

**CONTEST
REPORT ISSUE**

02479

MASTER-SCALE MUSTANG

VOL. 9, NO. 1 FEBRUARY 1983

CCC CANADA \$2.75

SCALE R/C MODELER



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HOW TO FIBERGLASS
Step-By-Step
Techniques

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Stunter

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CARIBBEAN
CRUISE**



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- Formed plastic nose section
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- Call number pattern and spacing details
- Plans show in model scale ALL panel lines - panels - hatches - fasteners - protrusions - you name it
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4. Tank bomb release
5. Slide canopies
6. Actuate flaps
7. Actuate cooling doors
8. Fabricate scale items (Pitot tube, etc.)
9. Complete radio installation
10. Apply an award winning finish

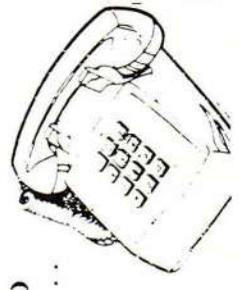


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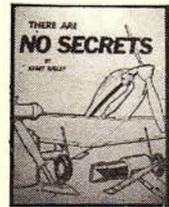
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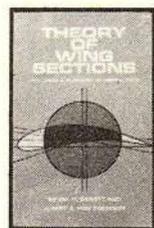


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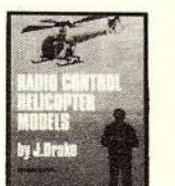
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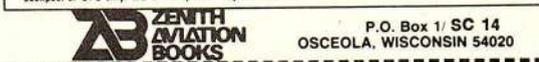
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SCALE R/C MODELER

VOLUME 9, NUMBER 1

FEBRUARY 1983



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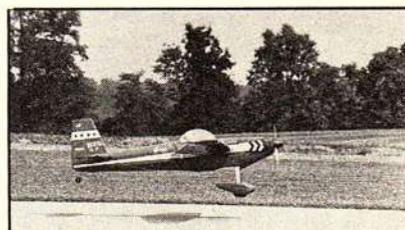
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COVER:
 Beauty pageant winner Trudy Stolz doesn't find Jim Meister's Mustang too big to handle. This new super-kit is explained by its designer in this issue. (P. H. Potega photo)

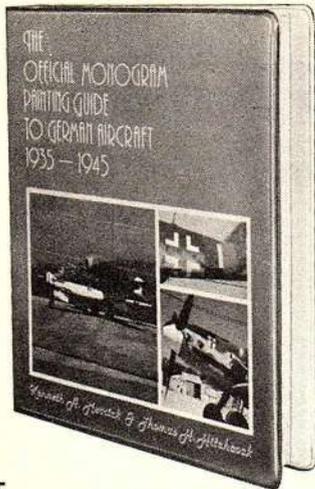
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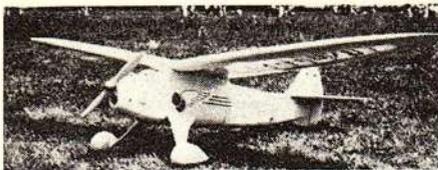
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EDITORIAL

ET TU NASA?!

What a surprise to get our latest issue of *REPLICA*, the official newsletter of NASA. Attached was a ballot asking members to vote for an F.A.I. team selection program to be implemented by NASA in 1983. What a shock! We couldn't believe, in this third year of the So. Calif. Scale Squadron's Masters selection program, that NASA was actually exhibiting the temerity to suggest that they wanted to host a separate team selection program for F.A.I. Not only that, but they were proposing using one of the Masters Championships official team qualifying clubs to run the F.A.I. program.

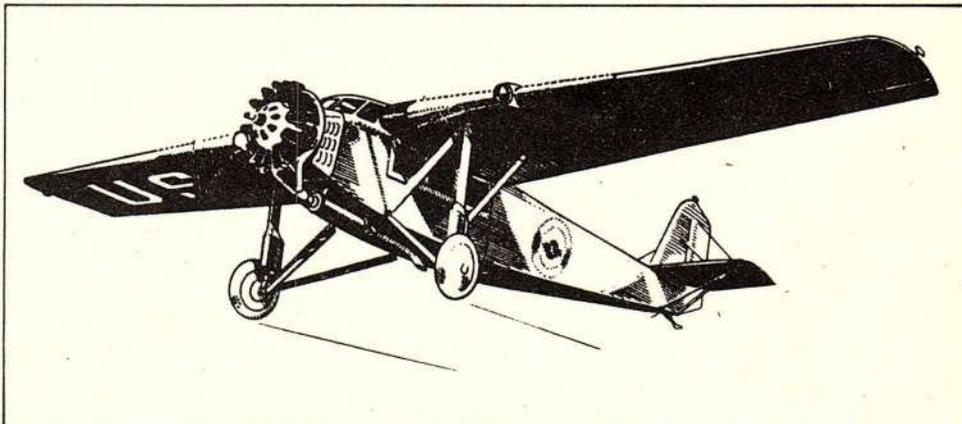
Let's take a few steps back and put this into perspective. The Scale Masters program was set up to crown a national champion; however, the option has always been left open that such a program could easily adapt itself to any sort of selection program, including that for the F.A.I. team. The reason that a program like the Masters was started, in the first place, was to get rid of the fluke one-shot national championships, such as the NATS. Why let it all ride on one contest, when a program like the Masters is set up to select the most consistent pilot, by an elimination process? To take the F.A.I. selection program and merely move the time and place from the AMA NATS to a different contest is to do nothing but take a step sideways.

One of the questions which immediately comes to mind is why wasn't the Scale Squadron contacted as a possible approach to a team selection program? Doesn't it make more sense to go with a qualifying system

which has proven its merits over the past three years, instead of embarking on a new and unproven program? After the travesty the U.S. suffered at the Reno World Championships this year (see the report in the December issue), we need a strong program that will give the U.S. the best representation possible.

We have strong feelings about NASA trying to make what is an obvious power play here. It's no surprise that the Vice-president of NASA is Dale Arvin, who was the co-chairman and C.D. of last year's Masters. We can only question why the man who has been so pro-Scale Masters in these past years would have his own club selected as the group to run this F.A.I. team selection program? We feel that it would be a real conflict of interest for this same club to propit to espouse the credo of the Scale Masters, and at the same time claim the right to run a team selection program. All we can see coming of this is a definite rift in the ranks of scale modeling.

Modelers will, in 1983, be forced to make a choice between the F.A.I. team selection program, and the Masters Program. This could all be avoided by running both qualifiers within the Scale Masters program. Personally, we feel that the Masters could run it more efficiently. As an unofficial "insider" to the happenings within the Scale Masters program for the last three years, the one club which was the most "rabble-raising" about following the rules was the Louisville group. Year before last, they insisted that they wanted to fly by rules which hadn't yet been officially accepted by the



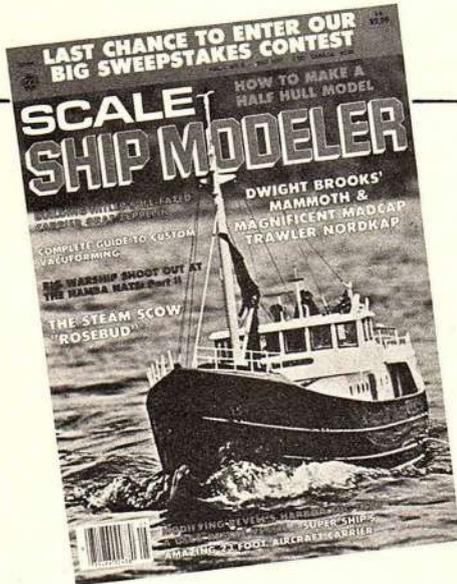
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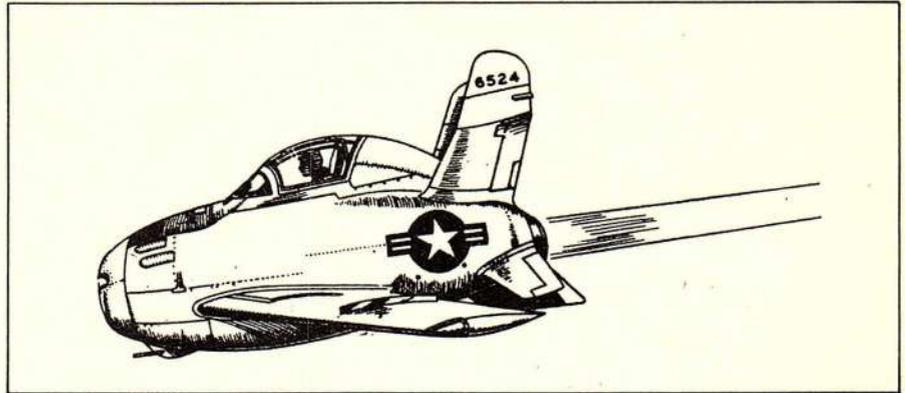
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ET TU NASA?!

AMA, and even last year they would not toe the line in properly combining Giant and Sport Scale. They actually wanted to send double their allocated representatives to the Masters . . . and then none of their club's officials or judges even bothered to show up at the finals! Is this the same group of modelers who now wish to run an F.A.I. team selection program using "pure" F.A.I. rules applicable to what would be in effect for 1984?" We must also say: "Et tu NASA" to the group which supposes to represent scale interest in the U.S. Ironically, it was a group of concerned Southern California Scale Squadron members who, in a hangar at the 1979 NATS, voted in the official body of NASA. After being through the intervening years a basically dormant rules proposing body, suddenly this organization decides to usurp the right to hold an F.A.I. qualifier from the very people who have given that organization life! Of course, since NASA (whose membership represents less than one percent of all the readers of this magazine, i.e., the total number of modelers who are interested enough in scale to purchase a publication) now has the ear of the AMA as being recognized as the spokesbody for a special interest group (no wonder that the Editor of the official journal of NASA is on the payroll of the AMA), it's probably only a matter of rubber stamping the approval of this team selection debacle.

The whole thing reeks of "leading the modelers by the horns" by a few people whose credentials to run any sort of contest are questionable, to say the least. We feel that, to risk destroying the Masters selection program at this point, is not in the better interest of the true *majority* of the scale modelers.



By the time you read this, the die will have been cast, so discussing it or debating it will do little to stop this proposed contest. However, we do urge all modelers to contact NASA and let them know that you disagree with setting up yet another team selection program. NASA has always been, and should remain, a rules proposing body, and we really don't feel that they have any right trying to run contests, especially ones which are so important to our national image as the F.A.I. team selection program. Another irony is that the same people who were previously involved in selecting the F.A.I. team in the Nats program, are now trying to get exclusive control of this process.

We don't need a one-shot team selection program, but rather a truly national eliminations program which will give us more qualified representation than we have previously had. It was no coincidence that only two of the modelers who flew in the 1981 Masters even competed in the F.A.I. selection program at that year's NATS. Only a sustained and geographically universal program such as the Scale Masters can get the exposure and long-term commitment needed to make future F.A.I. selections indica-

tive of the best modeling efforts this country has to offer.

We give a resounding "NAY" to this backhanded way to steal the thunder which the many clubs around the country have worked so hard to establish in the Masters Program. Yes, we do need a good F.A.I. program, but having it one weekend in Kentucky instead of another weekend at the NATS is ludicrous. The sad thing is that, without really consulting the Masters organization, NASA has set a precedent of operating outside the true structure of scale modeling in this country. By not even considering the Masters as the logical candidate for such a selection program, they have set up a source of friction and division which scale modeling did not need.

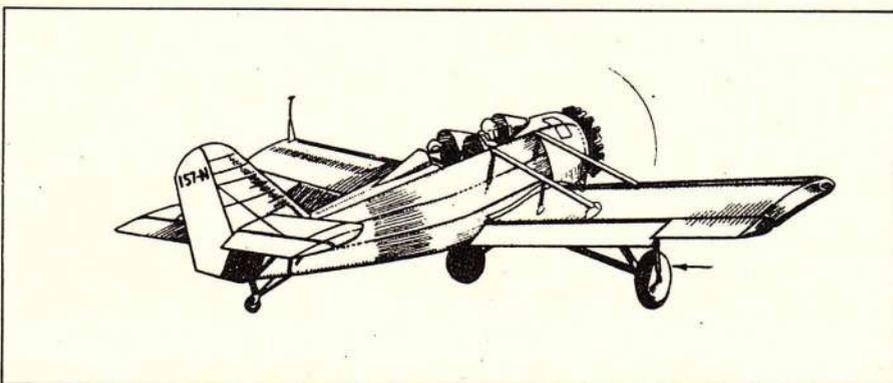
It was bad enough when the Mint Julep tried to monopolize the Masters program in a selfish effort to use "their" rules, but now NASA is officially stabbing it in the back by setting up a separate program for F.A.I. First the Mint Julep crowd, but now "Et tu, NASA!"

Please write the Editor concerning this vital issue, and if you send a letter to NASA, make sure that we get a copy of it: NASA's address is: Bob Underwood, President, 4109 Concord Oaks Dr., St. Louis, MO 63128.

* * *

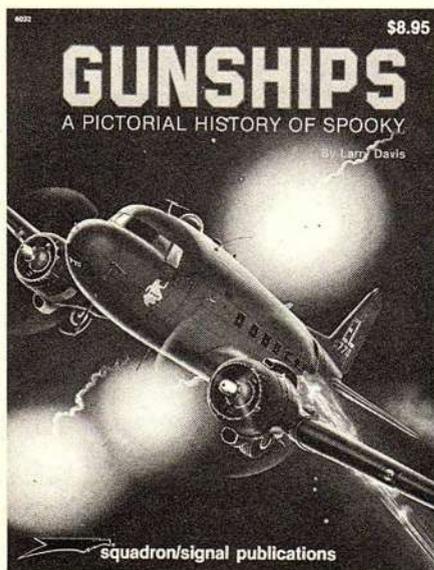
POXY POINTERS

Last issue, we presented the formula for mixing your own military camouflages. Olive Drab and Neutral Grey were the two colors shown. This issue, we present another set of formulas from the Hobbypoxy labs: Sea Blue and Intermediate Blue. Our thanks to Claude McCullough and the folks at Hobby-



Book Notes

Reading and research for
the builder of the model.



As a real departure from its main-line series of aircraft in profile, Squadron/Signal has released a fascinating book on the relatively obscure type of aircraft generically known as "spooky." These are the gunships, and they range anywhere from the C-47, to modified Helio Stallions. The fire power of these specialized aircraft was astounding, and they were the most feared weapon in Vietnam. *Spooky* illustrates the profusion of variations-on-a-theme made possible with the gunships. The possibilities for modeling these special services aircraft include not only the C-47, but also the Cessna O-2A, the B-26 and the OV-10 Bronco. With their distinctive nose art, these make exciting modeling subjects.

The book is 64 pages, with a limited amount of color. However, there are hundreds of photos and profuse detail drawings. Published by Squadron/Signal, 1115 Crowley Drive, Carrollton, TX 75006. Price \$8.95.



While not one of their newest titles, we thought we would review Squadron/Signal's *F-86 Sabre* book, since the April '82 issue of this magazine carried a feature article on the ducted fan version of this famous jet. This book will definitely fill the documentation needs of any modeler who is building the model, as well as serving for an excellent general reference source for the aero historian. As with all of the other Squadron/Signal titles, this one is profusely illustrated with color photos, drawings, color three-views, etc. No bit of visual data is left unexplored, in an effort to present the reader with the total F-86 story. The text is rather perfunctory, yet totally adequate, and the real wealth of knowledge in this book is in the graphics.

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HEART OF AMERICA MASTERS SCALE

The story of a rainy weekend in Kansas City,
and the fun everyone had.

By Patrick Ventola

Photos by the author

If asked to describe the Midwest Regionals in one sentence, I would have to resort to the old ploy: "I've got some good news, and some bad news."

First, the good news. The "Heart of America Scale Meet" was held at the K.C.R.C.'s field, just outside Kansas City, Missouri. This is a superb flying site, with a generous 50x400 foot asphalt runway. Dick Taylor, and his cohorts from the club did a fantastic job of running the meet, and there were no discouraging words heard from any of the contestants. That takes care of the good news. . . .

The bad news is that a veritable Monsoon descended on the area, in one of the wettest months in the the history of the state. Friday looked bleak, with downpours making it impossible to even saunter outside.

Actually, the gods of little airplanes must have heard our pleas, for Saturday dawned like a picture-perfect day. There was some wind, but the contest got underway without any hassles. It was weird to be out there flying in the bright, with the radio broadcasting severe weather warnings! In the end, the weatherman won, as Sunday was again a rainy morning. The tempestuous weather subsided enough in the afternoon so that the last rounds could be flown, so the weekend was not a total loss.

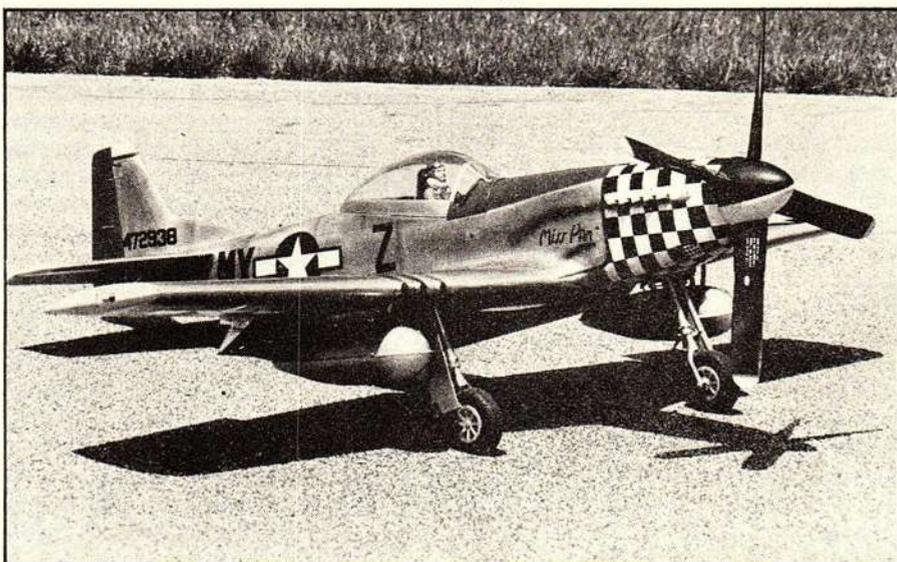
Even though we did have a successful weekend of competition, the inclement weather did take its toll on attendance. There should have been a lot more than the eleven who competed, and we usually pull quite well from the surrounding four states. Not only did that cut into

10 scale r/c modeler



Fred Hulen's YAT-28E was the hands down winner, with both highest static scores and some of the best flight points of the contest.

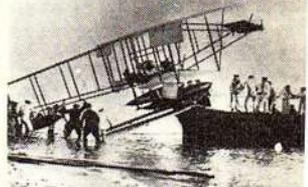
John Britt flies his P-51 like a Pattern ship.



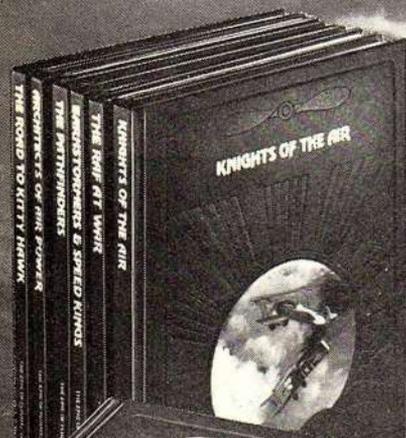
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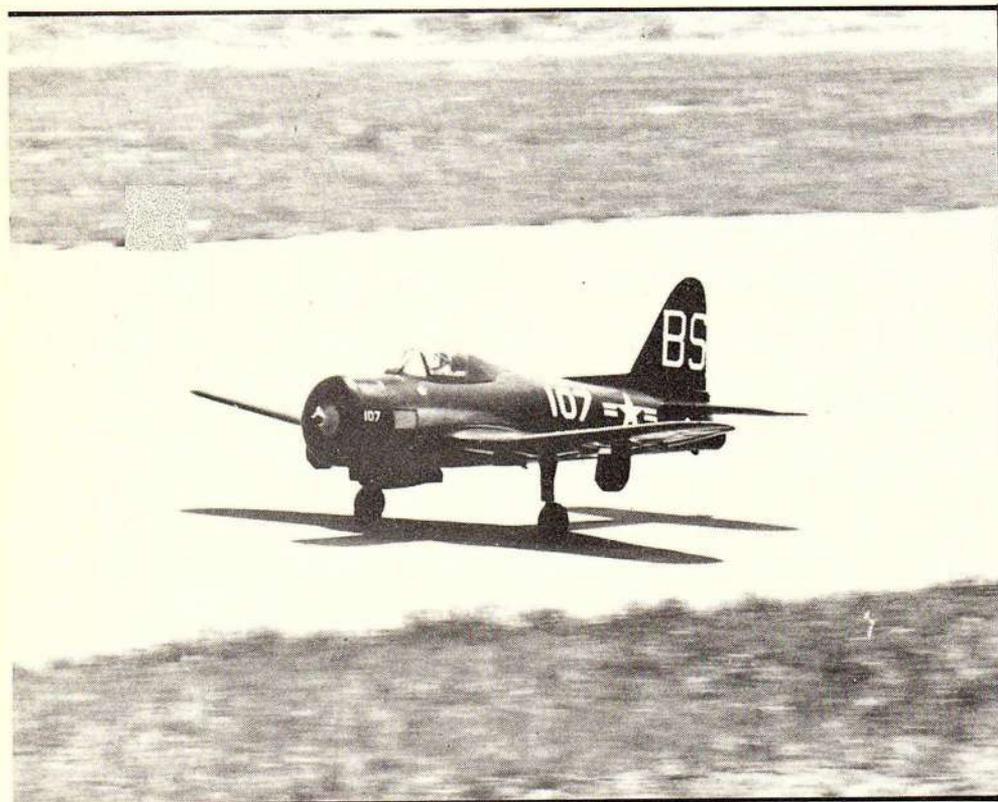
the number of fliers, but a bit of bad luck kept the local hot shots from participating. Tom Cook, the reigning Masters Champion, lost his beautiful F4 Phantom at the Mint Julep meet just two weeks before. Tom had reworked the old Blue Angels jet into a Vietnam type.

Pat Early, another local contender, made splinters of an immaculate

Larry Scott's Waco Taperwing was one of the giant scale entries at the meet. Beautifully done and well flown.



Bud Atkinson's Ryan Fireball was one of the most unusual entries. It is a .90-powered model.



SBD just two days before the big weekend. This was a machine which would have given everyone a run for the money. I had the dubious honor of wiping out my airplane in the pits. I had just finished a new Platt Me 109, and I had just refueled for a last checkout flight. I started the Rossi .90, and just as I stepped around behind the prop, a loud explosion was heard. After checking my body for holes or missing parts, I realized that the spinner had been thrown. The missing part was eventually found about 400 feet away. Apparently, the momentary imbal-

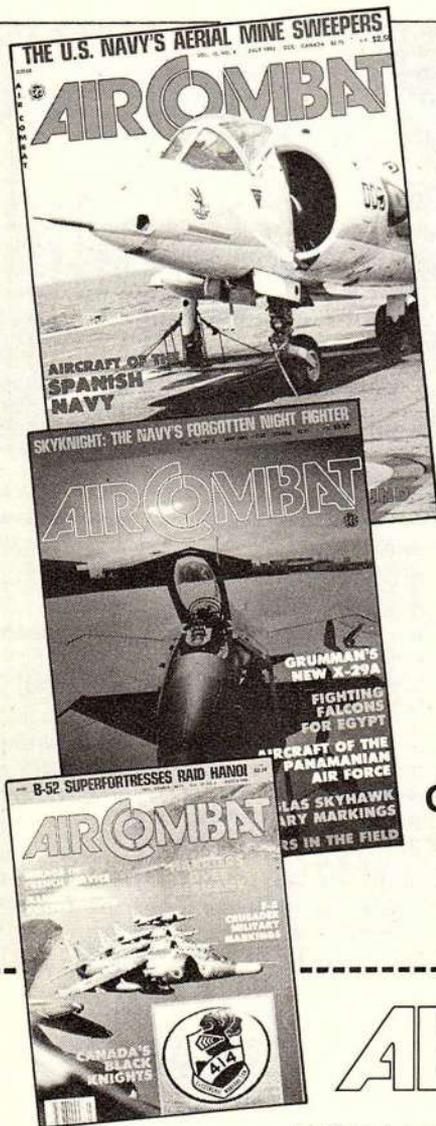
ance while the spinner was coming off set up such a vibration in the engine that it wrenched itself off the mounts, and in moments tore the entire nose area apart.

So with many of us standing around watching, the contest started. The new rules were used, which allowed almost any size aircraft to enter. Contrary to the tempest in a teapot at the Mint Julep about mixing Giant Scale and standard aircraft, we saw no problem with size being an influence on the judges.

Fred Hulen garnered top static score, with 89 points for his YAT 28E. Larry Scott brought his gorgeous Waco Taperwing from Iowa, and it received the second best static score, an 87. Third highest static score went to Darwin Ullendarl's fine-looking A4. Only the Waco was a giant scale machine. We feel that there is no problem in combining aircraft sizes, as long as you have competent judges. Everyone agreed that the best airplanes were getting the best scores at our meet, no matter what size they were.

John Britt got fourth in static with a .60-sized P-51 (85 points). There was even a .40-sized Cub in fifth place with an 83 static score. The other aircraft in the contest were a Quadra-powered Stephens Akro

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(Lynn Jorgenson), a .90-sized Ryan Fireball (Bud Atkinson), a 1/4-scale Cub (Bill Benton) and Jim Koch's wild Bonanza A-36. Jim had so many bells and whistles on this modified Sig kit that it looked more like a Bally pinball machine.

In spite of the interrupted schedule on Sunday morning, there was sufficient time to get six rounds of flying in. The level of flying was exceptionally high. Only Larry Scott had a few radio problems. We aren't going to narrate a blow-by-blow description of the flying, but let's point out that the flying made the difference in the final placings. Only Fred Hulen maintained his top position, but Darwin Ullendahl and John Britt both moved up, for second and third places, respectively.

For anyone contemplating bomb dropping as part of their flight maneuvers, I personally recommend the Fred Hulen school of ordnance engineering and design. The bombs on his YAT 28E released smoothly every time, and fell to earth in a perfect trajectory. Every release was at precisely a 60-degree dive angle. Maybe Fred wasn't so crazy spending hours on his back porch dropping bombs over the edge, to get them balanced just right! He received justifiable 10s for every bombing run.

Darwin Ullendahl's A4 was very realistic in flight, with the ducted fan really screaming. John Britt is an Expert Class Pattern flier, and he really showed what a Mustang can do, as he did the agile maneuvers that only a P-51 could perform so well. Lynn Jorgenson has been trying to beat his good friend Larry Scott, and he finally did it in this meet. It almost cost him an airplane, as his model did a nasty snap out of the bottom corner of a square loop. We estimated the pucker power of that one to be about 12!

Bill Benton and Dave Cordes put on some real airshows with their Cubs (one giant scale and the other .40-sized). The crowds loved it. Larry's radio started to act up, so he installed a new receiver, and then managed to capture fifth place.

The highest placing for a giant model was fourth, so they hardly walked away with the meet. We expect to see more and more large aircraft at future meets. But, we expect that the judges will always reward the laurels to the best combination of aircraft and pilot, without size being an influence.

