania, Australia. We see a jib which is severely deformed since it hasn't the benefit of an offset jib club swivel, or a traveler to help keep the clew from lifting on this run. Valuable sail area is not being presented to the wind. The main foot is confined to the boom, so a good deal of area is not able to take up the cambered shape needed for windward work. The main leech is hooking severely. On a beat, this will produce undesired amounts of weather helm if not corrected. When running downwind, it is desirable to allow the mast to rock forward a bit, letting the jib wing out easier. The backstay here is too tight, since we see no sag at all developing in the jib stay.

STRICTLY SAIL

By ROD CARR

Continuing our discussion of mainsails this month, we will touch upon the use of travelers and of vangs. The latter appear on almost all boats. They take many mechanical forms; from solid barstock turnbuckles to the ones used by some fellows who still are deluded into thinking that a simple rubber band is going to do the job.

The purpose of the vang is simple. It prevents the main boom from lifting when the boom is so far off the centerline of the boat that sheet tension does not hold it down. It is most useful on reaching points of sail, somewhat helpful on downwind legs, and *should never be controlling anything while going to weather!!* While close-hauled, it is the mainsheet and only the mainsheet which should be controlling the downward pull on the boom, and therefore exerting control over the shape of the mainsail leech.

So, as a first approximation, set your vang up so that she is still loose when the boom comes near the center of the boat, begins to tighten slightly as the boom tip goes out over the gunwale on a reach, and finally takes the full strain as a close reach point of sail is obtained. The amount of rise that a boom tip is allowed varies from boat to boat, and it varies with the cut of your sails. As a general rule of thumb, a boom of 22 inch length ought to be able to lift 1 inch vertically between the close-hauled and close reaching position. Such movement puts some extra draft into the main, improving its performance on the broad reaches, as the apparent wind strength drops. This movement can also act as sort of a shock absorber when gusty winds are encountered.

The vangs in Figure 1 are seen on present-day boats. Our favorite is (c) for the reason that the 6 or 8 fold purchase of squidding line allows an infinite control over vang tension, and also no weakening of the mast base is caused by drilling holes for screw eyes. It doesn't require another turnbuckle either, with attendant mechanical exasperation.

The traveler is a little bit more complicated. The traveler in its basic essence is really a movable sheet exit guide which allows the mainsheet to act as if it came out of the deck some distance on either side of the vessel's cen-

FIG. 1A

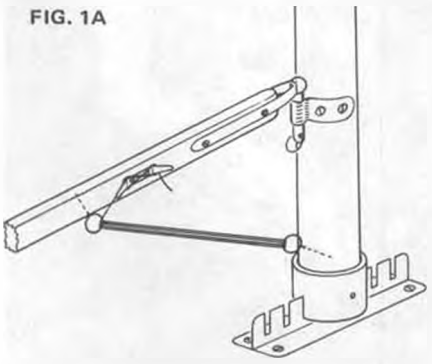


FIG. 1B

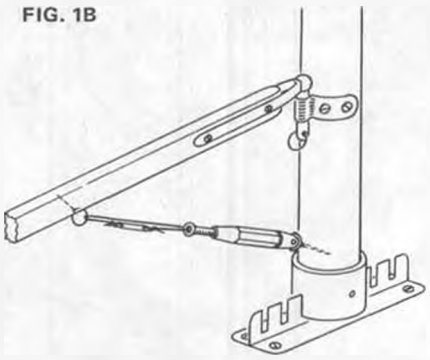
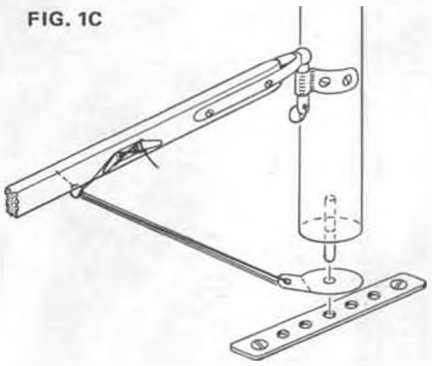


FIG. 1C



terline. The purpose is to allow the sheet to come directly vertically from the deck, and so allow it to pull straight downward on the main leech.

The traveler allows one to adjust the tension of the mainsail leech independent of the sail's angle to the centerline of the boat. Good windward power only comes when the sail has had almost all of the twist taken out of it, by a downward pull of the sheet. The traveler allows this downward pull, and simultaneously allows one to pick the location the boom will take when close hauled . . . if for example you wish to slack it outboard slightly during heavy air. A completely controllable traveler would be easy to make, but Figure 2 shows how such a device has been fitted to a class such as the East Coast 12-meter, in which controlling the traveler line (TL) by a servo is prohibited by the class rules. This arrangement was first spotted by the author on a boat skippered by Rich Matt, which did prove extremely potent on the weather legs. Notice that in such an arrangement, the sheet actually exits the deck near the foot of the mast and then runs along the boom and down to the traveler car, which is on the athwartships track. Adjustment of the traveler runs something like this:

a) In light air, the traveler car should be fairly close to the centerline of the boat. Sheet tension should not be so hard as to eliminate a reasonable amount of twist in the sail, and the slight amount of mainsail leech which hooks to windward will be more than made up for by the pointing ability and greater "speed made good to windward." (See, there are times when that bottom batten can violate RULE 1, and to good advantage.)

b) In moderate air, remove the tendency of the leech to hook to windward by increasing sheet tension, and simultaneously ease the traveler so that the boom makes a small angle to the centerline of the boat.

c) As the wind and sea increase further, ease the traveler more, check the boom vang to see if it is starting to accept some of the load, and free off the sheet slightly to allow the head of the sail to twist off a bit and reduce the amount of heel caused by the main. Under such conditions, the boat will usually go a bit better if she is freed off a bit, kept moving, and has good headway to carry her through the waves. If you try to pinch too high in waves, they will help to reduce your speed, and maneuverability. Also, be aware that a boom that is trimmed in too hard will make itself felt as weather helm, a tendency which will partially disappear as you free the sheets slightly. So it would seem reasonable to adopt some system of fixing the sheet leads on your boat, in order that you not start moving your rig fore and aft trying to balance the boat, when in reality what you need to be doing is a little fussing with the shape and positioning of your main.

Heavy weather sailing is a subject which we might delve into separately. Suffice it to say at this point, that no heavy weather sailing techniques will be successful unless you have taken the pains to outfit your boat with strong fittings, strong rigging, and have tested each to breaking. One should always be ready to make repairs on the spot. So, simple, easily replaced fittings are a must. Steer away from exotic goosenecks, fancy vangs and tiny 00-80 nuts and bolts no matter how "cute" they look. Try to make every fitting a bolt-on operation. You can't afford the time, nor will you have the conditions necessary, to use epoxy, polyester resin or super stuff, whatever it is!!! *RULE NUMBER 2* - Make everything on your boat STRONG, SIMPLE, and SWIFTLY REPLACEABLE!!!!!

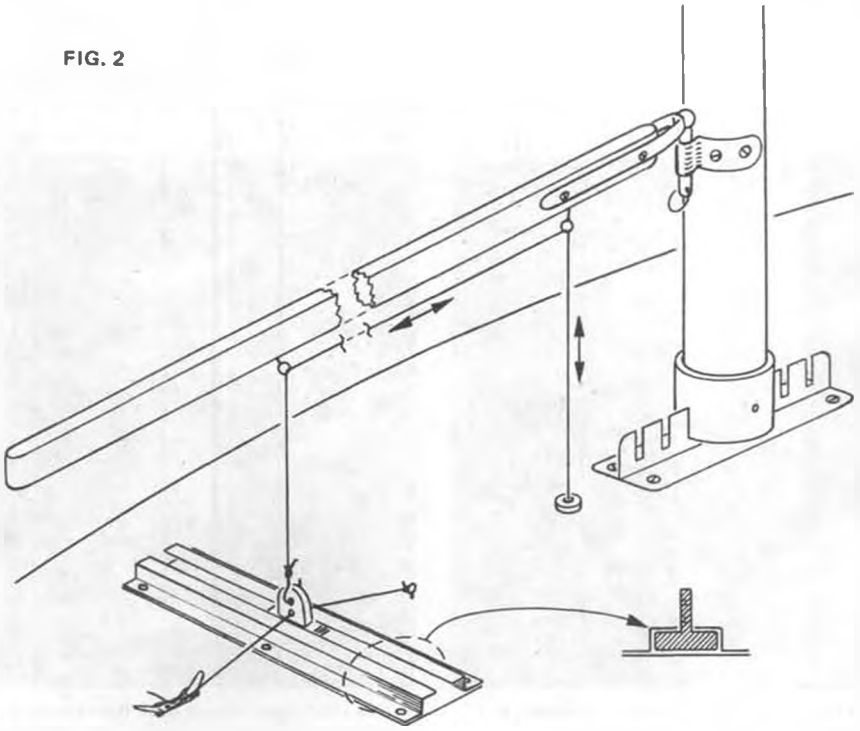
* * *

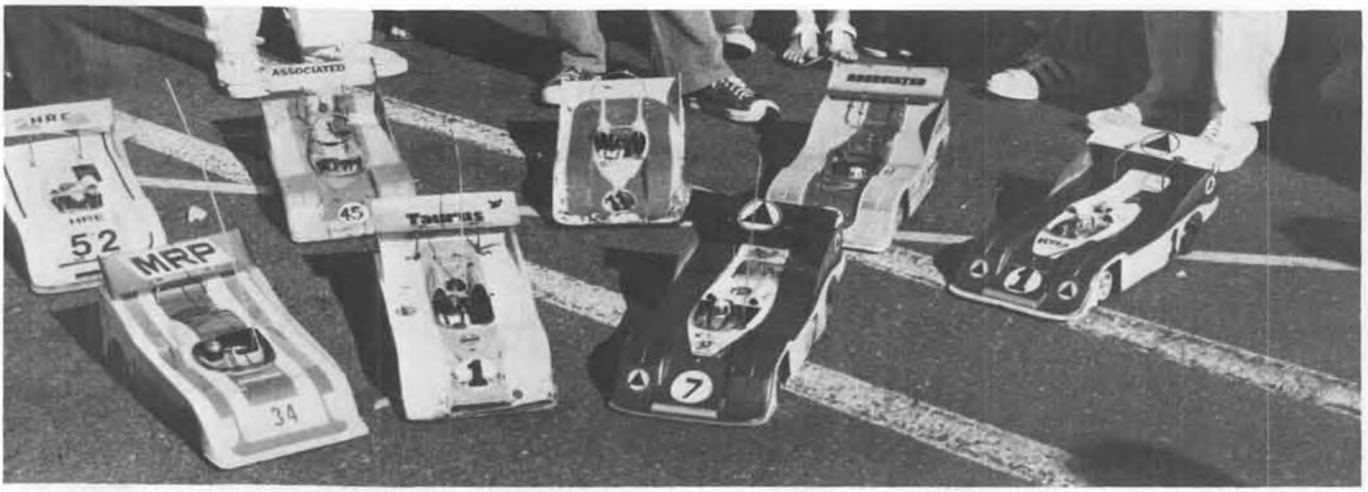
The photos document some of the activities of that other AMYA. Did you know that there were two AMYA's?? Well it's the Australian Model Yachting Association, and our information comes through the efforts of Garth Wilmot, of Tasmania. (Can't you just see a fire-engine red, planing 50/800 called the TASMANIAN DEVIL . . .)

Since we're sending sails down to Garth and his fellow skippers, he kindly volunteered permission to use the photos as further fodder for our "shape of speed" gallery. Let me remind everyone, that the only way to improve our boats is to identify the trouble, and

Continued on page 72

FIG. 2





Expert Road cars, 1/8th scale. Front row (l to r): Tony Bellizi's third place MRP, Mike Morrissey's second place Taurus, and Arturo Carbonell's first place Delta car (also fast qualifier). Other finishers in the back row.

R/C AUTO NEWS

PHOTOS BY CHUCK

By CHUCK HALLUM

Car number 7 got the white flag as it crossed the start-finish line. The car braked lightly, turned hard right through turn 1, accelerated rapidly while turning left for turn 2, and lined up perfectly for a straight shot through turn 3 and braked and turned left at 4. Full throttle accelerated the car rapidly down the short chute to turn 5. The car was right on the inside line taking a near perfect line. The engine emitted its deep muffled rap and picked up speed, went right through 6 without letting up and drifted to the outside to prepare for turn 7. At the last second the car braked momentarily and dove right with little decrease in speed. Slightly past the apex of the turn the driver went hard left, sliding slightly by turn 8, then hard right again for turn 9, with a touch on the brake to line up for the short straight in front of the drivers, getting the checkered flag as he crossed the finish line.

That was the last lap of the last race of the 1974 ROAR Nationals. Arturo Carbonell drove a nearly perfect race, slowly leaving the rest of the field. He also had fast qualifying time in the 1/8 Road Race. Mike Morrissey finished second and Tony Bellizzi third. Morrissey looked good during most of the qualifying and was thrashing around in the pits because in one heat his car looked like it was a handful. Gene Husting and Earl Campbell also looked very good during practice. My car was running good, and I qualified a fraction of a second further back.

At the start of the main it looked like it was going to be a great race (mostly for second place, if Carbonell could keep up his pace and stay out of trouble). Bellizzi drove a smooth race after qualifying. He looked better this year than any other time I've watched him. Gene Husting, who ended up fourth, was running very good and said that he had the same power as Carbonell and could run with him; but whenever Gene overshot a corner Carbonell would go by. Husting had to pit about six times which put him out of contention.

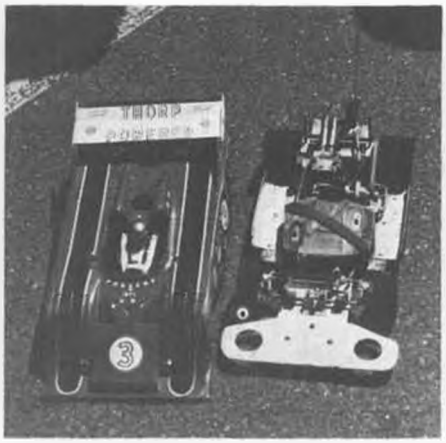
For me, the '74 ROAR NATS were very exciting and interesting. I got to race for the first time in a year and a half. My cars and myself performed as well as could be expected. In my first heat race, 1/8 oval, I was really nervous. If anybody had been near my transmitter antenna I would have beat them severely. Mike Morrissey couldn't believe that the "white streak" could be behind him and ready to pass at the exit of each corner during most of the heat. Had I been calmer I think I could have passed him easily. Even at that I was able to turn in the best qualifying time . . . just barely . . . for two heats (0.3 seconds in a total of 312 seconds).