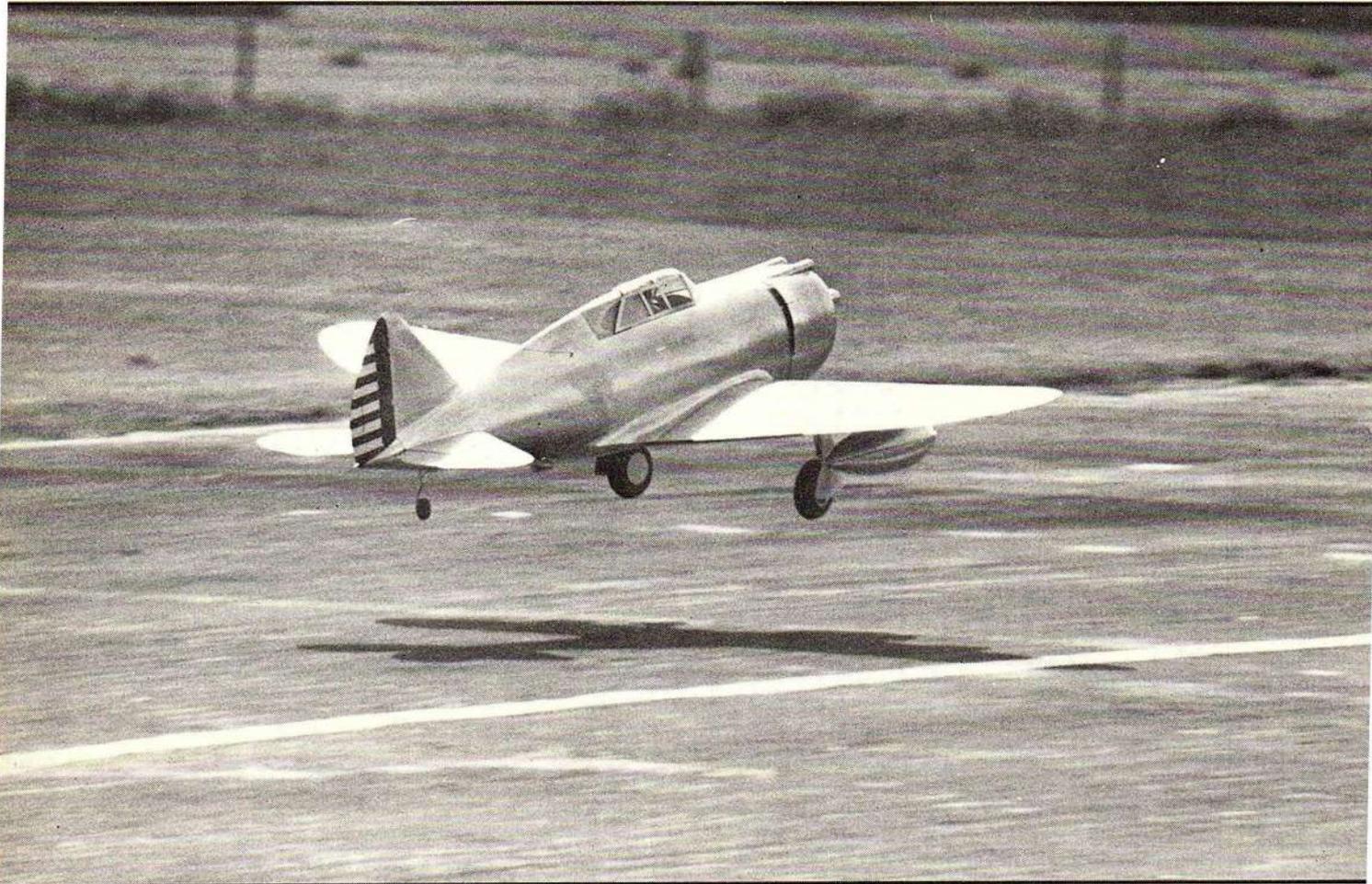
The Heart of America Scale Masters proved one thing . . . that a major contest can be a lot of fun, no matter what the weather!

**FLORIDA'S PREMIER SCALE EVENT IS A
REGIONAL QUALIFIER FOR THE MASTERS.**

By George Jenkins

Photos by the author

Art Johnson's P-43 Lancer uses a Quadra engine, and weighs 20 pounds. He won Giant Scale.



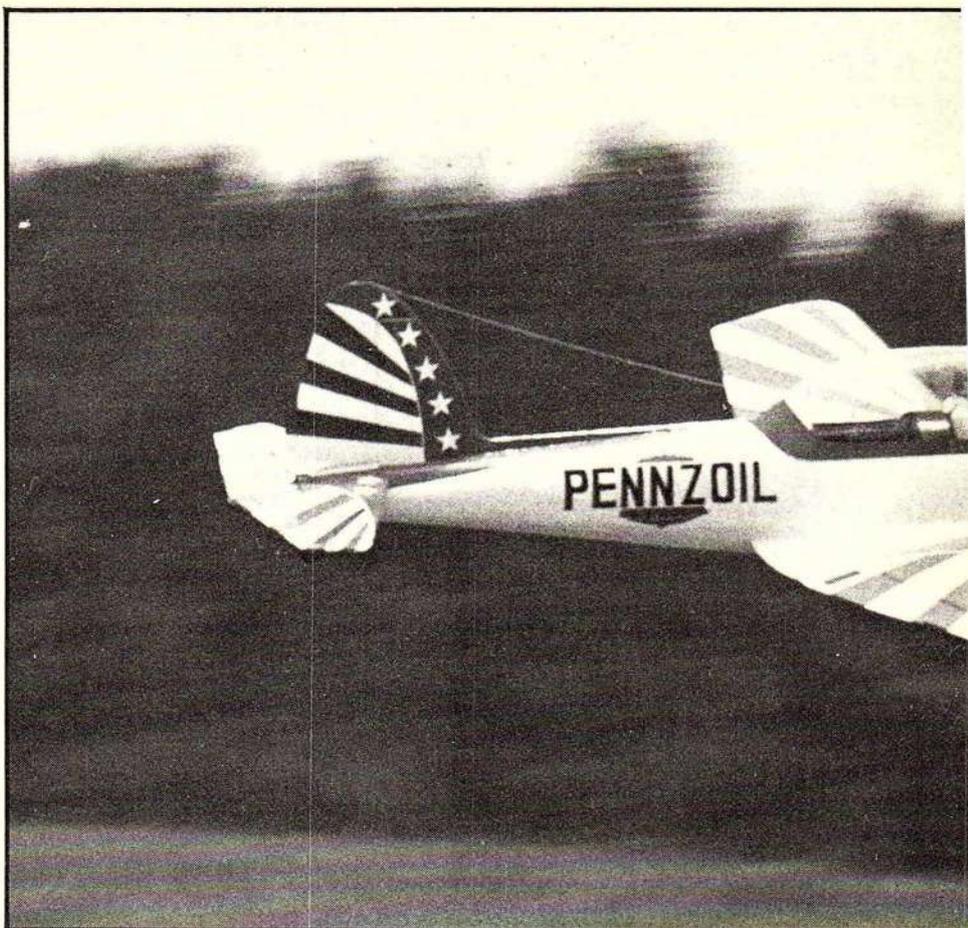
KING ORANGE

After a tangerine, what comes next? An orange, of course—the King Orange. This contest follows the famed Tangerine meet in Florida, one being a Winter event and the other a Summer contest. The meet is held in the central part of the state, along the West Coast, just outside Tampa. Typically, this is the hot part of the state, and the rainy season comes early here. This weekend contest saw scattered afternoon thundershowers come as frequently as broken props on a grass field.

The contest site has two paved runways, and the West Pasco Model Pilots Association ran a very smooth contest. The static judging ran a little late, and wasn't wrapped up until noon. Nevertheless, all the flights were logged, in spite of the nuisance of intermittent thundershowers in the afternoons.

It is always interesting to spend the time before the first official flights looking over the field of entries. We enjoy speculating as to how each model will turn out at the end. Some look extremely promising, sitting there looking like they belong in a museum. We look at them and wonder if they will fly as well as they look, and whether the pilot can handle it. It's difficult to predict the outcome by just looking at the raw product. Sometimes we come close, and sometimes we're off by a mile. Maybe that's what makes each scale contest a total surprise, even though many of the models may have been competing against each other for some time.

Dick Trueschel's Swift flew in two versions: 1/6- and 1/4-scale. Both took second place trophies in their respective events.



We are happy to say that we nailed this one. One glimpse at Art Johnson's Republic P-43 was all we needed. It was immaculate in its all-silver paint. When we found out that it was Art's machine, we knew that it was a shoo-in. Art is as much the flier as he is the builder, and he's noted for his light airframes. This Quadra-powered model weighed only 20 pounds. He had a slight edge in the static competition. Art flew one of the 275 copies of this

Rod Spanier's Taylor Craft took First Place in Team Scale. This is a 15-year-old model of the Scotsman.





Pretty Chipmunk by George Jordan. The plane weighs 25 pounds, and flies with a large Quadra engine.



vintage fighter when he was a Second Lieutenant in China. He had some great documentation in his personal files from 1942. Art even made the pilot look like his younger self!

Art's flying later proved to be up to form, and he did some auxiliary tank drops which were fantastically realistic. The Lancer flew most authentically, with a slow airspeed and a lot of power through the maneuvers.

Dave Platt showed up with the prototype of his new P-51D kit. Although kitted by most of the major manufacturers at one time or another, it still remains a popular subject and an excellent choice for a kit. Dave believes in field testing the model before it is finalized in kit form. He flies the prototype as much as possible under contest conditions because, if they can survive the tortures of contest work, the models will endure anything!

The size of the model makes it impressive, and the .90 powerplant helps through the maneuvers. Dave's mastery of detailing and weathering was evident, and such little items as the pilot's boot scuffs around the canopy spells "Dave Platt" all the way. The Mustang uses the oil cooler exit for the exhaust of his piped Rossi. Dave even has a set of special retracts available.

Needless to say, Dave walked away with high static score, and he put in some great flights, losing only one round because the spinner was rubbing against the fuse.

Bill Williams flew his A4 Skyhawk. He burnt some pretty big holes in the sky, and this model is fast, fast, fast! Another outstanding model was Robert Walter's F6F-3 Hellcat. This is a model of the carrier-based fighter which operated from the *USS Lexington* in the Pacific in 1943.

Dick Trueschel, who designed, built and now flies two Globe Swifts, brought both of the models to the meet. The 1/6-scale version was featured in the June '82 issue of *Scale R/C Modeler*. This version ultimately took second place in Expert at the meet, finishing just behind Bill Williams' Skyhawk. The 1/4-scale version flies just as well as the smaller Swift, and it took second prize in the Giant Scale Class. Plans for either are available from T&T Models.

Bob Godfrey was one of my old cronies, and he recently relocated to Florida. We spent quite a bit of time reminiscing, and he had his new scratchbuilt Laser 200 at the

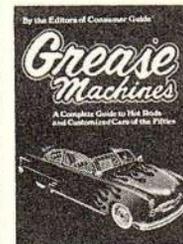
(Continued on page 80)

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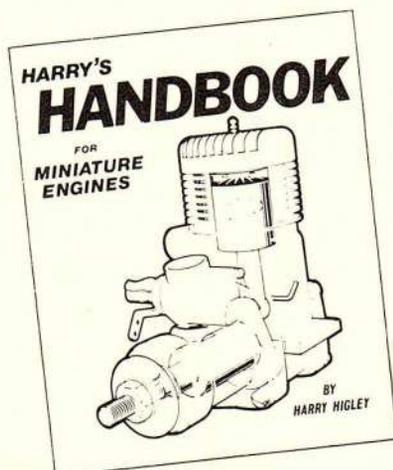
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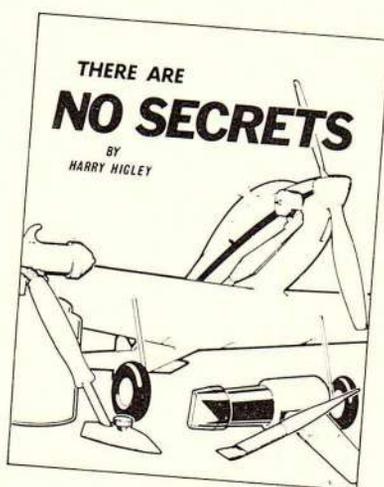
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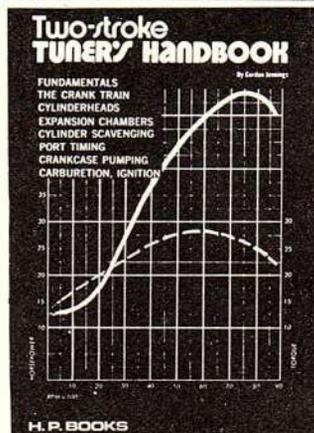
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The traditional contest mug shot, with all the happy trophy winners: (bottom row, left to right) Steve Cook, Dick Heininge, Bruce Nelson and Dick Semple. (Top row, left to right) Gil Horstman, Howard Breshears, Micky Moore, Doug Stewart, Clay Straube and Gene Miller.

Welcome to the 1982 edition of the U.S. Scale Masters Northwest Regional Championships held at Deer Park, Washington, and hosted by the Barons R/C Club of Spokane.

The first order of business is to do static judging of all the entered aircraft. This took place at the Deer

Park High School gymnasium on Friday. Three sets of judges were set up to judge the aircraft that were presented on a table the prescribed distance away, after which the aircraft were put on display for the crowd to enjoy. The quality of the aircraft, from a spectator's standpoint, was very good. The people enjoyed being able to view and take pictures of the planes. This year, the aircraft ranged from World War One through present-day commercial aircraft that can be seen at nearly any airport.

The overriding concern that the scale judges had was a lack of documentation. It seemed that there were several airplanes presented with little or no documentation, others presented with inaccurate or incomplete documentation, and then a few that were presented very nicely. But by and large, the preponderance were fair to poor. It seems that the documentation problem still exists for our scale builders and fliers. Scale judging was completed at 6:00 p.m., at which time many of the contestants picked up their aircraft

NORTHWEST REGIONAL CHAMPIONSHIPS

The U.S. Scale Masters regional qualifier was well attended and exciting.

By Gil Horstman Photos by Ray Care



Winner in Team Scale was Howard Breshears, with his Sig YAK 18P. The author, Gil Horstman, shared the honors by doing the flying.

and proceeded to the nearby flying field.

The Barons' model airport is a piece of inactive runway approximately 150 feet wide and 2,000 feet long. Some very nice test flights were put in on Friday night, which would lead one to believe that the competition was going to be rather close and that the flying quality would be high.

Saturday was no disappointment, as the competition was good and the scores were close. The wind played a part, however, in the quality of the flying. There were no serious crashes—a few broken propellers were the most damage during the whole contest. With the wind being a crosswind and in the neighborhood of 12 to 16 knots much of the day, flights were exciting, and it did hold the scores down. The highest score, 84½ points, for flights both days was put in by Gil Horstman flying a Yak 18P as a team entry with Howard Breshears. Terry Muggli also posted good scores, flying a Cosmic Wind.

The judges for all flights were 20 scale r/c modeler



Doug Stewart checks to see if everything is okay in the engine department of his giant-scale J-3 Cub, which won the event.

U.S.P.J.A. rated, ranging from a Five up to a One, that being held by Dick Carson, who was also the chief judge. An observation on the judging, from a competitor's standpoint and listening to various conversations—I would say that most pilots were very satisfied with the quality of the judging.

The aircraft represented all kits, except for one Ag Cat, which was scratchbuilt. Sig led the list with four entries, Royal Products had two, Bridi had two, and Byron Models had one, Proctor, Ikon Northwest, Fox, Balsa U.S.A., Jemco, and Pilot models each had one.

The radios used varied from 4-channel through 8-channel, with all the bells and whistles on them. We're beginning to see more of the JR radios and the Airtronics radio, as their reliability and performance is being proven in the area. There was one radio that was custom made by Doug Stewart.

Engines ranged from the .40s to the .60s; .61s, through .90s, the Gemini 2-cylinder, a 4-cycle, Tartan 1.3 glow, and the Quadras. These certainly represents a cross-section in power.

At the conclusion of Saturday's flying, an air show was presented



for us by Steve Wolfe, Mike Wiggin, and Dave Schwartz. The show was started by Dave and his Stephens Acro, a bright orange monoplane. Since this was Dave's very first air

Beautiful Proctor Nieuport 28, by Dick Neininge. Used Tartan 1.3 converted to glo operation.

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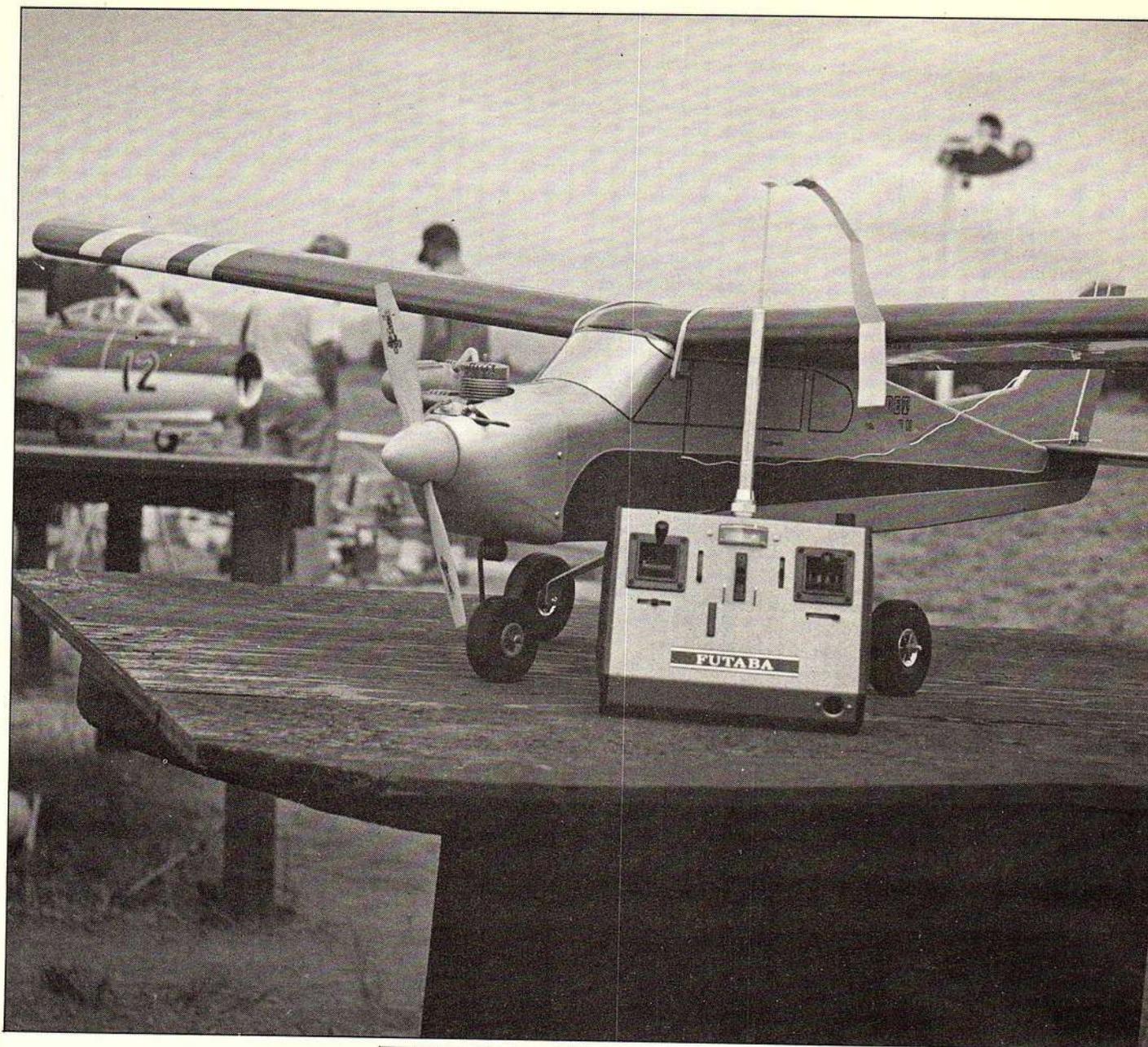
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show, he only had a 1,500 ft. waiver, so his aerobatics were flown respecting that limitation. After Dave completed a very safe routine, he made a high speed low-level pass with a pull-up and successfully withheld the urge to roll.

Dave was followed by Mike Wiggin, from British Columbia, flying a beautiful new Z250 monoplane that had recently been completed by Steve Wolfe and Steve Soper. Mike is a very accomplished aerobatic pilot and does have a ground level waiver, so he put his new aircraft through its paces at ground level. The aircraft is very exciting to watch, very colorful and, as it turns out, would make an ideal scale model

Bruce Nelson was all nerves as he taxied his J-3 out for another flight in the gusty air. Although it was his first contest, he managed to walk off with a plaque.



The big raffle prize was this Sig Kadet, with K&B .40 and Futaba radio. Raffle made the meet a financial success for the host club.

in that it has a fully symmetrical wing (double tapered), all on the center line, with no incidences.

Mike's routine was followed by Steve Wolfe flying a dark blue and gold trimmed Pitts S1, which is the lead plane in the Northern Knights, a two Pitts Special aerobatic team. Steve Wolfe's routine is truly outstanding. If you like aerobatics, you would have loved what he did! The Pitts Special is a very aerobatic aircraft, and in the hands of a Steve Wolfe it certainly performs flawlessly. It was our pleasure to get to view the airplanes up close, because immediately after the flights, the pilots taxied the airplanes down in the model pit area so that they could be inspected at close hand. The gentlemen were more than gracious in answering numerous questions from the onlookers.

After the dust had settled, we all adjourned to the Deer Park High School where the Barons' ladies had prepared dinner for all pilots, contestants, families, and anybody interested in sitting around and gabbing about model airplanes—which was the capper for a very full day. One of the highlights of the banquet was the drawing for the Sig Kadet, with a K&B .40 engine and Futaba radio. The Barons club had been selling tickets for some time to support the Scale Masters contest, and the time had come to draw the winner. The lucky person was Franz Stricker from Connell, Washington.

Sunday morning it was apparent

that, if we were going to fly the remaining three rounds, we'd have to get at it, so Dick Carson, the CD, called a slightly early pilot's meeting and got the flightlines underway. There were several people who had not flown Saturday because of the high winds, and there were a couple of folks who had radio problems that just simply couldn't get them straightened out in time to fly, so the flight order went fairly quickly. The outcome of the whole thing, starting with Team Scale:

1st Place: The team of Gil Horstman and Howard Breshears, flying a Yak 18P (Sig kit).

2nd Place: The team of Bruce Nelson, Dick Semple, and Neil Clukey with a Sig J3 Cub (1/4 scale).

3rd Place: Gene Miller and Clay Straube, with a Byron MiG.

Sportsman Scale was won by Mickey Moore, flying a 10-year-old PT-19, followed by Clee Childress, and then Ron Lober, each flying a nicely done Royal P-51.

Experts Scale was won by Terry Muggli, flying a Bridi Cosmic Wind.

Giant Scale was won by Doug Stewart, flying a Balsa USA J-3 that was highly modified. Doug had used aluminum plate where the real one had aluminum, and rib stitching—he did just a beautiful job. He was followed by Dick Heininge, flying a nicely done Proctor Nieuport 28. Third place went to Bruce Cooper, flying a CAP 20 Bridi kit.

The qualifiers for the U.S. Scale Masters Finals were Doug Stewart,

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The Straube/Miller Team busy repairing the starter for their Byron MiG.



with 251 points; Terry Muggli, with 233.5 points; Mickey Moore, with 230.5 points; Dick Heininge, with 228.5 points; and Bruce Cooper, at 195.5 points. So that's the lineup of qualifiers for the Finals in California in August.

The prizes awarded at this contest were outstanding. Doug Stewart, for having the highest overall score, took home a Futaba 6-channel radio, along with other merchandise and prizes graciously donated by the manufacturers. Mickey Moore, for winning the Sportsman Scale competition, took home a Kraft 6-channel radio. And the team of Gil Horstman and Howard Breshears took home an Airtronics 2-channel radio. Everyone who entered was awarded some kind of merchandise to take home with them. The top finishers received beautifully done plaques that will be a pleasure to display.

The contest was deemed a rousing success by everyone, from spectators through all the competitors and the workers. It was through the cooperation of nearly everyone in the Barons Club that the contest did come

off so smoothly. Dick Carson was the CD, with Joe Fox assisting. Bruce and Marcie Nelson were contest coordinator and pusher, respectively. Without the Barons' wives and the rest of the Barons supported the activity, it wouldn't have been the success it was. The contest grew more than 100 percent from last year and we suspect that with the

good word which has gone home with the spectators and contestants, it could possibly double again in 1983.

The Barons Club wishes to thank the hobby manufacturers who supported this contest, with special thanks going to Sig Manufacturing, Futaba, Airtronics, Kraft, and K&B. We'll see you at the finals! □

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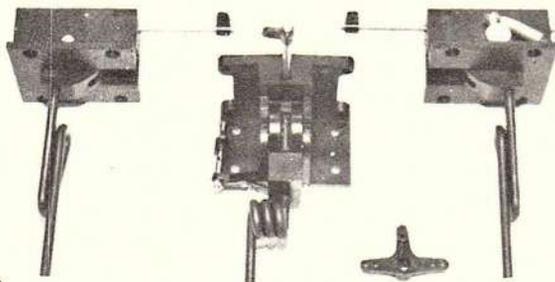
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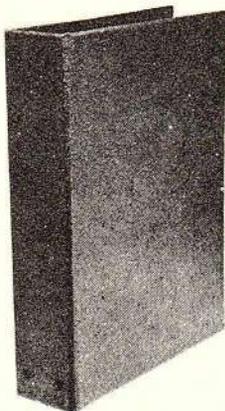


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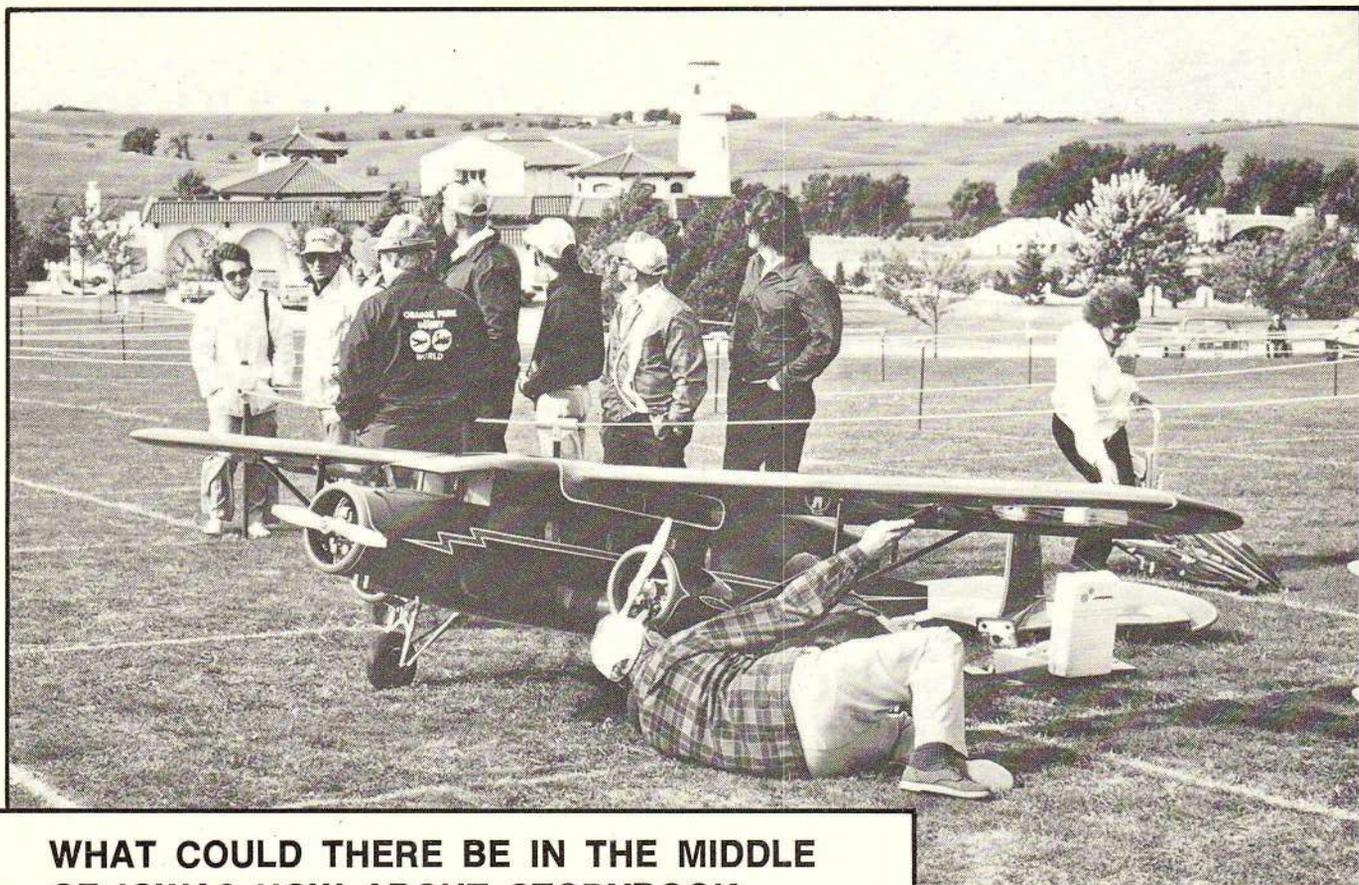
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A huge Stinson Trimotor gets a preflight check. The large complex of buildings in the background is Byron's home.