After the oval qualifying, Mike and I talked a while. I think he was surprised that my putt-putt went as fast as his screamer, particularly after my long lay-

"How are they bitin' today?" Drivers get a better view of track from this stand.

Seattle contingent which took home most of the 1/12th scale hardware (l to r): Ron Frederick, Don McKay (JoMac), Tony Bellizzi, and Bob Welsh.

Gary Kyes' 1st place Oval Expert car is Taurus with aluminum axle. Morrissey's back-up.



Bob Joshnick's 2nd place Amatuer road car, a Thorp. One of fastest at the race.

Arturo Carbonell's Delta required a lot of plumbing for the trick carburetor.

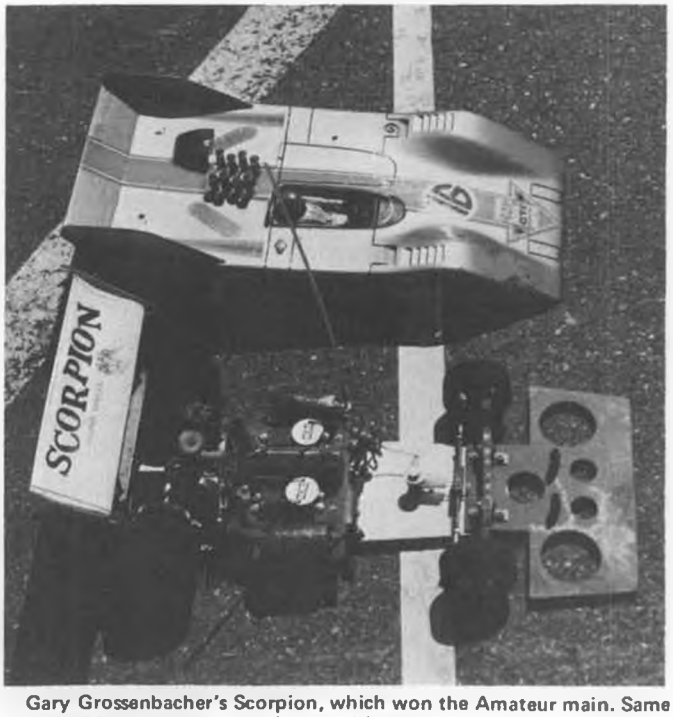
off. When he asked about my fuel consumption, I said I was getting about 6 to 7 minutes, or about 35-40 laps, so I was planning two pit stops. Mike groaned and said we were back in the same old situation, namely Mike's cars (Kyes was running his backup car) having to make more pit stops.

In the 1/8 oval Expert Main it was essentially a three car race; myself, Morrissey, and Gary Kyes. At the start, Kyes jumped out to the front. Morrissey and myself both got into a mess at turn one. At the end of the first lap I got into another tangle and Kyes and a couple of other cars passed me. So at lap 2 I was already a lap behind. But by about lap 30 I was in the lead. My car was handling beautifully and I was able to pass most cars toward the exit of the corners. Shut off points, or turning locations to enter the corners, were difficult to establish, so I usually went a little deep. I could then use the well marked inside line . . . two rows of orange Botts dots . . . to get lined up on. I was probably within two or three feet of them most of the time during the last half of the corners.

Tony Bellizzi's modified and stock 1/12 cars used same body. Roll bar helped car in a flip.

MB's R/C Auto editor drove his HRE car. Was fast qualifier in Oval and lead Expert main in laps 30 thru 99. Crash in 89th cut rear tire in half, but he finished last 11 laps and came in second.

Ray Bell's winning concours car. Hand-formed aluminum body, front suspension with shocks, .15 powered. Looked great on track too.



Gary Grossenbacher's Scorpion, which won the Amateur main. Same general layout as most road cars, with equipment located well back.

I was able to put more than a lap on the rest of the field by lap 89. Coming down the front straight I got kind of squirrely and had to back off to straighten up. (My bumper/body mount screws loosened and were dragging on the ground.)

John Thorp, who I had just passed, whapped me in the back and cut my outside rear tire. Putting on the throttle all I managed to do was spin a doughnut. Dick Camp then blasted me at full throttle. The impact sheared off his front axle and finished the race for him. I moved over to the wall and my pit man tore off about half my outside tire and I continued. The car was a handful with the unbalanced wheel and little outside rear rubber. I held the lead through lap 99 and Kyes passed me on the last lap (I understand). There was a little confusion at the end because the flagman was ready to give me the checkered flag. But it was a great race, with Morrissey finishing third, 2 laps down.

In general, the track conditions were very good. In the morning the traction would be good. As the surface heated up, traction would drop and the cars experienced noticeable power oversteer. Then as the cars ran, and the track began to cool off, the traction would increase again. The first 2-1/2 days, during the 1/12 scale racing, the traction was a little worse, but they really didn't need it since their track layouts were quite large compared to the car size.

The 1/12 scale races appeared much more professional this year. There were a considerable number of cars entered in all the events. However, it seemed that if anyone had an unmodified car that would just keep running they would have been guaranteed a second or third place finish. Tony Bellizzi walked away with most of the first place hardware, with his reliable cars and usually good driving. Rich Lee won the 1/12 B Oval race. Gene Husting even got into the 1/12 scale act. When he was running, he posted good times, not because the car was fast, but because he drove reasonably well. I think 75% of the guys would do better by reducing the steering travel and going to stock Jerobee front tires. Stiffening the front suspension would help too. There just is no reason why an unmodified car should spin out on a 1/8 scale track corner.

Some of the modified 1/12 scale cars were screamers. The cars running the road course in particular looked really fast. As usual, the bigger transmitters swamped out some of the modified 100 mv jobs and there were complaints. The serious racer knows he needs a good radio (mostly the receiver) and puts out the extra bucks for one. The guy who is just a beginner or is dollar limited tries a hopped up 100 mv job once, then learns he better change. The 1/12 scale modified class is really not much cheaper to get into than 1/8 scale. Operating costs for 1/12 scale are definitely less, however.

The drag classes were run under the lights. There were some really impressive runs made, and the usual number of wall blasts. In 1/12 scale, the highest top speed was 33.42 mph and in 1/8 scale 43.70 mph by Steve Stallings and Marvin Lew, respectively. Lowest E.T. in 1/12 was 3.913 seconds by M. Yeager, and 1/8, 3.311 seconds, by Ron Sheldon.

The timing and Christmas tree set up for the drags was great. Jim Muir, of the RAMS Club, designed the setup and got some advice and help (I believe) from Pete Petri of Texas . . . I'll have an article on this type setup in the future. Since my cars needed work each night, I was able to see only a few of the drag runs.

The 1/8 Amateur Oval main was somthing else. It seemed like a destruction derby; there were always a couple of cars being repaired. At the start, it looked like a run away for Bob Titterington. He was driving great and his car was working. Titterington got into a few mixups and at about 50 laps he apparently seemed to have radio problems. (Later he told me it was brain fade.)

Continued on page 58

Results of 1974 Nationals Main Events

1/8 Expert Oval

Finish	Laps
G. Kyes	100
*C. Hallum	100
M. Morrissey	98
J. Thorp	96
G. Husting	95
J. Ulstad Jr.	91
R. Camp	84
J. Goldberg	51
D. McNeely	38
B. Kroells	1

1/8 Expert Road

Finish	Laps
*A. Carbonell	100
M. Morrissey	97
A. Bellizzi	96
G. Husting	95
R. Curtis	94
J. Thorp	93
G. Kyes	76
C. Hallum	68
E. Campbell	3
R. Camp	N.S.

1/8 Amateur Oval

Finish	Laps
J. Kimbrough	100
M. Carone	98
R. Fredricks	96
A. Sanchez	92
J. Snow	86
*R. Titterington	81
C. Petri	80
E. Felty	53
T. Longshaw	27
J. Thompson	17

1/8 Amateur Road

Finish	Laps
*G. Grossenbacher	100
R. Joshnick	98
M. Carone	95
B. Steele	92
J. Snow	90
R. Lillie	86
C. Petri	86
B. Jianas	78
J. Cade	45
H. Kanegawa	25

*First qualifier

1/8 Drag — Funny Car Top Eliminator — G. Buriani
1/8 Drag Rails — Top Eliminator — R. Sheldon
1/8 Concours — R. Bell, R. Moody, G. Anderson

1/12 A Road

Finish	Laps
A Bellizzi	100
*D. McKay	78
T. Lepper	74
J. Crisp	61
R. Fredricks	59
G. Husting	8

1/12 B Road

Finish	Laps
A. Bellizzi	100
D. McKay	96
R. Welch	94
R. Fredricks	92
G. Stone	87
R. Lee	86
*G. Husting	85
S. Stallings	68
G. Kyes	68

1/12 A Oval

Finish	Laps
A. Bellizzi	100
*S. Betts	93
D. McKay	82
J. Crisp	77
K. McClelland	52
R. Vanzee	30

1/12 B Oval

Finish	Laps
R. Lee	100
D. McKay	92
R. Welch	91
R. Fredricks	89
S. Stallings	87
G. Stone	86
D. Steen	38
*A. Bellizzi	6

*First qualifier

1/12 Drag — Top Eliminator — S. Stallings
1/12 Concours — D. Kalivada, D. McKay, G. Kyes

SAILFISH

One of the prettiest Sailboats you ever saw either Free Sailing, or R/C. Construction is simplicity itself. Die Cut Frame, features Plywood for strength and long life. Printed-planked Deck is Die Cut and ready to slip into rub rail, molded into Sleek Plastic Hull. Kit is unusually complete with Die Cut Mahogany Cabin, Brass Chain, Many Cast Metal Fittings, CLOTH SAILS, Rigging cordage, Mast & Boom Material stamped Rudder and Keel with INTEGRAL LEAD BALLAST, Step by Step Plans show simple assembly. Base shown not included.

HEIGHT 32½"
LENGTH 24"
BEAM 5"

Sterling MODELS INC.
PHILA., PA. 19144, USA

Kit B23

$12.95

STERLING MODELS • BELFIELD AVE. and WISTER ST. • PHILA., PA. 19144. If no dealer available, direct orders accepted —with 10% additional charge for handling and shipping. (60¢ minimum in U.S., $1.25 minimum outside U.S.)

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- ☐ "Secrets of Control Line and Carrier Flying." Including preflight, soloing, stunting, Carrier rules and regulations, Carrier flying hints and control line installation instructions. 25¢ enclosed. No checks. Only U.S. money orders or currency accepted.

Name _____

Address _____ City _____ State _____ Zip _____

Lone Eagle . . . *Continued from page 36*

edge, and tips 1/16 off the board. They are constructed entirely of 1/16 x 3/16 medium balsa except for the stab spar, which is medium hard.

COVERING

Cover with Japanese tissue . . . do not water shrink the tissue until all parts are assembled. When the covering is tight . . . no wrinkles . . . apply three coats of thinned dope (60/40) with plasticizer added. Control outlines and license numbers are cut from black tissue. *(See Fernando's column, "F/F Scale," for more detail on covering with tissue. wcn)*

PROP

The prop is carved from medium hard balsa and is covered with Japanese tissue for added toughness and as an aid to a good finish. Utilize a free wheeling device of your choice. Although the winding eye is more practical if located outside of the spinner, it really makes a neat job if the spinner can be kept clean. This necessitates winding the rubber motor directly or with an "S" hook instead of through the prop shaft, but a clean spinner sure looks nifty.

TRIMMING AND FLYING

The original model required 1/4 downthrust and a touch of left thrust, which was inserted before each flight so that the plane wouldn't look like a 1927 SST droop-snoot when not flying. It climbs left, glides right and is competitive for most flying scale contests. Do your initial testing over tall grass, if any is available, as the best of them take a few bonks until fully trimmed. The ship should balance about 40 percent back from the leading edge and some nose weight may be required. A hand glide with the nose pointed down slightly should produce a smooth straight glide and gentle landing before trying a powered flight. Start powered flights with 100 turns in the motor and work your way up, paying careful attention to flight characteristics. Power stalls should be corrected with down thrust and stalls in the glide should be corrected with

nose weight. Try to avoid warps, as they can change from one flying session to another and make each session a new series of test flights.

A well trimmed Lone Eagle, fully wound, should produce flights in excess of a minute with no difficulty. The original thermaled so well that it went 20 min O.O.S. – sob! Good luck with yours.

R/C News . . . . *Continued from page 11*

at the Nats. Paradoxically, the bulk of those voting against this idea were A and B fliers! Apparently they didn't like the idea of facing a set of judges who had just watched Rhett Miller, Jim Whitley, or someone of that caliber, put in a typically magnificent flight.

Got news for ya, A and B'ers! We feel this is the wrong philosophy on two counts. First of all, a little lesson in judge psyching:

When a judge has just watched a top flier put in a flight, he's in a nice mood. He's basking in the calm of having seen a smooth, precise flight, with mistakes that were very easy to spot because they stood out like a sore thumb. He's relaxed, looking forward to another good flight, and his mind is on 7 through 10.

Now it's up to you to take advantage of the situation. Remember that old saying about first impressions. You can set yourself up for a lot of points even before you get to the contest. Make sure your engine and brakes work well. As for the latter, it's amazing how many fliers come to the Nats with no reasonable means of stopping their toads from rolling! You don't even have to go to your local flying field to solve this problem. Work it out in your driveway!

The taxi demonstration and takeoff maneuver are the first things you'll do for the judge, and really, no matter how good you are on the rest of the flight, you'll either maintain or destroy the judges mood by how you start out. For Heavens sake, make it good!

The second philosophy involves psyching yourself. It may not make you

win your event, but competing in any sport with people who are better than you, will always improve your ability. Our favorite athletic sport is tennis, and when we take on a hacker, our own game seems to become just enough better to win . . . and that's it. On the other hand, we have also played against some top local talent who have beaten us soundly, but in the process, we could feel our own game improving tremendously.

Go out and fly with the "biggies." There's an air of betterness all around you, and you'll get swept up in it. And don't forget, you're not flying *against* those hot shots, you're flying *with* them.

CONTEST IDEA

Old flying buddy Bob Noll, Vestal, New York, wrote to tell us about the 19th Annual R/C Contest put on by his club, the Aeroguidance Society, Endicott, New York. Of special interest was an idea the club tried, successfully, to help defray expenses.

The contest was held at the Tri-Cities Airport on July 13 and 14, and with permission of the airport manager, the club rented spaces for area business men to display their products. The displays were all of the "outdoors" type, including travel trailers, boats, bicycles, swimming pools, etc. Sounds like a great idea, and one worth looking into for other on-the-ball clubs.

Incidentally, Bruno Giezendanner, who was a guest of Dick Penrod's, flew in the Class D Expert (what else!) event, using Bob Noll's "Yankee" pattern ship. His score was the highest, but had to be put in a special category because he did the 1973 rules version of the Figure M and Top Hat, which are still being flown in Europe. (Interesting. What will be used in the 1975 World Championships?) His score of 4806 was followed closely by official first place winner Tony Bonetti's 4740. Second and third were Dennis Donohue and Ed Keck with 4735 and 4732.5

Sport Scale was won by Bob Nelitz (Kinner Fleet Finch) who was 1973 Canadian Scale Champ, followed by Bob Karlsson (TBD Devastator) and Ed Izzo (P-40). Ed used to have the nickname "Twelve-Twenty" (a "Z" and a "2" look alot alike), but since he's lost so much weight, they should change it to "Six-Ten." ●

R/C Cars . . . . . *Continued from page 54*

At this point he had about 4 laps on the eventual winner. Anyhow, Mike Carone became the leader for about the next 25 laps until he pitted and then Jay Kimbrough took over the lead. The lead switched again on the next pit stops. Kimbrough lucked out when Jerry Thompson came across the track out of control and Kimbrough T-boned him but didn't hurt his car. Carone didn't fare so well later because he was involved in a crash and his car was bent up. Most of the time Kimbrough was running steadily and he didn't try to pass cars in hazardous situations. It paid off cause he won and Carone limped home second. Bob Fredricks finished third, four laps down.

Gary Grossenbacher jumped out into the lead at the start in the 1/8 amateur road main. Grossenbacher and Bill Jianas tangled in the high speed esses at the end of the first lap, with Jianas getting the worst of it. His steering servo popped out of the mounts. After Jianas got his car fixed he was running as fast as the leaders, but was out of the race. I believe Grossenbacher held the lead throughout the race but was in the pits several times to fix his steering servo saver and even flamed out once. He had to be driving fast to keep the lead and win. Bob Joshnick was fast in practice and ran strong in the race and finished second. His car was unmistakeable in the corners, because when his steering override released the whole front end of the car jumped. This is the first time I have seen this happen, the front traction and down force had to be terrific and he must have had quite a bit of front caster. Mike Carone finished third, running a good race for his first nationals. He might have finished better but he had one long pit stop to repair a loose fuel tank.

During the open practice before the

two 1/8 scale road mains it was interesting to watch the amateurs and experts practice together. Morrissey had to work pretty hard to pass Joshnick. I think both Joshnick and Grossenbacher (probably Jianas too) could have beaten many of the expert drivers. Bob Titterington easily could have outclassed many experts with his oval car. This type of situation has led to some concern over driver classification at the nationals. Some possible solutions were discussed at the Annual ROAR meeting and are presented later in this article. It's interesting to note that the top ten amateur oval qualifying times fit between the third and tenth expert qualifying times.

There were several technical innovations that caught my eye. Carbonell had another trick carburetor this year. It was a slide valve job with both idle and high speed needles and the fuel system was pressurized from the muffler. It looked like Carbonell had better mid-range power than anybody and his light touch on the throttle made it work great. He did just about all his passing at the entry to the back straight, where his mid-range power gave him the advantage. Roy Moody had a differential which packaged very neatly inside the spur gear. It was based on two concentric axles. Al Olsen (an amateur) had a rocking rear end which looked good at various times during practice and qualifying. However it appeared to suffer because there was no rear spring rate. I had a rear suspension system bolted onto my road car. The car handled great through the corners but suffered because the engine didn't have a good bottom end (the car weighed 5 lbs., 12 oz.) for initial acceleration. During the expert main, the suspension got bashed several times and the car was in the pits for repairs (back to the drawing board).

Special thanks must go to the RAMS Club for their efforts in running the '74 Nats. Ray Bell did a great job as race director; Judy Massing in race setup and backup counter; Betty Tunison in frequency/practice control; her husband, Jay Tunison, was the very competent and colorful flagman, and Jim Muir calculated and posted the heat times. The Pioneer R/C airplane club members were appreciated as course marshalls as well as the other RAMS club members. Official lap counting was done by local Explorer Scout Troop 106.

ANNUAL "ROAR" MEETING

After the banquet the Annual ROAR meeting was held. Several people did roar. The proposal to have eight district directors and three officers, with two year staggered terms, was accepted. The permanent Competition/Rules Committee and Nationals Committee proposal was rejected. A motion from the floor to allow By Laws changes by Initiative Petition and Official ballot vote at times other than the Annual meeting was approved by a quorum.

There were essentially three proposals for consideration by the Competition Committee on driver classifications at the Nationals. One was to let the district director establish who should be considered expert and amateur in their regions. The Nats would essentially pit the experts and amateurs of each area. Whatever you run in your region you would run at the Nats. Second, a proposal was made for a single class at the Nats. After qualifying, 4 or 5 mains would be set up. Obviously no one would want to sand bag. I was surprised when several experts said they wouldn't compete in a race with what they considered amateurs. If you're hot, you're hot and you'd make the A Main.

The third suggestion was to have an open class (still 3.5cc displacement limit) a restricted carburetor bore and fuel class (also 3.5cc limit). Basically, this would be like different engine classes in boats and planes. The open class would be for the "hot dogs" and the restricted class would keep the competition more even for those who want to race more cheaply and not go against the super drivers and/or super engines.

We will find out if the competition committee thinks any of these ideas are acceptable by January 1975. If you have any preference, I would like to hear from you (my address is at the end of the column). Personally I prefer proposal 3, then 2. I don't think everyone should get a trophy who comes to the Nats, rather, you should be the best in your class. So, in the second proposal, I think trophies should be presented only in the A, or A and B mains. In proposal 3, it might be best to have only 2 heat races, with the lowest time used as the qualifying time. Then have 4 or 5 sit-outs for the main and the next 10 (possibly) going in a semi-main. The best 5 or 6 in the semi could move to the main, frequencies allowing. I guess that one reason I prefer proposal 3 is that it gives the driver a choice, whereas proposal 2 does not give the driver any choice at all. The 1/12 scale racers already have something like proposal 2 and there are very few complaints.

Another item discussed was a suggestion that all 1/12 scale radio equipment be limited to 100 mv/output to prevent high power radios from swamping the low power jobs.

The last suggestion before the meeting closed was that we run stock cars at the odd numbered year Nats and open wheel cars on even years.

Heard about a wild Invitational Race of Champions (IROC) at the Nats. Seems there is a new Porsche Carrera body out (Associated). "Racing Circuits" has been planning a class race based on a body

like this, so they have contacted Porsche about sponsoring this special class. Word has it that Porsche could use the series for promotional purposes, but would like to see the Turbo Carrera run and they might put up a Porsche 914 as the top prize. WOW! All I can say is it would sure pay to be the best driver in your area!

RECOMMENDATIONS FOR FUTURE NATS:

1. Reference Marks:
   I think it would be very helpful to the racers to put visible lines down the middle of the oval straights and the longer road course straights. A shut off line where the corner radius begins should go across at least half the track. Back about 20 ft or so there should be another shut off reference line which extends across about a quarter of the track width.
2. Lap Counting:
   One member of an R/C car club should supervise the official lap counting/timing of each car. Even with extensive training I don't think outsiders can accomplish the job that is required at a Nationals event.
3. Protests/Decisions:
   In any situation which requires a decision the race director should make the decision or should consult with the competition committee. The drivers involved should not influence the decision making.
4. Driver Classification:
   Open and Restricted power classes (both 3.5cc displacement limit) with no driver classification; or no driver classification with A and B mains for the top 20 (possible) drivers.

Please write to me if you have any comments, suggestions, questions, or ideas concerning R/C cars and racing C/O Model Builder, or C/O HRE inc., P.O. Box 4658, Irvine, CA 92664. Thanks for listening, it's great to be racing again, and have FUN . . . that's why we all do it! ●

Pylon . . . . . *Continued from page 27*

batteries to run the camera, switches, and the telemetry that sends back the data required.

The plane itself is painted with epoxy paint; a beautiful red and white with black trim. Wing construction is similar to the methods we now use, with the 1/64 plywood over foam. There is no resin on the wing at all.

When looking at the plane, the thing that really interested me was the absence of a tail. This does make it very difficult to fly off the ground. There is no tail to help the rotation, so ground speed is very important. Also playing an important role in rotation is the location of the main gear. As many of you know, if the gear is far forward, rotation is quite simple, but conversely, landing is extremely difficult, and bouncing off will spell disaster. On the other hand, if the gear is too far back, rotation is very difficult, but landing is much easier. This rule follows generally true with most models, but is magnified 10 times when you don't have a vertical stab to help effect initial rotation. Also keep in mind that under full power, the engine is pushing, not pulling, thus the nose has a tendency to go down, whereas on a puller (tractor) type plane the nose will tend to pull the plane up. The former can seem strange, as the faster you go on the ground, the more the nose digs in, and by reducing throttle at full ground speed, the plane actually wants to rotate.

The next morning we met at the local coffee shop on the way to Fort Irwin. By 7:00 A.M. we were actually on the road to what was going to be one of the most enlightening weekends I can remember in a long time.

Upon arrival at the dry lake and looking over various flying sites, Jack settled for an area on the north side of the lake and the truck was unloaded.

When you are flying something like this, you don't just grab you're flight box and a can of fuel and go. The plane itself takes two people to lift and there are hordes of electronic items to hook up and double check.

Every item in the plane was gone over with a fine tooth comb. All connections

were checked, along with each wire. Satisfied that everything was properly organized, the wing was bolted in place. Next came the proper selection of lens for the camera, which is, by the way, connected to a zoom mechanism. Several tests were run to satisfy Jack that the camera was functioning perfectly.

After everything was in place, the engine was started . . . with just one flip of the prop . . . by hand of course. Full throttle, and again everything was checked. With a feeling that success was about to join our side of the table, the nod was given to release the plane, and this I did. As the plane roared down the runway I began wondering when it was going to fly. It seems that the plane needs exactly 600 feet of runway and holding full up elevator will not effect rotation any sooner. But as the plane reached the marker that had been set up, rotation was accomplished and presto, the Sky Bye, as it is named, was airborne.

On the ground were several targets that were to be photographed by the R.P.V. while in flight, along with the pilot. Initially, Jack was flying the plane in the traditional manner . . . that is, strictly visually. Several passes were made around a simulated course and the plane was put into a climb, power off descent, and pulled straight up.

After ten or fifteen minutes of flying, Jack said the magic words, "Do you want to fly it?" My mouth dropped a bit, but what was I to say, I couldn't refuse a friend, could I? After getting the feel of the controls, I found the plane was extremely easy to fly. Everything was very similar to what I had been flying the past couple years. It seemed to act a bit sluggish, kind of like an Ugly Stik weighing about 15 pounds. There were no inherent difficulties that I could notice at all. It seemed to actually fly itself. The roll rate was fairly slow, but everything else seemed natural. I immediately noticed that the controls were effective at both full and reduced throttle. This is very important when the plane is that heavy.

As soon as I stopped shaking, I had to see how the plane would perform in various maneuvers, naturally. The first thing I attempted was an inside loop. I found that you have to put the plane in a slight dive to gain enough airspeed to carry it over the top, and if you don't, it just stalls and drops the nose on it's way to the "piece of the rock". Next, I did several maneuvers, such as split S's, stalls and Immelman turns, and found them quite easy to perform. All these were done at a safe altitude, naturally. I just couldn't believe how well the plane handled. It seemed to be a mixture of the way models fly and the way the real ones do.

After convincing Jack of my ability to handle this plane, I asked him if I could land it once. His reply was to let him do a few touch-and-go's first . . . just to make sure that everything was functioning properly.

The throttle was reduced to 50% and the plane was guided to the down wind leg, then turned base, followed by completely reducing the throttle and turning the plane onto final. The R.P.V. seemed very stable all the way to the ground, with no apparent tendency to wander or drop off on a wing tip. The next thing I knew, the plane was on the ground and the box was back in my hand with a nod to take off, which I promptly did. Just fantastic. I flew the thing around a few minutes then chopped the throttle and began to set up for a landing. Naturally, I was very nervous about getting close to the ground the first time, but after getting rid of the shakes I managed to put it down without any bounces and within 50 feet of me . . . and that ain't too shabby.

Several more flights were made in the same manner, and everything started to become second nature with the R.P.V. so Jack said "Let's fly with the TV!" After pulling the wing off and checking everything out very carefully, we refueled the plane and Jack checked out the telemetry in the van to see that all systems were functioning properly and when satisfied, he promptly started the engine and put the plane on the runway.

I was about to see what was going to be the most interesting part of all; flying this devil strictly with the camera. The R.P.V. is equipped with an airspeed indicator and an altimeter, along with various other flight instruments, and all the readings are sent back to a display panel for the pilot to view. The throttle was pushed forward and the ground speed began to increase. The first thing I noticed was that everything seems to happen very quick, and the camera is focused on the horizon, with the lens set at wide angle. It seems to be moving very fast and as soon as the elevator was increased, the Sky Bye was in the air.

The TV camera is equipped with a stabilizer that absorbs all of the vibrations and leaves the picture on the TV very clear, with no apparent interference from the Kraft radio, or vice-versa. I have done some instrument flying in the real airplanes, so catching on to flying with the camera was not too difficult, but naturally Jack was backing me up with a buddy box. It did take some time before I could fly smooth, as the tendency to climb was quite obvious.

The feeling you get is quite similar to being in a real plane. As you increase the pitch, the airspeed begins to fall and you put the nose back on the horizon and the airspeed starts to increase. Most of the flying I did through the camera was done at an altitude that would allow for plenty of mistakes. Turns were accomplished by the use of a combination of the instruments available and at a rate that kept the horizon in view at all times. The bank was about thirty degrees, and this made things fairly easy. I found that, like the real plane, if you concentrate on one instrument too long, the others will be out of synchronization, and getting things back to normal is difficult. At any time I desired, with the push of a button, I could zoom in or out on an object. It takes some getting used to, but is very exciting and certainly something different.