WHAT COULD THERE BE IN THE MIDDLE OF IOWA? HOW ABOUT STORYBOOK CASTLES, SAILING SHIPS, WARBIRDS... AND ONE OF THE BIGGEST GIANT SCALE FUN-FLI EVENTS EVER.

By Paul Edmunds

Photos by C. Insera, P. Edmunds and P. Lemons

Here's the scene: It's late August in the lush rolling countryside of Northwestern Iowa. I'm motoring along the verdant landscape. Summer rains have been plentiful this season, so the roadside grass is thick and bright green. Highway 59 meanders to Ida Grove, the location of the I.M.A.A. (International Miniature Aircraft Association) Fly-In.

The sky is overcast and threatening, with a ceiling of about 500 feet. Not ideal flying weather, and it looks as if the meet will get off to a very slow start. A roadway sign

states that Ida Grove is only 17 miles away. I settle down to another 20 minutes of daydreaming, when suddenly I spot red and white tents along a hillside. It looks as if the carnival is in town. A small airport appears to the left, and ahead I see two highway patrolmen motioning cars into a side road.

I comply, and immediately spot a huge archway ahead, with medieval towers flanking it. Ahead I see what looks like a painting out of a fairy tale. A huge castle on a hill, with towers and a moat! I later

learn that this sprawling estate (I've seen major corporations with smaller buildings) is Byron Godberson's home. In my rearview mirror, I see another huge building on the other side of the highway. This, I later discover, was the hangar.

I could tell that I was entering another world, and that this wasn't going to be your typical Fun-Fli. Men on foot and on horseback motioned me to a grassy knoll for parking. No sooner did I get out of my camper than the scent of beef cooking got my attention. I spotted four gigantic barbecue spits nearby, with what looked like a whole cow on each. A nearby tent was busy doling out food at a rate that made McDonalds look like a small coffee shop.

Several rows of huge circus tents



Bruce Chamber brought his colorful Christen Eagle all the way from Naples, Florida.

filled the grassy area, and I really felt as if I were at an old-fashioned country fair. One huge tent, measuring about 40x200 feet, was filled with booths for manufacturers to display their wares. The tent was so large that Hazel Sig's full-size

Sorry, we didn't get the name of the builder of this immaculate Staggerwing, which poses in front of one of the circus tents.

clipped wing Cub was lost at one end!

Another tent of the same size was used for static display of some of the 350 models which showed up. This area also served as overnight storage of the models. With the sky as bleak as it was, the tent was ideal for protecting the models (and pilots) from the elements.

There was another smaller tent for the Byron Originals display, which featured all of their models. You could sign up there for a guided tour of Byron kit production facili-

ties. There was also an information tent for the I.M.A.A.

It took about a 1/4-mile walk to finally get to the flying site. Another large tent sheltered some 350 transmitters and a well-organized frequency control. Bleachers were erected, which could seat some 600 spectators.

The pit area was laid out in a saw-toothed line, with recessed areas sort of like a boat marina. This made it possible to get up close to all of the models. The same layout has been used successfully at the Las

(Continued on page 30)



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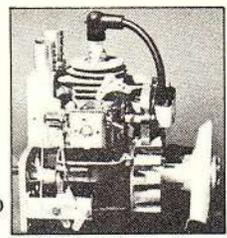
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Vegas Q.S.A.A. Fun-Fli. The runway was a beautifully manicured lawn, measuring 100x700 feet. I overheard that the Governor of Iowa had been present at the opening festivities, just a few hours before.

Models were already milling about in the sky, and the efficient flight line expeditors kept planes in the air all of the time. Since it is a fun-fli, you only fly when and if you want to. There is no judging or scoring of any type. The P.A. system kept the crowds aware of who and what were flying.

By three o'clock, the skies had cleared, and one could hear the distant drone of full-size aircraft. They came into sight, looking like an invasion fleet. There were three T-28s, a Razorback P-47, a T-34A, a Stinson and the replica of the Spirit of St. Louis. A Waco cabin job was there, a Skyraider, a Grumman Avenger, and a VariEze. They made several low passes, much to the pleasure of the crowd.

Dwayne Cole, noted aerobatic Ace, did a demonstration with his clipped-wing Taylor Craft. His airshow was magnificent, with all sorts of loops, rolls and spins . . . all done in a plane which was never designed for aerobatics! He landed long enough to announce the maneuver sequence of Joe Schymocker in his Christen Eagle. The Eagle's smoke system looked terrific against the deep blue Iowa sky. After Joe finished his breathtaking routine, Dwayne climbed back in his T-Craft and climbed almost out of sight. He then killed the engine and did a whole series of dead stick maneuvers on the way back to the runway.

While Dwayne was gaining altitude for this last feat, four parachutists did a smoke routine. They carried an American flag to the ground, and the National Anthem was played. The whole spectacle of the airshow was exhilarating. I figured that I was sort of right in my first opinion, that this was like a big country fair. The broadcasting system announced that ten hot air balloons were going to be launched at 6 p.m., and that ten rides would be auctioned off.

The flying continued, with every type and style of giant model doing their thing. The event was so well organized that on one had any problems or questions. The facility was so good that anyone who found fault with it would have needed their

head examined. The rolling hills of Iowa made for an idyllic backdrop for the activity. Everyone was obviously having lots of fun, so the primary purpose of the meet was obviously fulfilled.

At 6 p.m., the hot air balloons whisked a handful of excited top bidders off to the skies. A big picnic dinner got underway. We all went down the hill and across to the medieval hangar I had previously spotted. The outside was a perfect replica of a castle, even to the extent that a drawbridge had to be lowered to get an airplane inside the hangar across the moat. If the outside was like something from Disneyland, the inside was the real surprise. The central area of the hangar floor, where Byron's personal 310 G is kept, is inlaid with a handmade mosaic map of the world, which traces the travels of the *H.M.S. Bounty*. The floor was laid by a crew imported from Italy.

The adjacent room represented a giant medieval style ballroom, with a huge walk-in fireplace. There was a cave in which stalactites dripped water into a reflection pool. There was an intricate pipe system in the ceiling which dripped lime water, so that the ceiling looked like the inside of a natural cave, full of man-made stalactites. The ceiling of the ballroom was full of museum-quality

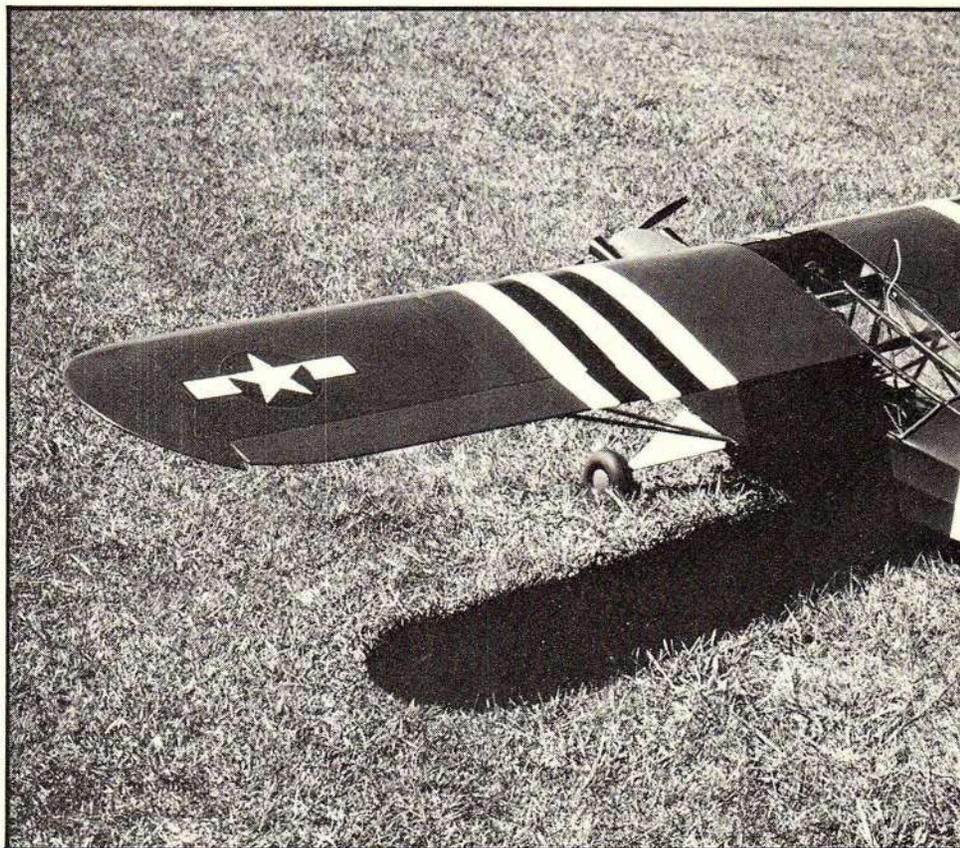
scale models, many of which were built by Byron himself.

The full-size aircraft from the afternoon's airshow were parked adjacent to the hangar, so we all got to inspect these rare birds up close while we waited for the chicken dinner. A barber shop quartet crooned while we ate and, as the skies darkened, a professional fireworks display filled the sky. It was the perfect end to a fairy tale day in this amazing wonderland.

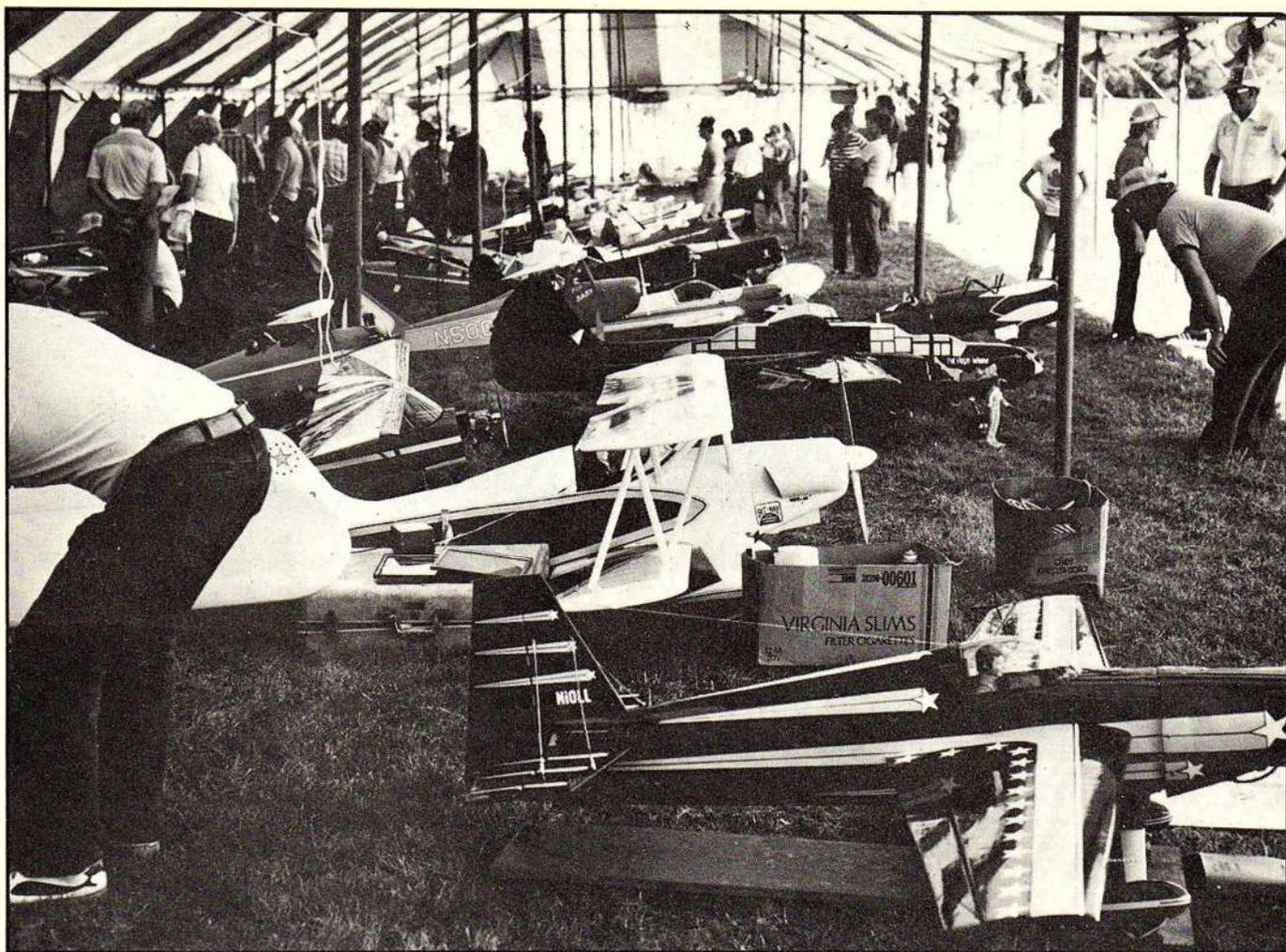
Early Saturday morning, the balloons were already taking passengers for a ride. After a typically mid-western hearty breakfast, we headed for the flying site. The announcer remarked that there were 350 entries, and over 450 aircraft in attendance. Friday's flying had logged some 145 flights.

The skies were gray, but the weather didn't look that much like rain. All over the place trolleys were being pulled by tractors to move spectators around. Greyhound tour buses were departing every few minutes to take the people to the Byron factory in town. There were some 8,000 people partaking of the fun of this meet.

Flying progressed throughout the day, but at 2 p.m., the models were called down for another airshow. The Souix City Air National Guard made a fly-by with their A7s. They



Bill Hunt's L-4 Bird Dog, uses a Fox .78 for power.



Just part of the vast array of models, housed comfortably under one of the big tops.

buzzed the field at 200 feet! As the jets disappeared behind the hill, the announcer stated that there would be another pass, at an even lower altitude. He commented that this would be done in entire safety, since the A7s were the most sophisticated and accurate ground tracking aircraft in the arsenal. We all heard the roar of the jets, but we had to do an about face to see them disappear over the next range of hills behind us. It was obviously a little practical joke!

The warbirds and antiques again filled the skies, but many of the routines were brought down nearer the deck because of the dense cloud cover.

After the airshow, the models once again took to the skies. Aircraft were here from Germany, Sweden, France, Canada and from just about every state of the country. Every imaginable type of giant model was flown, from B-17s to F-86s.

They shut off the flying at 5 o'clock to give everyone a chance to prepare for the sit down banquet. This was a huge affair, served by the local townsfolk, and the local

boy scouts served the tables. It was a great feast, all tasting very homemade. The only problem was that some 800 people showed up, which made it pretty tight. This had to be the biggest banquet we have ever been to, and it probably set some sort of Guinness record.

The banquet entertainment was the usual speeches and award presentations, hosted by Don Godfrey. A good comedy act followed, and a band was even provided for those who wanted to dance.

Sunday morning didn't give any relief from the unseasonably bad weather. The clouds were almost on the ground. We sauntered up to the flight line, and a few models were in the air. The planes couldn't venture too high, for they would disappear in the haze. The announcer commented that Saturday had logged some 175 flights. By mid-morning, a downpour started which, in typical Iowa style, would last the remainder of the day.

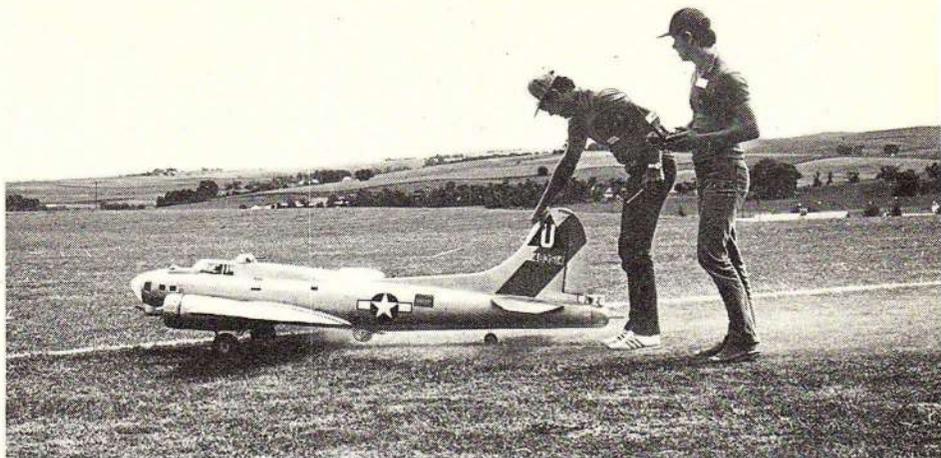


The German contingency brought back their ever-popular B-17, which really turned on the crowds.

This seemed like an appropriate time to take the factory tour. We boarded one of the buses, and, within minutes, were being unloaded at the factory. The tour was very thorough, with each segment of kit production being explained and questions answered by the employees who did the actual work. The facility is one of the most modern in the country, and it has often been cited as a perfect production facility.

At the front of the plant, a fantastic display room was built. The wallpaper was a cloud pattern, and the carpet was sky blue. The models were located strategically to look as if they were in flight. The retracts were hooked up, so that they could be actuated by a button. You could watch the intricate P-51 doors and gear cycle, and all of the models were beautifully finished.

As I stepped back out into the rain-drenched world. I felt sorry for all of the spectators who would not get a chance to see the excitement we all witnessed the day before. As we retraced our route, I again saw that huge replica of the sailing ship



H.M.S. Bounty. This is a 1/3-scale rendition of the ship, which makes the mast about 30 feet tall. The ship, one source told us, is free to pivot on a swiveling base under the water, so that it acts as a wind sock for the nearby airport. Another source stated that the model is on a giant turntable, and rotates upon command. Either way, it is something to see a huge ship floating in a lake in the middle of Iowa!

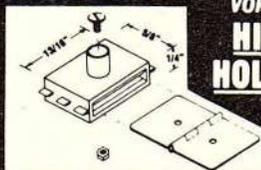
I drove away a changed person. I had seen sights which I didn't know

existed. The whole weekend had been like something out of a book. This was much more than just a Fun-Fli . . . it was a major event. It would be a fine experience for the whole family. It wasn't just the fancy medieval trimmings, but it was the meet itself. It was professionally organized, smoothly run, and a pleasure to be a part of. Put that together with the airfield factory tours and the hospitality and good times, and you have a weekend to remember. □

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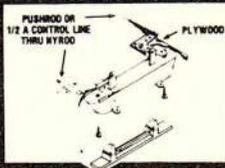
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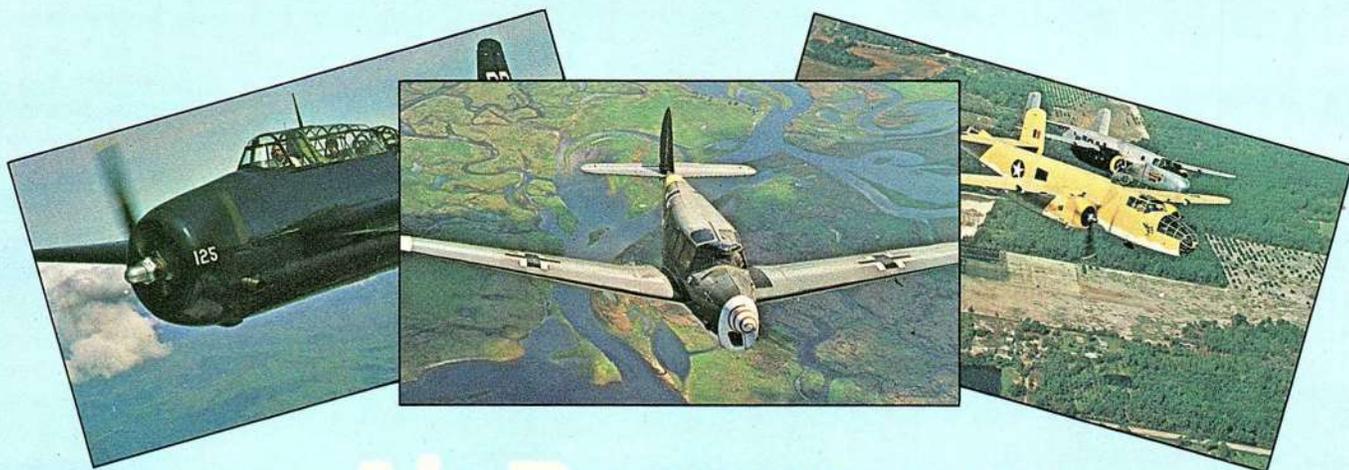
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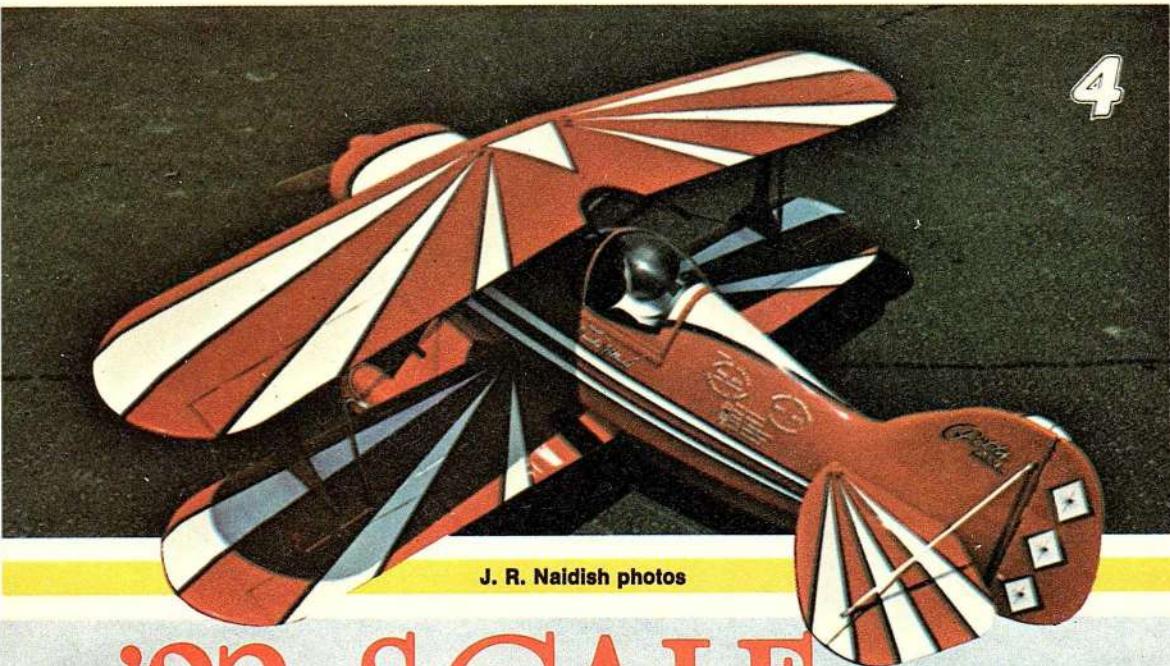
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1. Mike Mann, a relative newcomer to scale, flew his Corsair to 9th place.
2. Platt's P-51 got one of the best static scores of the meet.
3. Garland Hamilton's Spitfire was good enough for fifth place.
4. Olen Trenary's giant scale Pitts Special.





J. R. Naidish photos

Staff Report

'82 SCALE MASTERS CHAMPIONSHIPS

3



The best Scale Championships ever, with lots of excitement and a few surprises.

1. Chuck Fuller's Quadra-powered Stearman was a real crowd pleaser. 2. Fly-Baby, in giant scale, by Joe Dolan. 3. High performance monster Waco CTO, by Larry Scott.

2



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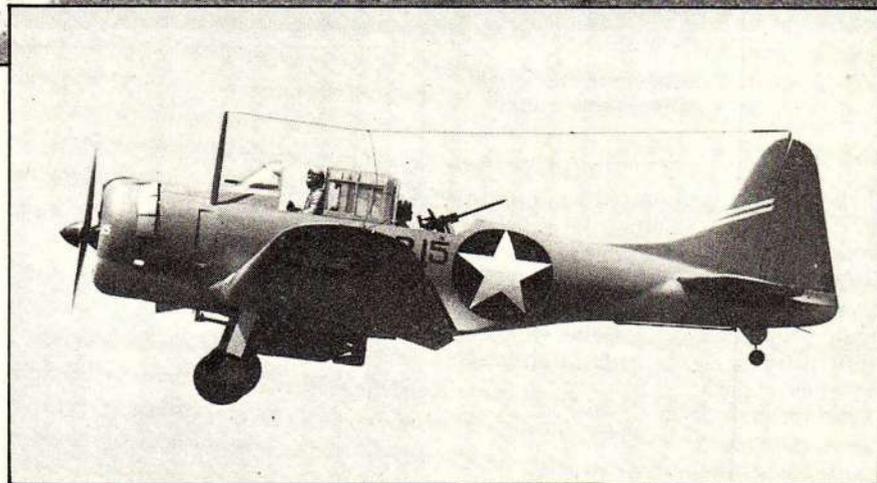
It would almost be a cliché to call this year's Masters Championships a "Gathering of Eagles," but it would also be unfair to term it anything less. Since the Scale Masters began three years ago, the quality of models has made quantum leaps each year (a good indication that the concept of a Masters Program is working). This year's gathering didn't have a turkey in the bunch, as 26 very competitive aircraft fought for the laurels.

Prior to the big three-day weekend, there was a lot of speculation as to who would be crowned Masters Champion for '82. Rumor had it that Tom Cook, the 1981 winner, would be back with a model even more exciting than his victorious double ducted fan Phantom. Kent Walters was up for the attempt to recapture the title he lost to Tom the previous year. Kent, in years of contest work, had always prided himself in scoring the top flight score at virtually every contest he has ever entered . . . until Tom Cook outflew him last year in Kentucky. Obviously, the mild-mannered cowboy from Phoenix was coming back with a friendly chip on his shoulder.

But, no one who knew who the qualifiers were was viewing this as a two-man contest. Garland Hamilton was relocated to Southern California and he had been putting on some heavy practice sessions. Jerry Ortego had just put the finishing touches on his forthcoming kit prototype of the FW 190D-9. Since Jerry had retired last year, he has had enough time to burn gallons of fuel in preparation for the contest. Don Lien was another local favorite. Don was a big winner on the contest circuit several years ago. After a brief hiatus, he was now back full force with his favorite airplane—a Focke Wulf (one of Jerry Ortego's kits).