The airspeed indicator at times would show a dive of about 130 MPH, and when the pitch was too great it would drop to 40 or 50. The landing approach was done at 35 MPH, which I am sure is much faster than we are used to. The ailerons were quite effective all the time, but effectiveness was much better at reduced throttle, as on landing. All other controls were very good. I didn't try to do any maneuvers through the TV camera, as it was enough to just be able to stay ahead of the plane at all times.

The sun was finally beginning to fade and we decided to pack up and go home, but only after Jack promised to invite me back when they figure out how to fly the confounded thing at night. By the way this company does things, that will probably be next week!

Further information about the R.P.V. may be obtained by writing to Developmental Science Inc. at 15747 East Valley Blvd., City of Industry, California 91745, attention Howard Krachman.

In continuing my drive to let both sides express their viewpoint on the issue of slowing down Formula I, next is a letter from Ed Hotelling that was written to Glen Spickler earlier this year, with a copy to me. See ya next month.

"Dear Glen:

"We all should carefully evaluate Cliff Weirick's suggestion to require Formula I's to idle for landing, because of his vast expertise in the field.

"Before implementing such a requirement, perhaps more of us should attempt to land a Formula I model with an idling engine. From my own experience in doing so, I have found it difficult to slow down the model as much with an idling engine as deadstick. The cleanliness of the airplane makes slowing them down difficult even for some experienced pilots at fields where long, flat approaches can be made. Therefore, larger, rather than smaller, fields may be required for idling Formula I landings.

"However, this difficulty may not be insurmountable, and may be outweighed at least in some parts of the country, by other advantages. Although in Southern California we don't need more classes to reduce the number of rounds of flying we get at a contest, perhaps a "Formula I Idle" class should be tried either as a third class to our Expert and Standard, or preferably as a separate contest. Then pilots can choose between entering Formula I "idle", Standard, and Expert. But *please* don't change the present, all out Formula I Standard and Expert class of racing for those of us who love it the way it is! Try the idle as a new class, fine, but don't mess with the racing which draws over 100 entries to Bakersfield!

Sincerely yours,
Ed Hotelling" ●

R/C Soaring . . *Continued from page 29*

leading edge and the flaps-down trailing edge, make a greater angle with the relative wind. The angle of attack is greater than before flaps were added, even after DS has countered the pitch-up force.

The deployment of flaps makes a physical modification to any airfoil. If the aft 20 or 30 percent of the flat-bottomed Clark Y section is bent downward 10 or 15 degrees, it becomes a rather heavily undercambered airfoil. The resulting chord line is at a more positive angle of incidence . . . angle between chord line and horizontal reference line along the sailplane's fuselage . . . than that of the original, un-flapped airfoil shape. It follows that the fixed stabilizer angle of incidence becomes more negative with reference to the wing's chord line, and produces greater nose-up effect.

The revised airfoil, as created by flap deployment, offers the pilot a couple of options. Since the new shape has a lower stalling speed, the craft can be flown slower while maintaining the original path of level flight. It can also be flown at any given speed . . . within the flap operating speed range . . . with the nose relatively lower. In a flaps down configuration, the fuselage attitude can be quite negative while the chord line is still at a positive, lifting angle. This characteristic gets the nose out of the way and gives the on-board pilot a better view of the intended landing area during final approach . . . an attribute not terribly important to the R/C sportsperson. Of greater interest is that flaps permit a relatively steep glide slope without buildup of speed as would occur in a "clean" dive at similar angle of descent.

Sounds great. Flaps must be the answer.

But.

There are a couple of nagging little problems.

The reduced airspeed caused by deployed flaps can be undesirable . . . such as in a brisk wind. Now "undesirable" may not be quite right, but flaps really don't buy ya hardly nothin' in a wind. In many respects, flaps are sorta on-board, discretionary, built-in headwind. The ground coverage and descent of a flapped aircraft in still air is not unlike that of landing into a steady wind. The slower speed and/or lighter wing loading produced by deployed wing flaps makes any vehicle more susceptible to wind and gusts. This can be disconcerting . . . at least. Recall that it's the flying featherweights that are flicked by the fickle forces of nature's folly . . . so to speak. Might say that "bombs" do it better in the wind.

Another potential embarrassment inherent to flaps is instant loss of lift upon their retraction. In some situations this is of no concern, but it can cause problems at low altitude. Assume, for example, that a sailplane is on final with flaps deployed. All the square footage hanging out is doing its job beautifully. The sailplane's speed is slow and its angle of descent is steep. About halfway down the final approach, the pilot realizes that the established path will put the sailplane on the ground short of the desired landing point. The only possible corrective action is to get that turkey cleaned up in order to shallow the glide angle and thereby extend its ground distance potential. The pilot retracts the flaps . . . and the sailplane makes a rather unceremonious attack on Mother Earth. It just sorta quit flying. Exactly.

What happened? The sailplane was in stable flight . . . that is, everything was going along just fine . . . although at a high angle of attack and slow airspeed. Then some dummy pulled the cork and dumped . . . retracted . . . the flaps. That amounted to instant angle of attack reduction, but no change in airspeed. All of a sudden the product of velocity and coefficient of lift was not adequate to sustain flight.

The cleaned-up wing will fly, of course . . . it did before the flaps were deployed . . . but not at the slower speed

of the flapped section. Chances are that the wing in the example stalled . . . at least partially . . . when the flaps were retracted. It was moving too slowly for the instant revision of wing section and angle of attack.

This situation can be corrected easily . . . with airspeed. A throttle could be real handy at times, but few sailplanes have this accessory. Sailplanes depend on gravity for velocity. Altitude must be traded for flying speed. Fine . . . if enough is available. It might be that the total altitude is not adequate to regain flying speed . . . much less reach the target landing area.

Flaps can be retracted without disastrous consequences, but a corresponding speed increase must be obtained to generate the lift necessary for flight. There are times when this isn't too convenient.

Spoilers do not have this little idiosyncracy. As mentioned, flaps can be classified as a speed reducing mechanism, whereas spoilers are a lift reducing device. The extension of a spoiler does not cause a change in the shape of the airfoil, though it does raise hell with a significant portion of the air flowing across the wing. As the name suggests, this gadget "spoils" the smooth flow of air so that a part of the wing cannot create lift. The remaining, unaffected portion can only produce less lift than the total wing potential, and so it offers less support for the sailplane's weight. Literally, deployed spoilers increase wing loading by reducing effective wing area. Rate of sink increases accordingly, as does stall speed.

The amount of area affected by spoilers is open to question, but a reasonable assumption can be made. As a rule of thumb, a fully deployed spoiler can be considered to destroy or significantly reduce effective lift over a span distance that is three times its own length. That is, a six inch long spoiler might be expected to kill the lift over eighteen inches of wing. With a spoiler on each panel . . . naturally . . . that makes a total of three feet of wing area that ain't workin'. Could make a rather interesting change in wing loading.

Now it might well be that the three-to-one factor is overstated. Maybe spoilers only affect the wing over a span that is twice their own dimension. But whatever, spoilers do disturb more wing that would be indicated by their size . . . and certainly more wing area than is directly downstream of their position. The point is that spoilers needn't be big to be very effective.

Check full-scale dimensions. A fifty-foot span sailplane seldom has spoilers longer than three feet. At 1/6 scale (2" = 1'-0"), that would work out to 6-inch spoilers for an 8'-4" (100") span model.

As an example, assume that a 100-inch span model has an average wing chord of 8 inches. Total wing area would be 800 square inches (5.55 square feet). If wing loading were 8 ounces per square foot, total weight would be 44.4 ounces. Now, assume the model is equipped with spoilers that are 6 inches long. With spoilers fully opened . . . and assuming the spoilers to have an effective ratio of 3 . . . the working span would be reduced to [100 – (6x2x3)] 64 inches. Working wing area would be (64x8) 512 square inches (3.55 square feet), and effective wing loading would jump to (44.4/3.55) 12.5 ounces per square foot.

With the more modest spoiler effective ratio of 2, the working wing span, with spoilers full open, would be [100 – (6x2x2)] 76 inches. Working area would be (76x8) 608 square inches (4.22 square feet) for a wing loading of (44.4/4.22) 10.5 ounces per square foot.

Deployed spoilers cause little change in the flight characteristics of any given sailplane. Airspeed for landing approach and touchdown is higher than for a clean configuration, but this isn't all bad since the rate of sink can be varied. With spoilers, flying speed is adequate for good control and to penetrate gusty conditions, yet rate of sink can be high enough for short field approaches.

Operating techniques for either flaps or spoilers are simple enough, though the R/C sportsman can add to his problems by improper procedures. These auxiliary controls should not be actuated by an on-off switch nor operated as a go/no-go function. Good landings can result from aerial brake-pumping, but there is a better way.

Flap deployment should be progressive. That is, as the landing area is approached, the flap angle should be increased only as needed to steepen the glide and/or increase rate of sink. As each increment is added, the resulting flight path should be stabilized and evaluated before further deployment is commanded. The retraction of flaps, in flight, should be avoided.

Assuming that a landing is initiated with some sort of conventional flight pattern, key points for flap deployment can be established. For sake of discussion, consider the landing pattern to incorporate a downwind, base and final leg. As the sailplane travels downwind, and is directly abeam (opposite) of the intended landing point, the pilot should evaluate the craft's altitude and cross-wind distance, and the wind velocity. The pilot must judge whether or not the sailplane is in the proper relative position for the existing conditions. If the sailplane is lower than is comfortable, a bit far out, or if there's a headwind of any significance the application of flaps would be inappropriate. If the altitude looks good, flight path is about right, and there is little or no wind, the addition of flaps could mess up a good thing. It all depends upon the "normal" flight path and procedure, established by experience, that is utilized for mental

comparison. Obviously, if the sailplane is high, close-in and conditions are dead calm, the introduction of flaps is warranted.

The second key point for approach evaluation is on the crosswind leg. If all looks good, leave the flap setting as it is. If things seem to have deteriorated . . . too low, too far out, wind increasing . . . retraction of any flap that was deployed on the downwind leg can be considered. For reasons discussed a couple of paragraphs back, flap retraction must be approached with caution. It may not work out. But then getting them off might result in a situation that is less bad . . . though not good. Or whatever.

If the position of the sailplane on crosswind seems a bit too high or close-in, more flaps may be added. That's what they're for. Same is true if things look about right, and the standard pattern procedure calls for more flaps. The essential thing throughout the total landing process is to maintain the desired . . . and hopefully, ideal . . . altitude and glide path in relation to the touchdown target. Flaps are there to help attain and maintain this situation . . . progressively. They should not be used in either a mechanical or erratic manner. Sometimes the biggest problem with flaps is too much too soon. It's always possible that the best use of flaps is to leave them alone . . . even completely retracted.

Turning on to the final leg, the approach should be pretty well set up . . . if the first two key points were analyzed properly and appropriate corrections made. If the sailplane is out of position on the low side, there's a real problem. About all that can be done is to push the nose down for speed and retract the flaps slowly. Maaaaaybe a "save" can be made, but the odds aren't good. But, again, the results might be less bad than continuing . . . fat, dumb and happy . . . to squat twenty yards downwind of the runway.

If the sailplane is high and/or close-in when turning on final, additional flap deployment can be made to improve the situation. Before such deployment, however, the glide path should be observed carefully for the effect of any headwind.

The one truism regarding flaps . . . or any type of landing approach . . . is that if error is to be made, it should be on the "high" side. Altitude is money in the bank . . . though anything can be overdone.

There is no rule that says flaps or spoilers must be used exclusive of other techniques. It might be that the utilization of pattern variance . . . extended downwind leg, close-in crosswind, S-turns on final . . . might help bring off a precision landing that could not be accomplished with only auxiliary controls. Spoilers or flaps should not be considered as a total replacement for other procedures. Use everything ya got to get where ya wanta get. This pattern variance thing was covered in the May 1972 column.

Landing approach procedure with a spoiler equipped sailplane is similar to that with flaps in that key position versus ideal glide path must be analyzed and corrected. There is one important difference, however, and it is where spoilers can really pay off. Assuming ideal positioning when downwind-abeam, the balance of a normal approach should be flown with spoilers in the half-open position. The glide path and rate of descent with spoilers half-open should be accepted as routine and normal, and the basis from which all approach corrections are made.

Spoilers can be closed without the problems attendant to retracting flaps. With closed spoilers, the wing immediately recaptures that amount of lifting surface that was lost due to spoiler deployment. When the normal approach path is established with half-open spoilers, the pilot has the option to increase rate of sink by commanding more spoiler extension *or* decrease rate of sink . . . and thereby increase distance potential . . . by retraction of the spoilers. This amounts to a positive-negative control that offers flexibility far beyond that available with a flap equipped craft.

A visit to any full-scale soaring field will provide the opportunity to see this spoiler phenomenon in action. Sooner or later, the pilot of a landing sailplane that has touched down and is on the wheel will close the spoilers to reduce drag and extend his ground roll . . . but too soon. The regained lift will put the sailplane in the air again. Not high . . . but flyin'.

Obviously this "puttin' back" capability of spoilers . . . assuming half-open to be the normal approach configuration . . . is a fine and very usuable feature. There's no way that it or anything else can overcome all pilot induced probblems, but it can go a long way in help-

ing. In many minds, this characteristic of the spoiler system is enough to overshadow the versatility of flaps.

Most R/C soaring sportsmen will have their own ideas on the installation and actuation of a spoiler or flap system. In most cases, spoilers can be added to existing vehicles, whereas retrofit of flaps can be a real pain in the aft region of sailplane entrails (ARSE). The best idea is to incorporate the desired features at the time of original construction . . . naturally. Various proven system designs can be found in back issues of Model Builder . . . or one of the lesser publications.

No mechanical device will overcome a lack of basic piloting skills . . . unfortunately . . . but either flaps or spoilers can help make a good pilot better. Either system will cause more decisions to be made, but both will help provide solutions. As competition gets more sophisticated . . . as flying fields become more restricted . . . as sailplane performance and efficiency increase . . . supplementary controls may become common to the point of being near standard equipment as inexpensive and practical additions for any but the most basic R/C sailplane.

F/F Scale . . . . *Continued from page 42*

this mixture around the edges. Apply tissue onto the framework carefully, pulling it evenly all around. The only word of caution is, do not leave your fingers on any one place too long or they will stick to the tissue. If this happens, carefully roll your finger off the edge . . . don't pull, or you could tear the tissue. You'll find this method makes covering much simpler all around.

Some modelers have heard about applying Japanese tissue wet, and they can't imagine how it can be done, considering how easily tissue tears when wet. I'll tell you how I do it, and those of you who try it can add your own ideas.

First off, the only reason one would want to apply wet tissue is to try to cover in one piece an upper wing panel or a fuselage that has a few slight compound curves. I dope the edge of, let's say, a wing at least six times. When I apply the thinner through the tissue I want it to hold! First I cover the bottom dry. Most often the bottom of a wing or tail is flat and easily done by any method. Next, take a piece of tissue which has been cut oversize (make certain the grain is going spanwise), and with an atomizer of water, spray the backside of the tissue (dull side) with an even coat of water. This is then quickly, but carefully, laid on top of the wing, wet side down. Pull gently in all directions until the covering is taut and smooth. Thinner is applied all around, followed by a coat of clear dope. The bottom of the wing is then "atomized" with water and the wing pinned down to dry.

What's my reason for doing it this way? By spraying only the back or downward side, the tissue is not completely saturated with water. Therefore, it gives you quite a bit of time to get the tissue pulled around the way you want without any tearing. (I know some modelers prefer to wet or soak the tissue and then place it between a couple of towels to absorb the excess water. However, the tissue in this condition is really susceptible to tearing.) Once the wing has dried, the extra tissue can be trimmed using fine sandpaper, then finished in the conventional manner.

With all the water-shrinking and doping going on, there is always the possibility that a warp could sneak in and ruin the flying of your latest project. Most modelers are familiar with the steam kettle method of removing warps, but one that works best is to use dry heat. Most everyone has a portable electric heater, even a toaster will work. Turn the heater on and twist the warped surface in the opposite direction, like you would if using steam. Hold it near the heat for a short time, remove it from the heat, and continue to hold it for a few additional moments until it cools. You will find that the warp will be permanently gone. Whatever you do, don't get it too close or you will ignite your model!

In future articles I will discuss other covering techniques for scale models, involving silkspan, silk, and condenser paper.

Just a reminder that on October 5 and 6, the Flightmasters are holding their 25th, or Silver Anniversary Annual. Judging is set for 7:30 p.m. Saturday evening at Rockwell International Recreation Center, Imperial Highway in Inglewood (located next to L.A.X.). Flying will be at the Sepulveda Basin on Sunday morning, beginning at 8 a.m. This is one of the finest scale contests you'll find anywhere!

Hannan . . . . . *Continued from page 38*

a suitable aerodrome. Additionally, Ray has converted Sleek Streeks and plastic display models to this form of flying. Unfortunately, his converted A-26 Douglas made a direct hit on a basketball backboard!

SMALL MODEL MARKINGS

Stan Fink, of Eugene, Oregon, has developed an interesting technique for applying lettering to rubber-powered models. First, he purchases rub-down type transfer letters, available from larger art stores. Next, he pins down a sheet of tissue covering material over a piece of graph paper. The graph lines showing through the tissue provide guides for letter placement, and the individual characters are applied directly to the tissue. Caution should be exercised when lifting the backing paper away, to prevent tearing the tissue.

Next, the tissue panel is applied to the model. Stan uses rubber cement for this operation, and does not recommend substitutes. Caution: Some of these letters will be dissolved by heavy applications of clear dope, but will usually withstand a thin sprayed coating. Fink reports that even young modelers have secured good results with his system.

COX BIZ BOFFO

That "show business" headline was meant to capture your attention. According to a recent UPI release, things are going great guns with the Santa Ana firm, in spite of the energy shortage and inflation. Presently, Cox is turning out more aircraft each year than MacDonnell Douglas, Boeing and Lockheed combined! In fact over a million model planes were sold last year, and income neared $20 million. Not bad for a "toy airplane" operation!

HMMMMM

Jack McCracken, well-known scale modeler and Nationals judge, wrote in with this brain-teaser: "Is a single-cylinder engine considered an in-line or a radial?" Answer: Yes.

We've also been puzzled about the CO_2 powerplant. Is it an engine or a motor?

Jack also points out a rather common misconception: Somehow, most engines of radial configuration have been of the odd-numbered variety, usually three, five, seven, or nine. Naturally, twin-row combinations of these types feature an even number of cylinders, but the basic engineering concept is that the odd number of cylinders contribute to the smoothness of operation. And yet, Jack supplied information showing that quite a number of powerplants have been produced in even-number types, including the following: Hurricane C-450 (8 cyl. radial); Brownback C-400 (6 cyl. radial); Challenger R-600 (6 cyl. radial) . . . on the famous "St. Louis Robin I;" Irwin 79 (4 cyl. radial); the Murray-Ajax (8 cyl. radial); and the Murray-Atlas (6 cyl. radial). (In the slightly-staggered but not really twin-row department, we find the Anzani 6 and 10 cyl. radials). Or, how about the double row, 12 cylinder Curtiss Chieftain? Which all goes to prove, when it comes to aviation, you can't count on anything!

INTERESTING SIDELIGHTS

According to Russ Barrera, who just returned from the International Aerolympics, which were held in New Jersey during July, one of the most magnificent scale models entered was a large (6 feet, 6 inch span) P-38 control-liner by a Polish builder, Jerzy Ostrowski. To everyone's astonishment, Jerzy towed this masterpiece to and from the flightline on the end of a line, like a wagon!

Russ also noted a strong trend toward functioning instruments in these world-championship type scale models. Evidently, this sort of mechanism finds favorable reception with the judges and counts heavily towards ingenuity points, an important factor in FAI static scale judging. Who will be the first to equip a Peanut with operating instruments? Actually, air speed indicators, compasses, and temperature gauges seem possible, but wait 'til you try for a tachometer or a clock!

MAKING THE BEST OF IT

It seems that many of our Japanese-American model builders were interned in camps during World War II, and their hobby really helped to keep them from going stir-crazy!

One such modeler was Fudo Takagi, well known West Coast free flighter. Fudo built the Bell Airacobra shown, which spans only 3 inches, while in camp in Arizona, about 1943. The model is part balsa wood and part box-wood, all hand carved, of course. Most of the very limited supplies were obtained by mail. Fudo even made his own silk screens for printing decals! Several models were constructed, as gifts for close friends.

CUSTOM WINDER

If you care enough to buy the very

best, we suggest you consider one of the new rubber-model winders being offered by Bob Wilder. This finely-crafted item features nylon gears and has a 20:1 ratio, making it primarily suitable for small outdoor and most indoor models. The 3 inch diameter case features a dial type counter, with a friction style resetting action. The counter capacity is 500 turns per revolution, and the red pointer is clearly visible against the satin finish aluminum dial face. The output hook may be ordered in either .045" or 1/8" diameter wire. Price for this precision instrument is $25.50 postpaid, which includes a plate personalized with your name!

Address: Bob Wilder, 2010 Boston St., Irving, Texas 75061.

(We're waiting for the one that will let you know 5 turns before the rubber breaks! wcn)

SILLY SIGN-OFF DEPARTMENT:

From Ed Lockhart comes this question: "What's the best color to dye hedral?"

Answer: "Poly chrome!"

Choppers . . . . . *Continued from page 26*

the Jenesco refueling manifold and shut-off valve, available at $5.95 from Jenesco Engineering, 1649-1 W. Sepulveda Blvd., Torrance, Calif. 90501. This little gem is indispensable when it comes to pressurizing your helicopter fuel system (and you should, you know) since it eliminates the need for removing fuel and pressure lines when refueling and completely eliminates the need for separate vent tubes. It can also be used to stop the engine and prevent fuel from flooding the engine when fuel is left in the tank. Designed for mounting in the fuselage side, its operation is delightfully simple. Just turn the valve to the "fill" position and apply the refueling tube to the inlet until fuel overflows from the vent hole. The valve is then rotated to the "open" position and the engine is started. To stop it, the valve is returned to the "fill" position, which immediately cuts the fuel supply to the engine and releases tank pressure. And, oh yes, it can be used in the same manner for an ordinary suction feed system in case you don't like the idea of a pressurized system. It comes complete with instructions!

NEWS ITEM

How many of you are aware of the Federal Aviation Administration's Basic Helicopter Handbook which covers over a hundred pages of theory, operation and maneuvers? Initially printed in 1965, but revised just last year, it is a technical manual prepared by experts for pilot applicants, however, it is invaluable for the model helicopter enthusiast who is interested in background and theory. To get your copy, send $1.30 to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 and ask for a copy of AC-61-13A (stock No. 5011-00064). Don't miss out on this one, it's inexpensive and contains hundreds of illustrations!

FINAL APPROACH:

By the time this issue is on the newsstands, yours truly will be basking on the beaches in Hawaii for a short spell of loafin' – relaxin' – and hopefully some sport flying in the Islands. I hope there's some chopper activity there and will report on it when I return next month.

C/L . . . . . *Continued from page 33*

entries to warrant two separate days with nothing else going on.

How about the Slow Combat people who had to stay over until the last Monday to fly all alone. We're sure many of them had to get home to their jobs. Not every one has two summer months off to mess around, like we do.

The radio pattern flyers missed the entire Nats. Everyone was gone, hobby shop closed, hangar cleaned out, and they were just starting to fly. I know the R/Cers wanted to see other events and models, and other modelers wanted to see them, too. So they really got the short stick.

CONTROLINE WORLD CHAMPIONSHIPS

These were held July 26-28 in Czeck-

oslovakia. Our team had some unforgettable experiences, which included missing persons, missing luggage, lost passports, mean border guards, dead bodies, high speed auto chases, smashed model boxes, and just plain getting lost. Al Hodgkins will have the complete story for us, hopefully next month.

We did do fair, however, with Bob Gieseke winning Stunt and Bill Werwage taking second. Speed was an all Rossi factory team win. Luckily, Chuck Schute is a U.S. member of the "Rossi factory team!" Chuck won third place. All the Rossi's were experimental, non-production types . . . no way close to what you can get . . . if you can even *get* a Rossi. Chuck's was a one-of-a-kind, made to order for him, some unusual materials for a Rossi. I know what it was, but am not supposed to tell. Sorry folks. But then, you couldn't get one anyway.

FAI CLAUS

FAI Control Line Association of the United States. (No official name yet. OK to use this one if you want it!) This is a new organization that was formed at the Nationals, and is dedicated to the selection and preparation of the United States teams for world competition. Throughout the week, announcements were posted in the hangar, and on Friday night a meeting was held for the purpose of discussing the problems of our team selection program. Those present included AMA officials, past and present team members, and future hopefuls (me). All areas of the USA were represented, and I don't feel we have to worry about one locality dominating the organization. There was a lot of heated discussion (argument) about the problems of past programs, and possible cures for the future.

Glenn Lee, present Grand National Control Line Champion, was selected as the directing chairman for the . . . er . . . FAI CLAUS. Jim Duncan, three time team member was selected as the secretary and P/R chairman.

The first item discussed concerned previous team trials locations. It was decided that past finals held separately and close to the same time as the Nationals created undue hardship for competitors who wished to attend both events. We personally know that driving 3000 miles twice in the same month is a great hardship.

The association then voted and approved that the next finals scheduled for 1975 will be held at the same site as the 1975 Nationals, and will take place on the days prior to the start of official National events. It was also decided that no qualifying would be necessary for speed or team race. Any AMA member who registered could compete. Registration fees will be $20.00 per contestant if posted before May 1, 1975 and $40.00 if posted after that date . . . or at the trials. All registration fees will be used for team expenses at the World Champs.

Although there was a definite lack of stunt representatives at the meeting, it was agreed that they had received a very bad deal at the last team trials because there were no practice circles available for stunt flyers. Due to that past unpleasantness, the PAMPA stunt organization has already begun making plans for a separate stunt team trials, at a large site. Although there is nothing wrong with their plans, after all you gotta look out for yourself, we sincerely hope that PAMPA will work with the "FAI CLAUS" in selecting the U.S. Team.

NATIONALS RACING EXCITING, BUT NOT PROFESSIONAL

We once said that scale racing and rat racing could be decided by lining up the pit men and having them try to restart engines and attempt fast plug changes. Well, we forgot about the pilots! If we use my system, then we would also have to put *all* the pilots together in the center circle with their brass handles (knuckles) and have them start slugging it out. A winning combination would consist of a street fighter for a pilot and a miracle worker for a pit man.

Seriously, we were disgusted by what went on at the Nationals. The models and equipment were superior to previous years but the people were something else! Pilots were openly whipping, pivoting, and hindering opponents. Most pilots pass the handle ¼ to ½ lap ahead of of the model, which is a flagrant violation. Pit crews would set up 15 to 20 feet apart, which is not only a safety hazard but a rule book violation. There was no attempt in Scale Racing to fly with the handle on the chest or to pass with the handle at the head. If anyone read the rules then they just didn't understand them or didn't give a hoot.

One scale race pilot processed a set of models, then showed up to fly with two completely different, illegal models, and was never checked. Makes you wonder why bother processing at all. Teams were cussing at each other about cheating while cheating themselves.

So, where was the controline director during all this? He was trying to be fair and unbiased. He was there, so unbiased that he didn't disqualify anyone regardless of how badly they were breaking the rules! The few fouls that were called were too late and not consistent. A contest director has to be sure of his own ability to recognize rule infractions, and be willing to penalize or disqualify any team that does not go by the rules. Unfortunately, the racing director did not want to disqualify anyone . . . not even the people who argued with him and openly swore at him. No C.D. has to put

up with that, and certainly should not. Perhaps next year, a control line racing director made of sterner stuff will be selected for the Nats, and all the unpleasantness will be stopped before they get started.

Quotable quotes from C/L racing at Nats:

"Are you ready for a 2 min warning?"

"I could see from here that the models didn't need to be safety pull tested after the line entanglement. Besides they both finished the race so they must have been safe!"

Do you want to know who really ran some good races at the Nationals? The radio control people really have got it all together. A competitor has to be ready to race when he goes out to their area. They are constantly processing four or five heats in advance and they don't stop or wait for anyone. You get called for safety check, transmitter impound, start position draw, readyline, spotter identification. They don't even care if you are ready or not for the warm up period. They announce that your time has already started and is half over . . . and they mean it! We were caught trying to change a plug once when our ready line was told to move out. They didn't care what our problem was; if we weren't ready to race *immediately* when called, then we didn't get to go at all! We missed that round completely. If that had been at control line, we would have been given at least 15 minutes to diddle our thumbs. You know, I like the R/C system better. They don't even allow time to discuss or file a protest. *(If control line ever had an event where 100 people showed up to compete, as happens in R/C pylon racing, they'd soon learn to stop pampering and become more regimented. The system was born of necessity! wcn)* I am going to devote some future articles to explaining how to run a C/L contest efficiently, that applies to all categories, stunt, racing combat, carrier and speed.