Actually, the skill level of all of the entrants was so high that anyone could be up for the crown. Dave Platt was coming from Florida, Jack Aycock from Colorado, Art Johnson from Florida, Bob Frey from Phoenix, and a handful of other fully qualified pilots. The field was so equally balanced that we wouldn't have taken odds on anyone as the best candidate.

When the contest dates arrived, one apparent thing was the lack of support from many of the regionals. With ten regional qualifying events, there should have been five qualifiers from each, for a total of 50 entrants. No doubt, the overall poor



The Masters Champion, back again after a year's respite. The 1/8th Air Force is burning Kent's cowboy hat, as part of his victory celebration. Kent is both laughing

and also wiping all of the champagne off after the boys christened his victory. The inset photo shows Kent's Dauntless on a fly-by.



Don Lien flew his new FW 190 to second place. This is the Jerry Ortego Models' .90-powered kit.

as Grand Prize, and they asked that the meet be held in California.

Those who did show up were the real cream of the scale crop, so the purpose of the contest to select the best scale modeler was still valid. Friday was dedicated to static judging, as well as some practice flying. Already Murphy's immutable Laws were beginning to twist the finger of Fate. Garland Hamilton had wiped out his Number 1 model a few weeks before the contest. He had a brand new Spitfire, but one could tell that he wasn't exhibiting that total confidence in his flight maneuvers.

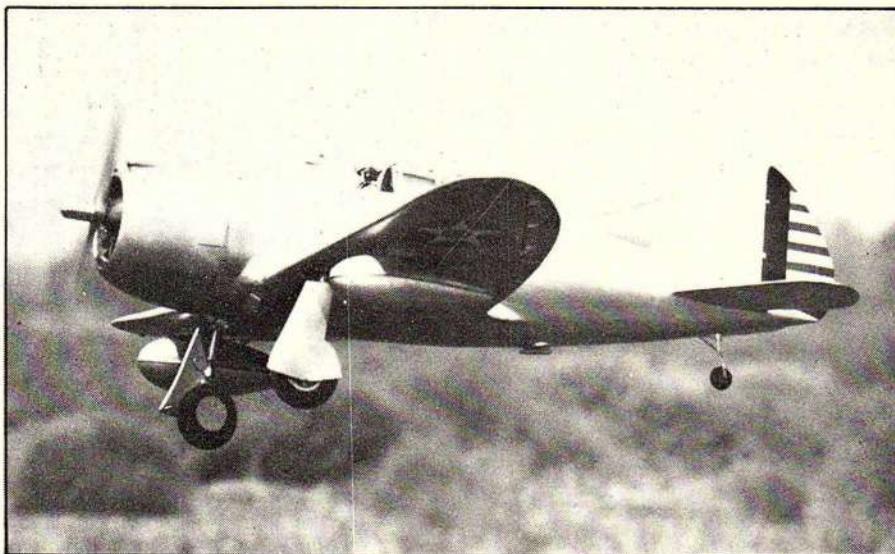
Tom Cook showed up with a magnificent F4C Phantom, which was tricked out with every imaginable option. Ironically, it was one of these "trick" features which did him



Col. Art Johnson actually flew one of the 275 Republic P-43s in China during the war. His Quadra-powered model took third place.

shape of the economy had a lot to do with the showing, but it was somewhat of a let down to find almost half of the field of entrants missing. As we'll discuss later, the Scale Squadron may be offering some alternatives to solve that problem next year.

Before anyone out there raises the issue of it being another California contest, and using that as the rationale for the low attendance, let it be said that the reason the meet was slated for the West Coast was that Nissan (Datsun) had put up a car
38 scale r/c modeler



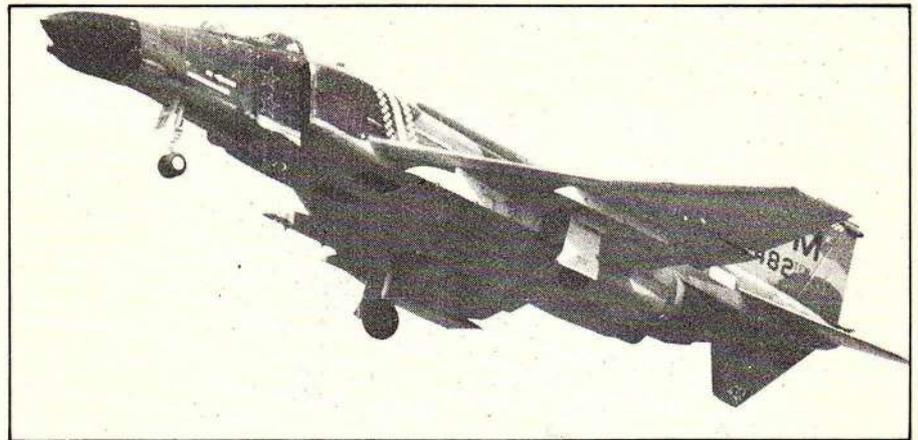
in at the eleventh hour. Tom was taking that "one-last-practice-flight" on Friday afternoon, and the big jet was really eating up the sky. Tom apparently hit the wrong switch on the transmitter and, instead of the retract lowering, the servo-operated canopy came open. This put the plane in such an uncontrollable attitude that all one could do was watch the model lazily spiral in.

The wreckage looked like a total, and everyone mentally wrote Tom off the list. But, Larry Wolfe is fast becoming the patron saint of crashes. Two years ago, he and Bob Violett rebuilt Bob's totaled model in an all-nighter at Larry's shop. Last year at the Masters, Larry was up all night rebuilding his own crashed model. This year, he and Tom Cook were up till 4 a.m. rebuilding the Phantom (no wonder Larry always looks so tired at each Masters!).

Among the pilots, one of the topics of discussion was the influence of the admission of giant scale into the Masters event. Nine of the registered entries sported chain saw engines, and another eight had .90s in the nose. This last figure is a little misleading, since many of these .90 engines were stuffed into the cowls of what are traditionally .60-powered aircraft. But, the fact remains that a majority of the models were a cut larger than the accepted .60-sized machine. Significantly, when the dust had settled, the top three finishers had .90 or larger engines, and seven of the top ten were flying these larger size engines.

As if Murphy's Law wasn't busy enough putting gremlins in many flier's plans to win this meet, there was rain in sunny Southern California on Friday afternoon, and Saturday morning dawned not with fog

Tom Cook's impressive F4C Phantom. After destroying the model Friday afternoon, he came back to secure fourth place. Tom was last year's Champion. The big double ducted fan is seen taking off, and deploying its drogue chute upon landing.





Why is this man smiling? Because his new FW 190D-9 just won sixth place for him, and also because another of his kits took second place. It's Jerry Ortego, of the model company by the same name.

from the nearby ocean, but with low-lying rain clouds. This was almost like science fiction, since there had been no rain in this area for almost five months! It made one wonder, to say the least.

The suspense was so thick during the first round that you could cut it with the proverbial knife. The static scores were an all important determinant of who might win . . . and they can be a big help (or hindrance) psychologically. As the flights were completed and static scores were posted, the rumblings went through the crowd.

The top dogs in static were Dave Platt, with his new P-51; and a real surprise . . . Jack Aycock's Proctor Nieuport 11. Both were immaculate models, and both pilots were capable of putting in a few solid flight scores and walking away with the marbles. Next on the list with 91s were Kent Walters, Art Johnson and Don Lien. Kent had just finished posting a barn burner of a flight, with a 90.75 score . . . it looked as if he was going to give everyone something to shoot for.

Art Johnson had one of the most unusual entries at the meet. His Quadra-powered P-43 Lancer was the precursor of the P-47 Thunderbolt. Art, a retired Air Force Colo-

(Continued on page 68)



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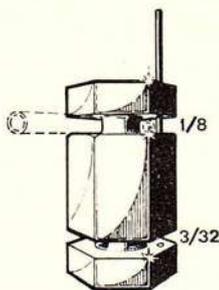
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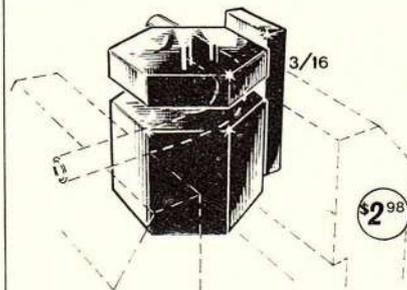
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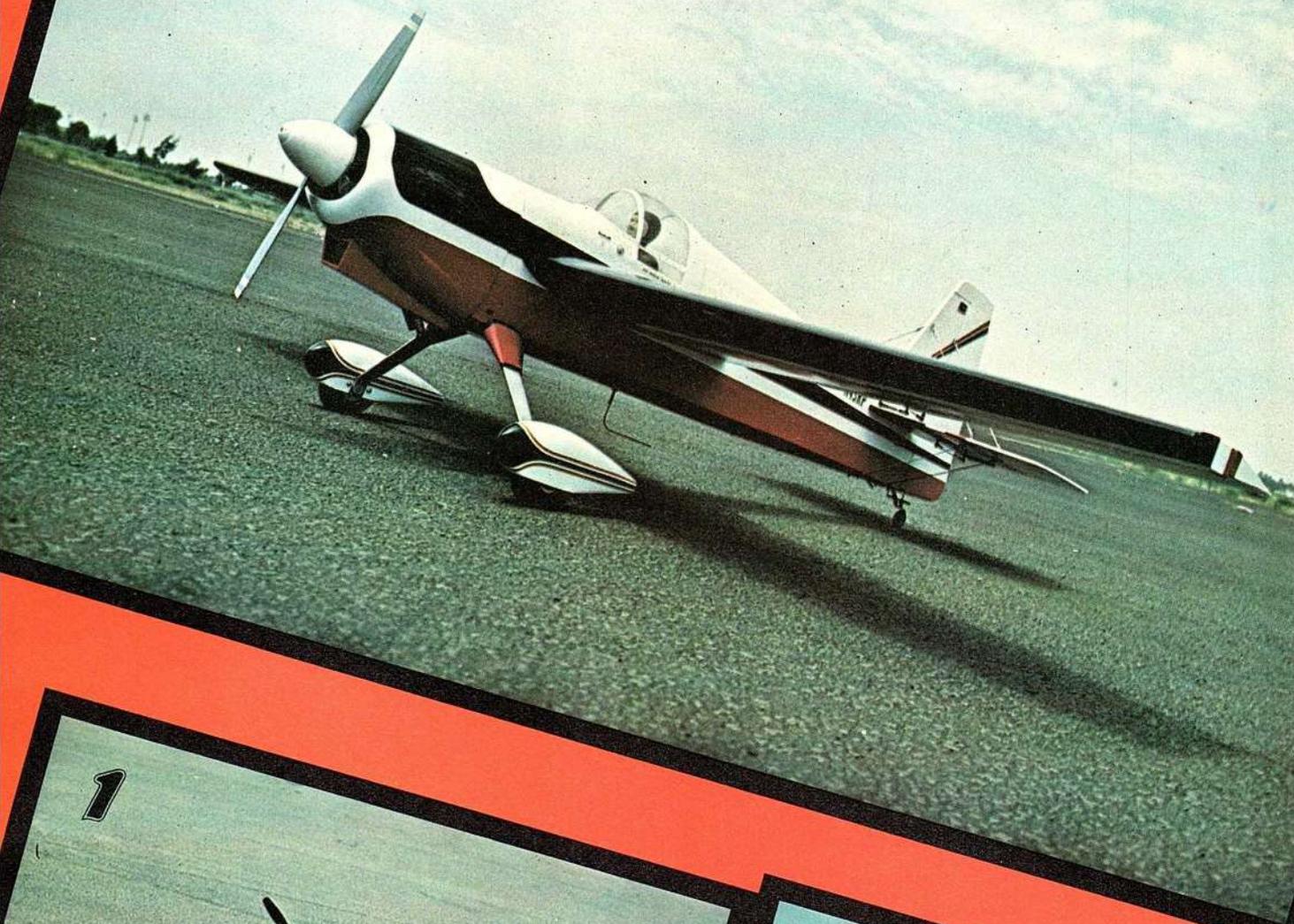
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1. Joe Solko's version of the Mallory Models Laser. 2. Lynn Jorgensen's Stephens Akro is quarter-scale. 3. Tom Weemes' Gee Bee Model E was rebuilt two weeks before the meet.

2



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3



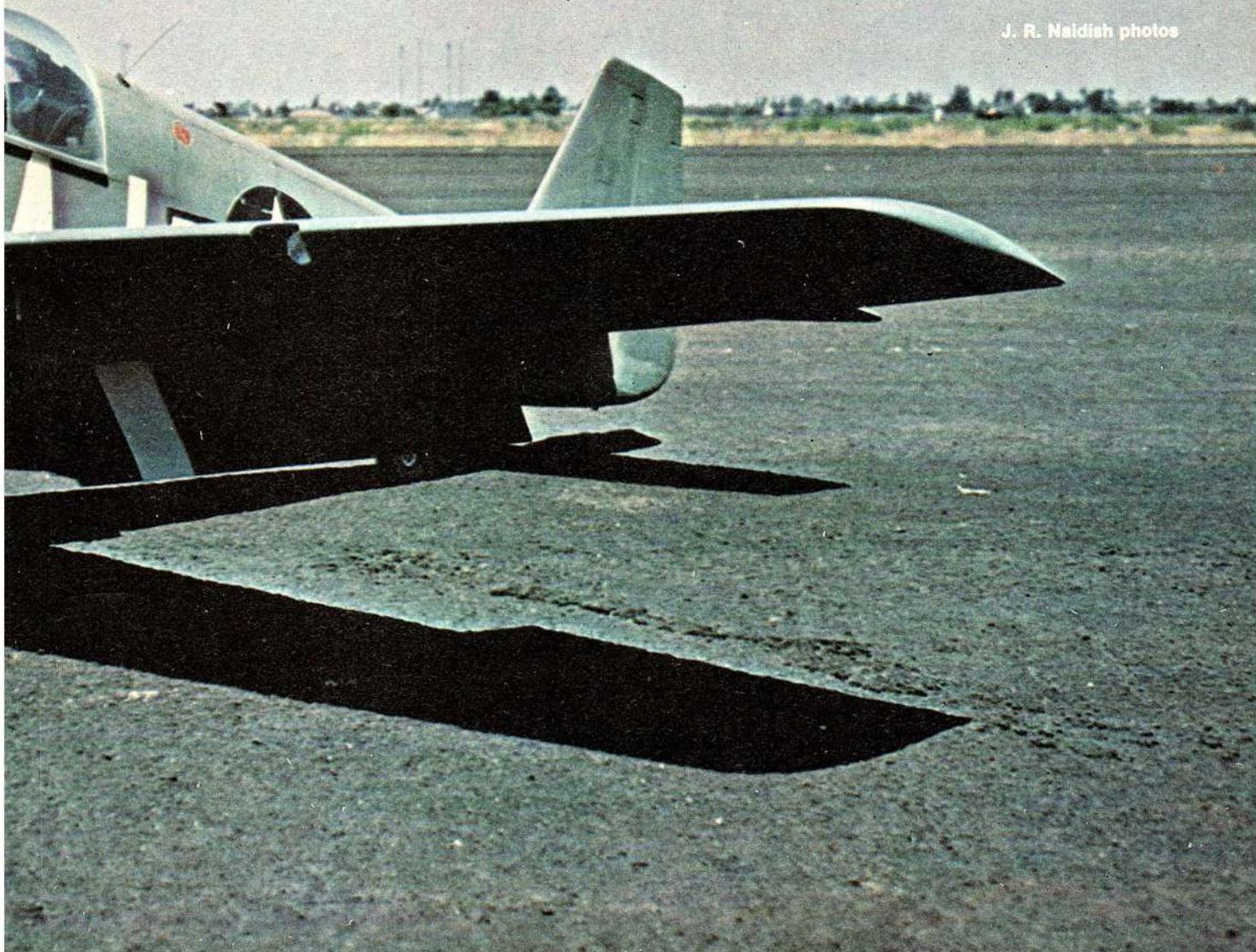


MASTER SCALE MUSTANG

(PART 1)

Here is the Mustang kit that will set the standard for all future scale kits. There's never been a more accurate P-51! By Jim Meister, President of Master Scale

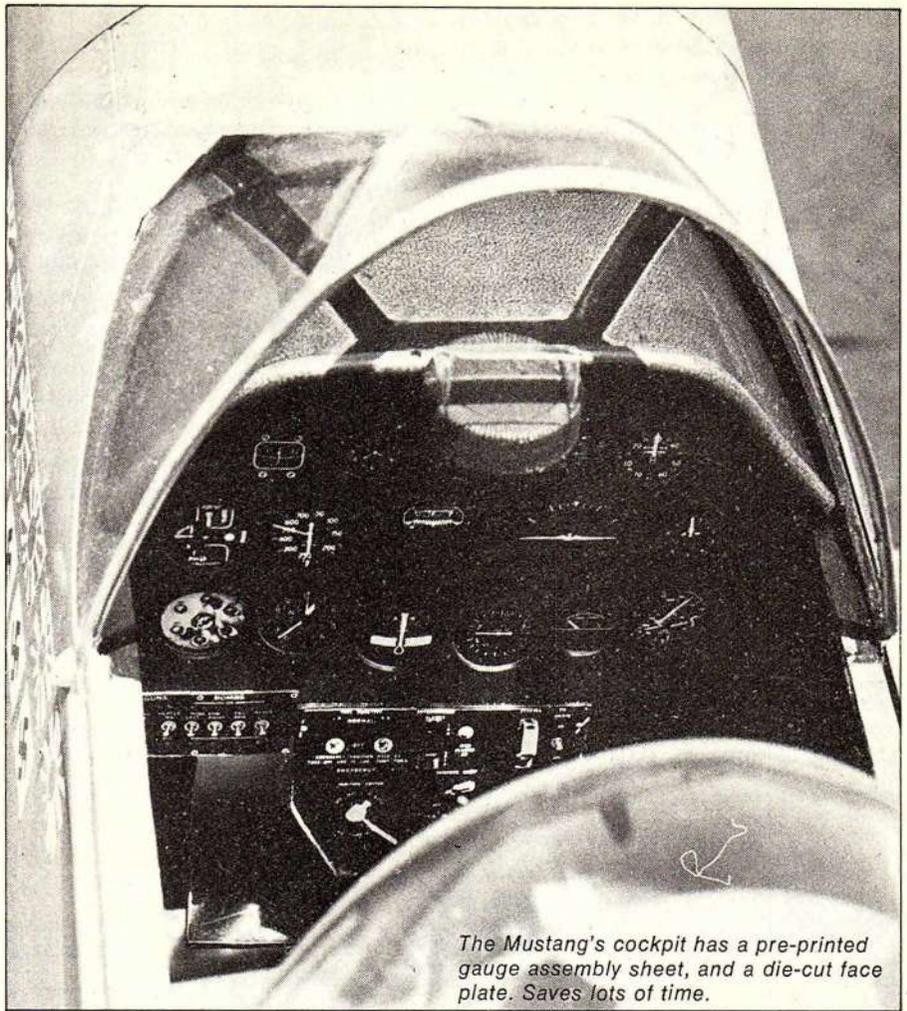
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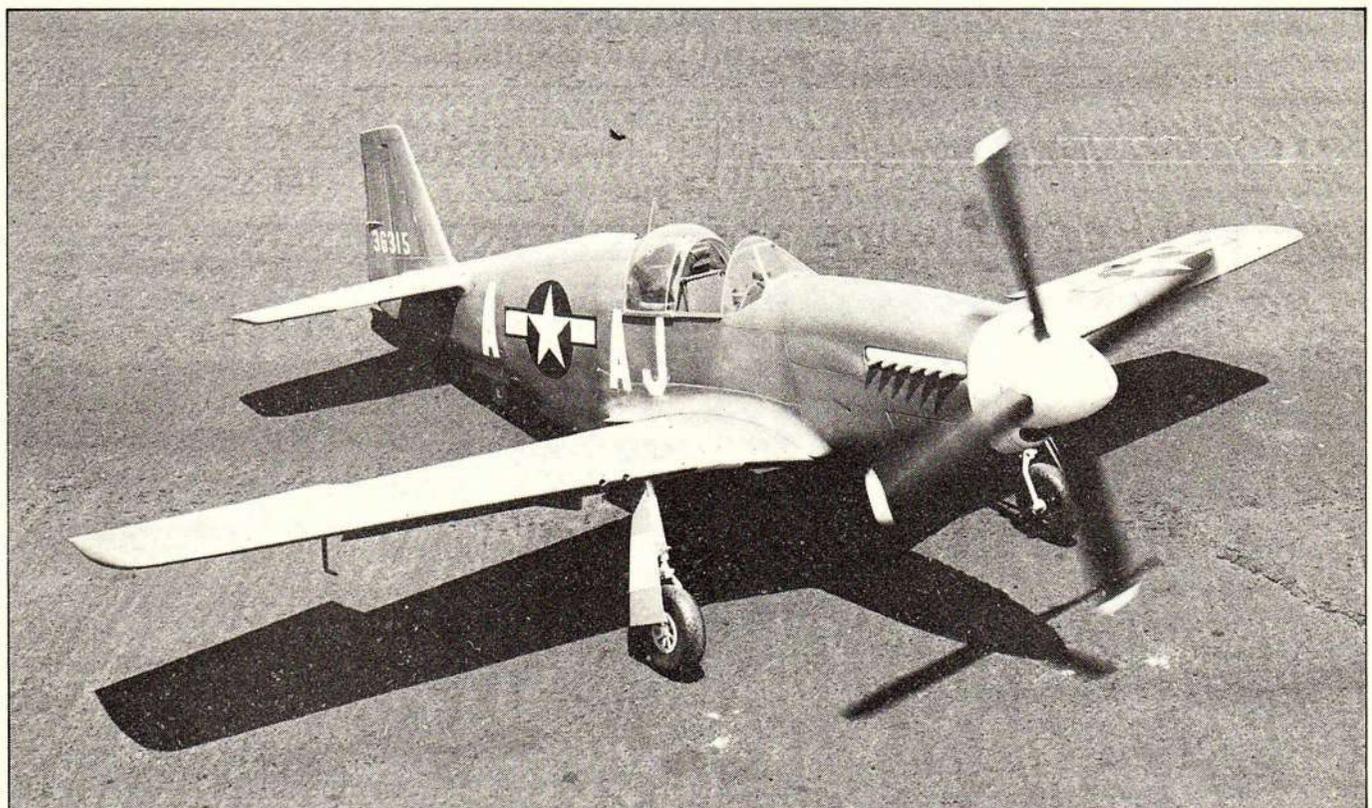


A lot has happened since our first design in the "Master Scale" kit line appeared two years ago. Our SBD-5 (see *Scale R/C Modeler*, February 1981) was an overnight success because it built easily, and it was one of the most highly detailed scale kits to ever be produced. Shortly after the release of the Dauntless, an illness in the family forced us to turn the popular Jemco line of kits over to Marks Models. Since Mark and Rod Smith had been producing the kits under our label, we were confident that the outstanding tradition of quality would be continued. They also do all of the wood and molding work for our Master Scale kits, so you know that you are getting a kit that is cut from the best wood, and with superb parts fit.

Actually, most of the last 28 months has been spent in an intensive program to design and manufacture a totally accurate P-51 Mustang. We take the term "Master Scale" seriously, so we spent months pouring over drawings and documentation sources. True to our policy of verifying everything, we spent hours crawling all over a full-size Mustang, plotting every station and double checking every dimension. If it's a Master Scale model, you can be assured of 100 percent scale fidel-



The Mustang's cockpit has a pre-printed gauge assembly sheet, and a die-cut face plate. Saves lots of time.



The big Mustang is still on the compact size, with a 71" span. This helps to keep the power-to-weight ratio a little more realistic.

ity. This article will, in part, explain why we can make such a statement, for this Mustang will make even the most deeply hibernating dormant Mustang buff crawl out of his shell.

Why a Mustang, when there are already a bunch of them on the market? Well, after looking at all of them, we were disappointed that not one was accurate . . . we could not even find a plastic model that was totally correct! Other kit designers may claim that they have engineered the perfect P-51 but, believe me, checking their final product against irrefutable documentation has shown that they have fallen short of the mark.

Just as our SBD-5 departed from our original kits in having a larger format, so too does the Mustang. This .90-powered P-51 has a 71-inch span (that's 16 percent of full-scale), and 865 sq. in. of wing area. The weight will be typically 14-15½ pounds, and the kit will retail for \$225 (direct orders only, and please include \$6 shipping). As will be seen, there are numerous scale extras and options available, too. You can specify either the "B" or "D" versions,

and a Malcolm Hood is available for the "B" (specify when ordering, please).

If you have built any of the standard Jemco kits, the Mustang won't be too much of a surprise for you. As a matter of fact, there is so much building data available with the kit that we can honestly say that a beginner to scale should be able to complete the job. The P-51's fuse uses the familiar JEM LOC crutch construction. The parts virtually snap together over a central alignment key, so that you could literally assemble the fuselage in your lap in front of the TV (but experience has shown that the wife will quickly veto that idea!).

Instead of a sheeted foam wing, we opted for a built-up structure. The main reason we avoided the foam core was to get a very rigid mount for our custom scale landing gear. You'll notice in the photos that the gear is pivoted very near the landing edge, where it should be. There simply is no proper way to support such a gear arrangement in a foam core.

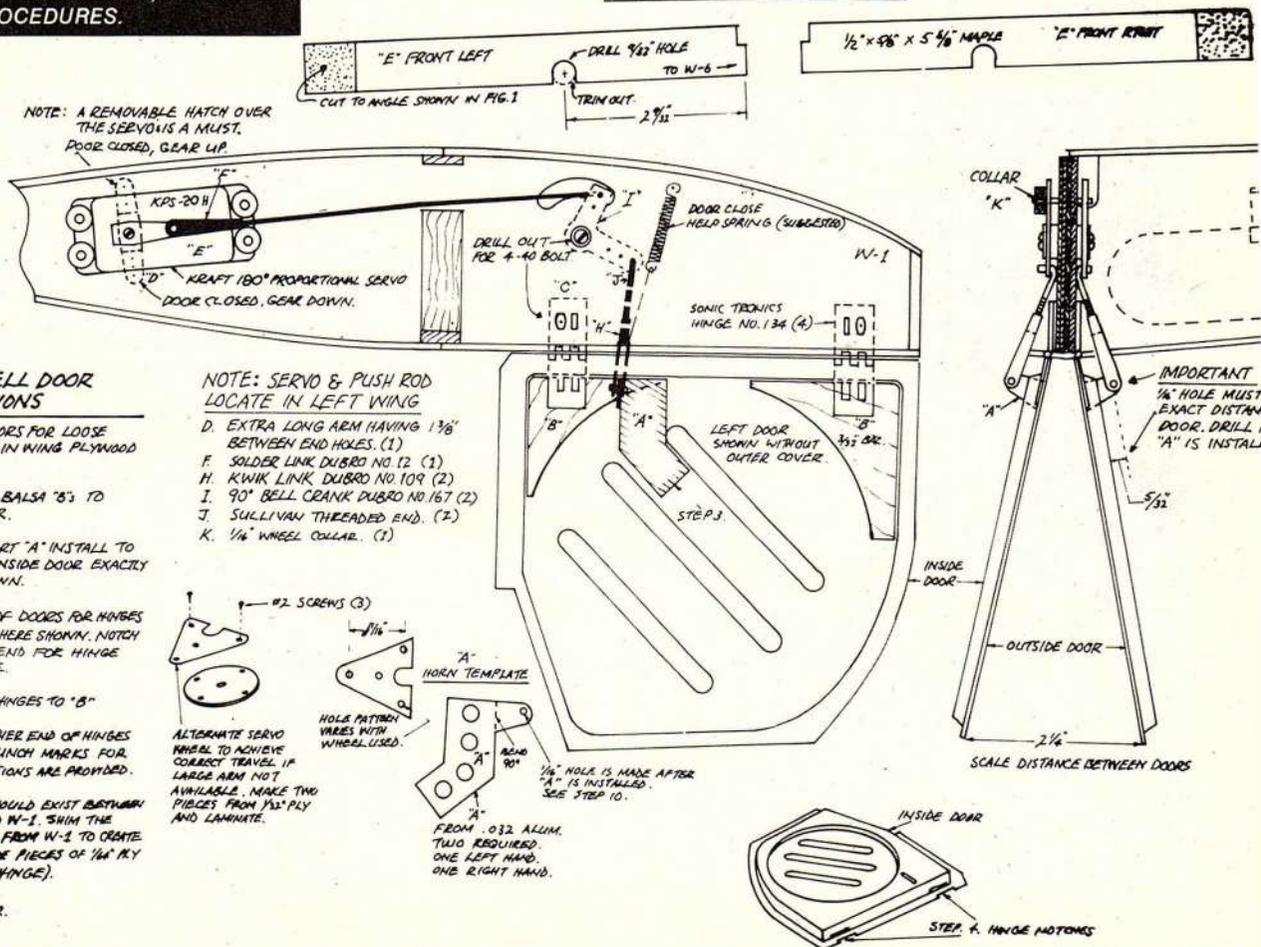
The kit will set a new trend in

hardware packages. We decided that it was useless to put a bunch of goodies in plastic bags, many of which most modelers have sitting around the shop. Why pay twice for such hardware? We kept the price down by doing this, and we were able to reinvest the money normally charged for these goodies in some of the best engineering drawings and photo building sheets ever included in a kit. The Mustang comes with eight large sheets of drawings, and 12 pages of detail photos to assist the builder. There are special instructions on how to paint insignia and markings. Many interior cockpit parts are included, as well as a very extensive instruction booklet.

We searched high and low for commercially available accessories, in particular a good set of scale retracts and a correct retractable tail wheel. We quickly discovered that we would have to proceed with our own ingenuity. Our decision was that we would either offer the hard-to-make accessories needed to finish the kit as optional items, or that we would give the modeler enough drawings and information to build

DETAIL OF THE INNER GEAR DOOR ACTUATION MECHANISMS, WITH STEP-BY-STEP PROCEDURES.

"E" TEMPLATES. (LEFT & RIGHT)



his own accessories with simple shop tools.

The retractable tail wheel posed the first challenge. It must fold forward, yet the wheel appears to go straight upward into the well. We could find no accurate way to duplicate this action, so we simply sat down and engineered a very basic unit to do the job. The plans show how to make this gadget in less than an hour, for a cost of about \$1 in materials. The only odd-ball tool called for are tin snips, and most modelers will already have the brass tubing, sheet metal, and piano wire and wheel collars needed. The drawings explain how to make the doors, and how to get them to close properly every time.

The main gear was not so easy. Since scale landing gear are being given more emphasis in scoring these days, we decided to accept nothing less than total accuracy. Three features were considered critical:

1. The gear strut would have to pivot near the center of the wing's cross section.
2. The strut door and secondary doors would have to be made of

formed plastic to facilitate construction.

3. The gear strut would have to operate like a functional oleo for total authenticity.

As it turned out, we are manufacturing the strut assemblies. We designed them around the Robart P-51 gear legs, to keep the cost within reason. The oleo legs are available for \$40 a set.

With the struts taken care of, we still had to cope with the problem of getting a scale-like gear location in the wing and a scale retraction kit which converts a set of Rom Air retracts into the correct geometry. This mod will work on almost any taildragger, too. The kit sells for \$30.00.

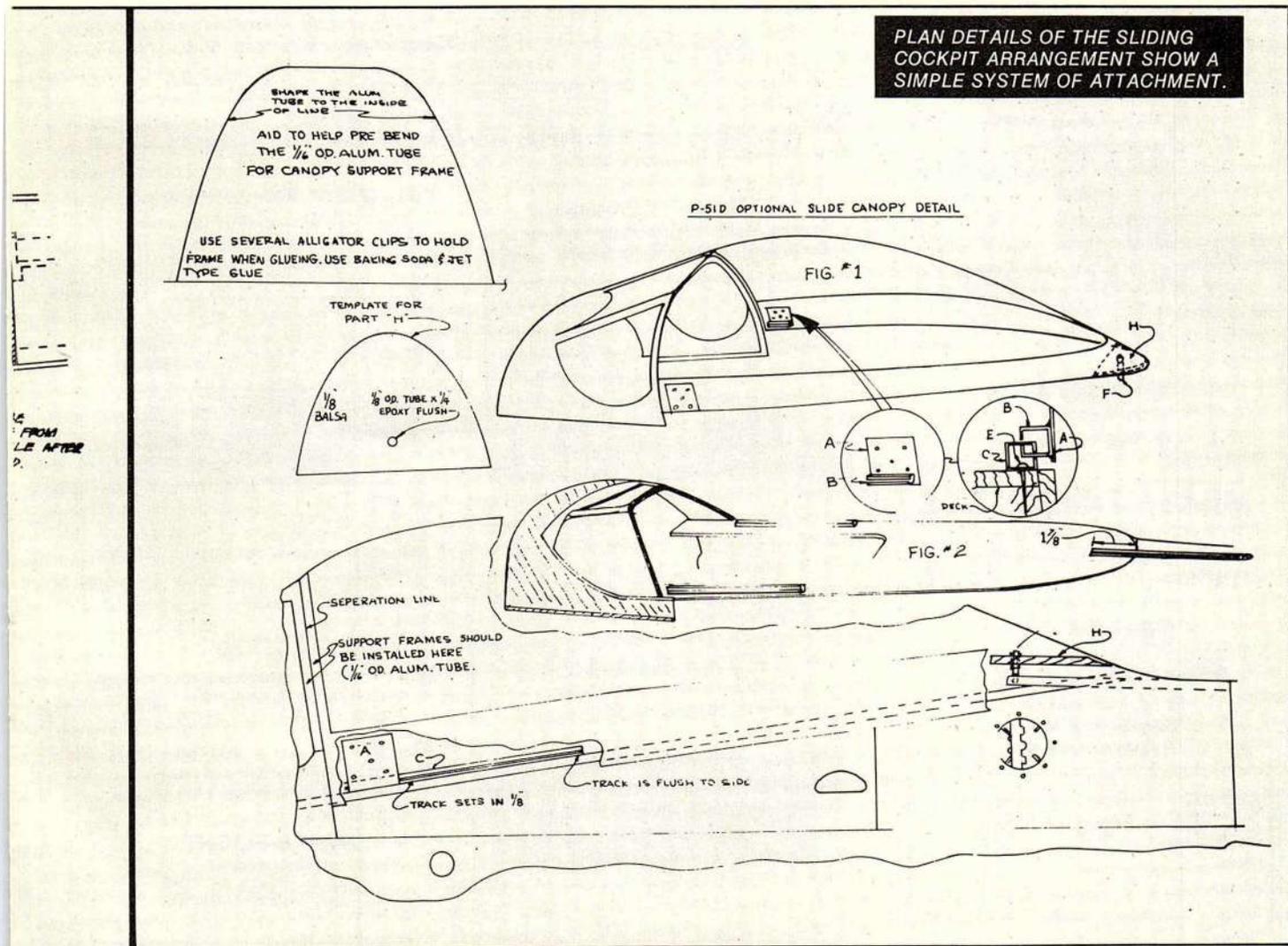
It looked as if we had licked the undercarriage problems, but the final difficulty didn't surface until we completed the model and set it on the runway. The Robart scale tires almost went flat from the extra weight! The cure was very simple, but a little odd. We took some of the replacement wick from a patio torch and stuffed it inside the tire. Look for Tiki Torch Wick #1502

at your garden or hardware shop. It comes in nine-inch lengths, so you'll have to get three of them, since each wheel takes ten inches of material.

Another solution is to use some expandable polyfoam. There is a two-part solution which expands and solidifies. Sig makes it, and you can also find it in the railroad section of the hobby shop. The foam will take the shape of the container it's poured into, so the expanded foam will fill the cavity of the tire. Be warned that it doesn't take much foam to do the job. We prefer the wicks, since they are a little more pliant.

The kit includes a 30x36 inch drawing of the retract system, illustrating the main gear installation, door hook-up and how to operate the doors from a separate servo. Complete instructions are given for using one channel to get both sequential door and wheel retraction.

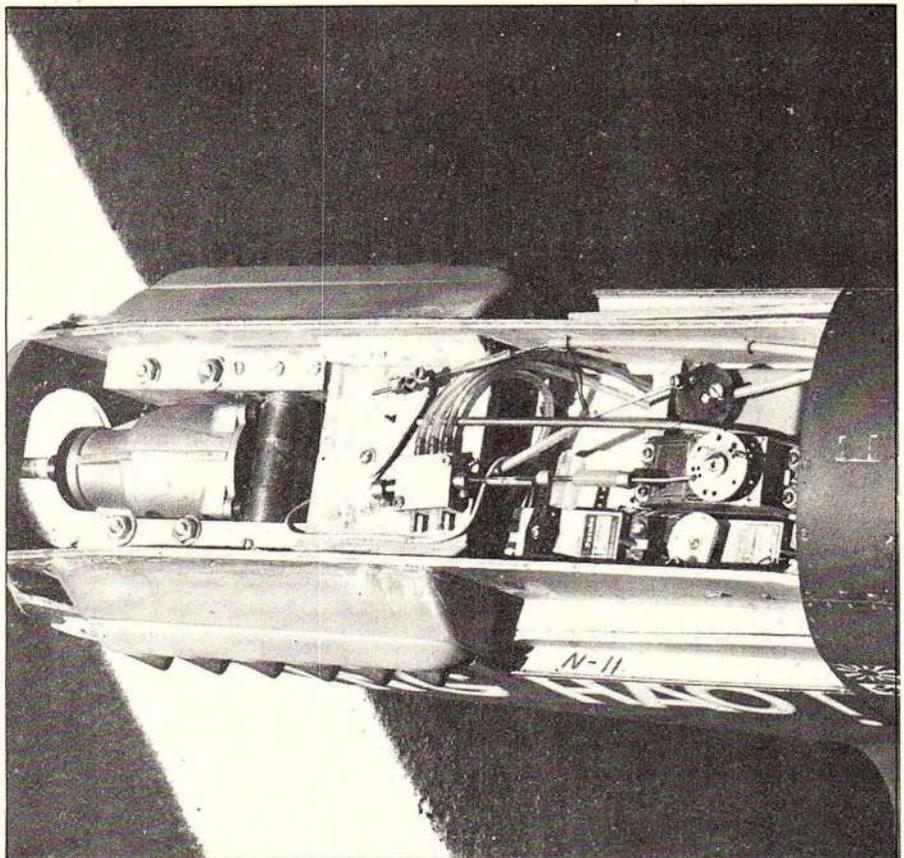
When we say that the Mustang is exact scale, we mean right down to the engine cooling system. A special air duct has been engineered which runs from the scale opening



below the spinner, through the fuselage and out through the scale engine cooling duct behind the wing. This discharge door is servo operated, and intended to be tied in with the throttle. There are no cheater holes for cooling in this P-51's cowl.

You'll enjoy doing the cockpit interior of the Mustang. We have redesigned the equipment locations so that there are no servos below the cockpit area. The cockpit floor, with the pilot's seat attached, can be completely removed by simply taking out two screws. The top nose cowl hides the servos. This installation helps the C.G., and makes for very easy radio access (without removing the wing, too!).

As an optional function, the builder can install a functional exhaust system. By laying glass cloth and epoxy resin inside the plastic exhaust parts, the engine gases can vent out the scale locations. The drawings show all of the necessary plumbing. Since there is no commercial exhaust manifold which will work, we are manufacturing a universal style. Write to us for a price on this manifold. If you own a Slimline "Sport Scale" manifold, the drawings show how to modify it.



The radio installs between the engine and the cockpit. Functional, and access doesn't require removal of the wing.

(Continued on page 65)



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WINGSPAN: 86 INCHES
WING AREA: APPROX. 1300 SQ. IN.
LENGTH: 67 INCHES
WEIGHT: 14 - 15 LBS.

Light Laser

LET A LASER LIGHT UP YOUR LIFE.

By John W. Workman

J. R. Naidish photos



Are you building better now, but flying less? Does your flying field have limitations that make practice with your contest model a nail-biting affair? Have you ever wished that your 300 hour, 95 point beauty was as easy to fly as the trusty old Ugly Stik that you built? If you answer "yes" to any of these questions, stick with me and I'll show you the light—Laser light! And a light Laser!

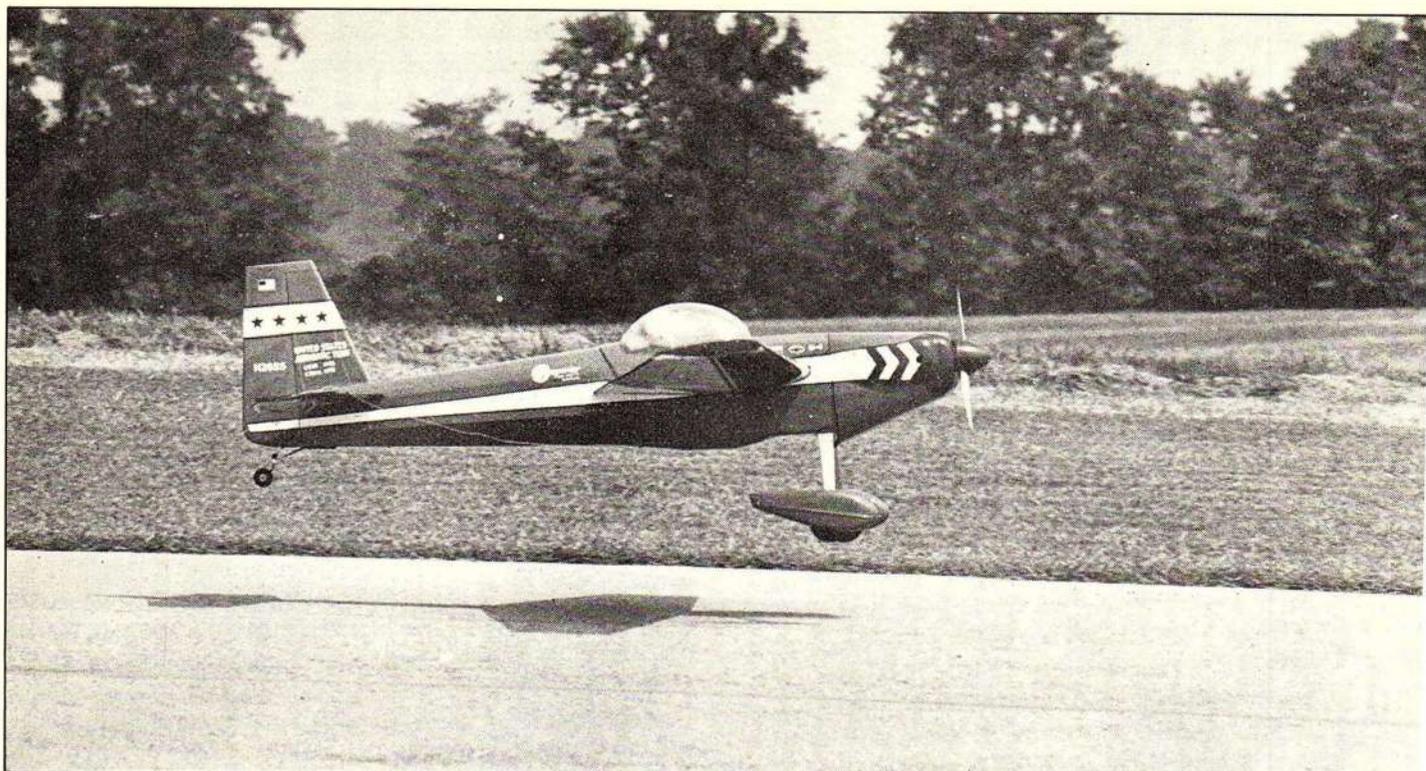
Most of us choose our scale models to suit our tastes, rather than for practical reasons. We often ignore the problems that such choices bring until after we are well into the project. It seems to me that a number of the problems with how well our scale models fly can be traced to one factor: wing loading. I know that airfoils, moments, flaps, C.G. location and all that other stuff is important, too, but if we can

reduce the usual 35+ ounce-per-square-foot loading of typical scale models to the 25-ounce range of sport models, all kinds of good things happen. So what we need to do is choose a subject which we can build to the desired low wing loading that will still be competitive.

I have had some success previously with a modified Sig Zlin Akrobat (built-up semi-symmetrical wing) covered with MonoKote. This model







The author's Laser breaks ground at last year's Masters Championships. Only lack of piloting skills kept the Laser from placing well at the meet.

weighed 6½ pounds and was powered with an OS .45 FSR. This model confirmed my thoughts about wing loading. A later MonoKoted P-51 (February '82 *Scale R/C Modeler*) was proof that the theory worked on different types of models. So what I looked for last year was a subject that the slick finish of MonoKote would look right on and which would be practical to build in a large size. I still wanted it to perform well on a .60. I looked for simple outlines, a bright color scheme, and enough responsiveness to make it fun to fly.

I considered several types of subjects. Biplanes: no, too complicated. Golden age: no, documentation problems. Light civil: generally too plain and docile. I came up with the category that should fill the bill: an aerobatic monoplane. A quick search for documentation had me checking out Repla-Tech International and their excellent line of scale drawings. A new addition to their line was a set of drawings showing Leo Loudenslager's Laser 200, the modified Stevens Akro it started from, and another version, the Laser 200F owned by Bob Carmichael. When the photo pack and the drawings came in, I had my subject.

I chose Carmichael's 200F for several reasons. First, Loudenslager's



On the ground, the Laser handles well. It will roll forever on the mains.

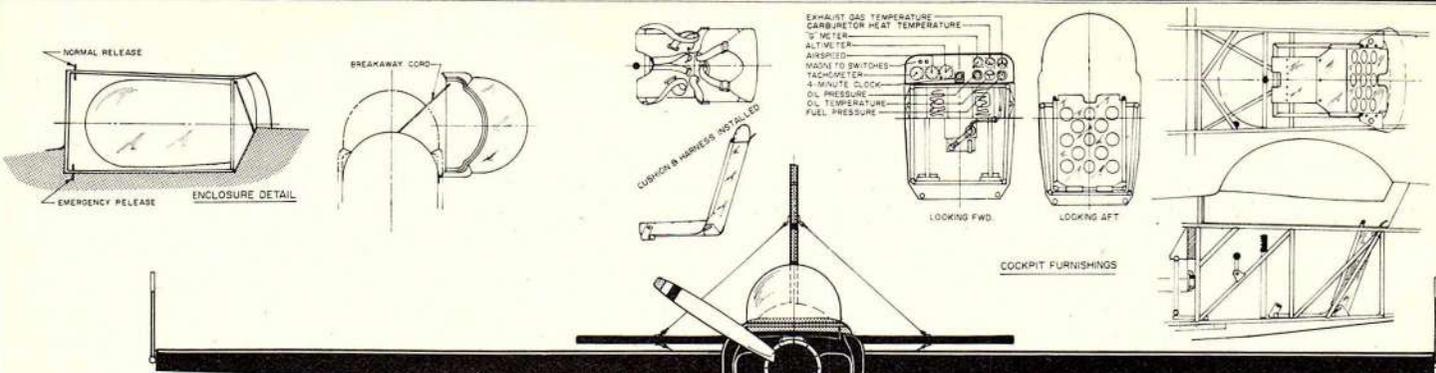
Laser 200 has been done. Everyone has seen it and the static judges know the details too well. Also, the 200F has simpler fuselage cross-sections and a much easier cowl to build from wood—not as many compound curves. Finally, the color scheme is much more exciting.

The Laser 200F is about halfway between Leo Loudenslager's Laser 200, and the modified Stevens Akro with which he started. The wing and empennage are the same as Leo's Laser, but the fuselage and cowl more closely resemble the Akro. The color scheme is fairly straightforward and smoke would be a

simple mechanical option. So, off to the drawing board.

I scaled the Laser at 3" = 1' (quarter-scale) for several reasons. First, the resulting 72" span is still reasonable for transportation—the fuselage is only about five feet long. Second, this scale would allow me to enter it in Giant Scale. Third, these larger models tend to fly better, at the same wing loading, than smaller ones. Fourth, the model would still be reasonable for a .60 engine.

The design is very conventional. The one-piece wing is built-up (or can be cut from foam) and then completely sheeted with 1/16" balsa. The ailerons are actuated by large diameter aluminum tube torque rods. The new Rhom torque rods would



LASER 200F

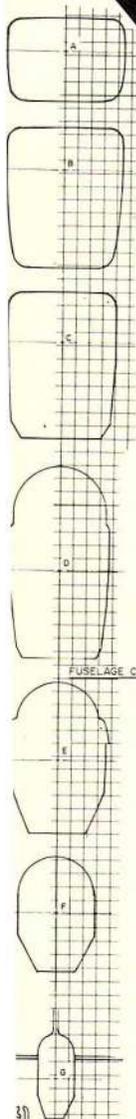
AEROBATIC AIRPLANE

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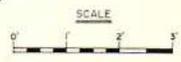
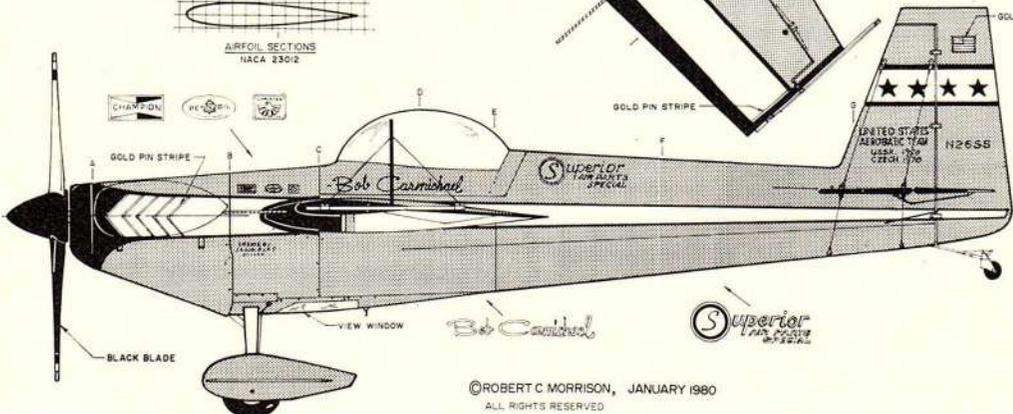
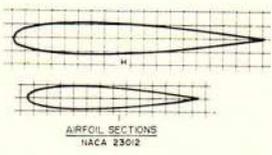
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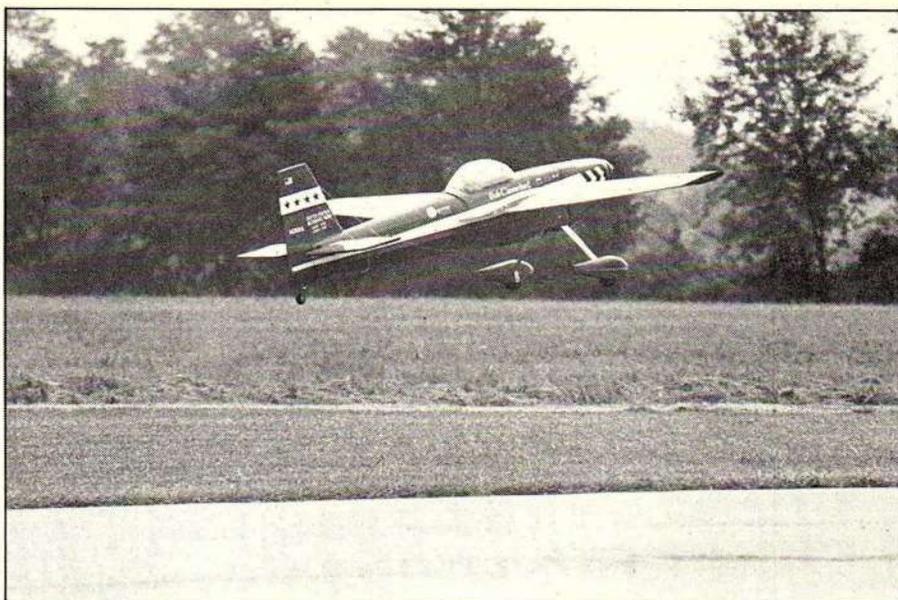
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be great here. The ailerons are counterbalanced, as in the full-scale machine; using lead in the tip counterbalance tabs.

The fuselage is a stick-built truss structure, with formers top and bottom to fill out the outlines. To manage the mid-wing set-up, I made the fuselage above the wing removable like a hatch. This piece includes the cockpit and canopy and separates at the rear canopy hatch line and the cowl line. The wing saddle is reinforced with 1/8" ply under the wing to carry structural loads through this large gap in the upper structure.

The engine is mounted on the end of a plywood box inside the one-piece cowl. The box framing ties into the front wing mounting plate, the cowl attachment bulkhead and the landing gear plate. Most structural loads are thus concentrated into one very solid location. The cowl is built up using 1/4-inch balsa sheet. The air intake in front of the engine is ducted to direct as much cooling air as possible to the cylinder. The other side is left blocked off at about a half-inch inside the cowl. Cooling air and the engine exhaust exit at the scale location at the center bottom of the cowl.



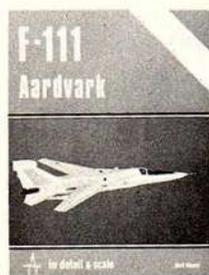
Takeoffs are crisp and positive, with no wing wobbling or loss of heading. With a .90 under the cowl, the Laser will almost VTO.

In keeping with the idea behind this project, the entire airplane is covered with MonoKote, except for the cowl and wheel pants. They were painted to match. The lettering is painted on the MonoKote after carefully cleaning it with K&B thinner.

They have not come off in over a year of flying. The canopy was hand-pulled over a rather crude form (this is a BIG canopy). The landing gear strut was obtained from Mallory Models, and is the same one used for their Laser 200. The wheel pants can be laminated and carved from balsa or modified from Mallory fiberglass items. All up weight is between nine and ten pounds, depending on whose scales you use.

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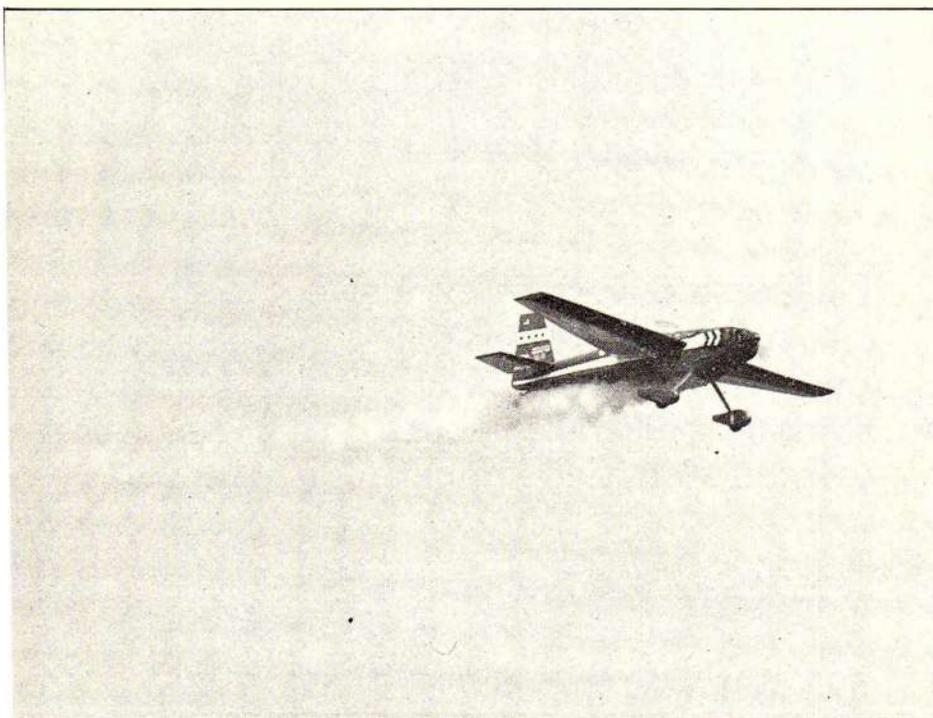
A clean and efficient machine, the Laser has pleasing lines in the air. The secret to good performance is its 9 pound weight.