COMBAT CHEATING

There is a certain combat team that has been entering and winning with models equipped with big leading edge wing fences on their Nemisis'. And they have been doing very well too. They claim that because the fences are big and curved that they are not sharp devices for cutting streamers.

Bull . . . ony!

We watched their matches. Those are streamer grabbers and they work, tearing off streamers in what would normally be bad passes. Contest Directors must *not* allow any combat model that does not have a smooth leading edge, to be processed.

FUNNY LINES

This is probably the biggest breakthrough for control line since the Schneurle engine. If you want to add 5 to 20 mph to your model by doing nothing more than changing the lines, this will be for you. We don't have enough space this month to detail the system for you, and we'll have to make some drawings to go with it.

Basically, the Italians have developed a method of causing one line to "draft" the other, or follow behind it, drastically reducing drag.

You still have a two line system with complete control. In fact, a two line system might have a slight edge on the monoline control in speed because of the smaller frontal area of the smaller dual line size. This might just be the ticket for getting a lot of people back into speed who never liked monoline.

I understand that some official AMA types, after seeing "Funny Lines" for the first time at the Nats, held an "official" meeting and banned Funny Lines from record attempts. This is a very head-in-the-sand action and sounds to us like witch hunting. ●

Plug Sparks . . *Continued from page 17*

hour on the timer points of the Madewell 49 in a Playboy Cabin, the model was finally launched with the engine screaming beautifully. At three hundred feet the wind caught the model in vertical position, looped it over, and literally dashed it to pieces, engine included. Hatrak, undismayed, viewed the wreckage, and said, "Have you a spare motor?", completely ignoring the airplane wreck. There should be more like Carl!

Surprisingly, in spite of the wind, most models were landing at the end of the base. Those that failed, either had too long a motor run, or the dethermalizer was set for too long a flight. It was astonishing more models weren't lost.

S.A.M. BUSINESS MEETING

Wednesday night found most of the SAM members again at the CPO club to attend the Annual SAM Business Meeting. President Woody Bartelt commented on the growth of SAM during the past year, pointing out the Old Time Eagles were responsible in a large measure for the increase. Tim Banaczak, Treasurer, reported solvency; over 400 bucks in the kitty!

Cdr. Bolton displayed the SAM Champs commemorative patches, plus the standard SAM Insignia patch selling for two dollars each. Jack indicated that the profits from these were to go to sponsor the Navy Museum at Pensacola. What better way than to have one old timer organization sponsor another . . . gr-r-reat! Incidentally, patches can still be obtained (particularly the SAM patch) from Tim Banaczak. Write for them, well worth it!

Nomination of officers was the next order of business, with the following results:

President:	Joe Beshar
Sec.-Treas.:	Tim Banaczak
East V.P.:	Jack Whittles

Midwest V.P.: Bob Elman
Rocky Mtn. V.P.: Tim Dannels
Western V.P.: John Pond

Inasmuch as no office was opposed, the election was a foregone conclusion. Joe Beshar was asked to assume the chair and in the ensuing speech, announced his goal of 1000 members in SAM. The writer then asked for the election and rule changes to be placed before the membership for confirmation. Banaczak indicated the membership would be polled.

The presentation of the controversial R/C power rule failed to materialize as the Old Time Eagles had decided to re-examine the question before presenting a rule change.

The SAM Newsletter came in for considerable punning as the SAM SPEAKS publication was extremely sporadic in printing. This immediately launched a discussion as to what a SAM member could expect for his dues. Among some of the ideas presented were the possibility of magazine subscription discounts. The President announced he had arranged for the SAM Membership application to appear in one of the leading model magazines.

Following this lengthy discussion, a motion was made to hold the next SAM Champs at Denver. This was passed with the proviso that the Model Museum Club would undertake the sponsorship. The meeting was then adjourned.

Thursday was the wrapup day, and the last chance for those who were unable to take a trophy during the first two days.

Probably the biggest bang the writer got was watching Ron Moulton, Editor of Aeromodeller, fly John Haggart's So Long. Transported all the way from England just for this single purpose, the model flew quite well, although it did not place. Ron Moulton is to be credited for excellent handling of the model and engine starting. No problems either way! Outside of the Canadian boys, this was the only non-US competitor, although there were plenty of overseas spectators resulting from the International and World Championship events being staged during this time at Lakehurst. Among the most prominent was Henry Nichols, a truly madcap soul. To escape his infectious spirit and humor, you'd have to be dead!

Also noted at the officials F/F desk was the addition of Jack Florenzie, a long time AMA F/F official. Jack simply walked up and said he would help. How about that? Jack is recovering nicely from a seige of illness, one reason you won't see him officiating at the Nationals.

SAM VICTORY BANQUET

Dunno what the count was, but there was no question in this writer's mind, this was the biggest SAM dinner ever. The CPO club was S.R.O. (theater parlance). Talk about celebrities, important officials, VIP's, this dinner didn't suffer from a lack! Headed up by Johnny Clemens, AMA President, AMA was also represented by John Worth, Frank Ehling, and Carl Wheeley. Walt "Pops" Shroder, and Art Shroeder of Model Airplane News, Ron Moulton of Aeromodeller, Don McGovern, Flying Modeler . . . in fact, the press was completely represented. The O/T movement won't suffer from that.

The usual trophy awarding and speeches were given a slight twist as the Event Directors gave out all the trophies. The boys caught "Daddy Warbucks" off base when the columnist was summoned to the platform and handed the Miller High Life trophy for best drinking. While still stunned, a cold beer was thrust in his hand and the evidence immediately photographed. It's gonna take a little time to recover from that!

A real resounding round of applause was given Woodman and Beshar for their tremendous efforts in putting on what the writer considers the biggest and best SAM meet do date. Cdr. Jack Bolton also received a standing ovation for all the facilities he had made possible. To top it off, he went home with four trophies!

The drawing (another gimmick to raise money!) was held amid considerable joshing. One wag, upon hearing one person called with no answer, quickly

stood up and said the fellow said to pick up the winnings for him. Clever! It didn't fail to bring forth a considerable amount of haw-haws. Eventually the Super Cyclone was won by one of the recorders (Darn! Forgot his name). Being from the O.T. Eagles Club, this also brought forth some comments, one of the milder being "collusion."

Regardless of all the fun, one cannot help but think that with the SAM Championships being held on the East Coast for the first time, SAM has finally come of age! Well, here are the results:

July 2
Results: SAM Champs - Free Flight
Class A Pylon
1. Jack Whittles – Interceptor/ O&R 19
2. Joe Beshar – Fox/Bantam
3. Jack Chilmark – Playboy 19/ O&R 19

Class C Cabin
1. Tom Lucas – Playboy Cabin/ Atwood
2. Herb Wahl – Clipper/Hurleman
3. Larry Boyer – Clipper/Tiger

Stick Rubber
1. John Stott – Gollywock
2. Joe Scerro – Twin Pusher Orig.
3. Danny Shields – Burnham T.P.

Cabin Rubber
1. Ron Sharpton – Korda Detherm-alizer
2. Fran Kastory – Korda
3. Jack Whittles – Korda

Scale Rubber (High Single Flight)
1. Chet Bukowski – (Corben Super Ace
2. George Morland (Stinson SR-8)
3. Jack Chilmark – Pyrettaupin

July 3
.020 Replica
1. Fred Kiley – Baby Bombshell
2. Don Assel – Interceptor
3. Robert Hamer – Bombshell

30 Sec. Antique
1. Larry Boyer – Clipper/Tiger
2. Herb Wahl – Clipper/Hurleman
3. Jack Whittles – Spook 48/ O&R 23

B Pylon
1. Woody Bartelt – Ranger/ O&R 29
2. Jack Chilmark – Playboy Jr./ O&R 23
3. Wayne Cain – Zipper/O&R 23

A Cabin
1. Woody Bartelt – So Long/ Arden 19
2. Wayne Cain – Dodger/Arden 19
3. Bruno Markiewicz – So Long/ Arden 19

July 4
C Pylon
1. Jim Robinson – Playboy Sr./ O&R 60
2. Bruno Markiewicz – Sailplane/ Cyke
3. Tom Lucas – Playboy Sr./ Atwood

B Cabin
1. Jack Chilmark – Spectre/ O&R 23
2. Bruno Markiewicz – So Long/ O&R 23
3. John Lessig – Dodger/ Forster 29

July 2 - 4
SAM CHAMPIONSHIPS
R/C Events
Class A
1. Al Schwarnhert – (Playboy Jr.)
2. Dave Schwanhert – (Zipper)
3. Jack Bolton –(Coronet)

Class B
1. Leon Shulman – (Zomby)
2. Jack Bolton – (Playboy)
3. Cliff Schaible – (Playboy)

Class C
1. Cliff Campbell – (Gas Champ)
2. Dave Jaggie – (Playboy)
3. Joe Beshar – (Fox)

Class D
1. John Kelly – (Sailplane)
2. Jack Bolton – (Playboy)
3. Dave Jaggie – (Pylon Buster)

Antique
1. Howard Carmen – (Powerhouse)
2. Tom Knahel – (Mercury Scientific)
3. Leo Weiss – (Aristocrat)

.020
1. Joe Beshar – (Playboy)
2. Dave Jaggie – (Zipper)
3. Jack Bolton – (Powerhouse)

Texaco
1. Howard Carmen (Powerhouse)
2. Fred Collins – (Buccaneer)
3. John Pond – (Dallaire)

PICKUPS

Housing was for free for the out-of-towners. Real great facilities too! Meals were dirt cheap. The biggest expense anyone would have, would be the gas cost. The writer observes the only gas shortage is the lack of cheap gas! Only two models hit the hangars. That should be some sort of a record! Besides the brush hiding models, the busy road along the base was also bad for the unwary modeler who didn't immediately chase his model. True pickups there!

With enthusiasm on the east coast running so high, it appears quite a few easterners will be making the trip to Denver. Looks like an even bigger and better Champs in '75. How about a slogan, "SAM's alive in '75!" ●

ATTENTION !
OLD TIMER FANS ! !
New address for those hard-to-find Old Timer Plans:
John Pond
4269 Sayoko Circle
San Jose, Ca. 95136
(408) 225-0308

Sailing . . . . . *Continued from page 51*

cure it. Luckily with sails, it is usually a simple tug on a downhaul, or a small change in mast bend that will do it. Hull problems require a good deal more labor. It is also very easy to send a boat out, that up till then, has looked like a champion, and having forgotten to tighten the vang, the first reach winds up with an hourglass wrap around the spreaders. Nobody is free from such gremlins, and we can all learn by exchanging such experiences.

* * *

We recently ran across a new publication aimed directly at the model yachting competition skipper. Titled: "THE IT'S FUN TO SAIL, BUT MORE FUN TO WIN BOOK." It was written by Ray Davidson in conjunction with a workshop program on R/C sailing yachts sponsored by the Ontario Science Centre. It focuses directly on the sailing of the boat, what to look for and how to react on each leg of the "round the

buoys" race course. It illustrates basic rules, but stresses concentration, attention to detail, and a never-give-up attitude for the serious competition skipper. I had the luck of getting a copy from Wolfgang Schultz at the Eastern Regional 50/800 Championship held here in the nation's capital on June 30th. I hope to have further information on availability here in the U.S. by the time this column is on the newsstands, so write to me directly for the latest word.

And while you've got your stamps out, send in your five dollar annual dues to the AMERICAN MODEL YACHTING ASSOCIATION c/o C.H. Black, 4761 Niagara Avenue, San Diego, Ca. 92107. There are now over 1,000 boats registered with AMYA, which gives a good indication of the rapid growth of this non-polluting, head-to-head competing form of the radio control sport.

I'll field questions directly, Rod Carr, 7607 Gresham St., Springfield, Va. 22151, or write in care of MODEL BUILDER.

* * *

Free Flight . . . *Continued from page 45*

several different modes. According to the charts the "flap-up" (0 - 1° from flat bottom) mode has very low drag at the needed angle of attack for climb. In fact it is the only undercambered section I'm familiar with that doesn't have the usual drawback of the undercambered foil, that is, a sharp increase of drag near the zero-lift angle.

"If the charts are correct, this section with the flaps up is just about as good in the climb as the typical flat-bottomed sections now in use. Determining the quality of glide is not so easy to evaluate. The RN is much too high to make comparisons easy. According to a graph comparison table, the Gott. 400 with the flaps in the moderate position (5 - 6° deflection) is about average for Nordic-like foils. It is better than some but not as good as the Gott. 57. The reason for this only average glide is probably the high entry of the Gott. 400. But you can't have everything, as that well-rounded nose is what gives the Gott. 400 such low drag in the climb.

"But for an all-around flapper foil, the Gott. 400 seems hard to beat. And use has seemed to bear this out. The Sirendipity foil, which is based on the Gott. 400 and has slightly less undercamber, has had good success, giving a fast-climbing ship with a glide far superior to conventional fixed camber ships. I highly recommend it for anyone considering an all around flapper. (For a short-run flyoff ship, something like the Gott. 57 might have an advantage over the 400).

"A few months ago I discovered an interesting thing. I had been working on a modified CH 407 (see last month's Darned Good Airfoils) to use on a flapper. I was surprised to find that the Gott. 400 and the CH 407 were almost a match for each other except for the differing noses. Evidently it would be possible to use identical rib templates and effect a transformation from one ship to another by modifying the nose with some vigorous sanding. I should mention that the CH 407 had to be slightly changed in the rear 35% to accomodate a flat bottomed flap. Still, the resemblences between the main bodies of the two foils are amazingly close, and considering our tolerances of

construction, of little moment.

"The modification that I made from the Gott. 400 to the Sirendipity is a moot point. I reduced the undercamber slightly because I just couldn't believe the figures on the chart. Perhaps this caution is not warranted. Another change I made was to reduce the flap to 35 from 40%. This is in line with my recent feelings that there are advantages to using a moderate sized flap and little if any loss in efficiency . . . in fact, there may be a gain in getting the hinge line further aft.

"Just got a letter from Koster (Tom Koster, Danish FAI Flapper experimenter). He had a great victory at Weiner Neustadt with his new Hot Tuna. I guess he really startled the other flyers with his new mode of transition, dropping the stab first and putting the ship over the top in a sort of outside loop. They really came running to find out what he was doing! The technique really works great but you sure have to have a ship that keeps its nose up. I used it on my first flapper and had a spectacular transition. One second it was going straight up and then suddenly, quick like a combat maneuver, it just flipped over and glided majestically away. The next flight, though, I launched too shallow and the ship was coming down. It flipped upside down into an inverted spiral dive to its death. Anyway, Koster worked his way to the 4 second flyoff against Peter Kretchmer (the prop maker). Thomas said it was a good test for the flapper, as Kretchmer had a long-spanned ship with undercamber and a good Rossi up front. Kretchmer did around 98 seconds and Koster did around 165. Koster went home happy and I imagine there are now a few flappers on drawing boards in Germany. Incidentally, Koster had climb troubles last year and figured it was caused by the stab overpowering the wing. This year he is trying a semi-symmetrical tailplane airfoil and claims it is worth its weight in gold."

HOT TIPS FOR HOT STUFF AND OTHER STUFF

A couple of quick tips from the Hunters of Satellite City, via the Northwest's Notorious Don Dodd:

1. Having trouble getting that Hot Stuff to set up? Moisten the glue surface and watch it work. Cyanoacrylate needs moisture . . . not much, a little dab will do you.

2. Still covering with Mylar? Doesn't give you the rigidity you want? Try this: Cover the open framework with Japanese tissue. Dope it once or twice with thin nitrate (not butyrate) dope. Allow several weeks for the nitrate to cure . . . cover over with 1/4 mil clear mylar. For those of you who have had problems, I bet you were doping with butyrate . . . The stuff never really stabilizes, you know. Try Nitrate . . . but be careful of its flammability.

THE STARFDUSTER . . . A NEW CONCEPT IN FREE FLIGHT?

In keeping with today's instant world, free flighters need to get on the bandwagon. Any modeler with the wherewithal can purchase instant and ready to fly models . . . except free flighters. For too long we have stood around with our heads in the sand and talked theory, when the talk should have been marketing and dollars . . . the good old American way.

With this in mind, I would like to suggest the following to Sal Taibi, proprietor of Competition Models. Since his Starduster design is probably the most respected and competitive commercial design now available on the market, he should take the following steps and lead the way to a greater future for free flight.

Sal would find a ready market if he could produce an ARF Duster (or STARF Duster, if he prefers) complete with engine, tank, timer, etc. It could be produced in a rubber banded version, for those who want to assemble their own; and a non-rubber banded version, for those who don't wish to take the time to put theirs together before flying. The STARF Duster, in this condition, should sell for no less than $200.00 (to give it status), and be marketed in a styrofoam case.

An entire line of authentic STARF Duster parts packages could follow the introduction of this revolutionary product . . . everything from embossed d.t. rubber bands to pre-cut mylar iron-on trim to make every model distinctively different and original. A factory repair service network could be established to take care of those untimely, but expected, little accidents which do occur. Such slogans as, "Dust your Duster? Don't STARF your flying time, send your ship to Sal," come to mind.

To prove the worth of the model, a factory flying team should tour the Western World competing in all of the big contests with their STARF Dusters. The logical follow-up to this would be a series of color cover photos and feature articles in all of the major model magazines . . . complete with product reviews, how-to-do-it series, plus an AMA sponsored TV Special with reprint films available to charter clubs at a nominal fee. Such titles as "Greater Than Tennis," or "180 is STARF," are possibilities for such cinematic exploits.

The AMA F/F Contest Board would need to deliberate at some length whether the STARF Duster meets the intent of the Builder of the Model Rule, but, I would conjecture, in early 1979, after countless pro and con arguments in the newsletters and the model press, it would concede that the STARF Duster is an acceptable model for free flight

MODEL R/C HELICOPTER DATA CARD

Complete and return to: MODEL BUILDER – CHOPPER CHATTER
Box 4336, 1105 Spurgeon St.
Santa Ana, California 92702

Name: _____ **Phone:** _____

Address: _____ **Age:** ____

R/C Helicopters: Interest only ☐ Building ☐ Completed ☐

Type model or kit: _____

Areas where help is needed: _____

List special skills you might share: _____

Remarks: _____

competition. This would then open the market for the other manufacturers to follow the imaginative lead provided by Competition Models. Advertising would be able to capitalize on the ARFree Flight's ease of assembly and elimination of the tedious hours of time spent with such things as knives, glues, dope, tissue and other ancient rituals.

The National Free Flight Society would then be able to award the ARFree Flight a place in history by naming it as one of its Ten Designs of the Year.

After all of this happens, free flight would assure itself of genteel respectability as a gentleman's sport and the AMA could declare a new Novice and Expert Classification System to replace the archaic Junior-Senior-Open categories for flyers who prefer competition to fun-flying.

A whole new jargon could develop surrounding the ARFree Flight and, as a logical outgrowth, a new magazine should hit the newsstands in 1981, entitled Free Flight Modeler. It's major initial thrust would be to assail the AMA for its regressive and clandestine operations.

Lest you think the above too far-fetched, I have no doubts that similar developments could occur, given the right setting and the right people at the right time. After all, it's not a totally untried idea . . . . . ●

R/C Nats . . . . . *Continued from page 23*

fully finished Akrostar.

In fourth place was Jerry Nelson, founder of the National Sport Pattern Association, with his Pitts. As usual, Jerry got a lot of back seat driver help from his flying buddies along the flight line.

The 5th place airplane turned us on just about more than anything else at the Nats. John Alexander, from Abilene, Texas, entered a P-38 with molded fuselage and booms. Up close, the big ship was a bit rough, even at the required 10 feet. It was all original, with homemade retracts, mufflers, and cooling heads for the enclosed engines. He had made the fuselage molds himself.

But it wasn't the static appearance of the P-38 that grabbed us . . . it was the sound and the flying . . . but especially the sound. The engines were extremely quiet, but had that typical deep, whooshing whine of the powerful, in-line Rolls-Royce or Allison as it flashed by on low passes. The scale speed seemed just right, and the ship flew with a heavy, solid, on-a-rail manner that gave us goose pimples. Sport Scale at its best . . . in our opinion.

In the afternoon, AMA Scale took over, and it also had its star performer . . . Dan McCan and his North American "Shrike" Commander, in the colors of Bob Hoover's well known air show stopper. The ship was a live K&B commercial with K&B front rotor 40's powered by K&B 500, and the model finished with green and white K&B Superpoxy. Dan's experience in building, finishing. and flying Formula I pylon racers "done him no dirt." He put the Commander through a series of maneuvers that often emulated Bob Hoover's artistry, especially the huge, cloud tickling loop started from 10 feet off the deck, climbing way up overhead, and then screaming down the back side to level out at the 10 foot starting altitude. That, friends . . . takes guts!

Dan won Class I AMA Scale . . . followed by Larry Smith's Zlin (watch that torque effect on takeoff, Larry!), Ray Collelli's Fokker D-VII, Don Neill's beautiful Grumman F6F Hellcat, and Bob Underwood with an unusual twin engine aircraft that attracted a lot of attention, the Alcor C-6. This one-of-a-kind Lockheed design flew in 1938 and was quite unusual in that its twin Menasco engines were mounted pancake fashion on either side of the flattened nose of the plane. The retract gear operated P-40 fashion; folding and rotating simultaneously to the rear. Unfortunately, Bob's homemade gear liked to start rotating before folding, so that he used up several pairs of propellers getting in a couple of flights out of 6 trys. Bob and the Alcor earned the Scale Flight Achievement trophy.

In Class II, Bob Wischer, fresh from winning the World Championship in scale when he became the last minute fill-in for crashed out Bob Karlsson, had no trouble taking first with his beautifully built and detailed Emeraude.

Claude McCullough, Mr. R/C Scale, brought his beautiful Shinn, but was so ill from bronchitis and back problems that he could hardly walk. However, Jimmy Grier decided that if Claude could disobey his doctor's instructions and come to the Nats anyhow, then he damn well better enter and fly to make it all worthwhile.

Jimmy helped assemble the plane,

took it to the flight line, started and tuned the engine, and literally did everything but wiggle the sticks for Claude. In fact, on one flight, the Shinn was going full bore down the runway and about to lift off before Claude could turn around to see what was happening! It was all good enough for second place.

Charles Viosca, the only other Class II scale entry, placed third with his J-3 Cub.

We'd like to discuss this Sport/AMA Scale thing further, but will put it off until next month.

THE PRIVATE NATIONALS OF CLASS A, B, & D PATTERN FLIERS, or, WHERE DID EVERYBODY GO?

On Monday, Tuesday, Wednesday, and Thursday, August 12 through 15, the 1974 AMA R/C Pattern Nationals took place on a remote and deserted portion of huge Chennault Air Force Base, site of the just completed 1974 AMA Nationals.

If that sounds a little facetious . . . you bet! Much to the disappointment of many free flight and control line contestants who had to get home, plus R/C contestants whose events had been completed up to a week earlier, and also had to go home, R/C Pattern finally got under way . . . after the party was over.

Monday and Tuesday were qualifying days for Class D Expert, also final days for Class D Novice. In other words, D Novice fliers flew only the qualifying pattern to determine their nationally rated skill . . . humpf!

Coming out on top in Class D novice was Mike Stokes, from Memphis, Tennessee, with a score of 4365. For comparison, the lowest of the 20 qualifiers in Class DN, Bob Smith, scored 4810 to qualify. We watched one of Mike's flights, and he topped off a nice performance with a rather spectacular landing. As he made his approach, we could see that his left main gear did not come down. Mike was obviously making the best of it by coming in with the left wing held high. As the ship touched down smoothly (in the circle, by the way) the left gear dropped down and locked and he was able to complete the landing without further incident. Mike admitted later that this had happened to him before, with the same results. We told that this was a pretty risky way of psyching the judges for extra points!

The next four places in Class DN were taken by Tom Walker, Jim Vanderwalker, Rusty Van Baren, and Bill Lippincott.

At the end of two days of qualifying, the 20 finalists emerged, headed by Rhett Miller III and listed in order of qualifying from there down; Mike Mueller, Steve Buck, Don Lowe, Al Dupler, Dave Brown, Norm Page, Phil Kraft, Bill Salkowski, Ed Keck, Jim Whitley, Ron Chidgey, Jim Martin, Steve Helms, Wayne Abernathy, Jim Oddino, Tony Bonetti, Steve Ellison, Jim Osborne, and Bob Smith.

Among the unexpected non-qualifiers were Don Coleman, Joe Bridi, Dennis Donohue, Lou Penrod, and George Hill. Dr. Ralph Brooke did not attend the Nats this year. We missed the bearded hippie dentist and his son Steve and hope they'll be back next year.

The first morning of the finals, Wednesday, looked like Doylestown in 1971. The early morning fog lifted to a low overcast . . . much too low for maneuvers such as the Figure M and Top Hat. By the time it lifted, it was too late to start a round, and it was decided that Class A & B would go ahead, and then a round of Class D Expert Finals would be flown in the late afternoon.

Incidently, because AMA Scale had been completed earlier and did not have to be flown simultaneously with D, using an alternating frequency schedule as done in past years, the finals were flown with one line at each site. The fliers may have liked the lack of distraction by not flying two lines back-to-back, but it sure raised hell with spectating . . . though on second thought, who cared, there weren't any spectators anyway!

If there had been only one round and only 5 trophies handed out in Expert (and many thought it would have been better to have 5 real trophies instead of 20 equal-sized paper weights), the contest could have been decided after the first round flown Wednesday afternoon. Miller, Whitley, Salkowski, Martin, and Brown finished in that order both in Round One, and at the end of the contest!

However, that ain't the way you play the game, so three more rounds were flown on Thursday morning, which came up with better weather than Wednesday.

In that first Wednesday afternoon round, Rhett Miller put up his best flight, which also turned out to be the highest score in the event . . . the only one over 5,000 at 5010. And if there was any doubt of his superiority, he went on to put up the second best and seventh best scores of the meet. The score he threw away (best 3 flights are totalled out of all flights made, in this case four) would have tied two and topped 9 of the best scores made by eleven out of the 20 finalists!

Rhett's stance and flying style is still like that of his teacher, the late Jim Kirkland, who was twice Nats Champ and a member of the U.S. Team that went to Bremen in 1969. He stands perfectly straight, feet planted firmly and slightly apart, the single stick Pro Line transmitter cradled in his left arm and held at waist level. The loudest we have ever heard this quiet, unassuming young gentleman of 16(!) talk is when he's calling out maneuvers to the judges, and then it's only enough to be heard and no more.

We watched Rhett fly in Round 3 when he put up his, and the event's, second highest score of 4905. The only fault we could find was in the four and eight point rolls . . . the stopping points were not sharply defined . . . they didn't "click." Other than that, there's nothing to say except, "If you want to see 9 and 10 point maneuvers done better than the book illustrates them, watch Rhett Miller III." If you've ever been a pattern judge, and then watch him for the first time, you'll know you haven't been tough enough.

Jim Whitley's performance, one notch down from Rhett, was just as convincing. Throughout the four rounds, he never dropped out of second place, and in the process, put up the 6th and 8th best scores of the contest, the highest being 4795.

When Jim flies, it's more interesting to watch him than his airplane. A good flier projects his mind into his ship . . . Jim projects his whole body (and that's a lot!) He is a scratch golfer (No, he doesn't have the itch. It means he's not allowed any handicap in competition, dummy!) You can tell when he's really putting on the pressure because he gets up on the balls of his feet and bends those knees. At the completion of a good takeoff you'd think he just sank a 30 foot putt, and on maneuvers going right to left, you can see the follow through as the left leg goes straight the right knee bends forward, and the antenna points down the runway. Thank Heavens he doesn't keep his head down!

Bill Salkowski's road to 3rd place was a little rockier. His second flight of 4175 dropped him to 8th, but then a strong 4800 (fifth highest of the meet) brought him back to 6th, and a 4675 in Round Four allowed him to drop the 4175 so that he just nosed out Jim Martin by 5 points (out of 14,210!).

Bill is always right up there in competition, and we're real glad to see him finish in the top 3 at the Nats . . . the best he has done at a Nationals Competition.

Jim Martin and Dave Brown started in 4th and 5th, traded places in Rounds 2 and 3 and then switched back again in Round 4 . . . close all the way.

Jim used an interesting technique to keep his maneuvers centered. He placed his caller, our old flying buddy Gus Geisinger, directly in front of him and about 6 to 8 feet away. We first saw this used by the British team in Doylestown, though in that case, the helper stood on the opposite side of the runway! Both Jim's Banshee and Dave's Phoenix 5 were extremely fast machines, and as such, took up lots of space to fly the maneuvers. If the "window" technique ever becomes mandatory, they'll both have to make drastic changes in airplanes and flying style.