The prototype flies extremely well on an O.S. .61 FSR (Zinger 11x7 prop). The smoke system uses a Tatone "Pitts" style muffler with pre-heat tube and diesel fuel. This is now available from Tatone as their "Lotsa Smoke" system. A second model has been built by another flier and he uses a foam wing, with a .90 for power. He really likes the pulling power of the .90 and large prop. His only problem was space for the fuel tank.

After a good season on the contest and air show trail, I must say that I succeeded in what I set out

(Continued on page 66)

A smoke system always makes an aerobatic model more interesting. The author uses a homemade version of the new Tatone Lotsa Smoke system.





BASICS OF FIBERGLASSING

Step-by-step method for applying glass cloth and resin. This system has some new twists.

By Pat Kinney

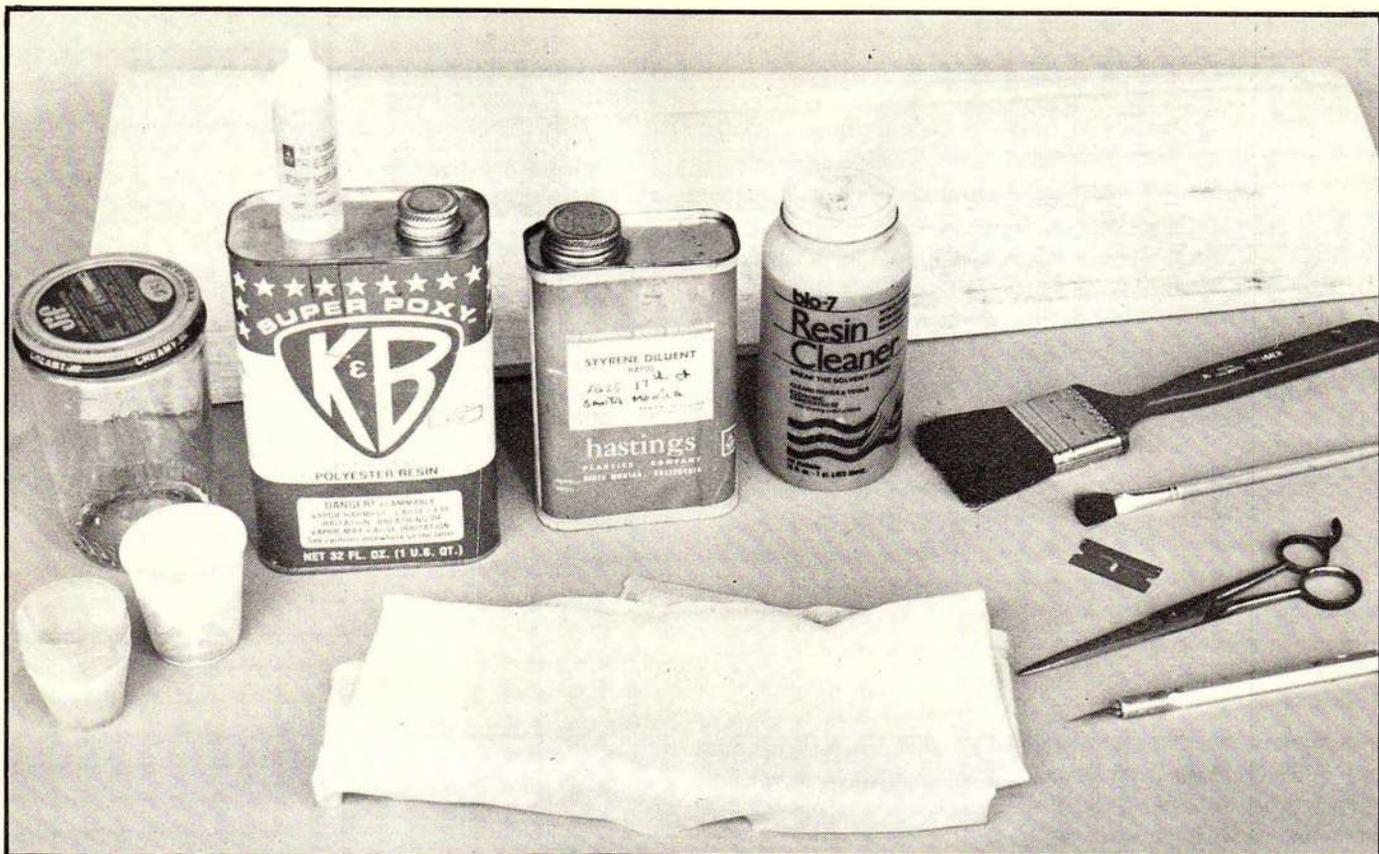
J. R. Naidish photos

When the Editor saw my P-51 at the MACS Show, he commented on the smooth finish. At first, he had approached me for an article on the now-classic Top Flite P-51, but the more I explained my "improved" system of fiberglassing, the more our conversation turned toward an article on the basics of glassing a



The author's P-51, finished with the resin process described herein.





All of the materials needed for a successful fiberglass operation. From the left: wax-free mixing containers, and an empty jar for clean up; a quart of polyester surfacing resin; styrene monomer additive; clean up solution (acetone may be substituted); two brushes, as described in the text; trimming tools, and a section of 1.4 oz. glass cloth.

model. For those who don't know how to apply glass cloth and resin, this will serve as a primer on getting a model ready for primer. For those who are old hands at glassing, here is a system which has some refinements which will give a lighter airframe, with far less sanding and preparation.

I do want to comment on the Top Flite Mustang, since it is one of the nicest kits I have ever built. The parts fit is good, and the quality of the materials in the kit box are superb. In the few years that this model has been available, it has become recognized as one of the true classics of the scale field. I would venture to say that there have been more of these models built than any other WWII fighter. Everyone loves a P-51, and this happens to be a very nice one.

I built mine totally stock, even to using the fixed gear supplied in the kit. I actually saw no need to modify anything, so I figured why mess with a good thing. I was concerned that the model would be a dog, with the

wheels and gear hanging out. To my pleasant surprise, the Mustang flew as if on rails, and doing maneuvers was no problem at all. The airplane is so stable, that even someone with limited stick time would have no trouble handling it.

The photos accompanying this article are self-explanatory as to how to do the resin technique. However, I'll detail the step-by-step procedure, so that you can fully understand the subtleties of this system. You will need the following items:

Polyester sanding resin: Use only the type made for modeling, and not laminating resins for boats.

Styrene Monomer: Available at stores which sell plastics and resins. All resins already have about 35 percent styrene monomer, but our secret is to add more to increase penetration and flowing characteristics.

Acetone: For clean up only.

1.43-oz./yd. fiberglass cloth: Do not use cloth lighter than 1-oz., nor heavier than 1.5-oz.

Assorted sandpapers: 180 and 220 Aluminum Oxide type, and assorted 220-600 Silicon Carbide (Wet-or-Dry) paper.

Brushes: A 1/2-inch and 2-inch natural bristle brush.

Miscellaneous: Stirring sticks, razor blades, mixing cups (either poly-plastic type or unwaxed paper), and empty cans for clean up.

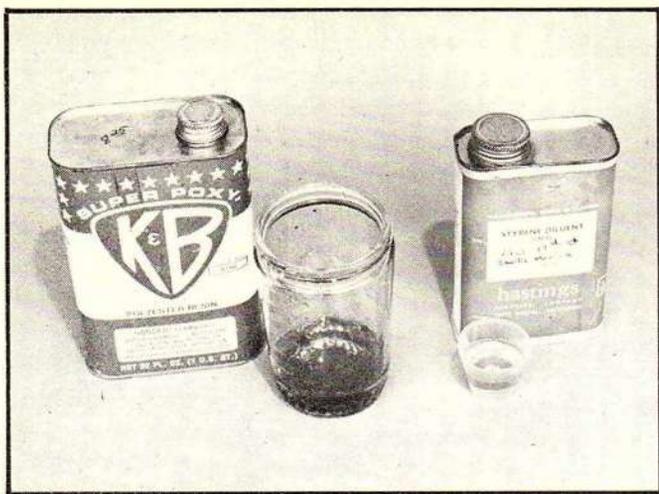
We will be mixing the resin in eight-ounce batches, stirring in three ounces of the styrene monomer. Do not add catalyst at this time! Part of the technique is to apply the resin in small batches (1/2-1 ounce each). You'll find that an ounce of resin will do half of the top of the wing, if you are applying it properly. Use 1.5-ounce cloth, for this is heavy enough to hold a sufficient amount of resin, yet not too heavy to add weight. Do not use 3/4-ounce cloth.

Make sure that all the wood surfaces are sanded smooth with 180 or 220 paper. The final finish will only be as smooth as the base over which it is applied.

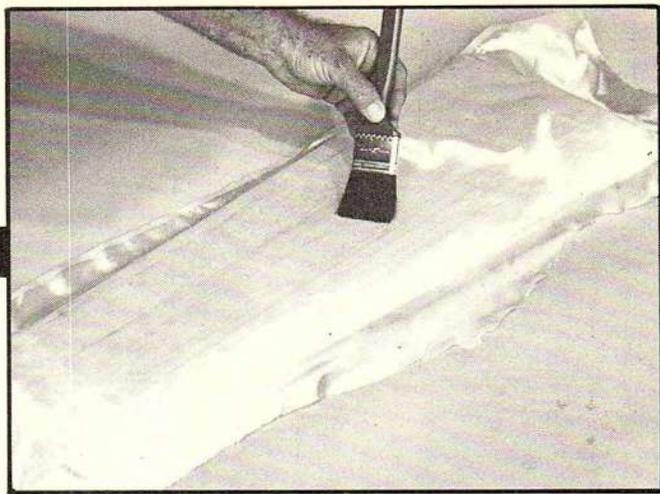
Cut the cloth so that the grain (test it by pulling along an edge) runs spanwise. Leave enough cloth for a 2-inch edge on all sides.

Lay the cloth in place, smooth down with the hand, then take the 2-inch brush and carefully go along from one end to the other, brushing the air pockets out of the cloth. You'll find that the natural bristle brush creates a slight static charge, which almost magically pulls the cloth down against the wood. If the cloth starts to lift or shift during the resining process, simply brush it back down with the brush. Once you have brushed it down, avoid handling it as much as possible.

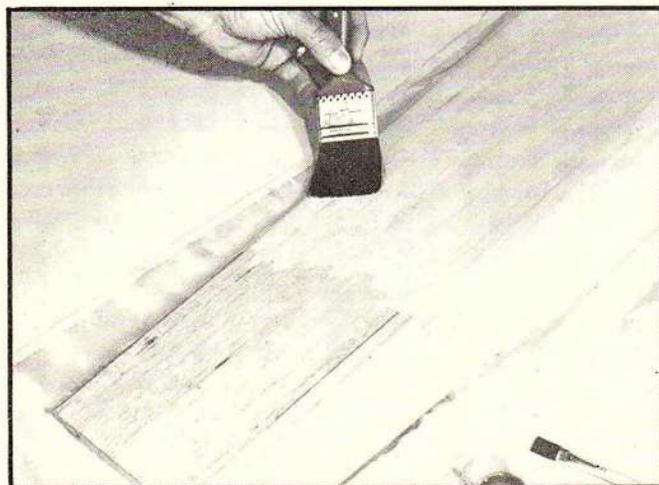
Pour about a half-ounce of the resin/monomer mix into one of the



Mix three ounces of styrene monomer to eight ounces of polyester surfacing resin. Do not add hardener to this batch.



Lay out the glass cloth, trimming it to leave 2 inches on each side excess. With the 2" brush, gently brush the cloth in place, so that static electricity will hold it to the wood.



If the cloth ahead of the work should start to pucker or shift, use the larger brush to lay it back down. The brush is kept dry.



The wood will look like this after the first coat. Note the waxy glaze from the surfacing resin. There are still open grain areas and glue seams.

small mixing cups. Add 6-8 ounces of catalyst. This will give you about 5-10 minutes of working time at room temperature. You will be applying the resin with a 1/2-inch brush, so you don't want the mixture "firing off" too quickly.

The brushing technique is important. Start at one end of the job, and *always brush in the same direction*. The first coat is supposed to soak into the cloth, leaving no glossy areas. This is a binder coat. Roll the trailing edge and leading edge past the center, so that the cloth will overlap when the other side is

applied. Remember, brush only toward the dry cloth, in one direction. Smooth out any wrinkles which may develop in the dry cloth with the 2-inch brush.

Keep a jar of acetone handy and clean the brush immediately. Once the resin has congealed, you'll have to throw the brush away.

The reason for the small applicator brush is to control the amount of resin used. A larger brush tends to flow on too much resin. You don't flow out the resin here, but rather you will brush it on, like paint. About an ounce of resin (two

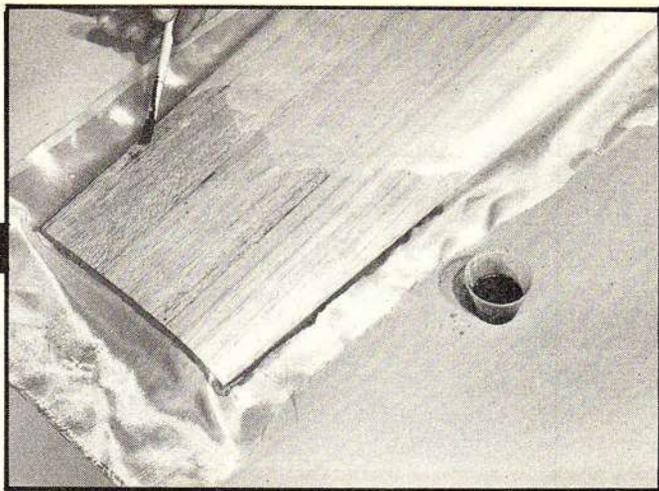
small batches) will do one-quarter of a wing, *i.e.*, the top of one side of the wing.

While the first panel area is setting up, go to the fuse, or some other area. Once you've finished that, it will be time to trim away the excess cloth on the wing panel and to apply the next panel. By working back and forth, this way, you'll get a complete airplane in the first coat of resin in about 2-3 hours.

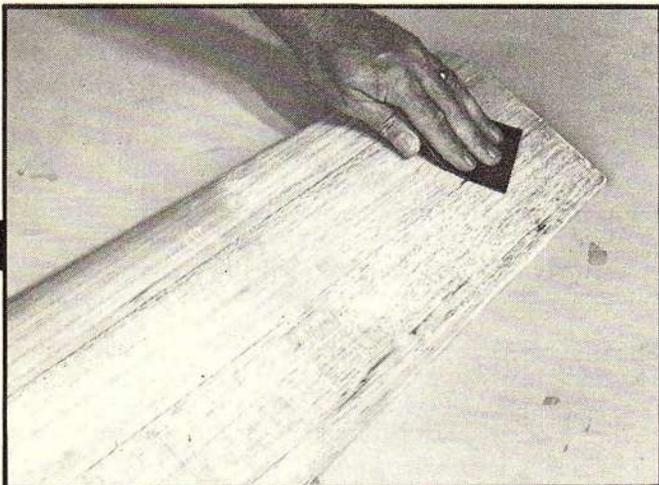
Note that this system doesn't rely on toilet paper or squeegees to pick up excess puddles of the resin. By controlling the amount with a small-



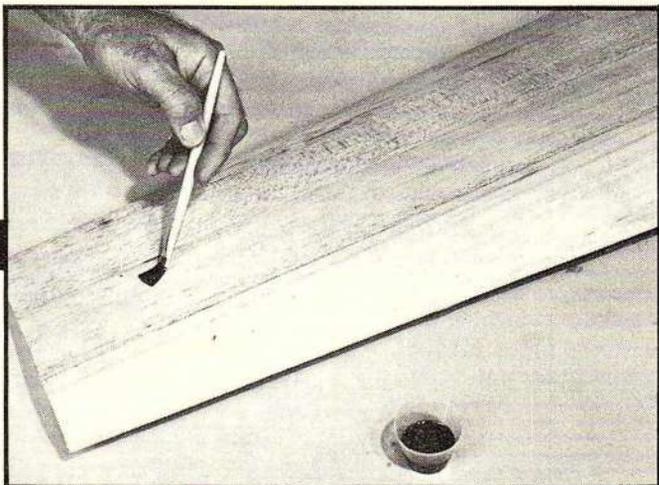
Pour an ounce of the pre-mixed resin in a small clean container, then add catalyst appropriately, and begin to GENTLY brush on the resin along one edge. Don't brush so hard as to disturb the cloth.



Brush the resin along the edges, so that the cloth lays past the centerline. Later, the second piece must overlap. Don't try to flow out the resin, but simply apply it as if it were paint.



A light sanding can be done between coats, but keep it quick and don't sand into the cloth. This step can be done after the second coat.



The second coat uses the small brush, again. This time, concentrate on flowing out the resin for a smooth level coat. Note how little resin it takes to do half a wing panel, and some of this will be left over!

The detail of the finished model, with Radip-o-graph ink panel lines and rivets.

er brush, and by using the styrene monomer to allow better penetration and smooth flowing, you'll avoid messy build-ups which are difficult to sand.

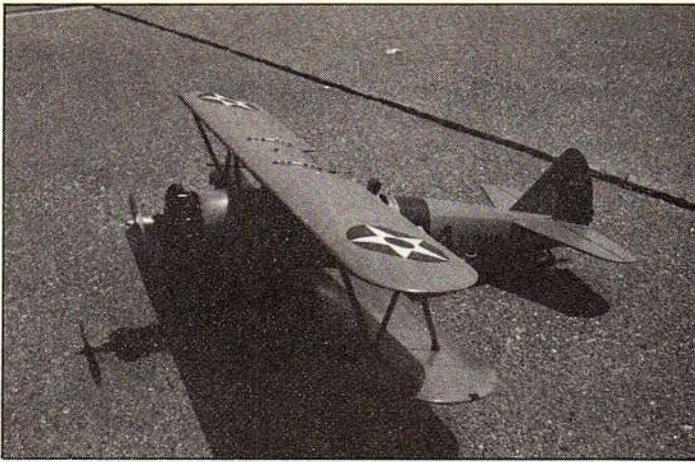
Speaking of sanding, be sure to work from 220 to 600 grit after the second coat has cured for at least five hours. Don't sand too much. There's very little resin on the surface (or, at least, there should be only a thin film), so just a few swipes with each grit will normally be all that's needed. Once the surfaces are final sanded, apply your favorite primer, then sand and paint.

Another advantage of this system is that there is no sanding necessary after the first coat. Let the first coat cure for a full five hours, then simply brush on another coat. The second coat will fill the weave of the cloth, and there will actually be very little sanding required after that, except to take out any brush marks or imperfections. You'll find that, if you brushed everything properly, you'll even have a few ounces of resin left over after completing an entire airframe.

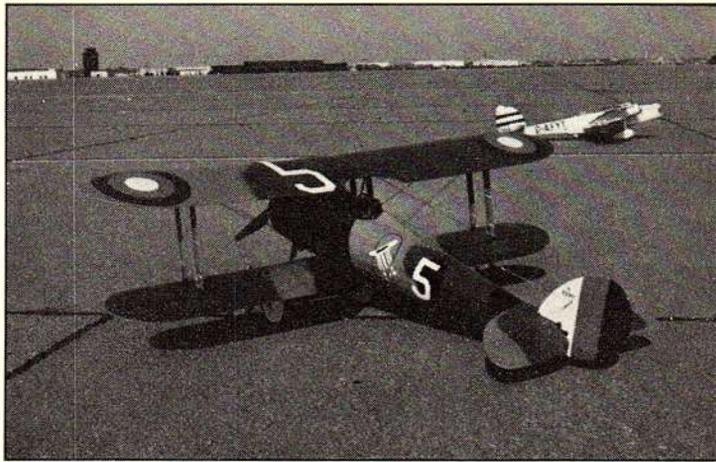
Applying resin is no secret. It takes a good even base surface, and

some attention to detail when you're applying the materials. If you've never applied glass and resin before, you'll be pleasantly surprised as to how easy it is. If you feel awkward, take some sheets of balsa, pin them down on the table, and try glassing them, for practice.

There is now no excuse for not getting a perfect finish on your next scale model. This technique, as outlined here, is probably the most fool-proof and reliable system for getting a consistently smooth finish. Once you've tried it, you'll never use any other finishing system. □



Jack Fortney's .40-sized Stearman won Sportsman Class. It was Jack's second contest!



Jack Aycock's immaculate Nieuport had the top static score, but mechanical problems kept him out of the running.

With plenty of good flying weather during the summer, it's hard to find time to build. After seven years in R/C, I now feel confident that I'm ready to enter the arena of Sport Scale competition. The only problem was that I had no time to complete the Pitts Special I had been getting ready for the Nats. The opportunity sounded great, with the Nats in nearby Lincoln, Nebraska. The only problem was that time was slipping away, and the Holman Pitts was still very far from finished.

It wasn't until a week before the Nats that I officially declared the task hopelessly lost. But I still wanted to attend this competition, so I decided to go as a cub reporter for *Scale R/C Modeler*. That pit pass would really enable me to see some great models up close.

The Lincoln site is a huge com-

plex, typically Nats in size. It's a military base, with those familiar expanses of concrete. For scale flying, you couldn't find a better site. The weather cooperated, and there was just a little heat and just a minor amount of wind. In all, a pretty good setting for a major contest.

The turnout was very small, with only 28 total entries in all classes (some were actually double entries by the same pilots). In the past years, the Nats has lost a lot of its momentum as a major event, and I personally hate to see all of that dues money going to waste (the AMA goes into debt each year in running the Nats) for only two dozen modelers. Compare that to the Masters Championships this year. There only 26 showed up, but only 50 were entitled to enter in the first place. Maybe there's some

sense to that approach, especially since all of the modelers don't wind up footing the bill. I wonder if the AMA could rechannel that money to the Masters, where at least it could do the Scale event more good.

Precision Scale was almost a non-event. Had not Cliff Tacie changed from Sport Scale (where he represented the U.S. at the World Championships this summer) to Precision Scale, there would have been an automatic winner. The only other contestant was veteran Bob Wischer, who has been flying Precision Scale for probably years longer than it has even been an official event. Bob dragged his old Piel Beryl out of mothballs. Cliff used the Spezio Tu Holer he flew at Reno.

After the first round, Bob held the lead by a scant .3 points. But, Bob is an experienced flier, and he doesn't hesitate to do risky manieuv-

While attendance was down dramatically, this year's Nats was hotly contested. By Randy Kelsen

Photos by the author

SCALE AT



Dean Copeland's giant scale CAP-21, with Quadra power. A real show stopper of a model.



Skip Mast's familiar C-130 Hercules. Twelve-foot wing span.

vers with his Precision Scale model. When the dust had settled, Bob had amassed 3422.9 points, while Cliff had only 3312.3.

Giant Scale hosted only seven entries. Sig's designer, Mike Gretz put on a real show with his version of the Sig 1/4-scale J-3 Cub. If you have ever had the opportunity of seeing a Cub do loops and hammerheads, be advised that you were seeing a rarity, since the J-3 is placarded against the loop. But Mike did the maneuver in a very convincing manner.

Leonard McCoy is still flying his Dornier twin bomber. He does a very convincing job with this monster, and he netted second place for his efforts. Leonard is getting so good at the parachute drop that he actually had one of his chutes land on top of his own van in the adja-

cent parking lot! What are the odds of that happening?

Dean Copeland rounded out the top three, with his CAP 21. Lack of documentation kept his static score low, but he made up for it with some spectacular aerobatic maneuvers. He starts off his flight with a snap roll at about shoulder height . . . which gets the crowd to their feet every time. Dean is a real showman, and he virtually flew his way into the top three spots.

Everyone thought that Jack Aycock would walk away with the event. His Proctor Nieuport was almost flawless, and his 94 static score reflected that. No one could have touched him had he not been plagued with mechanical problems. Able to post only two flights, he just couldn't be competitive.

Stand-Off Scale (Sportsman Class) was won by Jack Fortney. He

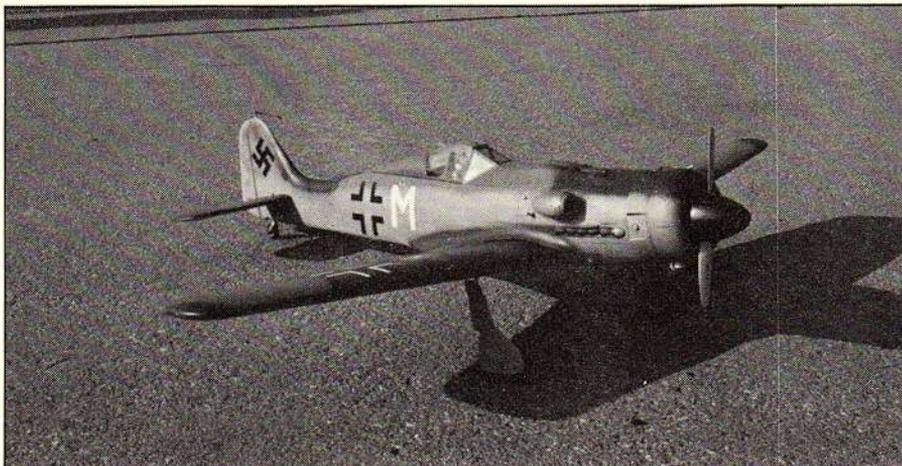
brought a little Stearman biplane from Omaha, powered by an O.S. .40 four-cycle. The scratchbuilt model putt-putted around in a most convincing manner. Jack was thrilled to death, for here he was a Nats Champion, and he had only entered one contest prior to this!

Dale Arvin was no neophyte, and he gave Jack a real run for his money. Dale had a very clean F4U Corsair, and he had to do a lot of perfect flying to make up for a six point deficit in his static score. And he just about did it, finally winding up with 155.80 points, while Jack had 155.85!

Jewel Ness wound up with a much lower score for his Byron MiG, but got a third place trophy for it.

Expert Class saw Hal Parenti walk away with top honors. His veteran Bearcat got a 91.7 static score, and that simply put him out

THE NATS



Ed Izzo came from the East Coast to fly this very clean Focke Wulf. A very realistic gear retraction sequence.



Sam Piscotta's modified Sterling Spitfire.

of reach. His flight scores backed up that great static score, as well.

For a moment, it looked like Fred Hulen might have a shot at it. He had a very mediocre static score of 86 with his YAT-28E, but he scorched a 95.7 flight score in one round, which meant he had a chance. He almost made it, coming within two points of catching Parenti.

Skip Mast returned with his ever-popular C-130 Hercules. This is a huge model, and it always gets attention when it flies. Skip does a superb job of flying this complex machine. Both Cliff Tacie and Dean Copeland flew double entries. Cliff's Citabria got fourth place, and Dean's Byron T-34 took fifth.

There was only one mishap during the meet, when Roger Geer's Shrike Commander bit the dust. We speculated that the model tip stalled coming down the back side of a loop. Bud Atkinson had some minor glitches on his last flight of his giant scale T-34, but he wisely elected to save the model for another day.

The judging was top caliber. There were some rumblings about one judge who was scoring noticeably lower than the others but, in the final analysis, he was consistently lower. After all the name of the game is consistent judging, and not necessarily equivalent judging. Bob Underwood did a great job of running the show, and everyone agreed that it was a successful contest, even though it had such a limited entry. □

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MUSTANG

(Continued from page 48)



The scale outline of the Mustang is probably the most accurate ever achieved on a production kit plane. The author spent 28 months in research!

In all, three methods of exhaust are included.

A 4.55-inch aluminum spinner (with back plate, adaptor and nut) is included in the kit. The spinner can also be ordered as a separate item for use on other models at \$15.00.

We have also introduced some new kit concepts intended to help the modeler achieve a correct scale finish. The fuse side view identifies all of the panel lines, hatches, vents and other external items. An entire 30x36 inch blueprint gives a plan-view of the right wing and stab, showing *all* of the surface details. The measurements can simply be transferred to the actual model, making it painless to get the detailing just right. We recommend Polly S paints for those camouflage schemes. You'll find these paints in the plastics or model railroad section of the hobby shop. Be sure to overspray them with matte clear to fuel proof the airframe.

The Mustang kit also includes a hidden aileron linkage system. Our flight reports have proven that they work, although the total amount of deflection is somewhat reduced. They are easy to install, and all of the linkages are totally hidden inside the wing.

A simple method of making the sliding canopy is shown on the drawings. There are also drawings of the gun sights (with exploded views). The instrument panel is die cut. All of the gauge holes are done, and a preprinted instrument set is simply glued behind it. The pilot seat is fabricated from pre-cut parts. If you have four ballpoint pen springs, you can even shock mount the seat, as per the prototype. Formed cockpit side panels are provided. Plenty of detail photos are included to help you round out the cockpit (no additional charge here).

More "freebies" are included, such as the 75-gallon auxiliary drop tanks. Even the wing racks to which they

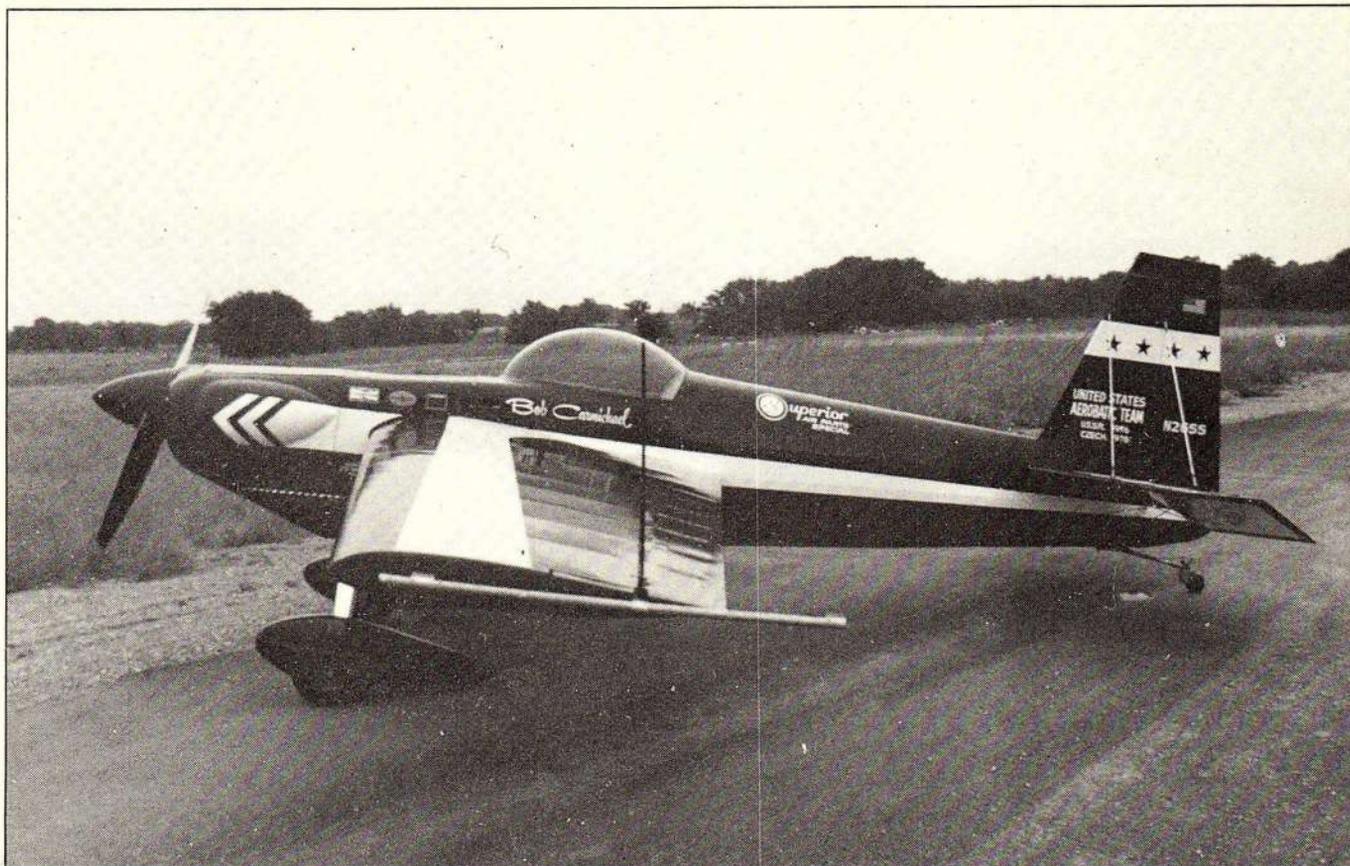
attach are there.

Our unique system of doing the templates for the insignia and markings was stumbled upon by accident. Since the wing is built-up, we suddenly found ourselves without a 36-inch long straight building board. We grabbed our metal straightedge and went in search of a true surface on which to build. We were hitting a blind wall, until an idea struck. We purchased a 20x36 inch piece of 1/4-inch glass. We laid this on the building board, then used the straightedge to adjust the level with shims. Don't use a thinner piece of glass, for even this hard material can flex slightly. Obviously, be careful not to drop any work tools on it!

Now, all we had to do was slide the plans under the glass, and we could work along at an easy pace. The only glue which will firmly bond to the glass is the cyanoacrylates, so most other adhesives can be scraped off with a razor blade. When it came time to make the masks for the

Light Laser®

(Continued from page 57)



Bob Carmichael's full-size Laser 200F, as it was flown at the World Championships. Bob no longer owns the plane. (Photo courtesy Repla-Tech Int'l, from their photo documentation packet).

to do. The Laser is easy and fun to fly. Repairs are simple and dings can just be ironed out. The 26-oz./sq. ft. wing loading definitely puts this model in the "light" class. The smoke system works well and is quite impressive. The model scored very high in static at the 1981 Scale Masters at Louisville, and only my flying talents kept it from placing better than mid-pack.

As a matter of fact, the model flies better than I am capable of piloting it. Takeoffs are a breeze if you let (or force) the tail to come up and let it run on the mains. Nose-overs are non-existent on both takeoff and landing. Partial throttle on the .61 is plenty for takeoff and most flying. Full throttle gives decent climb performance—what I like to think of as prototypical. Speed does not pick up too much on the downhill side of loops, due to the large frontal area and light weight.

66 scale r/c modeler

Stall turns are probably what this Laser does best. With lots of throw on the large rudder, it rotates very smoothly about the C.G., without the rolling tendency of many models. Similarly, the stall characteristics are super. The wing has no washout, but the taper in the planform seems to keep it from wanting to tip stall. At the stall, the nose drops straight forward. This causes problems if you are trying to spin the airplane although, once started, it spins smoothly and recovers immediately.

The rolls are nice and smooth, and the airplane is fast enough to stretch them out well. The loops are easy, although you have to plan how large to make them, since the large frontal area will cause "up-hill" speed to drop some as the engine has to start fighting gravity. Inverted flight is easy, with very little forward stick required. A more aft C.G. than I use would probably make this even better. The model needs no nose weight, and the radio is as far aft as I could put it.

Landing the Laser is really a relief. My only problem is that I tend to underestimate my approach speed and end up landing long. The size of the model in the air is deceiving.

The controls remain solid at low speeds and the model does not tend to be blown about by crosswinds. It sits down on the mains very well, and there is absolutely no nose-over tendency. Even bounces seem to maintain an even keel, so you do not have to panic to get the nose back down again.

So try a Laser, and make it light (pun intended). You will find scale models can be fun to fly, too. □

FULL-SIZE PLANS AVAILABLE FROM THE AUTHOR: JOHN W. WORKMAN, 3829 SCOTWOOD DRIVE, NASHVILLE, TN 37211. PRICE \$15.00 (POSTPAID).

ACCESSORIES ARE AVAILABLE FROM: BOB PALMER, 9161 MOREHART, ARLETA, CA 91331. GLASS COWL \$22.50, WHEELPANTS \$8.50 AND CANOPY \$5.50.

THREE-VIEW DRAWINGS OF THE LASER ARE AVAILABLE FOR BOTH THE LOUDENSLAGER LASER 200 AND THE CARMICHAEL 200F, DIRECTLY FROM: REPLA-TECH INTERNATIONAL, 48500 MCKENZIE HWY., VIDA, OR 97488. PRICE PER SHEET IS \$1.00. PHOTO PACKETS WITH COLOR SHOTS ARE AVAILABLE FOR 75¢ EACH (6 COLOR PHOTOS AVAILABLE) OR 35¢ EACH FOR TWO B&W PHOTOS (6 AVAILABLE).

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 UPDATE APRIL, 1980

PILOT (A)
Leo Loudenslager

LASER 200 (B)

UNITED STATES (C)
 '75-'76 '76-'77 '77-'78
 AEROBATIC CHAMPION

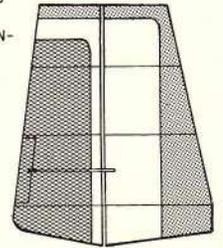
UNITED STATES (D)
 WORLD TEAMS

NOMENCLATURE MARKINGS
 (BOTH SIDES OF AIRPLANE)

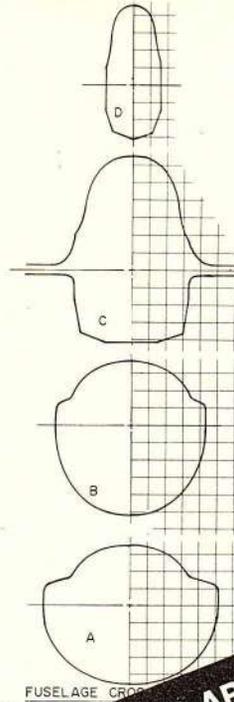
COLOR CODE

	BLUE
	YELLOW (SEE NOTE)
	SILVER
	RED

NOTE: ALL STARS, 3-BLADE PROP & SPINNER WHITE
 ALL COLOR BANDS & NOMENCLATURE YELLOW

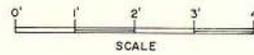


BOTTOM OF HORIZONTAL TAIL MARKINGS

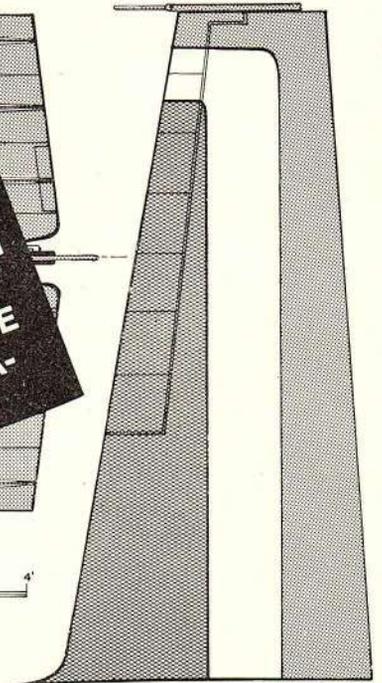


FUSELAGE CROSS-SECTION

THESE LASER DRAWINGS ARE AVAILABLE IN A LARGE FORMAT DIRECTLY FROM REPLA-TECH INTERNATIONAL, 48500 MCKENZIE HWY., VIDA, OREGON 97488. PRICE PER SHEET IS \$1.00. PHOTO PACKETS OF THE LASER ARE ALSO AVAILABLE FOR DOCUMENTATION.

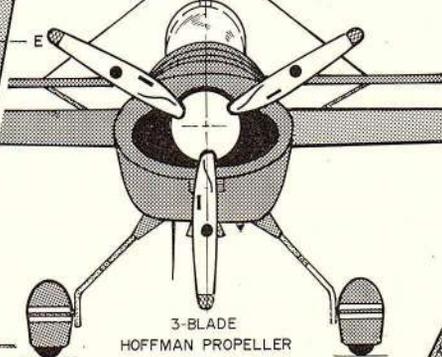
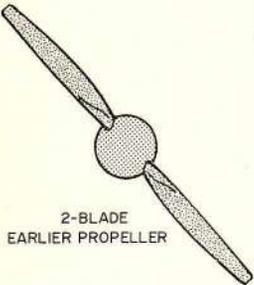


SCALE



BOTTOM OF WING MARKINGS

2-BLADE EARLIER PROPELLER

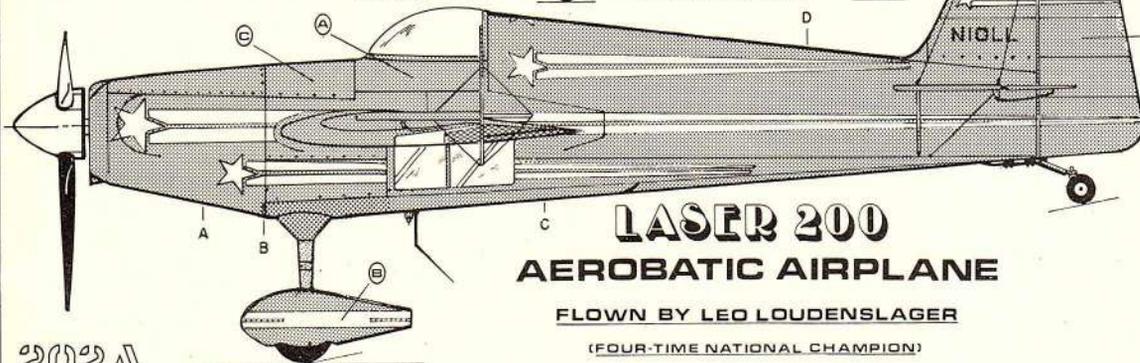


3-BLADE HOFFMAN PROPELLER

AEROBATIC REFERENCE GUIDE

NOTE: SEE REPLA-TECH PHOTO LISTS FOR PROOF-OF-SCALE PHOTOS.

MODIFIED STEPHENS AKRO. - CONFIGURATION AS SEEN AT 1979 NATIONAL CHAMPIONSHIPS



LASER 200
AEROBATIC AIRPLANE

FLOWN BY LEO LOUDENSLAGER

(FOUR-TIME NATIONAL CHAMPION)

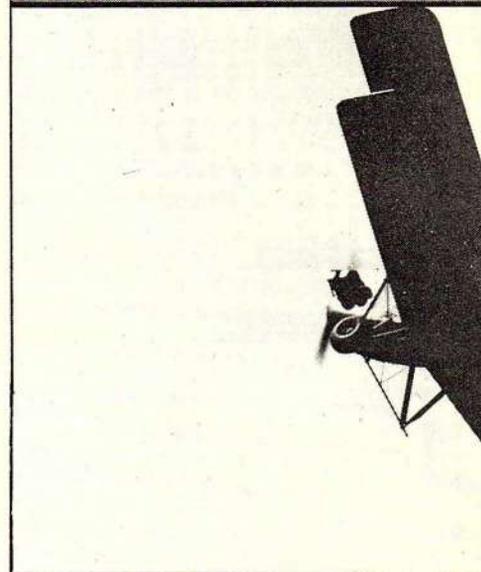
USA

REPLA-TECH
 INTERNATIONAL

48500 MCKENZIE HWY.
 VIDA, OREGON 97488

202A

CHAMPIONSHIPS

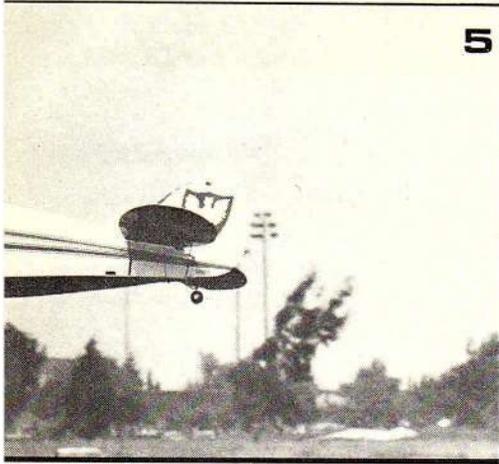


1. Bert Baker's Scale Flight Jug does a very low pass. 2. Al Kretz flew the Prestige Models' Smith Miniplane. A .60-sized biplane. 3. Bill McCallie's beautiful F8F got eleventh place. 4. Platt's P-51 on a fly-by. Where are the gear doors, and why's the tail wheel down, Dave? 5. Larry Scott's Waco CTO in 1/4 scale should have done better, but the static scores were only fair. 6. Joe Dolan's Fli Baby has just lost a wheel, but he landed it so well that the model came perfectly to rest with the main gear straddling the white line!

nel, had flown the original aircraft. He did a magnificent job of building the big model. The model was painted with silver paint from K-Mart. A nice idea, but the finish would fingerprint at the slightest touch, so Art had to wear white gloves when handling the aircraft!

There was Don Lien, with his new Focke Wulf, and a very good static score. You could tell that he sensed a chance to do well. On his fourth flight, he logged a 90.75, then topped that by posting a 91.75 in the last round. This last flight nipped Kent Walters of the honor of posting top flight score, as Kent had only a 91.5 best flight score. But he couldn't deprive Kent of the ulti-

5



6



every pilot's airline ticket (or travel expenses, if they drive). This seems a totally realistic and practical concept, which is bound to remove the problem of limited entries, and it will also make any geographic problems minimal.

We want to acknowledge the kind participation of Nissan Motors in the Masters program, and we hope

that they will be a primary sponsor next year. Dale Findley, the spark plug at Datsun who made this all possible, is to be commended for a job well done.

Denny DeWeese, of the Scale Squadron, got together with Ron Gorman to produce a quality video tape of the meet, and they intend to use this in soliciting new spon-



Chuck Fuller's giant scale Stearman was well flown, and captured eighth place. One of the best big bipes we've seen, and flown by one of the sharpest pilots.

mate victory.

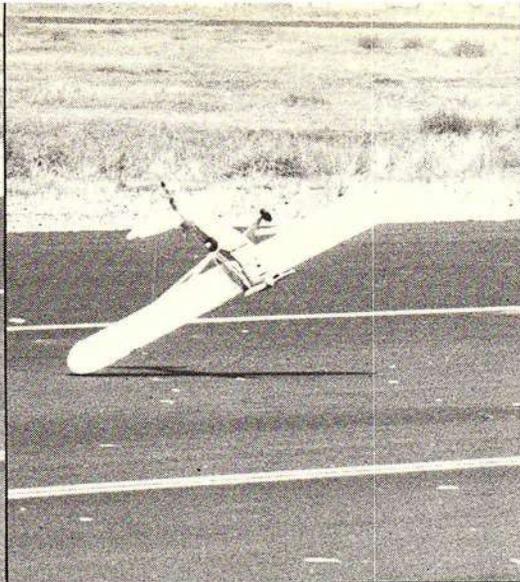
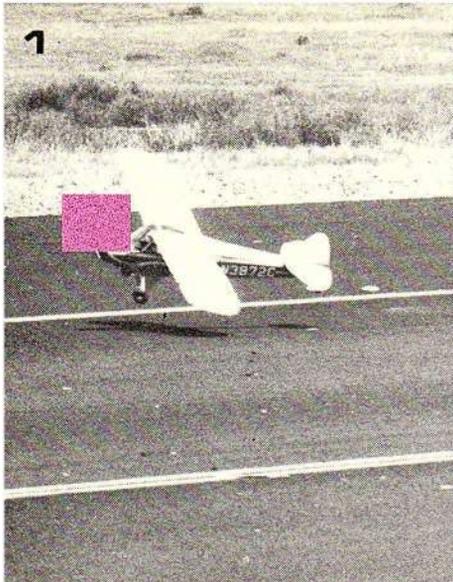
Originally, first prize was to have been a brand new Nissan Stanza. As it happened, the Masters Board decided that it would be equitable to sell the car, and distribute the wealth among all of the contestants. No one wanted to give up the excitement of winning a new car, but it seemed only fair to spread the wealth around. As it turned out, each of the entrants received a new \$100 bill with their registration package, to help defer their traveling expenses. This naturally was a great idea. First prize was a new radio, plus \$500 cash, and cash awards ran to fifth place.

We honestly have mixed emotions about introducing such a level of professionalism to this contest. Being the Scale Champion is motivation enough, we feel. However, there is always the practical side of such contests to consider. The trip from the East Coast could be as much as \$700 for the weekend. That, plus the time off from work, can put a real drain on the average modeler's pocketbook. Therefore, the Scale Squadron has proposed that next year's event have enough prize money and sponsorships behind it to pay for



Jack Aycock's Proctor Nieuport 11 had one of the highest static scores of the contest, but he could only hold on to tenth place.

1

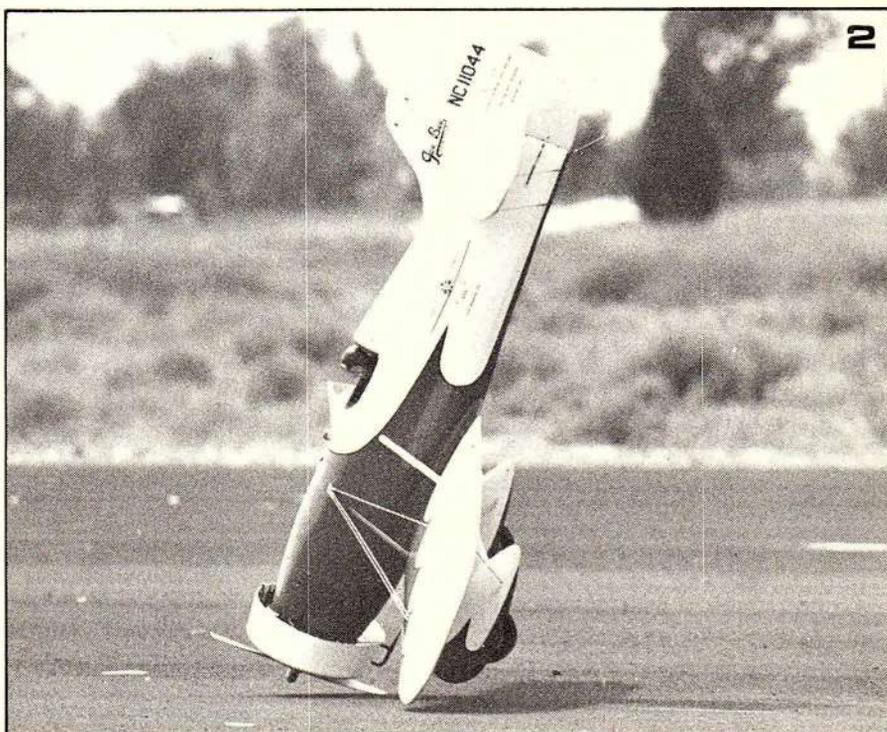


1. Dale Cordes' PA-18 does a little ballet for the camera. 2. Tom Weemes' Gee Bee Model E pirouettes on the prop. 3. Olen Trenary shows that the Pitts is a graceful machine, in any posture. Note that the entire model is clear of the runway.

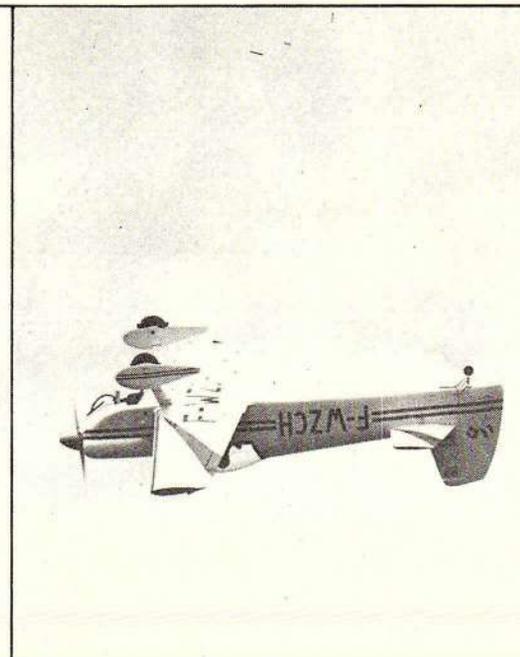
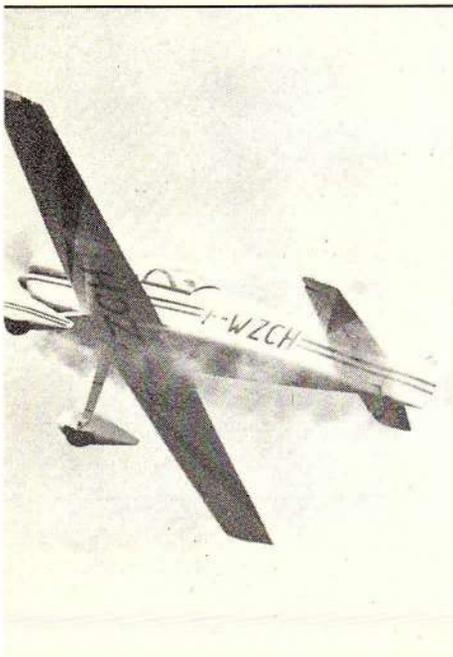
sors. Such positive PR efforts can only help this event to grow and prosper. The club raffled off a pre-built airplane, plus they managed a very busy food concession contest. All of this helped to make for a very successful contest.

The two days of flying saw six full rounds flown. The rain clouds quickly disappeared, and all of the flying was done in near ideal conditions, on the freshly repaved quarter-mile long runways at Mile Square Park.

Dean Copeland shows how to do a snap roll at less than ten feet of altitude with his quarter-scale CAP-21. A great flying model, piloted by one of the hottest stick jockeys around.