Mike Mueller, a young man who is an old timer in R/C Nationals competition, got off to a slow start, considering his second highest qualifying score. He placed 13th in the first round of the finals. However, in Round 2 he put up the fourth highest score of the meet, 4805, which catapulted him to 3rd, a position he held through Round 3, but then settled into 6th with a 4590 in Round 4.

Mike still has a most unusual way of holding the transmitter . . . so unusual that we figured (incorrectly) that he must have seen Norway's Pujo (say "Pie-Oh") Stephanson doing it. He's the only other flyer we know of who holds the transmitter against his chest and just under his chin . . . so close that the sticks almost touch his cheeks when they are moved toward the center. Whatever the reason, it sure works well for Mike!

Steve Buck, the pleasant and soft-spoken pre-med student from Phoenix, Arizona, who was 3rd highest qualifier, never quite got it all together, though his last flight of 4675 pulled him up from 10th in Round 3 to a final of 7th.

Finishing out the first ten places were Steve Ellison, Norm Page, and Steve Helms. Ellison kept improving with each round. We didn't see his first flight, but he must have had an engine cut or run out of time, as the 3595 that put him in 19th was not his kind of score. A 4405 moved him to 16th in Round 2, followed by a 4640 to 14th place, and a final 4665, which put him in 8th.

Norm Page, who was winner of the 1972 Huntsville Masters Tournament, putting him on the 1973 U.S. Team, had a good start with 4620, but an engine cut in Round 2 dropped him to 19th, from which position he climbed back to finish 9th.

Steve Helms' best round was No. 3, when a 4620 pulled him up to 7th place, but a 4440 in Round 4 dropped him again to 10th.

Nothing in the way of equipment really dominated the finals this year, though there were 4 Super Tigre engines in the top ten airplanes. Ellison, Helms,

and Phil Kraft, who placed 12th, were using prototype Kraft engines, which seemed to perform quite well. The T2A, designed and produced by Chuck and Bob Smith, was used by 5 of the qualifiers, while four of Don Lowe's Phoenix . . . one No. 5, and three of No. 6 . . . were flown.

Phil Kraft's airplane, which for want of another name, was dubbed "Big Mother" by fellow contestants, seemed to arouse the most interest. It was larger than most of the other aircraft, and the wing had a thicker section. As a result, it was slow, yet steady in the air and the maneuvers, especially the long Slow and Eight Point rolls, and the Figure M and Top Hat, could be done in a smaller amount of space and consequently, closer to the judges. If framing does come into the picture (no pun intended), Phil's ship could be an indication of the trend. Frankly, we think a couple of his scores should have been higher.

Radios were pretty evenly split between Kraft and Pro Line, with two S&O's (Salkowski and Oddino, Who else?) and a World Engines (Dave Brown) adding to the variety. None of the new Kraft "Super Radios" were being used. These will probably make their first appearance at the Masters Tournament next month in Wichita.

The finals flying in general was pretty good, though only a few contestants really showed top World Championship form. The Rolling Eight was often a "Snowman" figure . . . the bottom loop being much bigger than the top one. The high speed airplanes simply couldn't be slowed enough when going "down hill." Several fliers were seen flattening the bottom loop in order to avoid pruning the trees at the edge of the runway.

Quite often, the slow . . . roll . . . would . . . start . . . off . . . OK, but . . . would . . . speed . . . up . . . in thesecond-half. Possibly the plane builds up rotational momentum, and aileron deflection would have to be backed off. Even a slow roll button wouldn't help much if this were the case. Tapering the wing structural weight off toward the tips might help overcome this.

Most common faults seen on other maneuvers included; jumping takeoffs . . . pattern ships can't rotate like jets. They should be set up with a slight positive angle of attack on the ground so that lift off comes gently, when ship reaches flying speed.

Stall turns in Figure M . . . wings not flat in plane of rotation during stall.

Cuban 8 . . . missed crossover.

Double Immelman . . . many are looking like a loop with rolls. Should look more like an oval race track on edge.

Four Point Roll . . . 1 . . . 2 . . . 3 . . . 4. Get it?

Eight Point Roll . . . points of hesitation not clearly defined.

Running Eight . . . Three times the plane has to go through the exact same piece of sky. Rougher than it looks.

Top Hat . . . Loss of heading at transition from vertical climb to inverted flight across the top.

Spin . . . Spiral entry instead of sharp stall.

Traffic Pattern . . . Only a few started high enough to show a continued descent throughout the maneuver. Many got too low too far back and had to goose throttle and break out of descent path in order to reach the landing circle.

Landing and Spot . . . Better landings than in previous years. Pilots have learned that a 9 landing in the outer circle is worth more than a 1 or 2 in the inner circle and are not diving for the spot. Distance of roll-out to stop needs some defining. Some ships roll so far that judges can't see a sharply defined stop.

Immediately after Class D was concluded on Thursday, the Class A and B had their last fling . . . and in pretty good company too, as many of the Class D finalists volunteered and were put into service as judges.

Winners in Class A were Terry Nitsch 1st, Greg Kieliszek 2nd, Bob Williams 3rd, Merle Hyde 4th, and Duane Reetz 5th. Best A Junior was Bill Rutledge, whose airplane was much bigger than he, and Best A Senior was Clifford Hiatt.

In Class B, the winner was Tony Howze, followed by Jess Hogan (who judged D) 2nd, Bill Constant 3rd, Dale Adam 4th, and Tom Golson 5th. Best B Junior trophy went unclaimed, and Tony Howze was Best Senior.

Incidentally, Rhett Miller also picked up the Best D Senior trophy, and Dan McCan, on the strength of his Class I Scale win and 5th place in Formula I, was the R/C Category Champion.

For the first time in quite a few years, there wasn't an R/C banquet at which trophies could be handed out. But on the other hand, at least the A and B winners had the chance to share a little limelight with the D fliers, as all Pattern trophies were handed out in a brief ceremony, at Finals Site A, soon after the conclusion of flying.

And if anyone feels bad about that, just remember; all free flight and control line winners have, for years, simply turned in a slip at the trophy cage and received their hardware . . . no hand clap . . . no kiss . . . no nuttin'. ■

Counter . . . *Continued from page 7*

"Omni Mount" is the name given to a new boat engine mount being offered by Octura Models, P.O. Box 536, Park Ridge, Ill. 60068. With some easy modifications the mount will take anything from a .19 to a .65, and the overall width is 5 inches, which can be trimmed

to 3-1/4 inches when necessary. At $3.75 each, it is reasonable enough to consider a mount for each engine used, permitting fast engine changes. If not available at your dealer, it may be ordered direct by adding 10% for postage and handling.

* * *

Modernistic Models, Box 6932, Burbank, Calif. 91510, which now offers a series of Peanut scale plans, has just introduced the first of a new series of 3/4 inch scale plans. Selling for $1.50, plus tax to California residents, plus 50 cents for postage, the first plan available is for Ben Howard's "Mister Mulligan." Plans are rolled and mailed in a tube.

* * *

The HRE-1000 chassis kit for 1/8 scale R/C cars is now available from HRE Inc., P.O. Box 4658, Irvine, CA. 92664. Kit includes all major chassis components, wheels and tires, clutch assembly, aerodynamic wing, body mounts, engine mounts, Kydex for bumpers and roll bar; everything shown in the photo. Price is $134.95, and all items are available separately. Dealer inquiries invited. The chassis was fastest qualifier in Expert Oval, and placed second in the main at the 1974 ROAR Nationals. See advertisement and R/C auto column for more information.

* * *

"Flying Scale Models of WW II" is the title of a book just published by MODEL BUILDER Magazine. Compiled and produced by I.E. (Ed) Coleman, Toronto, Canada, the book features construction articles for rubber powered, 1/2 inch-to-the-foot scale models of 12 well known World War II fighter aircraft. Each article is accompanied by 5 or more pages of full size plans from which the model may be built. Included are; the Grumman F4F Wildcat and F6F Hellcat, F4U Corsair, Mitsubishi Zero, Hawker Hurricane, Supermarine Spitfire, Messerschmitt BF-109E, Focke-Wulf TA-152, P-39 Airacobra, Curtiss P-40C, P-47D Thunderbolt, and P-51B Mustang.

In addition to the construction articles, there are three special sections on building, finishing and flight adjustment, all well illustrated with photos and sketches.

Modelers who are known the world over for their ability to design, build, and fly free flight scale models, were especially commissioned to originate the material in this book, including Bill Hannan, Bob Peck, Hal Cover, Clarence Mather, J.D. (Doug) McHard, Harry Bagley, Frank Scott, and the producer himself, Ed Coleman.

Available immediately, see your hobby dealer, or order direct from MODEL BUILDER. Dealer inquiries invited. Suggested retail is $7.95. Direct orders should include 50 cents extra for 3rd Class, $1.25 for 1st Class postage. California residents add 48 cents for sales tax. ●

Workbench . . . *Continued from page 5*

he was to receive the appointment.

Anyone who has ever met Sal, and/or known of his long and successful record in free flight modeling, would agree that this was an appropriate award well deserved. It was unfortunate that Sal's lovely wife, Nan, had not come to the Nats this year, to be with him at the banquet. Had she known about the award, we're sure she would have come

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Original and classic peanut, sport, and scale rubber plans. Send SASE for list of 67 plans, or send $1.00 for two Peanuts and list. Fallston Plans Service, Box 133, Phoenix, Maryland 21131.

Model airplane plans. Peanut, rubber, CO_2, gas. Free list. Send self addressed, stamped envelope to: Modernistic Models, Box 6932 Burbank, California 91510.

PROFILES by Plecan. Two giant 24"x36" charts of well known Free Flight designs of the 1934/1963 era. Total of 77 profiles to same scale, with basic data. Great for den or workshop. $4.00 postpaid (in mailing tube). Calif. res. add 6% tax. Paul Plecan, Box 1556 Garden Grove, California 92642.

"Sailplane Designer's Handbook" - Performance, stability, aerodesign instructions, tables, charts, airfoils. $4.96. Eric Lister, 953 Kleckner Rd., Trenton, N. J. 08619.

Kirn reworked Tee Dee engines dominated winner's circle at the 1974 Nats! If you're really serious about 1/2A, fly what the champions fly. . .Kirn-Kraft left-hand Tee Dees, props, tanks, speed kits, accessories, etc. Send stamped self-addressed envelope for free complete list: Kirn-Kraft, Dept. M, P. O. Box 224, Anaheim, Calif. 92805.

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and would have enjoyed hearing Sal prior to the award, when each guest was asked to stand up and identify himself. In a booming voice, complete with the accent he has never lost, he announced himself as, "Sal Taibi, Brooklyn, New Yawk!"

THINGS TO DO

If this issue gets to you in time, don't forget the West Coast Helicopter Championships on September 22, at Oxnard Air Force Base, Camarillo, California. The event is being co-sponsored by MODEL BUILDER Magazine and the Camarillo Flying Circus Club. Call Tom Roe (805-482-0250) or Norm Blessum (805-492-1003) for further information.

* * *

The Modelers Organized For Charity (contact Don Federline, P.O. Box 151, Haddonfield, N.J. 08033 (609) 428-5084, are putting on the MODELEXPO, at Garden State Park, Cherry Hill, N.J., on October 12 and 13, 1974. It is a non-profit affair, with all proceeds going to the Institute of Medical Research, Camden, N.J. The AMA sanctioned event will feature four daily demonstrations of radio controlled model airplanes, boats, gliders, helicopters, and race cars. Each show will start with a model rocketry blast-off, and control line stunt and combat demonstrations will also be featured.

Incidentally, Garden State Park is a horse race track with seating capacity in excess of 19,000. Should be quite a show.

* * *

The Association of Greater Chicago Radio Control Clubs is presenting Chicago Expo No. 2, at the DuPage County Fairgrounds, Wheaton, Illinois, on Saturday and Sunday, November 2 and 3, 1974. In addition to static displays of model airplanes, boats and cars, there will be demonstrations of R/C model aircraft in flight, car road races, and racing boats.

ROUND TUIT!

The following letter from Frankie Early, a modeler's wife from Louisville, Kentucky, is self-explanatory. We got a kick out of it, and we think you will too:

"Mr. Northrop:

"In your June issue, you had an article called "The King Who Didn't Build or Fly Models . . . A Fable" *(By Bob Stalick, in his Free Flight Column, wcn).* My husband and I enjoyed it thoroughly, especially since he has not 'Built or Flown Models' for about five years, because he hasn't been able to get a 'round tuit'.

"My husband is Doug Early, Contest Director of the Kentucky "Mint Julep Meet," and although I am very proud of his achievements with this Meet, I would like to see him become more active in the flying end of his hobby. The work on the 'Mint Julep Meet' and other promotional activities for modeling has become almost a full time job for him, but he does enjoy modeling, and has for many years. We regard modeling as a family thing (after being referred to as the war department and being brainwashed for a number of years), and he has lots of friends eager to get him to 'flyin'.

"The main gist of this letter is . . . we had a surprise party for him on his birthday where the article was read to all guests and he was presented with (2) "Round Tuit" buttons (in case one didn't get him started) by a couple of his friends. Enclosed is a picture showing Knaves Jack and Ray (Jack Backer and Ray Smith) pinning them on Doug. Now all we can do is hope he will indeed get 'Round Tuit.'

"Thank you for a very good article. I read most of the modeling books (so Doug can't talk over my head), but this article was one of the funniest (while also hitting the nail on the head . . . the nail being Doug in this case) I've read for a long time."

And, while we're on the subject. . . .

DO IT NOW

Increasing costs, particularly of paper, will force us to increase the cover price of MODEL BUILDER with the January 1975 issue. If you have been thinking about getting a subscription, or you have a renewal coming up after the first of the year, why not *do it now* and save yourself a few bucks? If fact, our subscription department has been sending out January renewal notices prematurely, in order to avoid an expected rush resulting from heavy January subscription orders. Let's help each other . . . renew now and avoid the confusion . . . and the price increase. ●

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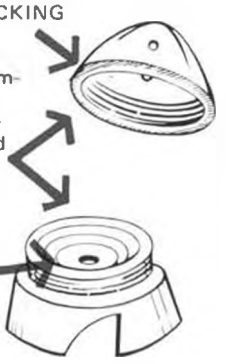

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