2

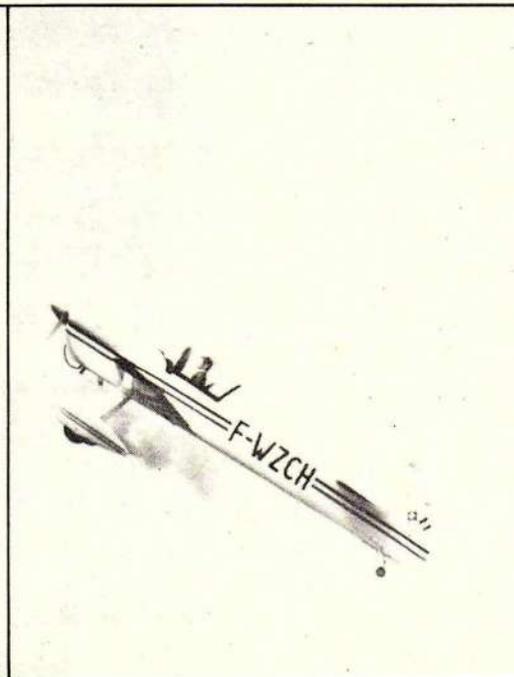


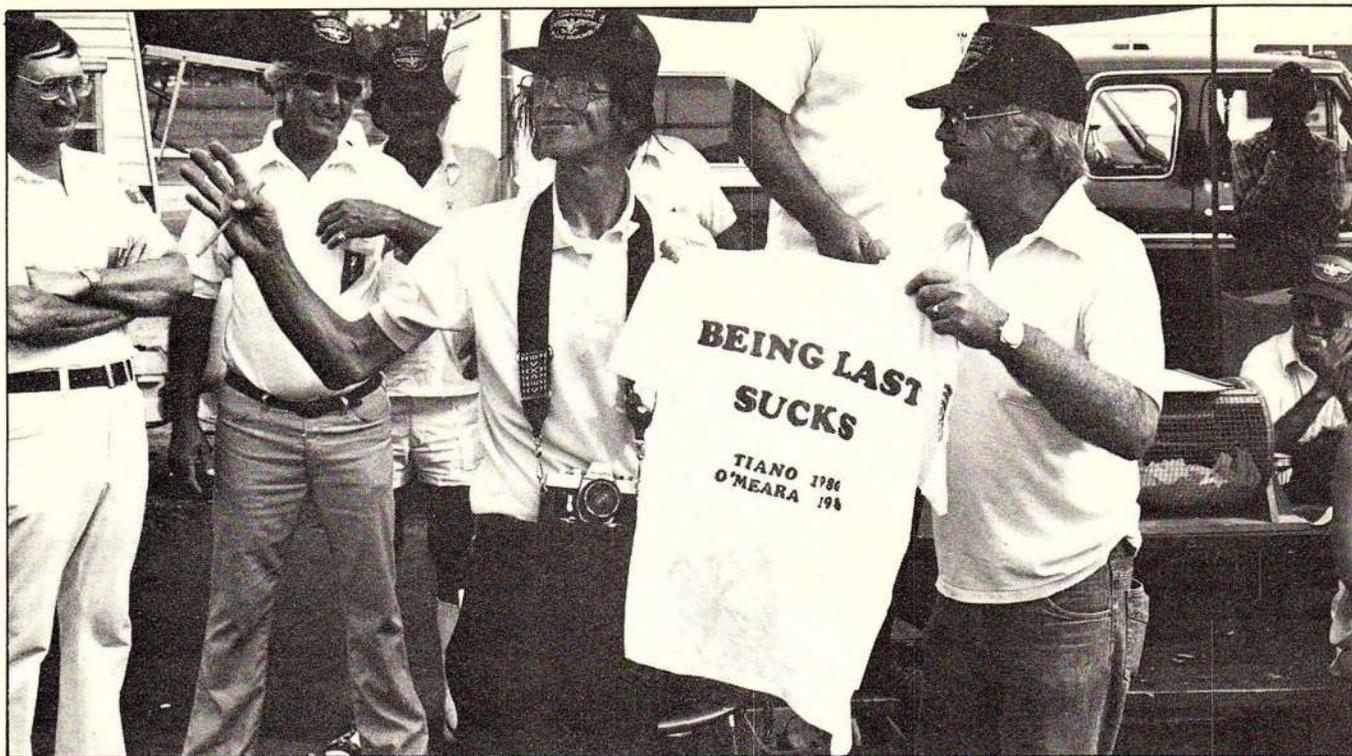


Tom Cook came back with his patched Phantom. The model just didn't go back together perfectly, and you could tell that Tom was really working to get the most from the bent airplane. Tom is one of the smoothest fliers we've ever seen, and he makes that big fan fly like a true jet. He likes to do his maneuvers low and right out in front, and the crowd loved it. When he capped off each flight by deploying a scale drogue chute after touchdown, the applause was universal.

Speaking of crowds, we estimated that there were probably some 3,000-5,000 spectators there each day. Sunday was so crowded that the parking area was virtually three rows deep with cars parked side by side over a 1/4-mile line. This all happened without any promotion, although there was a short piece on one of the local news programs on Saturday night. Obviously, Scale models have some very strong spectator appeal, and that's an important consideration for any sponsor.

There were some real crowd pleasing airplanes on hand, too. Not only did Kent Walters' famed dive bombing routine bring a great crowd response, but there was a real airshow flavor to the whole meet. Dean Copeland came from Omaha with a beautiful giant scale CAP-21. Dean is an Ace of a pilot, and he did a hairy snap roll on takeoff, which drove the crowd (and the other pilots) crazy. Chuck Fuller also gave the weekend some barnstorming flavor by doing a full roll after takeoff with his giant scale Stearman. Both of these models had smoke systems, and they put on airshows worthy of exhibition flying. Chuck was goofing off after the





Dan Santich showed 'em all! The lucky fellow gets to add his name to the Tee shirt.

contest, and lost the engine on a low and slow inverted pass, but the model looked repairable. At least he walked away with ninth place for his efforts.

Frank Tiano, who had the dubious distinction of finishing last two years ago, was back with his red Focke Wulf to try again for that honor. Brian O'Meara, the 1981 last placer, made the trip from Colorado just to pass on the perpetual Tee shirt which reads "Being Last Sucks!" Frank got beat out this year by Tennessee's Dan Santich, but all was not lost. Or, we should say, all *was* lost. Frank tried to show them all what a true snap on takeoff was supposed to look like. The FW snapped violently to the left, then snapped to the right, and was in the process of another one when it destructed. Lucky Frank won the "Most Stupid Pilot Error" award, which included a kit from Jerry Ortego Models . . . you guessed it, and another Focke Wulf!

The whole contest was so close that no one could tell until the last flight was posted who had won. There were only ten points between the top ten spots, so that last flight was the wild card for many. Don Lien came within a cat's whisker of catching Kent Walters for top honors, but Kent posted a 90.75 on his last flight to guarantee the victory (he averaged better than nine points

a maneuver over the entire six flights!)).

Art Johnson wound up in third, and Tom Cook flew his broken Phantom well enough to get a well-deserved fourth place. Garland Hamilton wound up in fifth place, and Jerry Ortego took sixth. As we mentioned, Murphy's Law was really working overtime this weekend. The rain started the contest, and then an astronomically improbable sequence of events marred the closing of the meet. By some fluke, batteries failed in not one, but two calculators! This wasn't discovered until after the awards were handed out, so it was kind of awkward to see pilots swapping trophies (and \$100 bills) fifteen minutes later. Things like that happen.

Could the contest have been improved upon? Not in any significant way. The Scale Squadron has their act together when it comes to managing a contest. We could make a few observations which arose out of the sheer magnitude of this meet. Because the pit area is arranged by frequencies, all of the models wind up congregated in a 100-foot area, while the spectators are sprawled out for hundreds of yards on either side. This means that a few people get a ring-side seat, while a vast majority of the onlookers never get a very good view of the planes. Perhaps the answer is to have an area

for each model, or make them only two rows deep, and put a nice placard by each plane with builder, home state or city, and a few quick bits of information about the size, weight, etc. This would also help the spectators to see more of the models. We kind of have things backwards, because we put the people behind a barrier, then we all stand in the pits and block their view of the runway! If we spread out the planes a little, then maybe the crowd can see those nice flip cards that the flight judges use for scores.

Things like this may be nit picking, but they can be very important if you're a young kid who might be getting into modeling in the next few years . . . and you can't get a decent look at the action. The Squadron may be relocating their field for the Masters to a nearby base. This would mean bleachers for the crowds.

Other possible changes for '83 may include a rules modification, to eliminate one of the flight options. This is an attempt to minimize the "easy" scores for such maneuvers as dive bombing. Some fliers are using this one maneuver for three options, *i.e.*, dive brakes, flaps and bomb drop. By eliminating one flight option, it is hoped that the event can be turned more toward a strictly flying event with more maneuvers. This

might give the non-military aircraft a better chance. As of this writing, this proposed change has not been finalized.

We must admit that our observations of the static scores at the Championships showed civilian aircraft to be at a marked disadvantage. As a matter of fact, the only correlations we detected in the static scores were that all of the higher scores were military machines, and all of the lower scores were civilian (with very rare exceptions). We don't know why, but the relationship was definitely there.

Another rules change for '83 which will only affect one guy is that the Champion cannot win two years in a row with the same model. This is a rule which was requested by the sponsor, Datsun, and we feel that it's a logical idea. The contest at Morgan Hill had to eventually resort to this approach to keep one superb model from dominating and eventually ruining the meet. The big question is: What will Cowboy Kent show up with next year? Probably an SBD-5 instead of an SBD-3!!

In all, the 1982 Masters Championships were the best yet. The level of competition was the highest we've ever seen and, except for a few cheap shots from Murphy's Law, the meet was a total success. Who knows how the contest would have turned out if last year's champ, Tom Cook, hadn't crashed his model on Friday. We could speculate forever on the "what ifs," and all that really matters is that next year's Masters should be one of the best events in modeling. The contest has already gained the respect of scale modelers around the country, and next year's event is already on the tentative calendar of many modelers. □

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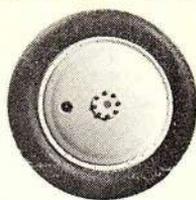


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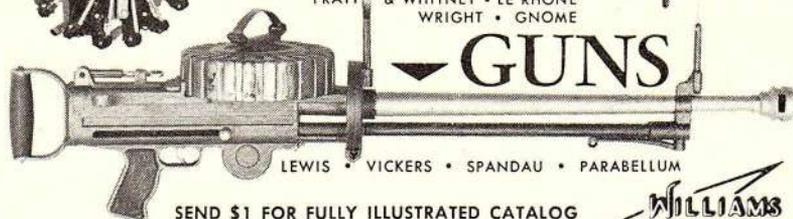
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(Continued from page 65)

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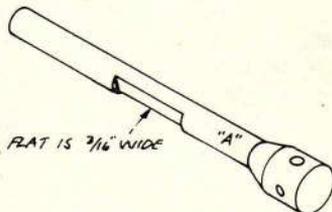
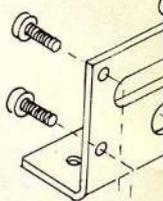
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1. A GENEROUS FLAT AREA MUST BE GROUND INTO THE PART "A". USE A DREMEL GRINDING STONE.
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The instructions and plans are packed with more valuable information and scale hints. We could go on explaining each one here but we're sure you are anxious to read something about the flight performance of this big beautiful bird.

* * *

Because of space limitations, we will continue Jim's story in the next issue. Not only will he discuss the flight performance of the Mustang . . . having seen it, we can promise you that the flight performance is

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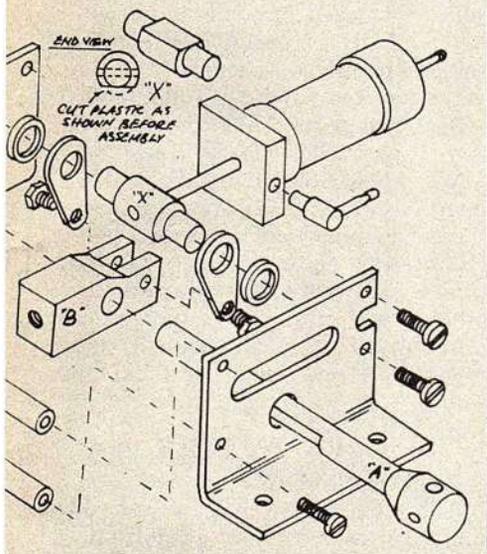


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spectacular . . . but Jim will also offer his expert opinion of another .90-sized scale kit which just recently came on the market. We were surprised ourselves that he found so many scale errors, which anyone building that kit will want to take into consideration if they intend to use it as a contest machine.

PLAN DETAIL SHOWING THE MODIFICATION KIT FOR THE RHOM RETRACTS. AVAILABLE FROM THE MANUFACTURER AS AN OPTION TO THE KIT.



We have had an opportunity to inspect the drawings and instructions that come with the Master Scale kit, and we must confess that they are the most elaborate scale presentation we have ever seen. Jim has taken over two years of research and consolidated all of that information into these drawings. The paperwork alone is worth the price of the kit.

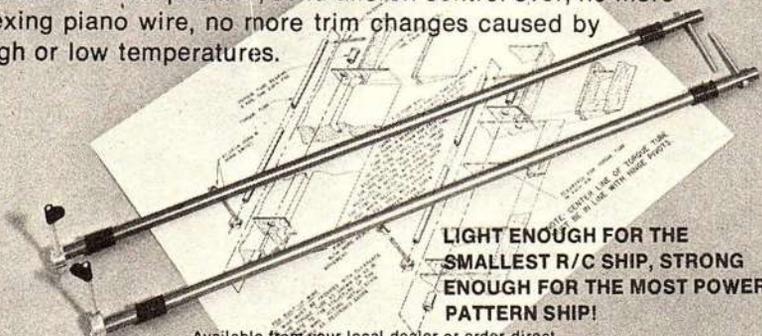
Jim's prototype model was on static display at the Masters, and we have never seen one airplane get so much attention. There was a crowd of modelers around the Mustang all day, and we think that Jim probably took a kit order from almost every one of the expert modelers at the meet. As we commented when we saw the model, it's light years ahead of any other kit on the market, and it will set the standard for all quality scale kits in the future. (PHP)

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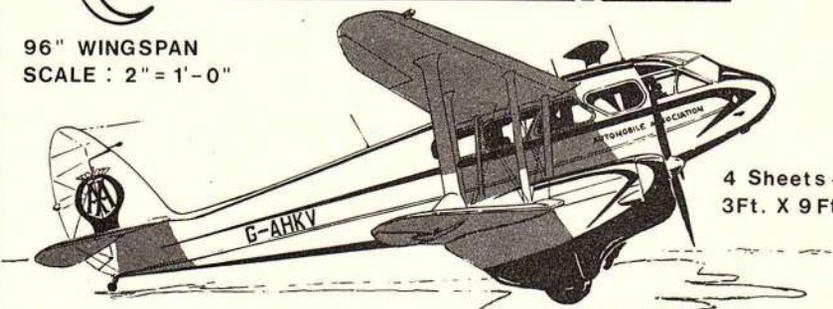
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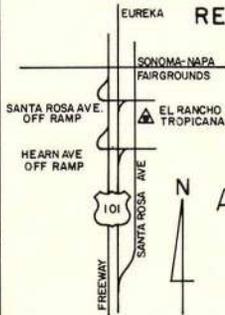
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EDITORIAL ET TU NASA?!

(Continued from page 8)

poxy for making this service available to scale modelers.

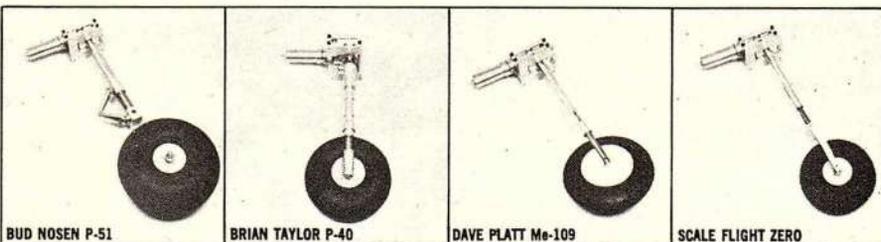
SEA BLUE, FS 35402, was a WWII Navy color suitable for Corsairs, Hellcats, etc. The formula for this color is: 3 parts H81 (Black), 2 parts H33 (Stinsen Green) and 1 part H24 (Dark Blue).

The second color this month is INTERMEDIATE BLUE, FS 35164, which was used in combination with SEA BLUE in early WWII three-color camouflage schemes. The formula for this color is: 4 parts H70 (Gray), 3 parts H66 (Dark Red) and 1 part H24 (Dark Blue).

We would like to emphasize last month's word of caution; namely, these formulas were developed using Hobbypoxy epoxy enamel standard colors. You won't be able to use any other brand of paint to achieve the same result, as their pigment concentrations and colors are not the same.

OPEN LETTER

Kent Walters is the new Scale Masters Champion and, as such, his opinions carry some weight. And weight is the topic of a letter Kent forwarded to the AMA recently. A little background to Kent's letter would help. For the last couple of years, Kent has been working on a large scratchbuilt B-17. Most likely, this project will finish-out at over 55 pounds, and so the recent change in the AMA's attitude toward an upper weight limit for model air-



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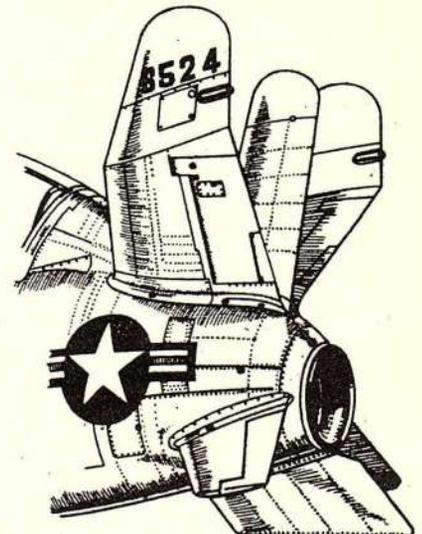
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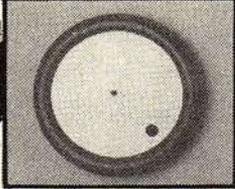
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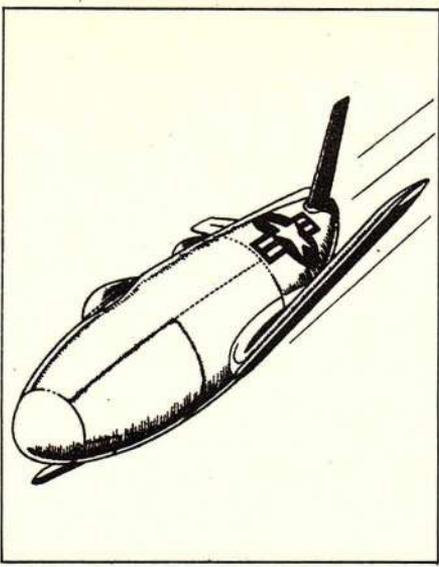
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craft is like pulling the rug out from under builders like Kent, who started projects in good faith when the policy was no weight restriction. But, Kent's letter isn't self-serving, but it rather tries to shed some light on the logic of adapting any weight limits. Here's Kent's letter:

Since the September issue of Model Aviation it has been of interest to many scale modelers just how the 55-pound weight limit was chosen. Although this figure was apparently the limit similarly imposed in Canada by MAAC and coincided with the Federal imposed highway speed limit, little else explained the reasoning used in this particular criteria.

Although some limit was obviously necessary in weight and total engine displacement(s) as big models continued to evolve, there now appears to be no meaningful extra weight allowance for multi-engine scale aircraft which use the same total engine displacement limits presently defined (4.4 cu. in.). Extra weight for multi-engine aircraft has historically been recognized as necessary and justified in sports scale to permit modeling even with minimal engine sizes such as .015 to .030 on four engine models. A similar relationship can be recognized in an effort to achieve fidelity to scale when extending this to larger models with total engine displacements up to 4.4 cu. in. A brief description is as follows:

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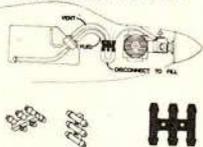
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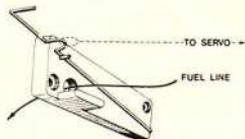
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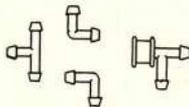


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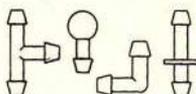
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ET TU NASA?!

because it was of sufficient size to permit reasonable fidelity to scale in flight and permit hidden engine installations of the popular 60 and even the more recent 90 size engines. However, if we were to model with this same engine size and scale for similar reasons on a four engine aircraft, let's see what now happens. Assume there will be a comparable amount of detailing and functions provided, i.e., flaps, retracts, etc. In practice, the model aircraft weight comparison is in the same weight ratio as the full size aircraft comparison. In a typical case, a four engine bomber would weigh six times that of a single engine fighter in full size. We now see a four engine model weighing in the vicinity of 72 pounds dry with other similar examples approaching 90 pounds.

Since this is only one example of achieving fidelity to scale (as well as flying characteristics) in multi-engine modeling it is important to consider an expanded weight limit in the 90 pound range for such models if the total engine displacements are still maintained at the present limit of 4.4 cubic inches.

One may ask, why make an exception in weight from the safety standpoint? For those that have seen aircraft flown of the example made above, the answer may be easy. Such aircraft fly relatively slow and are very stable aerodynamically as would be expected when comparing performance of its full size counterpart. They also perform very little in the way of serious aerobatic maneuvers which reduces probability of risk significantly during flight. I understand this fact was again witnessed at the recent IMAA Fun-Fly Festival of one or two such models.

If we start emphasizing the engine displacement limit for such models instead of the present limiting weight, we have really placed a significant control on the kinetic energy achieved during flight since aircraft above 55 pounds would be forced into a slower velocity attitude. This result is not only to be expected (Kinetic Energy K equals $\frac{1}{2}$ times mass times the velocity squared, i.e., $K = \frac{1}{2}mv^2$) but also it is desirable for scale fidelity.

If these reasons are still insufficient to satisfy the AMA Safety Council, then the next question by modelers would logically be why the

IT'S TIME FOR A CHOICE!!



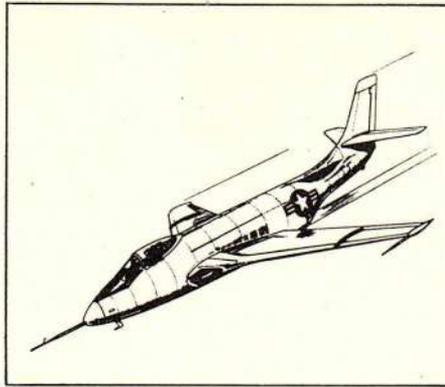
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AMA doesn't simply define those additional requirements in site conditions that may be proposed to fly such aircraft deemed appropriate for this modeling segment. Would further increasing the recently imposed 65 foot distance from operations line to spectator line allow AMA insurance coverage? Such aircraft deserve an opportunity to receive insurance coverage if flown in the proper environment and present engine limitations.

The statement made in the September issue of Model Aviation directly implying "models weighing over 55 pounds which are flown in the desert or uninhabited areas are not in need of insurance" is irresponsible and tears at the very fabric of which AMA is made.

This statement may have given erroneous justification for a significant percentage of the Western United States AMA modelers to reconsider need for membership based on such reasoning with their prevailing site environment and presumed "smaller and safer models" in general.

As suggested further in this September issue, the AMA Safety Committee should indeed look further into this matter with an approach that will not only be safe but serve as much of the modeling community as is practical. The 55 pound weight limit may be fine for single engine aircraft, but I would hope this is not the final stand for all models as implied in your October article in Model Aviation. Further study of this consideration may produce a guideline which can be called not only persistent and persuasive but also realistic over the coming years.

The scale modeling community needs the opportunity to use 60 or 90 size engines with corresponding size and weight airframe to model four engine aircraft and achieve what any scale modeler is striving for, fidelity to scale.

Sincerely,
Kent Walters

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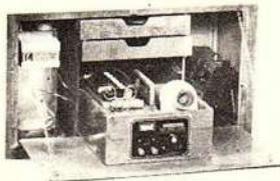
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contest. This rocket uses a Tartan twin for power, and weighs only 18 pounds. It took a third place trophy its first time out, and it's one of the most aerobatic planes we've ever seen.

An L-4B Grasshopper, built by Bill Hunt, flew very well. Bill modified the heck out of the kit, and did it up nicely in invasion stripes. The Grasshopper dropped propaganda pamphlets over the field as one of the scale flight options.

One of the tragedies of the weekend was the demise of Rod Spanier's beautiful Sopwith Pup. This giant scale model was being flown to perfection, as Rod made an inverted pass. That Clark Y airfoil isn't the greatest for inverted flying, and soon Rod found himself too low to roll out, and running out of options. The model folded up like a Pelican diving into the Gulf.

Rod had copied one of the last flying versions of this famed WWI fighter, which still gets airborne at airshows in England. Rod had added all of the flying wires, and had done a very realistic looking pilot, too. But he had already amassed enough points in his previous flights to take a well-deserved second in Team Scale. Rod then went on to take a

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(Continued from page 17)

first in Team, flying a 15-year-old Taylorcraft Scotsman.

From the oldest plane, we turn to the youngest flier . . . 14-year-old Tom Veloskey, Jr. He flew a Christen Eagle to first place in Sportsman. His dad, Tom, flies with the Kissimmee Valley Model Club Stunt Team. He has a scale model of Superman for airshows, and also a big model which drops four radio-controlled skydivers. It's nice to see a young man so actively involved in the hobby, and it looks as if he's going to be hard to beat in any class in the near future.

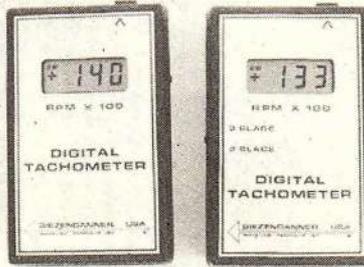
This contest, while small in attendance, is one of the nicest weekend meets in the Southeast. The judging is the best, and some of the best modelers in the country fly this meet. If you are going to be in the area, plan a trip in this direction. Busch Gardens is nearby, as is the Dark Continent. Disney World and the Epcot Center are within an hour's drive. One of the best restaurants in the world is Louis Pappas at Tarpon Springs. Imagine, all of this and scale models, too!

Dave Platt's P-51 gets airborne from the edge of the runway. It took highest static score.



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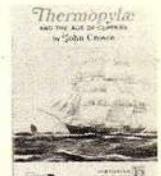
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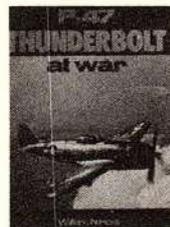
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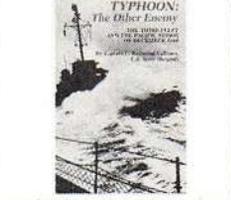
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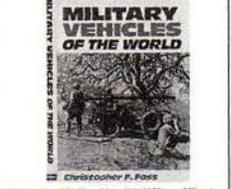
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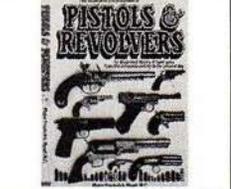
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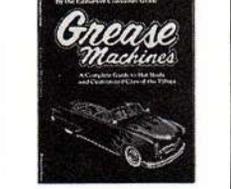
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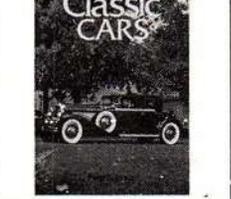
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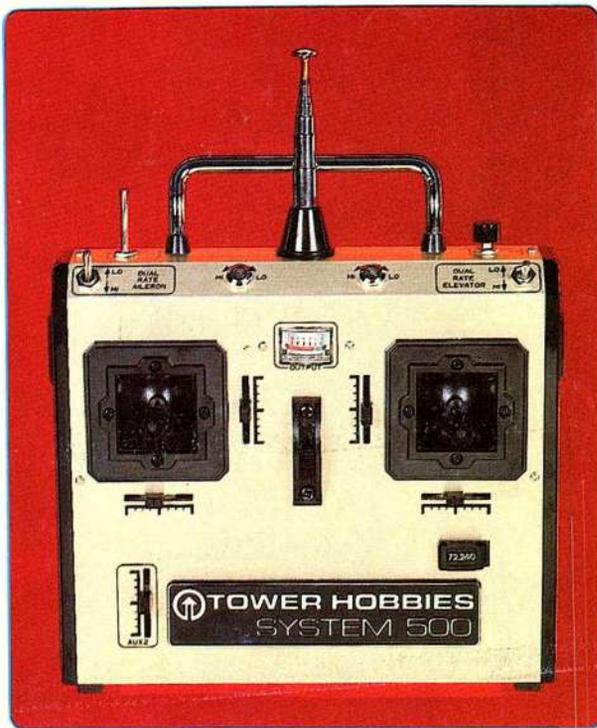
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